

PSREF

Collection of Think Products

Product
Specifications
Reference



Think

Version 581
August 11, 2021

Lenovo™

PSREF

Product Specifications Reference

ThinkPad Laptops

The ThinkPad logo, featuring the word "ThinkPad" in a white, sans-serif font. The dot above the "i" is a small red square.

Version 581
August 11, 2021

The Lenovo logo, consisting of the word "Lenovo" in white, sans-serif font, oriented vertically within a blue rectangular background.

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Summary of Changes

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

August 11, 2021 - Version 581

Additions in this update

► New product(s)

ThinkPad P15v Gen 2
ThinkPad T14s Gen 2 (AMD)
ThinkPad T15p Gen 2
ThinkPad X13 Gen 2 (AMD)

► Spec updated

ThinkPad E14
ThinkPad E14 Gen 2 (AMD)
ThinkPad E14 Gen 2 (Intel)
ThinkPad E14 Gen 3 (AMD)
ThinkPad E15
ThinkPad E15 Gen 2 (AMD)
ThinkPad E15 Gen 2 (Intel)
ThinkPad E15 Gen 3 (AMD)
ThinkPad L13 Gen 2 (AMD)
ThinkPad L13 Gen 2 (Intel)
ThinkPad L14 Gen 1 (AMD)
ThinkPad L14 Gen 2 (AMD)
ThinkPad L14 Gen 2 (AMD)
ThinkPad L14 Gen 2 (Intel)
ThinkPad L15 Gen 1 (AMD)
ThinkPad L15 Gen 2 (AMD)
ThinkPad L15 Gen 2 (AMD)
ThinkPad L15 Gen 2 (Intel)
ThinkPad P14s Gen 1 (AMD)
ThinkPad P14s Gen 1 (Intel)
ThinkPad P14s Gen 2 (Intel)
ThinkPad P15 Gen 1
ThinkPad P15s Gen 1
ThinkPad P15s Gen 2
ThinkPad P15v Gen 1
ThinkPad P17 Gen 1
ThinkPad T14 Gen 1 (AMD)
ThinkPad T14 Gen 2 (AMD)
ThinkPad T14s Gen 1 (AMD)
ThinkPad T14s Gen 2 (Intel)
ThinkPad T15g Gen 1
ThinkPad X13 Gen 1 (AMD)

Withdrawals in this update

► Withdrawn product(s)

None

OVERVIEW



| | |
|------------------------|----------------------------------------------|
| 1. Pen tether hole | 8. Headphone / microphone combo jack (3.5mm) |
| 2. Power connector | 9. USB 3.1 Gen 1 |
| 3. Ethernet (RJ-45) | 10. USB-C 3.1 Gen 1 |
| 4. HDMI 1.4b | 11. Kensington Security Slot |
| 5. USB 3.1 Gen 1 | 12. Pen tether hole |
| 6. MicroSD card reader | 13. Pen slot |
| 7. Power button | |

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or Intel Pentium® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron N4120 | 4 | 4 | 1.1GHz | 2.6GHz | 4MB | DDR4-2400 | Intel UHD Graphics 600 |
| Pentium Silver N5030 | 4 | 4 | 1.1GHz | 3.1GHz | 4MB | DDR4-2400 | Intel UHD Graphics 605 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics 600 | Integrated | Shared | DirectX® 12 |
| Intel UHD Graphics 605 | Integrated | Shared | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via HDMI® (up to 4096x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type

- DDR4-2400
- LPDDR3-1866

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

- One drive, up to 256GB M.2 2242 SSD
- 64GB eMMC on systemboard
- 128GB eMMC on systemboard

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| Flash Memory | eMMC | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

Notes:

1. System has one eMMC on systemboard or one M.2 2242 SSD exclusively

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Single microphone

Camera

720p, fixed focus

Battery

Battery

Integrated Li-Polymer 42Wh battery

Max Battery Life^[1]

MobileMark® 2014: 13.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 45W slim tip AC adapter
- 65W USB-C AC adapter
- 65W slim tip AC adapter

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 11.6" | HD (1366x768) | Multi-touch | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 11.6" | HD (1366x768) | None | TN | 250 nits | Anti-glare | 16:9 | 400:1 or 500:1 | 45% NTSC | 90° | - |

Touchscreen^[3]

- Capacitive-type multi-touch, supports 10-point touch

- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. IPS display is not available in EMEA
3. NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

No support

Touchpad

Buttonless Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

300 x 210 x 21.9 mm (11.81 x 8.27 x 0.86 inches)

Weight^[1]

1.36 kg (2.99 lbs)

Case Color

Black

Case Material

PC + ABS + GF (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 2x USB 3.1 Gen 1
- 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™)
- 1x HDMI 1.4b
- 1x microSD card reader

- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 3-year (1-yr battery) depot service

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS



Green Certifications

Green Certifications

RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|-----------------------------|-----------------------------------------------|
| 1. Pen slot | 6. Pen tether hole |
| 2. Power button | 7. USB-C 3.2 Gen 1 |
| 3. MicroSD card reader | 8. HDMI 1.4 |
| 4. USB 3.2 Gen 1 | 9. USB 3.2 Gen 1 |
| 5. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |

PERFORMANCE

Processor

Processor Family

8th Generation Intel® Core™ m / i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core m3-8100Y | 2 | 4 | 1.1GHz | 3.4GHz | 4MB | LPDDR3-1866 | Intel UHD Graphics 615 |
| Core i5-8200Y | 2 | 4 | 1.3GHz | 3.9GHz | 4MB | LPDDR3-1866 | Intel UHD Graphics 615 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics 615 | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type^[2]

LPDDR3-1866

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 2133MHz, but may run at 1866MHz depending on the memory support capability of processor

Storage

Storage Support

One drive, up to 256GB M.2 2242 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Advanced Audio

Microphone

Single microphone

Camera

- Front 720p, fixed focus
- Front 720p, fixed focus; rear 5.0-megapixel, auto focus

Battery

Battery

Integrated Li-Polymer 46Wh battery

Max Battery Life^[1]

MobileMark® 2014: 15.69 hr
MobileMark 2018: 11.05 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C AC adapter

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------------|------|------------|---------|--------------|----------------|-------------|---------------|-------------------------|
| 11.6" | HD (1366x768) | Multi-touch | IPS | 250 nits | Glossy | 16:9 | 800:1 | 45% NTSC | 170° | Corning® Gorilla® Glass |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad® Pen Pro, batteries required, on-board garaged
- No support

Keyboard

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

No support

Touchpad

Buttonless Mylar® surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

293x 207 x 19.9 mm (11.54 x 8.15 x 0.78 inches)

Weight^[1]

1.41 kg (3.1 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet^[1]**

No Ethernet

WLAN + Bluetooth®^[2]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. support MAC pass through
2. WiFi 6 full features might be limited by country level restrictions
BT5.2 is supported on Windows 10 version 20H2 or above (limited to BT5.0 on earlier version)

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 1.4
- 1x microSD card reader
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant



Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|-------------------------|
| 1. Power button | 8. Power connector |
| 2. Headphone / microphone combo jack (3.5mm) | 9. Ethernet (RJ-45) |
| 3. USB 3.1 Gen 1 | 10. HDMI 1.4 |
| 4. USB-C 3.1 Gen 1 | 11. USB 3.1 Gen 1 |
| 5. Kensington Security Slot | 12. MicroSD card reader |
| 6. Pen tether hole | 13. Pen slot |
| 7. Pen tether hole | |

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or Intel Pentium® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron N4120 | 4 | 4 | 1.1GHz | 2.6GHz | 4MB | DDR4-2400 | Intel UHD Graphics 600 |
| Pentium Silver N5030 | 4 | 4 | 1.1GHz | 3.1GHz | 4MB | DDR4-2400 | Intel UHD Graphics 605 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics 600 | Integrated | Shared | DirectX® 12 |
| Intel UHD Graphics 605 | Integrated | Shared | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via HDMI® (up to 4096x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type

- DDR4-2400
- LPDDR3-1866

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

- One drive, up to 256GB M.2 2242 SSD
- 64GB eMMC on systemboard
- 128GB eMMC on systemboard

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| Flash Memory | eMMC | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

Notes:

1. System has one eMMC on systemboard or one M.2 2242 SSD exclusively

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Single microphone

Camera

- Front 720p, fixed focus
- Front 720p, fixed focus; rear 5.0-megapixel, auto focus

Battery

Battery

Integrated Li-Polymer 42Wh battery

Max Battery Life

MobileMark® 2014: 12 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 45W slim tip AC adapter
- 65W USB-C AC adapter
- 65W slim tip AC adapter

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------------|------|------------|---------|--------------|----------------|-------------|---------------|-------------------------|
| 11.6" | HD (1366x768) | Multi-touch | IPS | 250 nits | Glossy | 16:9 | 800:1 | 45% NTSC | 170° | Corning® Gorilla® Glass |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad® Pen Pro, batteries required, on-board garaged
- No pen (with a pen garage ready, pen needs to be purchased separately)
- No support

Keyboard

6-row, multimedia Fn keys

Keyboard Backlight

No support

Touchpad

Buttonless Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

300 x 210 x 22.5 mm (11.81 x 8.27 x 0.89 inches)

Weight^[1]

1.54 kg (3.4 lbs)

Case Color

Black

Case Material

PC + ABS + GF (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 2x USB 3.1 Gen 1
- 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™)

ThinkPad Yoga 11e (5th Gen)

- 1x HDMI 1.4
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
 USB 2.0: 480 Mbit/s;
 USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
 USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
 USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
 Thunderbolt™ 3: 40 Gbit/s;
 FireWire 400: 400 Mbit/s;
 FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 3-year (1-yr battery) depot service

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)



CERTIFICATIONS

Green Certifications

Green Certifications

RoHS compliant

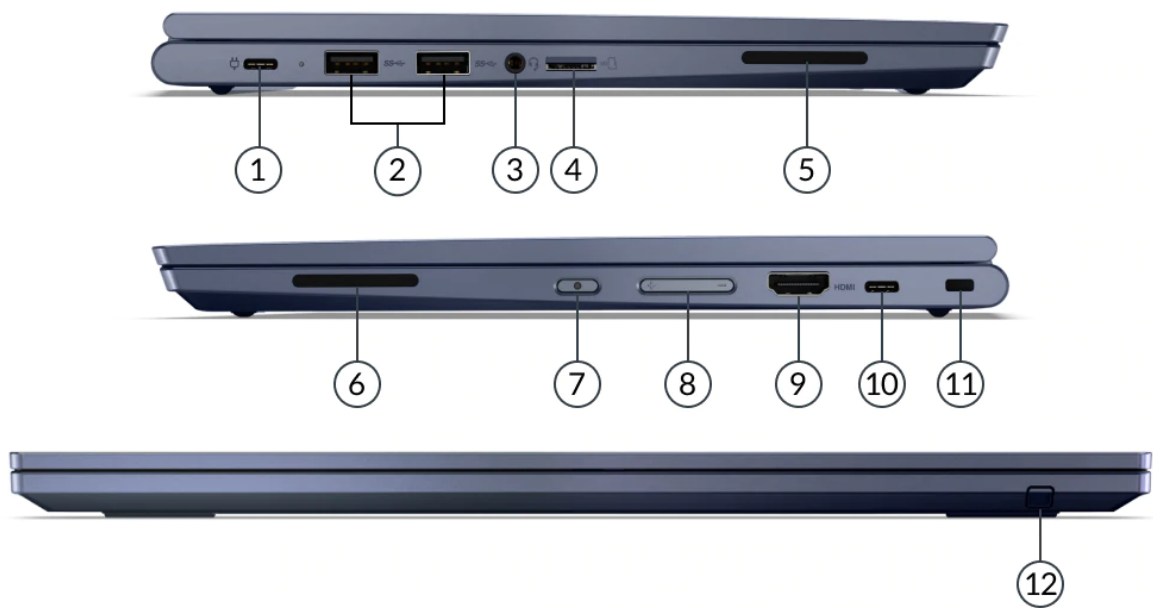
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. Power button |
| 2. 2x USB 3.2 Gen 1 | 8. Volume button |
| 3. Headphone / microphone combo jack (3.5mm) | 9. HDMI 2.0 |
| 4. MicroSD card reader | 10. USB-C 3.2 Gen 1 |
| 5. Speaker | 11. Kensington Security Slot |
| 6. Speaker | 12. Pen slot |

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 / 7 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Athlon Gold 3150C | 2 | 4 | 2.4GHz | 3.3GHz | 1MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon™ Graphics |
| AMD Ryzen 3 3250C | 2 | 4 | 2.6GHz | 3.5GHz | 1MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon Graphics |
| AMD Ryzen 5 3500C | 4 | 8 | 2.1GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon Graphics |
| AMD Ryzen 7 3700C | 4 | 8 | 2.3GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon Graphics |

Operating System

Operating System

- Google Chrome OS
- Google Chrome OS (with Chrome Education Upgrade)
- Google Chrome OS (with Chrome Enterprise Upgrade)

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

- Ryzen 5 / Ryzen 7 model: supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 3840x2160@60Hz) or USB-C (up to 3840x2160@60Hz)
- Athlon / Ryzen 3 model: supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@30Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

- Memory soldered to systemboard, no slots (4GB model)
- Memory soldered to systemboard, no slots, dual-channel (8GB or 16GB model)

Memory Type^[2]

DDR4-2400

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2400MHz due to processor limitation

Storage

Storage Support

- 64GB eMMC 5.1 on systemboard
- 32GB eMMC 5.1 on systemboard
- One drive, up to 256GB M.2 2280 SSD

Storage Slot

- eMMC on systemboard, no slots
- One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| Flash Memory | eMMC | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® 5682I-CGT codec

Speakers

Stereo speakers, 2W x2

Microphone

- Dual array microphone, far-field
- Dual array far-field microphone and a single microphone (models with rear camera)

Camera

- Front 720p, with privacy shutter, fixed focus
- Front 720p, with privacy shutter, fixed focus; rear 5.0-megapixel, auto focus

Battery

Battery

Integrated Li-Polymer 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

Google power load test: 12.5 hr

JEITA 2.0: 12.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark® 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 1400:1 | 72% NTSC | 170° | - |
| 13.3" | UHD (3840x2160) | Multi-touch | OLED | 400 nits | Anti-reflection, Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | - |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- Lenovo USI Pen, on-board garaged and rechargeable
- No pen (pen needs to be purchased separately)

Keyboard

Chrome keyboard, 6-row, spill-resistant

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

307 x 212.1 x 15.5-17.9 mm (12.09 x 8.35 x 0.61-0.70 inches)

Weight^[1]

1.497 kg (3.3 lbs)

Case Color

Abyss blue

Case Material

Aluminium (top), aluminium (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

No Ethernet

WLAN + Bluetooth^[1]

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.0, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Intel WiFi 6 card supports BT5.2 but is limited to BT5.0 by Chrome OS

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1
- 2x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

Google Security Chip H1

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

No support

Other Security

ThinkShutter camera cover

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



AMD



AMD



AMD



AMD



AMD



AMD

OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. USB-C 3.1 Gen 1 | 5. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.1 Gen 1 (Always On) | 6. USB 2.0 |
| 3. USB 3.1 Gen 1 | 7. Ethernet (RJ-45) |
| 4. HDMI 1.4b | 8. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Notes:

1. i7-10710U is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| AMD Radeon™ 625 | Discrete | 2GB GDDR5 | DirectX 12 |
| AMD Radeon RX 640 | Discrete | 2GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 16GB DDR4-2666

Memory Slots

One DDR4 SO-DIMM slot

Memory Type

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2280 SSD or 1x 2.5" HDD + 1x M.2 2242 SSD

- 2.5" HDD up to 2TB
- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB
- Optional Intel Optane™ Memory or Optane Memory Integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | SATA 6Gb/s | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Advanced Audio

Microphone

Dual array microphone

Camera

- 720p, fixed focus
- 720p, with ThinkShutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | - | 90° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | - | 170° | - |

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------------------------|-------------------------------------------------|
| Aluminium (top), PC + ABS (bottom) models | 325 x 232 x 18.9 mm (12.8 x 9.13 x 0.74 inches) |
| Aluminium (top), aluminium (bottom) models | 325 x 232 x 17.9 mm (12.8 x 9.13 x 0.7 inches) |
| PC + ABS (top), PC + ABS (bottom) models | 325 x 232 x 20.5 mm (12.8 x 9.13 x 0.81 inches) |

Weight^[1]

| Models | Weight |
|--------------------------------------------|--------------------|
| Aluminium (Top), PC + ABS (Bottom) models | 1.69 kg (3.73 lbs) |
| PC + ABS (Top), PC + ABS (Bottom) models | 1.77 kg (3.9 lbs) |
| Aluminium (Top), Aluminium (Bottom) models | 1.73 kg (3.81 lbs) |

Case Color

- Black
- Silver

Case Material

- Aluminium (top), aluminium (bottom)
- Aluminium (top), PC + ABS (bottom)
- PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek® RTL8111GUS

WLAN + Bluetooth^[1]

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™)
- 1x USB 2.0
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password

Other Security

- ThinkShutter camera cover
- None

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 5. Headphone / microphone combo jack (3.5mm) |
| 2. Charging light | 6. USB 2.0 |
| 3. USB 3.2 Gen 1 (Always On) | 7. Ethernet (RJ-45) |
| 4. HDMI 1.4b | 8. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 4300U | 4 | 4 | 2.7GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 4500U | 6 | 6 | 2.3GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4600U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4700U | 8 | 8 | 2.0GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4800U | 8 | 16 | 1.8GHz | 4.2GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Notes:

1. Ryzen 5 4600U, Ryzen 5 PRO 4650U and Ryzen 7 4800U are NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 20GB (4GB soldered + 16GB SO-DIMM) DDR4-3200
- Up to 24GB (8GB soldered + 16GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2014: 13 hr

MobileMark 2018: 10.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|-----------------|------|-----|----------|------------|------|-------|---|------|---|
| 14.0" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | - | 90° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | - | 170° | - |

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------------------------|--------------------------------------------------|
| Aluminium (top), aluminium (bottom) models | 324 x 220 x 17.9 mm (12.76 x 8.66 x 0.7 inches) |
| Aluminium (top), PC + ABS (bottom) models | 324 x 220 x 18.9 mm (12.76 x 8.66 x 0.74 inches) |
| PC + ABS (top), PC + ABS (bottom) models | 324 x 220 x 20.5 mm (12.76 x 8.66 x 0.81 inches) |

Weight^[1]

| Models | Weight |
|--------------------------------------------|--------------------|
| Aluminium (Top), Aluminium (Bottom) models | 1.64 kg (3.62 lbs) |
| Aluminium (Top), PC + ABS (Bottom) models | 1.59 kg (3.51 lbs) |
| PC + ABS (Top), PC + ABS (Bottom) models | 1.69 kg (3.73 lbs) |

Case Color

Black

Case Material

- Aluminium (top), aluminium (bottom)
- Aluminium (top), PC + ABS (bottom)
- PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth^[1]

- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Realtek RTL8822CE is NOT available in EMEA
Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 2.0
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

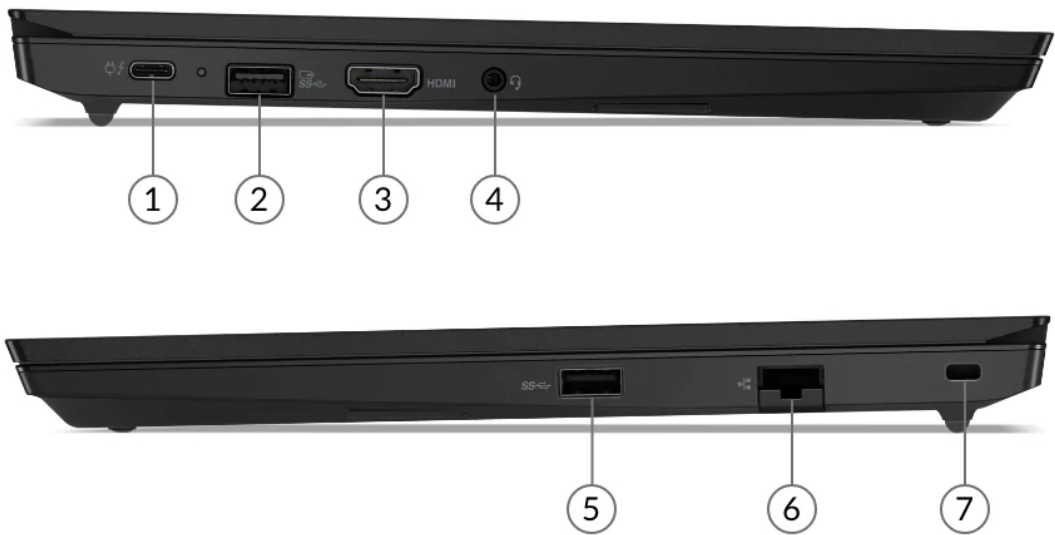


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. Thunderbolt 4 | 5. USB 2.0 |
| 2. USB 3.2 Gen 1 (Always On) | 6. Ethernet (RJ-45) |
| 3. HDMI 1.4b | 7. Kensington Security Slot |
| 4. Headphone / microphone combo jack (3.5mm) | |

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® GeForce® MX350 | Discrete | 2GB GDDR5 | DirectX 12 |
| NVIDIA GeForce MX450 | Discrete | 2GB GDDR5 | DirectX 12 |

Notes:

- The integrated graphics of i5 / i7 models is Intel Iris Xe Graphics but function as Intel UHD graphics due to single channel memory limitation

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@30Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 32GB DDR4-3200

Memory Slots

One DDR4 SO-DIMM slot

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type^[1]

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Notes:

1. M.2 2280 slot supports PCIe 4.0 x 4

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2014: 11.9 hr

MobileMark 2018: 8.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 500:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-----------|------|---|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |

Touchscreen

- Capacitive-type on-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. Displays with 300nits brightness (multi-touch and non-touch) are NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------------------------|--------------------------------------------------|
| Aluminium (top), aluminium (bottom) models | 324 x 220 x 17.9 mm (12.76 x 8.66 x 0.7 inches) |
| Aluminium (top), PC + ABS (bottom) models | 324 x 220 x 18.9 mm (12.76 x 8.66 x 0.74 inches) |
| PC + ABS (top), PC + ABS (bottom) models | 324 x 220 x 19.9 mm (12.76 x 8.66 x 0.78 inches) |

Weight^[1]

| Models | Weight |
|--------------------------------------------|--------------------|
| Aluminium (Top), Aluminium (Bottom) models | 1.64 kg (3.62 lbs) |
| Aluminium (Top), PC + ABS (Bottom) models | 1.59 kg (3.51 lbs) |
| PC + ABS (Top), PC + ABS (Bottom) models | 1.69 kg (3.73 lbs) |

Case Color

- Black
- Mineral metallic

Case Material

- Aluminium (top), aluminium (bottom)
- Aluminium (top), PC + ABS (bottom)
- PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111H-CG

WLAN + Bluetooth^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 2.0
- 1x USB 3.2 Gen 1 (Always On)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

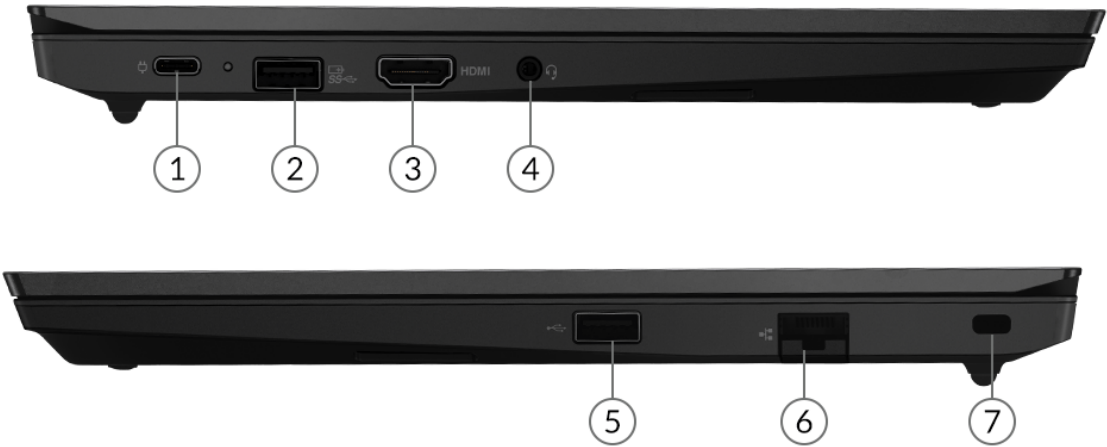
MIL-STD-810H military test passed

Other Certifications

TÜV Rheinland Low Blue Light



OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. USB-C 3.2 Gen 1 | 5. USB 2.0 |
| 2. USB 3.2 Gen 1 (Always On) | 6. Ethernet (RJ-45) |
| 3. HDMI 1.4b | 7. Kensington Security Slot |
| 4. Headphone / microphone combo jack (3.5mm) | |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5300U | 4 | 8 | 2.6GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5500U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5700U | 8 | 16 | 1.8GHz | 4.3GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5800U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Notes:

1. Ryzen 5 5600U, Ryzen 5 PRO 5650U and Ryzen 7 5800U are NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@30Hz) or USB-C (up to 4K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[2]

- Up to 20GB (4GB soldered + 16GB SO-DIMM) DDR4-3200
- Up to 24GB (8GB soldered + 16GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. 4GB soldered memory is NOT available in EMEA

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------|-----|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

- Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
- Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

- MobileMark® 2018: 15.8 hr (57Wh)
- MobileMark 2018: 12.8 hr (45Wh)

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | TN | 250 nits | Anti-glare | 16:9 | 500:1 | 45% NTSC | 90° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |

Touchscreen

Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
- Display with FHD 100% sRGB is NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------------------------|----------------------------------------------------|
| Aluminium (top), aluminium (bottom) models | 324 x 220.7 x 17.9 mm (12.76 x 8.69 x 0.7 inches) |
| PC + ABS (top), PC + ABS (bottom) models | 324 x 220.7 x 20.9 mm (12.76 x 8.69 x 0.82 inches) |

Weight^[1]

| Models | Weight |
|--------------------------------------------|--------------------|
| Aluminium (Top), Aluminium (Bottom) models | 1.64 kg (3.62 lbs) |
| PC + ABS (Top), PC + ABS (Bottom) models | 1.69 kg (3.73 lbs) |

Case Color^[2]

- Black
- Mineral metallic

Case Material

- Aluminium (top), aluminium (bottom)
- PC + ABS (top), PC + ABS (bottom)

Notes:

- The system weight varies depending on configurations
- Color mineral metallic is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth[®]^[1]

- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card

Notes:

1. Intel® Wi-Fi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 2.0
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE**Warranty****Base Warranty**

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service

- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- GREENGUARD®
- TCO
- RoHS compliant

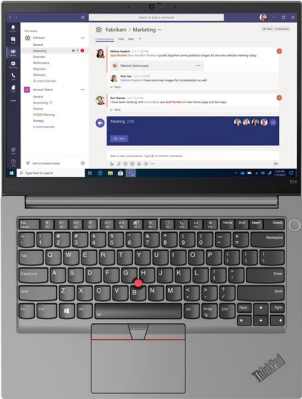
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

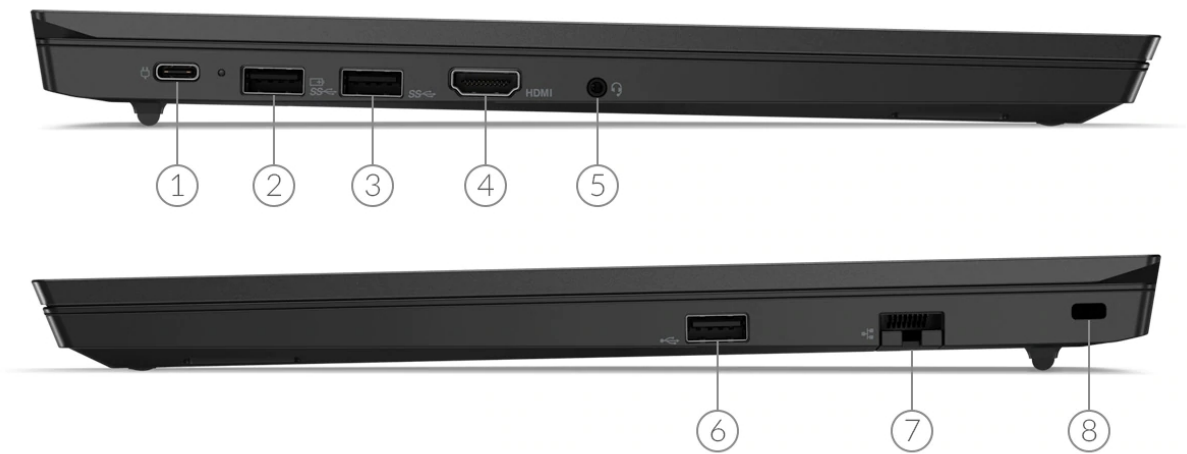


AMD



AMD

OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. USB-C 3.1 Gen 1 | 5. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.1 Gen 1 (Always On) | 6. USB 2.0 |
| 3. USB 3.1 Gen 1 | 7. Ethernet (RJ-45) |
| 4. HDMI 1.4b | 8. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Notes:

1. i7-10710U is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| AMD Radeon™ 625 | Discrete | 2GB GDDR5 | DirectX 12 |
| AMD Radeon RX 640 | Discrete | 2GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 16GB DDR4-2666

Memory Slots

One DDR4 SO-DIMM slot

Memory Type

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2280 SSD or 1x 2.5" HDD + 1x M.2 2242 SSD

- 2.5" HDD up to 2TB
- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB
- Optional Intel Optane™ Memory or Optane Memory Integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | SATA 6Gb/s | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Advanced Audio

Microphone

Dual array microphone

Camera

- 720p, fixed focus
- 720p, with ThinkShutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.2 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | - | 170° | - |
| 15.6" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | - | 90° | - |

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee

In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device**Keyboard**

6-row, spill-resistant, multimedia Fn keys, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

368 x 245 x 18.9 mm (14.49 x 9.65 x 0.74 inches)

Weight^[1]

1.9 kg (4.19 lbs)

Case Color

- Black
- Silver

Case Material

Aluminium (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Realtek® RTL8111GUS

WLAN + Bluetooth^[1]

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 2.0
- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password

Other Security

- ThinkShutter camera cover
- None

SERVICE**Warranty****Base Warranty**

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

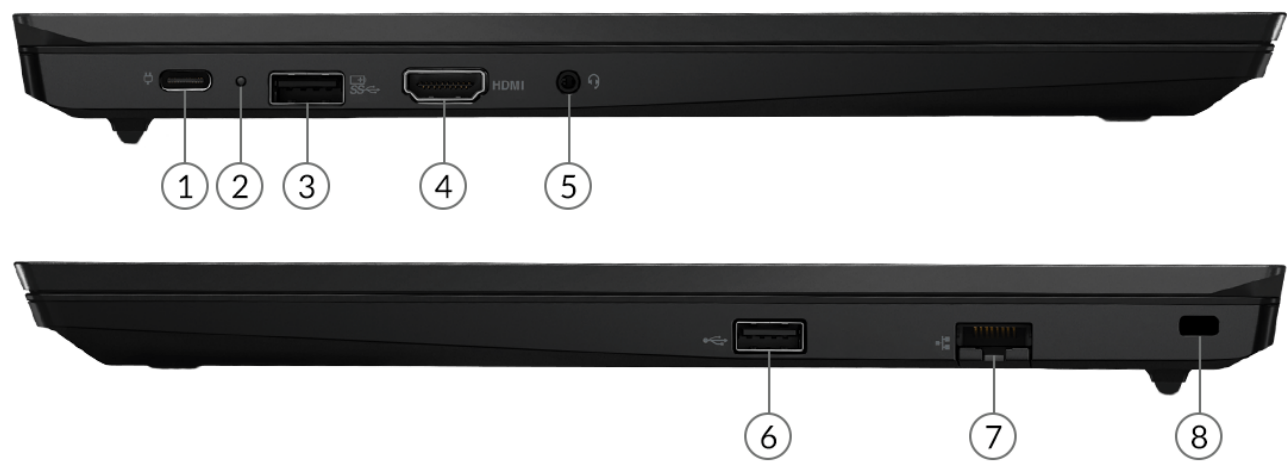
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 5. Headphone / microphone combo jack (3.5mm) |
| 2. Charging light | 6. USB 2.0 |
| 3. USB 3.2 Gen 1 (Always On) | 7. Ethernet (RJ-45) |
| 4. HDMI 1.4b | 8. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 4300U | 4 | 4 | 2.7GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 4500U | 6 | 6 | 2.3GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4600U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4700U | 8 | 8 | 2.0GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4800U | 8 | 16 | 1.8GHz | 4.2GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Notes:

1. Ryzen 5 4600U, Ryzen 5 PRO 4650U and Ryzen 7 4800U are NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 3840x2160@30Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 20GB (4GB soldered + 16GB SO-DIMM) DDR4-3200
- Up to 24GB (8GB soldered + 16GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.7 hr

MobileMark 2018: 10.4 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|--------------------|------|-----|----------|------------|------|-------|---|------|---|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | - | 170° | - |
| 15.6" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | - | 90° | - |

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365 x 240 x 18.9 mm (14.37 x 9.45 x 0.74 inches)

Weight^[1]

1.7 kg (3.75 lbs)

Case Color

Black

Case Material

Aluminium (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth™^[1]

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Realtek RTL8822CE is NOT available in EMEA
- WiFi 6 full features might be limited by country level restrictions
- Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1 (Always On)
- 1x USB 2.0
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

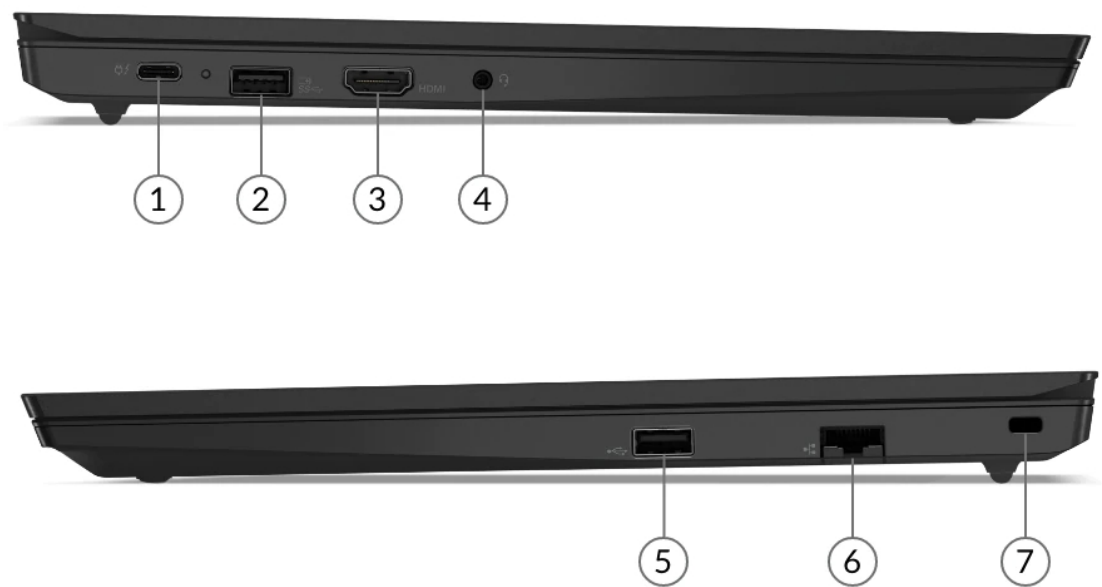


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. Thunderbolt 4 | 5. USB 2.0 |
| 2. USB 3.2 Gen 1 (Always On) | 6. Ethernet (RJ-45) |
| 3. HDMI 1.4b | 7. Kensington Security Slot |
| 4. Headphone / microphone combo jack (3.5mm) | |

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® GeForce® MX350 | Discrete | 2GB GDDR5 | DirectX 12 |
| NVIDIA GeForce MX450 | Discrete | 2GB GDDR5 | DirectX 12 |

Notes:

- The integrated graphics of i5 / i7 models is Intel Iris Xe Graphics but function as Intel UHD graphics due to single channel memory limitation

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@30Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 32GB DDR4-3200

Memory Slots

One DDR4 SO-DIMM slot

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type^[1]

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Notes:

1. M.2 2280 slot supports PCIe 4.0 x 4

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2014: 10.8 hr
MobileMark 2018: 8.2 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | TN | 220 nits | Anti-glare | 16:9 | 500:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-----------|------|---|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |

Touchscreen

- Capacitive-type on-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. Displays with 300nits brightness (multi-touch and non-touch) are NOT available in EMEA

Input Device**Keyboard**

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

365 x 240 x 18.9 mm (14.37 x 9.45 x 0.74 inches)

Weight^[1]

1.7 kg (3.75 lbs)

Case Color

- Black
- Mineral metallic

Case Material

Aluminium (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Realtek RTL8111H-CG

WLAN + Bluetooth^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]Standard Ports^[2]

- 1x USB 2.0
- 1x USB 3.2 Gen 1 (Always On)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE

Warranty

Base Warranty

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

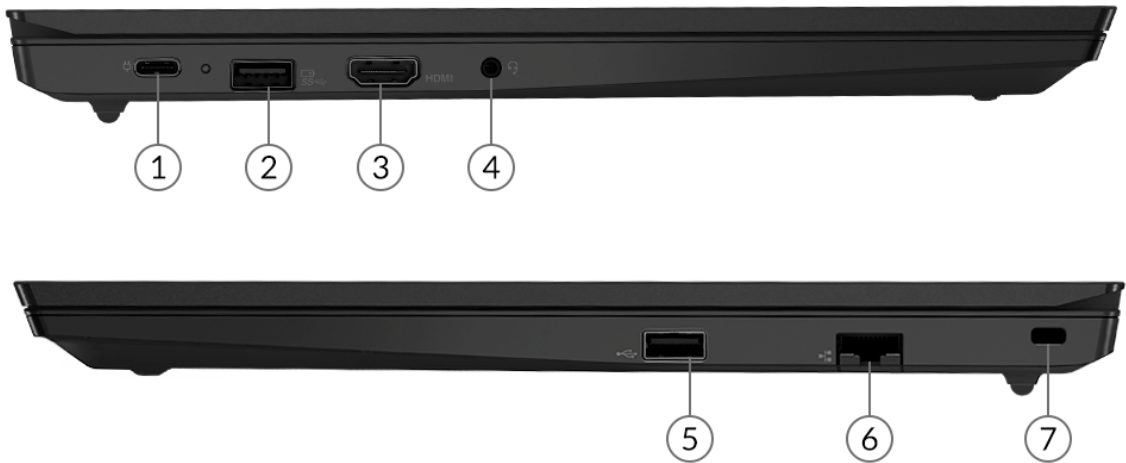
MIL-STD-810H military test passed

Other Certifications

TÜV Rheinland Low Blue Light



OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. USB-C 3.2 Gen 1 | 5. USB 2.0 |
| 2. USB 3.2 Gen 1 (Always On) | 6. Ethernet (RJ-45) |
| 3. HDMI 1.4b | 7. Kensington Security Slot |
| 4. Headphone / microphone combo jack (3.5mm) | |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5300U | 4 | 8 | 2.6GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5500U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5700U | 8 | 16 | 1.8GHz | 4.3GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5800U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Notes:

1. Ryzen 5 5600U, Ryzen 5 PRO 5650U and Ryzen 7 5800U are NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@30Hz) or USB-C (up to 4K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[2]

- Up to 20GB (4GB soldered + 16GB SO-DIMM) DDR4-3200
- Up to 24GB (8GB soldered + 16GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

2. 4GB soldered memory is NOT available in EMEA

Storage

Storage Support

Up to two drives, 1x M.2 2242 SSD + 1x M.2 2280 SSD

- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------|-----|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™, HARMAN-branded

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

- Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
- Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

- MobileMark® 2018: 10.3 hr (45Wh)
- MobileMark 2018: 13.6 hr (57Wh)

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C AC adapter
- No power adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | TN | 250 nits | Anti-glare | 16:9 | 500:1 | 45% NTSC | 90° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. Display with FHD 100% sRGB is NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365 x 240 x 18.9 mm (14.37 x 9.45 x 0.74 inches)

Weight^[1]

1.7 kg (3.75 lbs)

Case Color

Black

Case Material

Aluminium (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111GUS

WLAN + Bluetooth^[1]

- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel® Wi-Fi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 2.0
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

SERVICE**Warranty****Base Warranty**

- 1-year mail-in service
- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service

- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

ThinkPad® Integrated Earbuds

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- GREENGUARD®
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD



AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.1 Gen 1 | 7. MicroSD card reader |
| 2. USB-C 3.1 Gen 1 | 8. USB 3.1 Gen 1 |
| 3. Ethernet extension connector | 9. HDMI 1.4b |
| 4. USB 3.1 Gen 1 (Always On) | 10. Kensington Security Slot |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Smart card reader * |
| 6. Power button | |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or 10th Generation Intel Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Celeron 5205U | 2 | 2 | 1.9GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics |
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@30Hz) or USB-C (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

- Memory soldered to systemboard, no slots (4GB model)
- Memory soldered to systemboard, no slots, dual-channel (8GB or 16GB model)

Memory Type

- DDR4-2400
- DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 14.1 hr
JEITA 2.0: 14.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | HD (1366x768) | None | TN | 250 nits | Anti-glare | 16:9 | 500:1 | - | 90° | - |
| 13.3" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | - | 170° | - |

| | | | | | | | | | | |
|-------|--------------------|-----------------|-----|----------|----------------|------|-------|---|------|---|
| 13.3" | FHD (1920x1080) | Multi- touch | IPS | 300 nits | Anti- glare | 16:9 | 700:1 | - | 170° | - |
|-------|--------------------|-----------------|-----|----------|----------------|------|-------|---|------|---|

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device**Keyboard**

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.38 kg (3.04 lbs)

Case Color

- Black
- Silver

Case Material

Aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad® Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 2x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test



MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.2 Gen 1 | 6. Power button |
| 2. USB-C 3.2 Gen 2 | 7. MicroSD card reader |
| 3. Ethernet extension connector | 8. USB 3.2 Gen 1 |
| 4. USB 3.2 Gen 1 (Always On) | 9. HDMI 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 10. Kensington Security Slot |

- Notes:
- Optional smart card reader on the front side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5400U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 3840x2160@60Hz) or USB-C (up to 5120x2880@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | Offering | Security |
|--------------|------------------------|---------------------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | 128GB | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | 256GB / 512GB / 1TB | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 10.93 hr
JEITA 2.0: 12.492 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | HD (1366x768) | None | TN | 250 nits | Anti-glare | 16:9 | 500:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|--------------------|-------------|-----|----------|------------|------|-------|----------|------|---|
| 13.3" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.39 kg (3.06 lbs)

Case Color^[2]

- Black
- Silver

Case Material

Aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, RJ45 via optional ThinkPad® Ethernet Extension Adapter Gen 2

WLAN + Bluetooth®^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions

Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant



Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



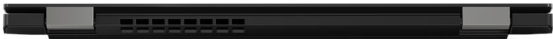
AMD



AMD

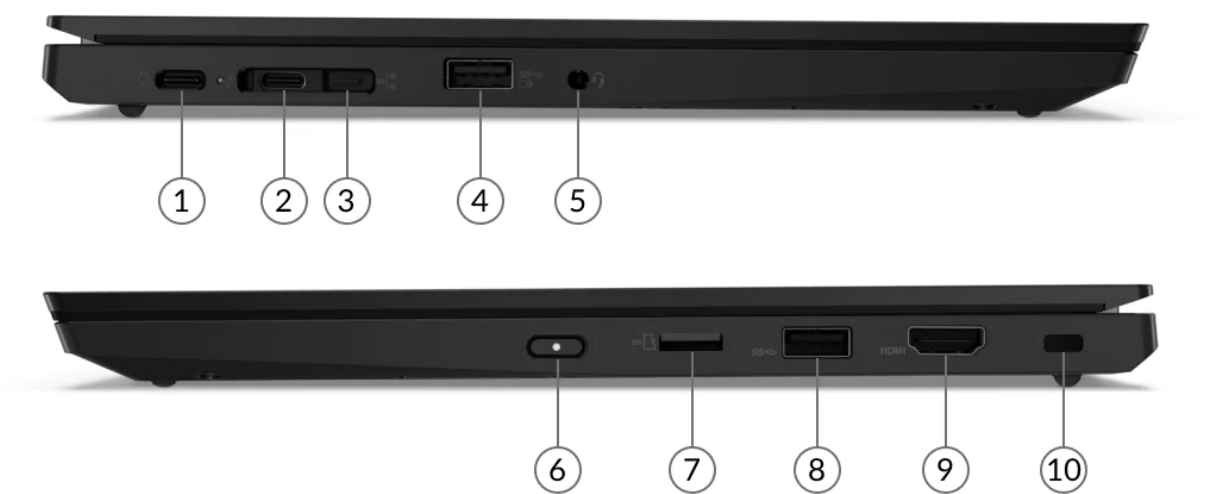


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.2 Gen 2 | 6. Power button |
| 2. Thunderbolt 4 | 7. MicroSD card reader |
| 3. Ethernet extension connector | 8. USB 3.2 Gen 1 |
| 4. USB 3.2 Gen 1 (Always On) | 9. HDMI 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 10. Kensington Security Slot |

- Notes:
- Optional smart card reader on the front side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or 11th Generation Intel Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Celeron 6305 | 2 | 2 | 1.8GHz | - | 4MB | DDR4-3200 | Intel UHD Graphics |
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 3840x2160@60Hz), USB-C (up to 5120x2160@60Hz) or Thunderbolt™ (up to 5120x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

- Memory soldered to systemboard, no slots (4GB model)
- Memory soldered to systemboard, no slots, dual-channel (8GB or 16GB model)

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.25 hr
MobileMark 2018: 8.91 hr
JEITA 2.0: 11.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | HD (1366x768) | None | TN | 250 nits | Anti- | 16:9 | 500:1 | 45% | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|-------|----------|------|---|
| | | | | | glare | | | NTSC | | |
| 13.3" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.39 kg (3.06 lbs)

Case Color

- Black
- Silver

Case Material

Aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad® Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY**System Management****System Management**

- Intel vPro Technology, DASH
- None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature^[1]**

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES**Bundled Accessories****Bundled Accessories**

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.1 Gen 1 | 7. Power button |
| 2. USB-C 3.1 Gen 1 | 8. MicroSD card reader |
| 3. Ethernet extension connector | 9. USB 3.1 Gen 1 |
| 4. USB 3.1 Gen 1 (Always On) | 10. HDMI 1.4b |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Kensington Security Slot |
| 6. Pen slot | 12. Smart card reader * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro in S mode
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@30Hz) or USB-C (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

- Memory soldered to systemboard, no slots (4GB model)
- Memory soldered to systemboard, no slots, dual-channel (8GB or 16GB model)

Memory Type

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera^[1]

- Front 720p, with ThinkShutter, fixed focus
- Front 720p, with ThinkShutter, fixed focus; rear 5.0-megapixel, auto focus
- Front IR & 720p hybrid, with ThinkShutter, fixed focus
- Front IR & 720p hybrid, with ThinkShutter, fixed focus; rear 5.0-megapixel, auto focus

Notes:

1. Rear camera is only selectable for models with fingerprint reader

Sensor

Sensors

Accelerometer (G) sensor

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.23 hr
JEITA 2.0: 13.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-reflection, Anti-smudge | 16:9 | 800:1 | 72% NTSC | 170° | - |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch, could reduce the brightness by up to 10%

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad® Pen Pro, on-board garaged and rechargeable
- No pen (pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.43 kg (3.15 lbs)

Case Color

- Black
- Silver

Case Material

Magnesium-aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth®^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 1 (Always On)
- 2x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password

- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

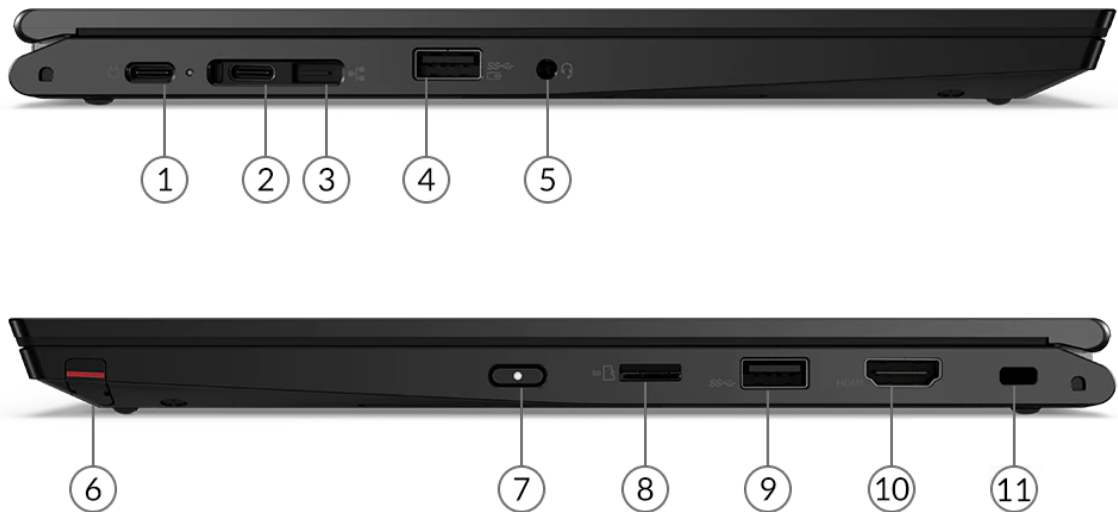
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. Power button |
| 2. USB-C 3.2 Gen 2 | 8. MicroSD card reader |
| 3. Ethernet extension connector | 9. USB 3.2 Gen 1 |
| 4. USB 3.2 Gen 1 (Always On) | 10. HDMI 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Kensington Security Slot |
| 6. Pen slot * | |

- Notes:
- Ports with * are only available on selected models
 - Optional smart card reader on the front side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5400U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 3840x2160@60Hz) or USB-C (up to 5120x2880@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | Offering | Security |
|--------------|------------------------|---------------------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | 128GB | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | 256GB / 512GB / 1TB | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera^[1]

- Front 720p, with privacy shutter, fixed focus
- Front 720p, with privacy shutter, fixed focus; rear 5.0-megapixel, auto focus
- Front IR & 720p hybrid, with privacy shutter, fixed focus
- Front IR & 720p hybrid, with privacy shutter, fixed focus; rear 5.0-megapixel, auto focus

Notes:

1. Rear camera is selectable for fingerprint reader model only

Sensor

Sensors

Accelerometer (G) sensor

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 10.55 hr
JEITA 2.0: 12.16 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|-----------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-reflection | 16:9 | 800:1 | 72% NTSC | 170° | - |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad® Pen Pro, on-board garaged and rechargeable
- No pen (with a pen garage ready, pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.44 kg (3.17 lbs)

Case Color^[2]

- Black
- Silver

Case Material

Aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth®^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN

No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password

- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

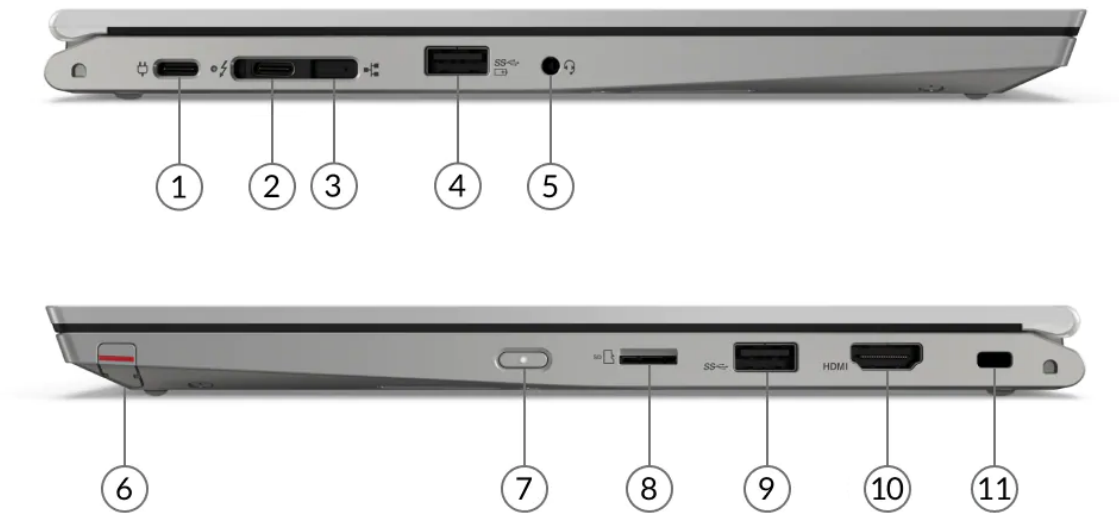


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. USB-C 3.2 Gen 2 | 7. Power button |
| 2. Thunderbolt 4 | 8. MicroSD card reader |
| 3. Ethernet extension connector | 9. USB 3.2 Gen 1 |
| 4. USB 3.2 Gen 1 (Always On) | 10. HDMI 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Kensington Security Slot |
| 6. Pen slot | |

- Notes:
- Optional smart card reader on the front side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 3840x2160@60Hz), USB-C (up to 5120x2160@60Hz) or Thunderbolt™ (up to 5120x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

- Memory soldered to systemboard, no slots (4GB model)
- Memory soldered to systemboard, no slots, dual-channel (8GB or 16GB model)

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Synaptic® CX11880 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

Dual array microphone

Camera^[1]

- Front 720p, with privacy shutter, fixed focus
- Front 720p, with privacy shutter, fixed focus; rear 5.0-megapixel, auto focus
- Front IR & 720p hybrid, with privacy shutter, fixed focus
- Front IR & 720p hybrid, with privacy shutter, fixed focus; rear 5.0-megapixel, auto focus

Notes:

1. Rear camera is selectable for fingerprint reader model only

Sensor

Sensors

Accelerometer (G) sensor

Battery

Battery

Integrated Li-Polymer 46Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 10.36 hr
MobileMark 2018: 8.36 hr
JEITA 2.0: 10.3 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-reflection, Anti-smudge | 16:9 | 800:1 | 72% NTSC | 170° | - |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad® Pen Pro, on-board garaged and rechargeable
- No pen (pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.5 x 219 x 17.6 mm (12.26 x 8.62 x 0.69 inches)

Weight^[1]

1.44 kg (3.17 lbs)

Case Color

- Black
- Silver

Case Material

Aluminium (top), GFRP (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2 or Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth®^[1]

- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card

WWAN

No support

SIM Card

ThinkPad L13 Yoga Gen 2 (Intel)

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to HDMI Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password

- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to USB-C Cable 2m
- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

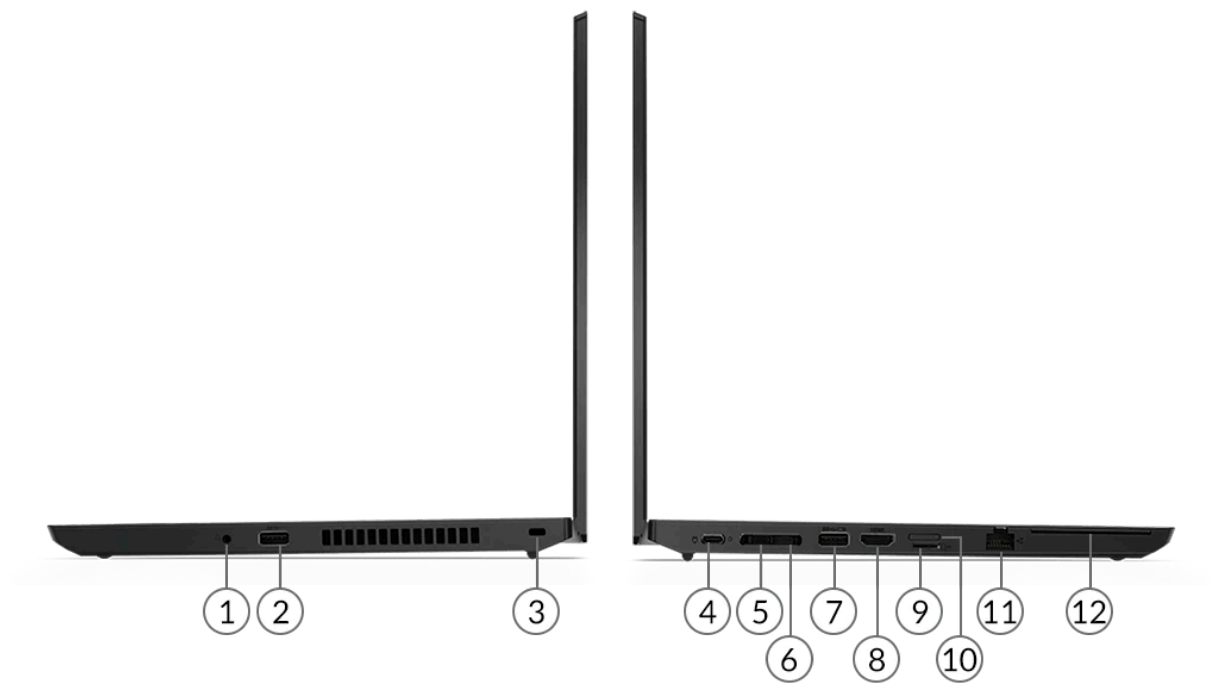
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 7. USB 3.2 Gen 1 (Always On) |
| 2. USB 3.2 Gen 1 | 8. HDMI 1.4b |
| 3. Kensington Security Slot | 9. MicroSD card reader |
| 4. USB-C 3.2 Gen 1 | 10. Nano-SIM card slot * |
| 5. USB-C 3.2 Gen 2 | 11. Ethernet (RJ-45) |
| 6. Side docking connector | 12. Smart card reader * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 4300U | 4 | 4 | 2.7GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 3 PRO 4450U | 4 | 8 | 2.5GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4500U | 6 | 6 | 2.3GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Notes:

1. No microphone is for speical bid only
2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 14.36 hr
MobileMark 2018: 10.7 hr
JEITA 2.0: 15.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. FHD Low Power display is NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

331 x 235 x 20.4 mm (13.03 x 9.25 x 0.80 inches)

Weight^[1]

1.61 kg (3.56 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Realtek RTL8111HN (non-DASH models)
- Gigabit Ethernet, Realtek RTL8111EPV (DASH models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-host
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO

- RoHS compliant

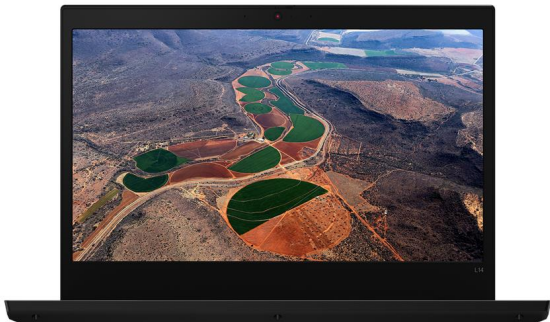
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



AMD



AMD



AMD



AMD

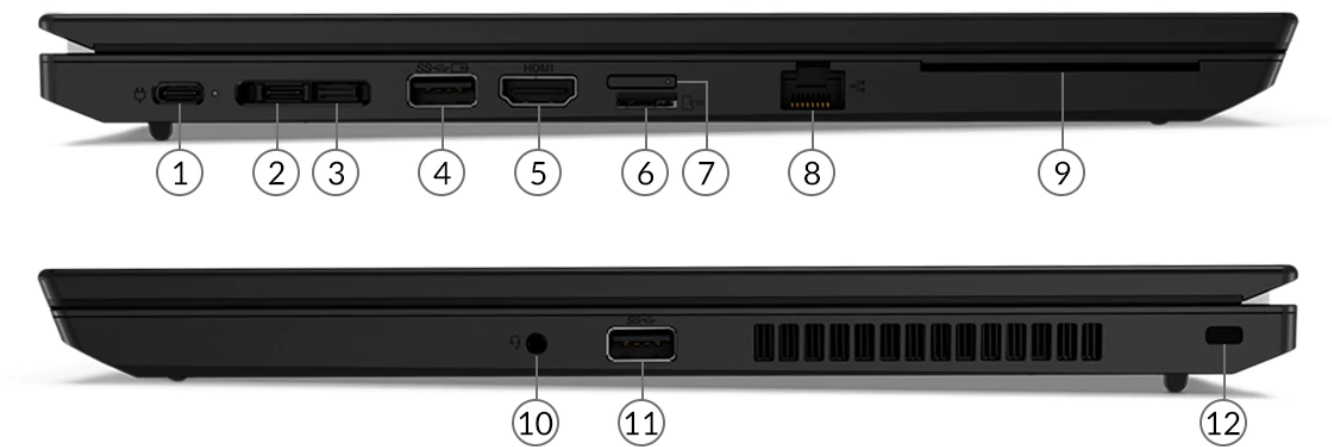


AMD



AMD

OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. Nano-SIM card slot * |
| 2. USB-C 3.2 Gen 2 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 1.4b | 11. USB 3.2 Gen 1 |
| 6. MicroSD card reader | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Pentium® or 10th Generation Intel Core™ i3 / i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Pentium Gold 6405U | 2 | 4 | 2.4GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics |
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |

Notes:

- 1. i7-10610U is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|--------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| AMD Radeon™ 625 | Discrete | 2GB GDDR5 | DirectX 12 |

Notes:

- 1. Discrete graphics is NOT available in EMEA

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz) or USB-C (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 64GB DDR4-2400
- Up to 64GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2400
- DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2400MHz or 2666MHz depending on the memory support capability of processor

Storage

Storage Support^[1]

- One SSD mode: one drive, 1x M.2 2280 SSD or 1x M.2 2242 SSD
 - M.2 2280 SSD up to 1TB
 - M.2 2242 SSD up to 512GB
 - Optional Intel Optane™ Memory integrated with SSD, M.2
- HDD/SSD mode: up to two drives, 1x 2.5" HDD + 1x M.2 2242 SSD
 - 2.5" HDD up to 2TB
 - M.2 2242 SSD up to 512GB

Storage Slot^[2]

- HDD/SSD mode: one 2.5" drive slot + one M.2 slot
 - One 2.5" drive slot, supports 2.5" SATA HDD
 - One M.2 2242 PCIe Gen 3x2 slot, supports M.2 2242 SSD
- One SSD mode: one M.2 slot
 - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

- Notes:
1. HDD/SSD mode is NOT available in EMEA
2. System has one HDD slot or one M.2 2280 slot exclusively for storage

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

- Notes:
1. No microphone is for speical bid only
2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.3 hr
MobileMark 2018: 7.95 hr
JEITA 2.0: 12 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C AC adapter

Notes:

1. 45W USB-C AC adapter is NOT available in EMEA

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

2. FHD Low Power display is NOT available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|--------------------------------------------------|
| Aluminium models | 331 x 235 x 19.1 mm (13.03 x 9.25 x 0.75 inches) |
| PC + ABS models | 331 x 235 x 20.4 mm (13.03 x 9.25 x 0.80 inches) |

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Aluminium models | 1.73 kg (3.83 lbs) |
| PC + ABS models | 1.61 kg (3.56 lbs) |

Case Color

Black

Case Material^[2]

PC + ABS or aluminium (top), PC + ABS (bottom)

Notes:

- 1. The system weight varies depending on configurations
- 2. Aluminum top cover is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

- 1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
- 2. For non-WWAN model, it means the model is NOT WWAN upgradable
WWAN is not supported on HDD models

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader^[1]

- Touch style fingerprint reader on palm rest, match-on-chip
- Touch style fingerprint reader on palm rest, match-on-host
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

Notes:

1. Match-on-chip fingerprint reader is for special bid only

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

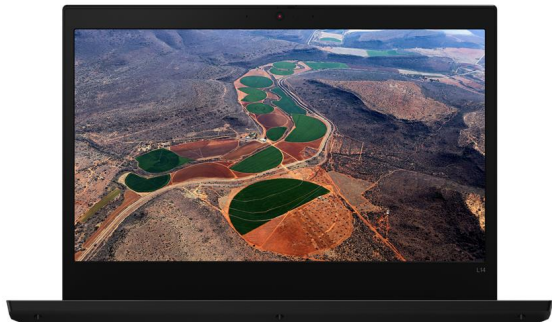
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

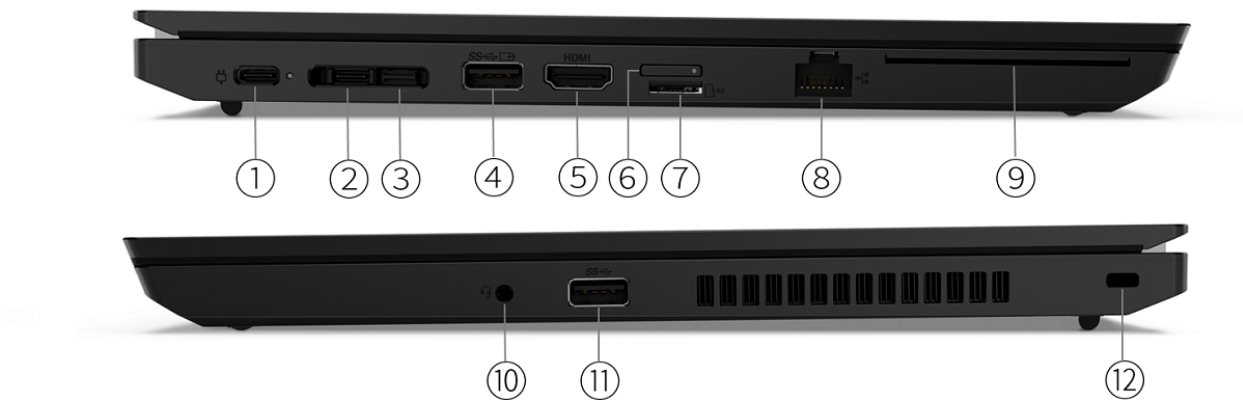
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. MicroSD card reader |
| 2. USB-C 3.2 Gen 2 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 2.0 | 11. USB 3.2 Gen 1 |
| 6. Nano-SIM card slot * | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5400U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 3 PRO 5450U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz) or USB-C (up to 5120x3200@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------|-----|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 11.8 hr
JEITA 2.0: 12.3 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only
45W USB-C AC adapter and 65W USB-C slim AC adapter are NOT available in EMEA

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|-------|----------|------|-----------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

331 x 235 x 20.4 mm (13.03 x 9.25 x 0.80 inches)

Weight^[1]

1.59 kg (3.49 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Realtek RTL8111HN (non-DASH models)
- Gigabit Ethernet, Realtek RTL8111EPV (DASH models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 2.0 and DisplayPort™ 1.4)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 2.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY**System Management****System Management**

- DASH
- None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature^[1]**

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications**Mil-Spec Test**

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

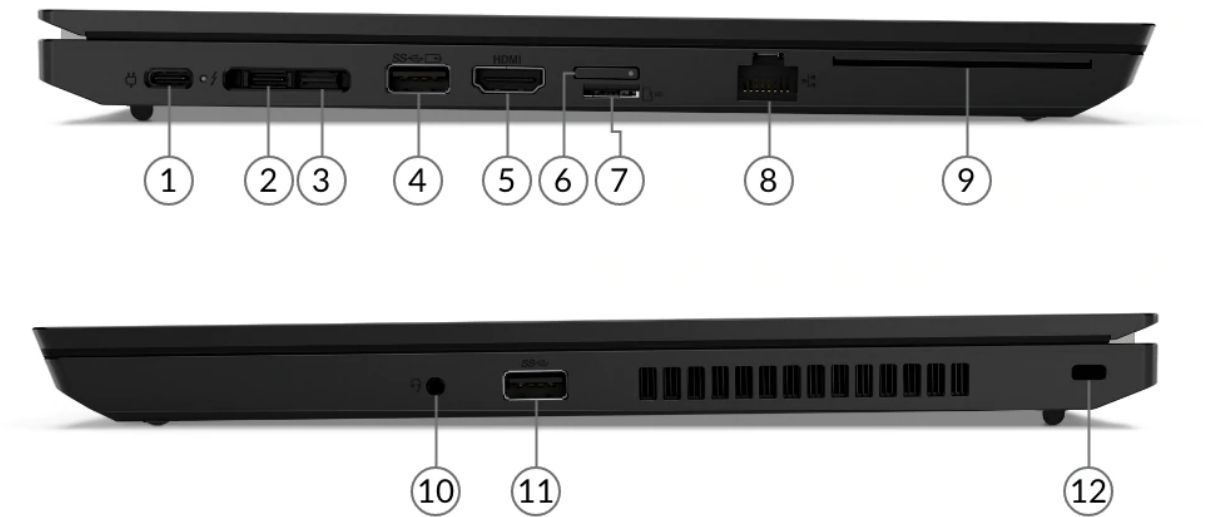


AMD



AMD

OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 2.0 | 11. USB 3.2 Gen 1 |
| 6. Nano-SIM card slot * | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Pentium® or 11th Generation Intel Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-------------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Pentium Gold 7505 | 2 | 4 | 2.0GHz | 3.5GHz | 4MB | DDR4-3200 | Intel UHD Graphics |
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System^[1]

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise LTSC
- Linux
- No operating system

Notes:

- Windows 10 IoT Enterprise LTSC is for special bid only

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® GeForce® MX450 | Discrete | 2GB GDDR6 | DirectX 12 |

Notes:

- Intel Iris Xe Graphics capability requires system to be configured with Intel Core i5 or i7 processor and dual channel memory. On the system with Intel Core i5 or i7 processor and single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics
NVIDIA GeForce MX450 is NOT available in EMEA

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz), USB-C (up to 5120x3200@60Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

- One SSD mode: one drive, 1x M.2 2280 SSD or 1x M.2 2242 SSD
 - M.2 2280 SSD up to 1TB
 - M.2 2242 SSD up to 128GB
- HDD/SSD mode: up to two drives, 1x 2.5" HDD + 1x M.2 2242 SSD
 - 2.5" HDD up to 2TB
 - M.2 2242 SSD up to 512GB

Storage Slot^[2]

- HDD/SSD mode: one 2.5" drive slot + one M.2 slot
 - One 2.5" drive slot, supports 2.5" SATA HDD
 - One M.2 2242 PCIe Gen 3x4 slot, supports M.2 2242 SSD
- One SSD mode: one M.2 slot
 - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Notes:

1. HDD/SSD mode is NOT available in EMEA

2. System has one HDD slot or one M.2 2280 slot exclusively for storage

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Notes:

1. No microphone is for speical bid only

2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 9.01 hr
JEITA 2.0: 11.815 hr

- Notes:
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

- Notes:
1. No power adapter is for special bid only
45W USB-C AC adapter and 65W USB-C slim AC adapter are NOT available in EMEA

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

- Notes:
1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|--------------------------------------------------|
| Aluminium models | 331 x 235 x 19.1 mm (13.03 x 9.25 x 0.75 inches) |
| PC + ABS models | 331 x 235 x 20.4 mm (13.03 x 9.25 x 0.80 inches) |

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Aluminium models | 1.74 kg (3.84 lbs) |
| PC + ABS models | 1.59 kg (3.49 lbs) |

Case Color

Black

Case Material^[2]

- Aluminium (top), PC + ABS (bottom)
- PC + ABS (top), PC + ABS (bottom)

Notes:

- The system weight varies depending on configurations
- Aluminium top cover is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

- Intel WiFi 6 full features might be limited by country level restrictions
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password (for HDD)
- NVMe password (for NVMe SSD)
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

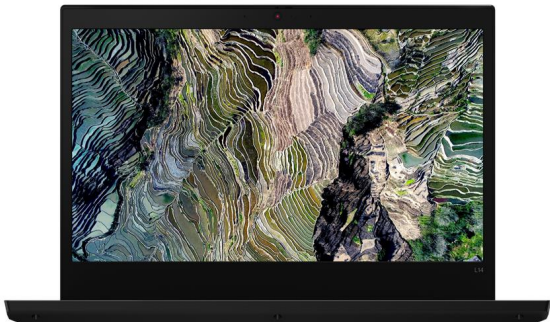
Other Certifications

Mil-Spec Test

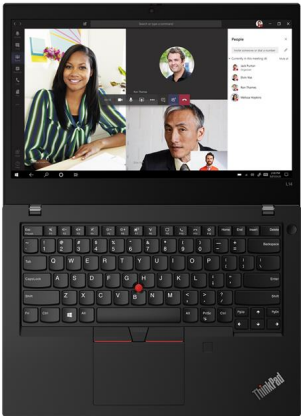
MIL-STD-810H military test passed



intel



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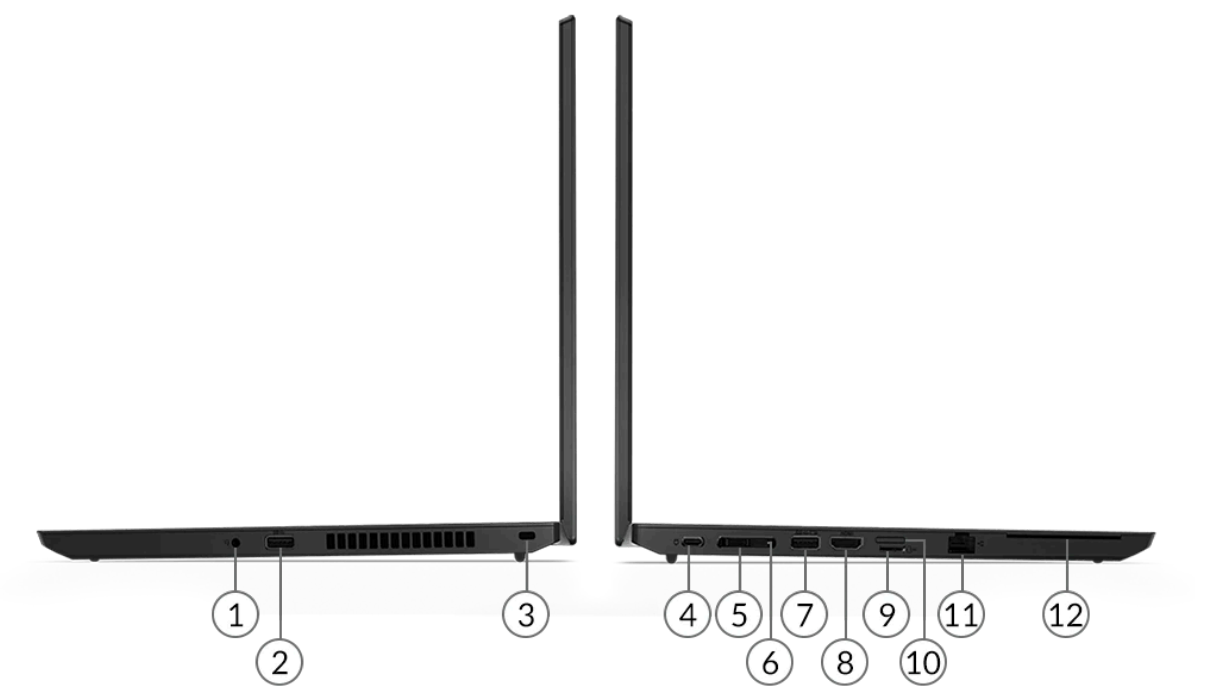


intel



intel

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 7. USB 3.2 Gen 1 (Always On) |
| 2. USB 3.2 Gen 1 | 8. HDMI 1.4b |
| 3. Kensington Security Slot | 9. MicroSD card reader |
| 4. USB-C 3.2 Gen 1 | 10. Nano-SIM card slot * |
| 5. USB-C 3.2 Gen 2 | 11. Ethernet (RJ-45) |
| 6. Side docking connector | 12. Smart card reader * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 4300U | 4 | 4 | 2.7GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 3 PRO 4450U | 4 | 8 | 2.5GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4500U | 6 | 6 | 2.3GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz) or USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Notes:

1. No microphone is for speical bid only
2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 13.78 hr
MobileMark 2018: 10.43 hr
JEITA 2.0: 15.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 21 mm (14.43 x 9.84 x 0.83 inches)

Weight^[1]

1.98 kg (4.37 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Realtek RTL8111HN (non-DASH models)
- Gigabit Ethernet, Realtek RTL8111EPV (DASH models)

WLAN + Bluetooth™^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-host
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO

- RoHS compliant

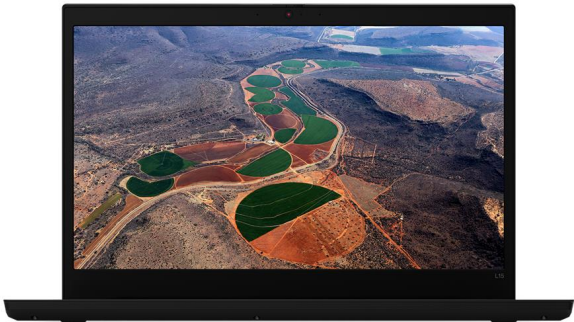
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



AMD



AMD



AMD



AMD

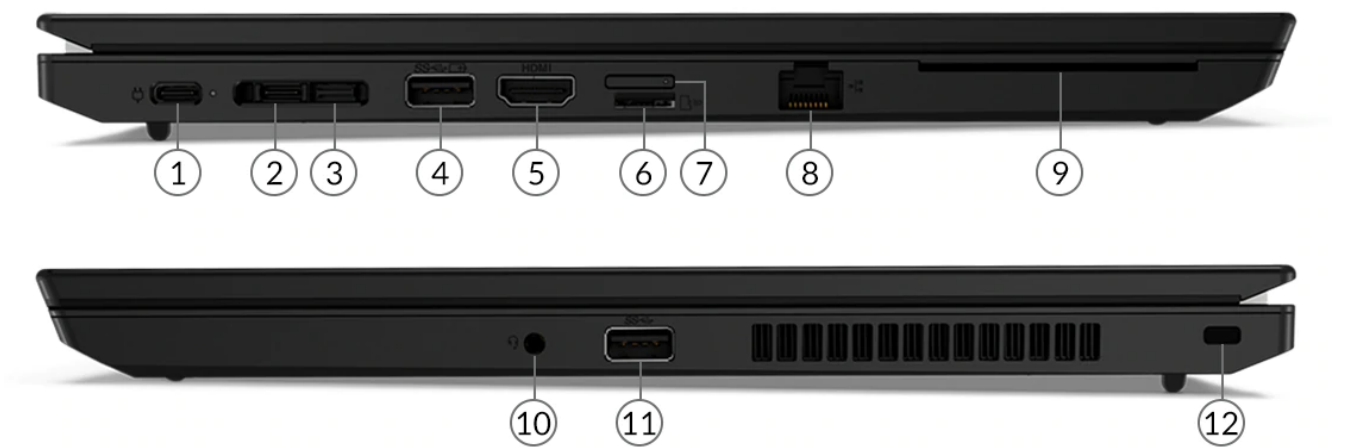


AMD



AMD

OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. Nano-SIM card slot * |
| 2. USB-C 3.2 Gen 2 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 1.4b | 11. USB 3.2 Gen 1 |
| 6. MicroSD card reader | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or 10th Generation Intel Core™ i3 / i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Celeron 5205U | 2 | 2 | 1.9GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics |
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |

Notes:

- 1. i7-10610U is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|--------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| AMD Radeon™ 625 | Discrete | 2GB GDDR5 | DirectX 12 |

Notes:

- 1. Discrete graphics is NOT available in EMEA

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz) or USB-C (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 64GB DDR4-2400
- Up to 64GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2400
- DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2400MHz or 2666MHz depending on the memory support capability of processor

Storage

Storage Support^[1]

- One SSD mode: one drive, 1x M.2 2280 SSD or 1x M.2 2242 SSD
 - M.2 2280 SSD up to 1TB
 - M.2 2242 SSD up to 512GB
 - Optional Intel Optane™ Memory integrated with SSD, M.2
- HDD/SSD mode: up to two drives, 1x 2.5" HDD + 1x M.2 2242 SSD
 - 2.5" HDD up to 2TB
 - M.2 2242 SSD up to 512GB

Storage Slot^[2]

- HDD/SSD mode: one 2.5" drive slot + one M.2 slot
 - One 2.5" drive slot, supports 2.5" SATA HDD
 - One M.2 2242 PCIe Gen 3x2 slot, supports M.2 2242 SSD
- One SSD mode: one M.2 slot
 - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

- Notes:
1. HDD/SSD mode is NOT available in EMEA
2. System has one HDD slot or one M.2 2280 slot exclusively for storage

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

- Notes:
1. No microphone is for speical bid only
2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 11.6 hr
MobileMark 2018: 8.56 hr
JEITA 2.0: 10.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C AC adapter

Notes:

1. 45W USB-C AC adapter is NOT available in EMEA

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 21 mm (14.43 x 9.84 x 0.83 inches)

Weight^[1]

1.98 kg (4.37 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable
WWAN is not supported on HDD models

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader^[1]

- Touch style fingerprint reader on palm rest, match-on-chip
- Touch style fingerprint reader on palm rest, match-on-host
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

Notes:

1. Match-on-chip fingerprint reader is for special bid only

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service

- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

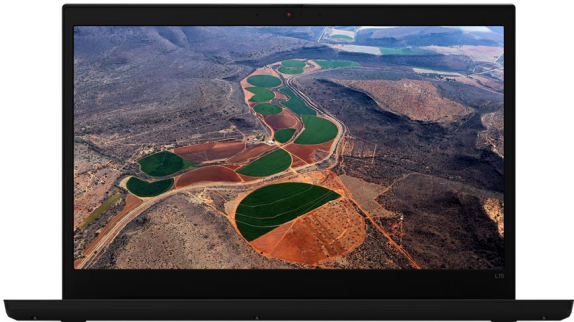
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

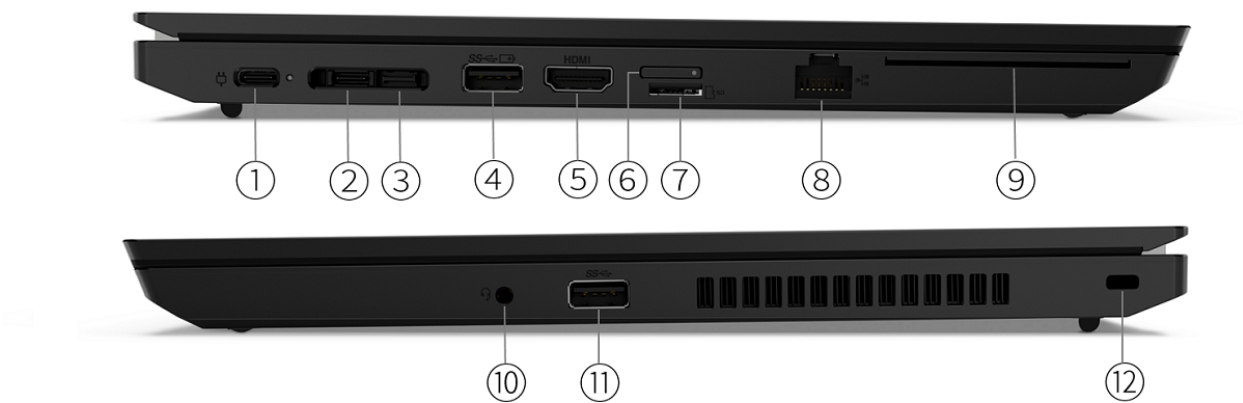
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. MicroSD card reader |
| 2. USB-C 3.2 Gen 2 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 2.0 | 11. USB 3.2 Gen 1 |
| 6. Nano-SIM card slot * | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 5400U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 3 PRO 5450U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz) or USB-C (up to 5120x3200@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------|-----|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 10.6 hr
JEITA 2.0: 12.05 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only
45W USB-C AC adapter and 65W USB-C slim AC adapter are NOT available in EMEA

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|-------|----------|------|---|
| 15.6" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 21 mm (14.43 x 9.84 x 0.83 inches)

Weight^[1]

1.99 kg (4.39 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Realtek RTL8111HN (non-DASH models)
- Gigabit Ethernet, Realtek RTL8111EPV (DASH models)

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 2.0 and DisplayPort™ 1.4)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 2.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY**System Management****System Management**

- DASH
- None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature^[1]**

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS**Green Certifications****Green Certifications**

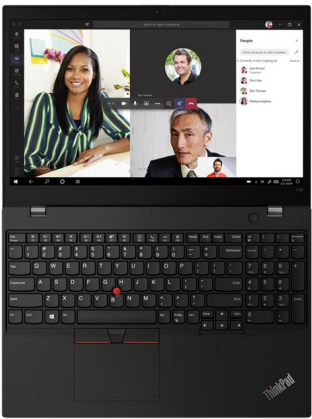
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications**Mil-Spec Test**

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

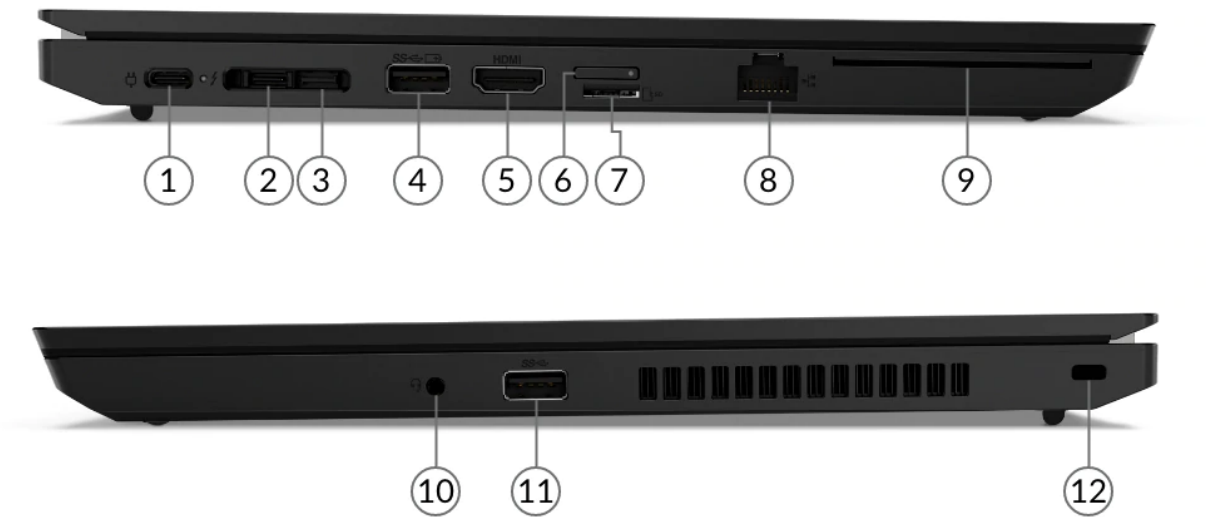


AMD



AMD

OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Ethernet (RJ-45) |
| 3. Side docking connector | 9. Smart card reader * |
| 4. USB 3.2 Gen 1 (Always On) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. HDMI 2.0 | 11. USB 3.2 Gen 1 |
| 6. Nano-SIM card slot * | 12. Kensington Security Slot |

- Notes:
- Ports with * are only available on selected models
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or 11th Generation Intel Core™ i3 / i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Celeron 6305 | 2 | 2 | 1.8GHz | - | 4MB | DDR4-3200 | Intel UHD Graphics |
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Notes:

1. Intel Celeron processor is NOT available in EMEA

Operating System

Operating System^[1]

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise LTSC
- Linux
- Ubuntu Linux
- No operating system

Notes:

1. Windows 10 IoT Enterprise LTSC is for special bid only

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® GeForce® MX450 | Discrete | 2GB GDDR6 | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics capability requires system to be configured with Intel Core i5 or i7 processor and dual channel memory. On the system with Intel Core i5 or i7 processor and single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics
NVIDIA GeForce MX450 is NOT available in EMEA

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz), USB-C (up to 5120x3200@60Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

- 1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

- One SSD mode: one drive, 1x M.2 2280 SSD or 1x M.2 2242 SSD
 - M.2 2280 SSD up to 1TB
 - M.2 2242 SSD up to 128GB
- HDD/SSD mode: up to two drives, 1x 2.5" HDD + 1x M.2 2242 SSD
 - 2.5" HDD up to 2TB
 - M.2 2242 SSD up to 512GB

Storage Slot^[2]

- HDD/SSD mode: one 2.5" drive slot + one M.2 slot
 - One 2.5" drive slot, supports 2.5" SATA HDD
 - One M.2 2242 PCIe Gen 3x4 slot, supports M.2 2242 SSD
- One SSD mode: one M.2 slot
 - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|---------------------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | APS (Active Protection System™) |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | APS (Active Protection System) |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Notes:

- 1. HDD/SSD mode is NOT available in EMEA
- 2. System has one HDD slot or one M.2 2280 slot exclusively for storage

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone^[1]

- Dual array microphone
- No microphone

Camera^[2]

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Notes:

- 1. No microphone is for speical bid only

2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 45Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 7.53 hr
JEITA 2.0: 11.255 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only
45W USB-C AC adapter and 65W USB-C slim AC adapter are NOT available in EMEA

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 21 mm (14.43 x 9.84 x 0.83 inches)

Weight^[1]

1.98 kg (4.37 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)

WLAN + Bluetooth®^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password (for HDD)
- NVMe password (for NVMe SSD)
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

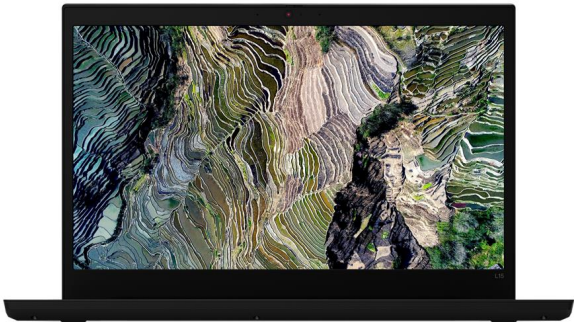
Other Certifications

Mil-Spec Test

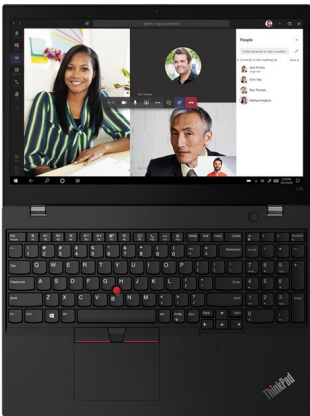
MIL-STD-810H military test passed



intel



intel



intel



intel



intel



intel

OVERVIEW



| | |
|-----------------------------|----------------------------------------------|
| 1. Nano-SIM card slot * | 6. Power connector |
| 2. SD card reader | 7. 2x USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 3. USB 3.2 Gen 1 | 8. HDMI 2.0 |
| 4. USB 3.2 Gen 1 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. Kensington Security Slot | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® W Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-2933 | Intel UHD Graphics |
| Core i9-10885H | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |
| Xeon W-10855M | 6 | 12 | 2.8GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|-----------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® Quadro® T1000 Max-Q | Discrete | 4GB GDDR6 | DirectX 12 |
| NVIDIA Quadro T2000 Max-Q | Discrete | 4GB GDDR6 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2933 ECC
- DDR4-2933 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

2. Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Storage

Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|-----------|-----|----------|
| M.2 2280 SSD | PCIe NVMe | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe | - | - |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers

Stereo speakers, Dolby® Atmos® Speaker System certified

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 135W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 15.9 hr
MobileMark 2018: 12 hr
JEITA 2.0: 17.1 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 135W slim tip AC adapter (2-pin)
- 135W slim tip AC adapter (3-pin)
- 170W slim tip AC adapter (2-pin)
- 170W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|-------------------------------|--------------------------------|--------------|----------------|-----------------|---------------|--------------------|
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 540nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR |
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Dolby Vision, HDR |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 178° | Dolby Vision, HDR |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro (for UHD OLED models)
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------|
| Touch models | 361.8 x 245.7 x18.7 mm (14.24 x 9.67 x 0.74 inches) |
| Non-touch models | 361.8 x 245.7 x18.4 mm (14.24 x 9.67 x 0.72 inches) |

Weight^[1]

| Models | Weight |
|------------------|-------------------|
| Non-touch models | 1.7 kg (3.75 lbs) |
| Touch models | 1.8 kg (3.97 lbs) |

Case Color

Black

Case Material

- Carbon Fiber (Black) + PC + PPS Hybrid (top), Aluminum + PC + ABS (bottom)
- Carbon Fiber (Woven pattern) + PC + PPS Hybrid (top), Aluminum + PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Lenovo USB-C to Ethernet Adapter
- No Ethernet

WLAN + Bluetooth™

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card

WWAN

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

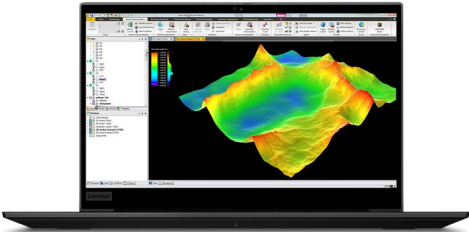
Mil-Spec Test

MIL-STD-810G military test passed

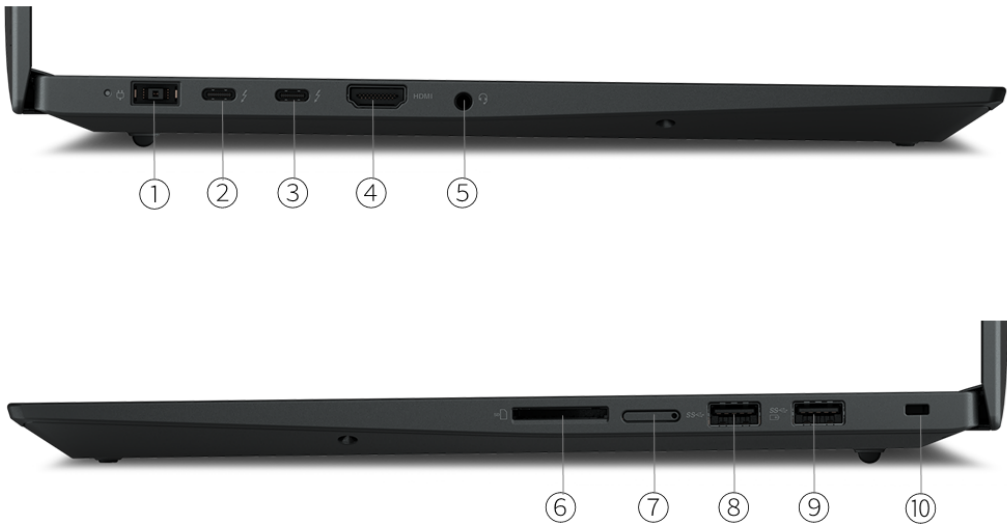
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------|------------------------------|
| 1. Power connector | 6. SD card reader |
| 2. Thunderbolt 4 | 7. Nano-SIM card slot |
| 3. Thunderbolt 4 | 8. USB 3.2 Gen 1 |
| 4. HDMI | 9. USB 3.2 Gen 1 (Always On) |
| 5. Headphone (3.5mm) | 10. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i7 / i9 Processor or Intel Xeon® W Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11855M | 6 | 12 | 3.2GHz | 4.9GHz | 18MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System^[1]

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Notes:

1. As preloaded OS, Fedora and Ubuntu Linux will be available on October 2021

Graphics

Graphics^[1]

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|----------------------------|------------|------------|-------------|-----|-----------|----------------|--------------|--------|
| Intel UHD Graphics | Integrated | Shared | | | - | - | DirectX® 12 | - |
| NVIDIA® GeForce® RTX™ 3070 | Discrete | 8GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA GeForce RTX 3080 | Discrete | 16GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A3000 | Discrete | 6GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A5000 | Discrete | 16GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA T1200 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A4000 | Discrete | 8GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A2000 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |

Notes:

1. Vapor Chamber cooling is available only with NV RTX A3000 / A4000 / A5000 and GeForce RTX 3070 / 3080 GPUs

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via one HDMI® (up to 4K@60Hz on NVIDIA T1200 or Intel UHD model, or 8K@60Hz on other discrete graphics model) or two Thunderbolt™ (up to 5120x3200@60Hz each)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-3200 ECC
- DDR4-3200 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

Up to two M.2 2280 SSD, up to 2TB each

Storage Slot^[2]

Three M.2 2280 PCIe slots for SSD:

- 1x M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD
- 1x M.2 2280 PCIe Gen 3x4 slot, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------|-----|---------------------------|----------|
| M.2 2280 SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal2 |

RAID

RAID 0/1 support (All M.2 SSD drives will work at PCIe Gen 3 in RAID mode)

Notes:

1. Dual storage is only available on models with Intel UHD graphics, NVIDIA T1200, and NVIDIA RTX A2000
2. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, Dolby® Atmos® Speaker System certified

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 1080p, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 90Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2018: 10.9 hr
JEITA 2.0: 13.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 135W slim tip AC adapter (3-pin)
- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|----------------------------------------------------|
| 16.0" | 16" WQXGA (2560x1600) | None | IPS | 400 nits | Anti-glare | 16:10 | 1200:1 | 100% sRGB | 170° | Low blue light, DC dimming |
| 16.0" | WQUXGA (3840x2400) | Multi-touch | IPS | 600 nits | Anti-reflection, Anti-smudge | 16:10 | 1500:1 | 100% Adobe® | 170° | Low blue light, Dolby Vision™, HDR 400, DC dimming |
| 16.0" | WQUXGA (3840x2400) | None | IPS | 600 nits | Anti-glare | 16:10 | 1500:1 | 100% Adobe | 170° | Low blue light, Dolby Vision, HDR 400, DC dimming |

Color Calibration

- X-Rite Pantone factory color calibration
- No color calibration

Touchscreen

- Capacitive-type on-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|------------------------------------------------------|
| Touch models | 359.5 x 253.8 x 18.2 mm (14.15 x 9.99 x 0.72 inches) |
| Non-touch models | 359.5 x 253.8 x 17.7 mm (14.15 x 9.99 x 0.7 inches) |

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Touch models | 1.86 kg (4.1 lbs) |
| Non-touch models | 1.81 kg (3.99 lbs) |

Case Color

Black

Case Material

- CF plate / GFRP hybrid (top), Aluminium (bottom)
- 37-degree twill CF Weave (top), Aluminium (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Lenovo USB-C to Ethernet Adapter
- No Ethernet

WLAN + Bluetooth™

Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[1]

- Integrated Mobile Broadband 4G LTE, Quectel EM05-CE, M.2 card, China only
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

- Nano SIM card, Lenovo Connect 24 months, 4G LTE
- No SIM card inbox

NFC

No support

Notes:

1. WWAN is only available on models with Intel UHD graphics, NVIDIA T1200, and NVIDIA RTX A2000

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.1 (HDMI 2.0 on NVIDIA T1200 or integrated graphics only model)
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file

attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

Thunderbolt 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;

FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot (2.5 x 6 mm)

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

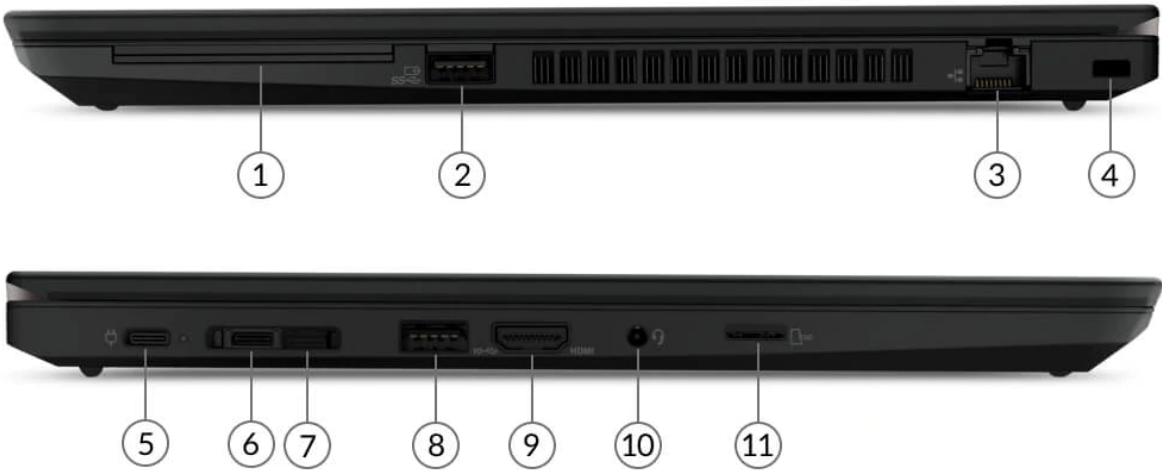
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 2.0 |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz) or USB-C (up to 5120x2880@60Hz, DP mode via USB-C to DP dongle)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM)
- Up to 48GB (16GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 1TB M.2 2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Notes:

- 1. M.2 2242 is special bid only

Removable Storage

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone, near-field

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 13.25 hr.

MobileMark 2018: 10.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter (2-pin)
- 45W USB-C AC adapter (3-pin)
- 65W USB-C slim AC adapter (3-pin)
- 65W USB-C slim AC adapter (2-pin)
- 65W USB-C AC adapter (2-pin)
- 65W USB-C AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch (FHD models only)
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight^[1]

| Models | Weight |
|--------------------------------------|--------------------|
| FHD Low Power / Privacy Guard models | 1.46 kg (3.22 lbs) |
| HD / FHD non-touch models | 1.55 kg (3.41 lbs) |

Case Color

Black

Case Material

PPS / 50% GF (top), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, supports Wake-on-LAN

WLAN + Bluetooth®

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)

- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY**System Management****System Management**

AMD Pro Manageability

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °C (50 °F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

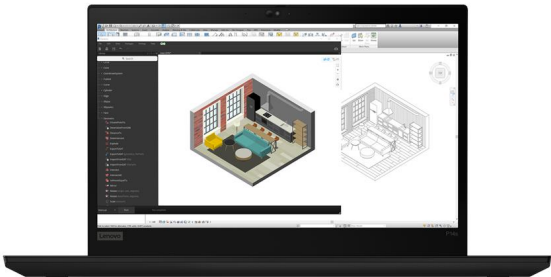
Mil-Spec Test

MIL-STD-810G military test passed

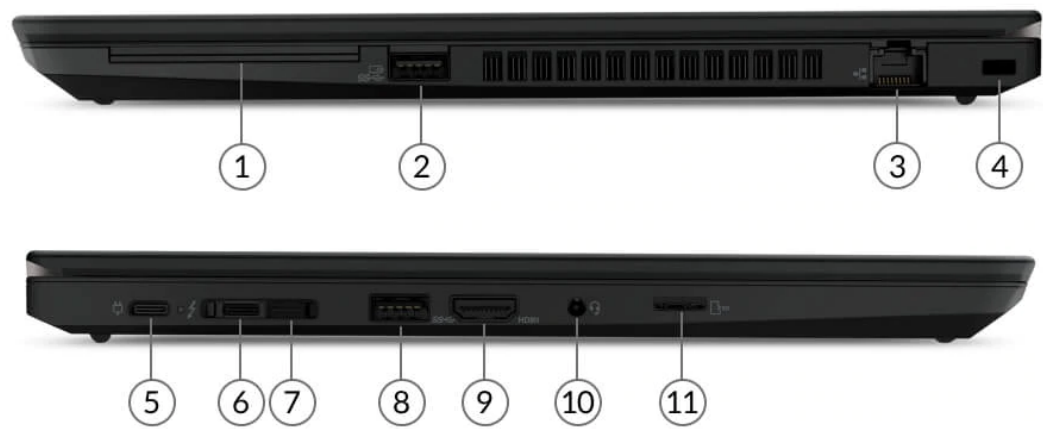
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 1.4b |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 1 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 / Thunderbolt 3 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|----------------------|----------|-----------|--------------|
| NVIDIA® Quadro® P520 | Discrete | 2GB GDDR5 | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM)
- Up to 48GB (16GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type^[2]

DDR4-2666 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually DDR4-3200 but may run at DDR4-2666 due to processor limitation

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Security |
|---------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane™ Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Notes:

1. M.2 2242 is special bid only

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 15.1 hr
MobileMark 2018: 10.96 hr
JEITA 2.0: 15.1 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 65W USB-C slim AC adapter (3-pin)
- 65W USB-C slim AC adapter (2-pin)
- 65W USB-C AC adapter (2-pin)
- 65W USB-C AC adapter (3-pin)

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect | Contrast | Color | Viewing | Key Features |
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|

| | | | | | | Ratio | Ratio | Gamut | Angle | |
|-------|-----------------|-------------|-----|----------|------------|-------|--------|-------------|-------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Glossy | 16:9 | 1500:1 | 100% Adobe® | 170° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch (FHD models only)
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight^[1]

| Models | Weight |
|--------------------------|--------------------|
| FHD Low Power models | 1.49 kg (3.28 lbs) |
| FHD models | 1.55 kg (3.43 lbs) |
| FHD Privacy Guard models | 1.61 kg (3.56 lbs) |
| FHD touch models | 1.55 kg (3.41 lbs) |
| UHD models | 1.49 kg (3.28 lbs) |

Case Color

Black

Case Material

PPS / 50% GF (top), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 2x USB-C 3.1 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset

- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

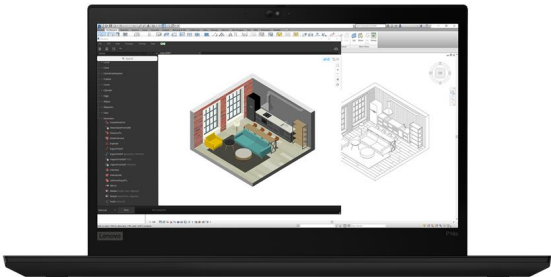
Mil-Spec Test

MIL-STD-810G military test passed

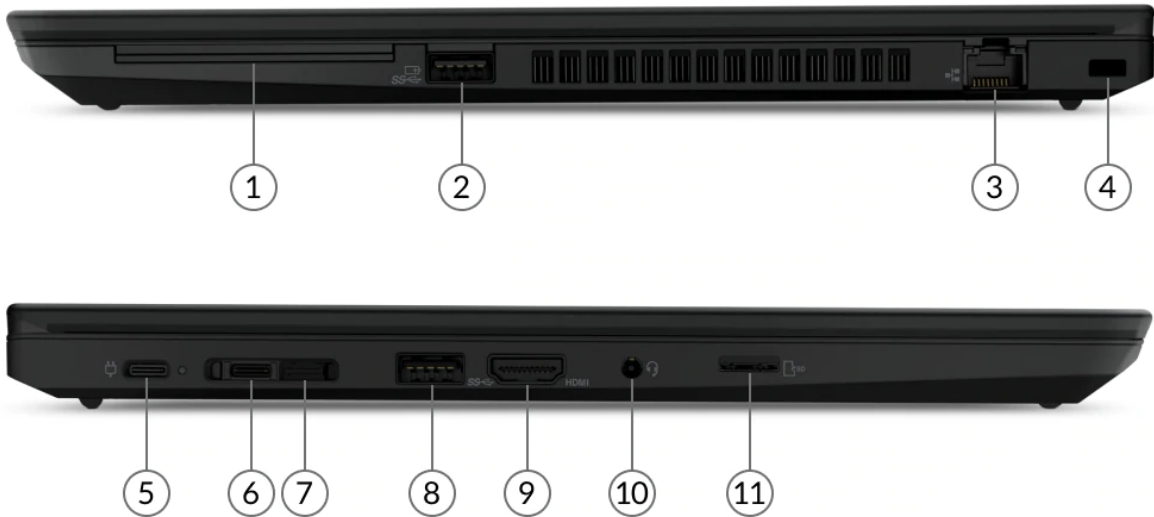
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 2.0 |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6, and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 5 / 7 Pro Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Government Edition 64 (for special bids models)
- Red Hat Enterprise Linux (certified only)

Graphics

Graphics

| Graphics | Type | Memory | Connector | Max Resolution | Key Features | Remark |
|---------------------|------------|--------|-----------|----------------|--------------|--------|
| AMD Radeon Graphics | Integrated | Shared | - | - | DirectX® 12 | - |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4096x2160@60Hz), or two USB-C (up to 5120x2880@60Hz, DP mode via USB-C to DP dongle)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 48GB (16GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3 slot, supports one M.2 PCIe Gen 4 or Gen 3 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|-----------|-----------|-----|----------|----------|
|-----------|-----------|-----|----------|----------|

| | | | | |
|--------------|-----------------|---|---------------------|-------|
| M.2 2280 SSD | PCIe Gen 3 NVMe | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe Gen 4 NVMe | - | 2TB | Opal2 |

Removable Storage

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, Dolby® Audio™ Speaker System certified

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 12.5 hr

JEITA 2.0: 15.8 hr (idle, 150 nits)

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter (2-pin)
- 45W USB-C AC adapter (3-pin)
- 65W USB-C slim AC adapter (3-pin)
- 65W USB-C slim AC adapter (2-pin)
- 65W USB-C AC adapter (2-pin)
- 65W USB-C AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|------------------------------------------------|
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | DC dimming |
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | DC dimming |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR 400, DC dimming, X-Rite FCC |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|----------|------|-------------------------------------|
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard, DC dimming |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight⁽¹⁾

| Models | Weight |
|--------------------------------------|--------------------|
| HD / FHD non-touch models | 1.55 kg (3.41 lbs) |
| FHD Low Power / Privacy Guard models | 1.46 kg (3.22 lbs) |
| FHD touch models | 1.55 kg (3.41 lbs) |

Case Color

- Black
- Storm grey

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111H, supports Wake-on-LAN

WLAN + Bluetooth™

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality

- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot (3 x 7 mm)

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password

- Self-healing BIOS

MANAGEABILITY

System Management

System Management

AMD Pro Manageability

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 2438 m (8,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

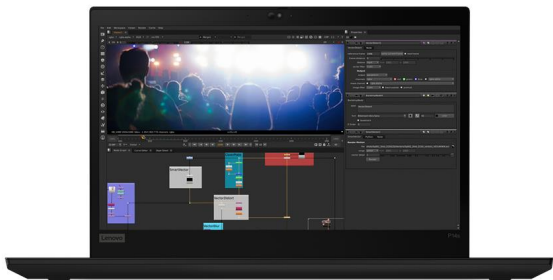
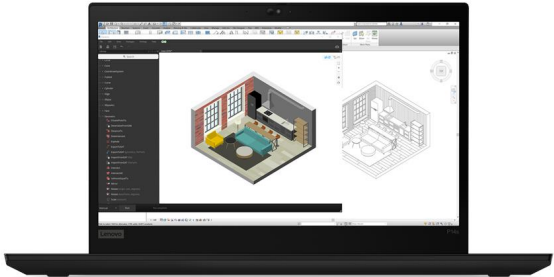
Mil-Spec Test

MIL-STD-810H military test passed

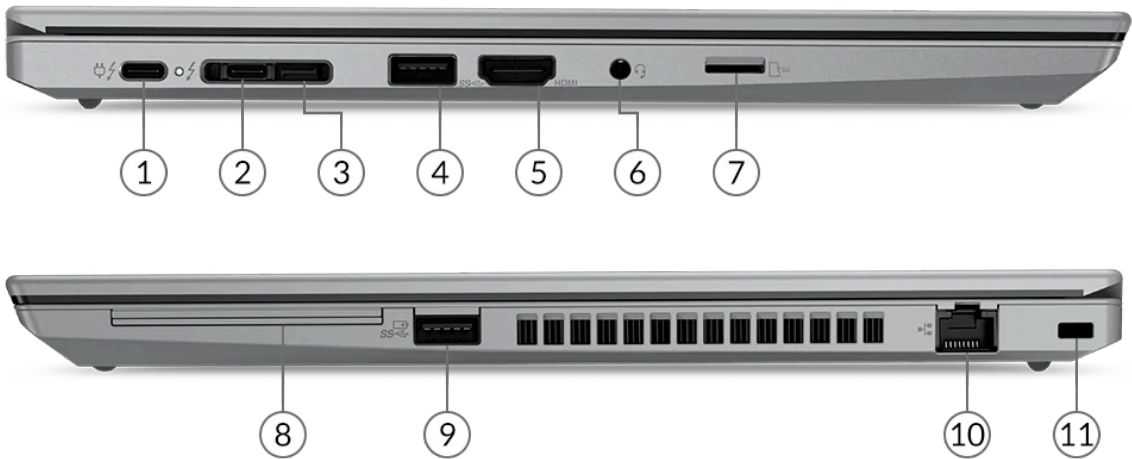
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Thunderbolt 4 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Smart card reader * |
| 3. Side docking connector | 9. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 10. Ethernet (RJ-45) |
| 5. HDMI 2.0 | 11. Kensington Security Slot |
| 6. Headphone / microphone combo jack (3.5mm) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® Quadro® T500 | Discrete | 4GB GDDR6 | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics requires dual channel memory. On models with single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics.

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM)
- Up to 48GB (16GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot^[1]

One M.2 2280 PCIe Gen 3 slot, supports one M.2 PCIe Gen 4 or Gen 3 SSD

Storage Type^[2]

| Disk Type | Interface | RPM | Offering | Security |
|--------------|---------------------|-----|---------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 | - | 2TB | Opal2 |

RAID

No support

Notes:

- 1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
- 2. System comes with one M.2 SSD slot that supports PCIe 3.0

Removable Storage

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone, far-field

Camera

- 720p, with privacy shutter, fixed focus
- Front IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

Battery life data is still under tuning and pending availability

Notes:

- 1. All battery life claims are approximate maximum and based on results using the MobileMark® 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter (3-pin)
- 65W USB-C slim AC adapter (3-pin)
- 65W USB-C slim AC adapter (2-pin)
- 65W USB-C AC adapter (2-pin)
- 65W USB-C AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|------------------------------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | DC dimming |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | DC dimming |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard, DC dimming |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR 400, DC dimming, X-Rite FCC |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|------------------------------------------------------|
| Aluminium models | 329.4 x 227.5 x 17.9 mm (12.97 x 8.96 x 0.70 inches) |
| PC + ABS models | 329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches) |

Weight^[1]

| Models | Weight |
|------------------|---------------------|
| Aluminium models | 1.502 kg (3.31 lbs) |
| PC + ABS models | 1.469 kg (3.24 lbs) |

Case Color

- Black
- Storm grey

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

- eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps / USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified Notebooks 8
- RoHS compliant

Other Certifications

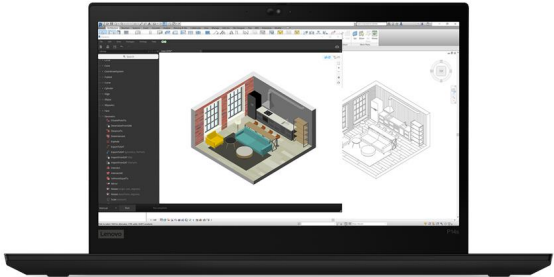
Mil-Spec Test

MIL-STD-810H military test passed

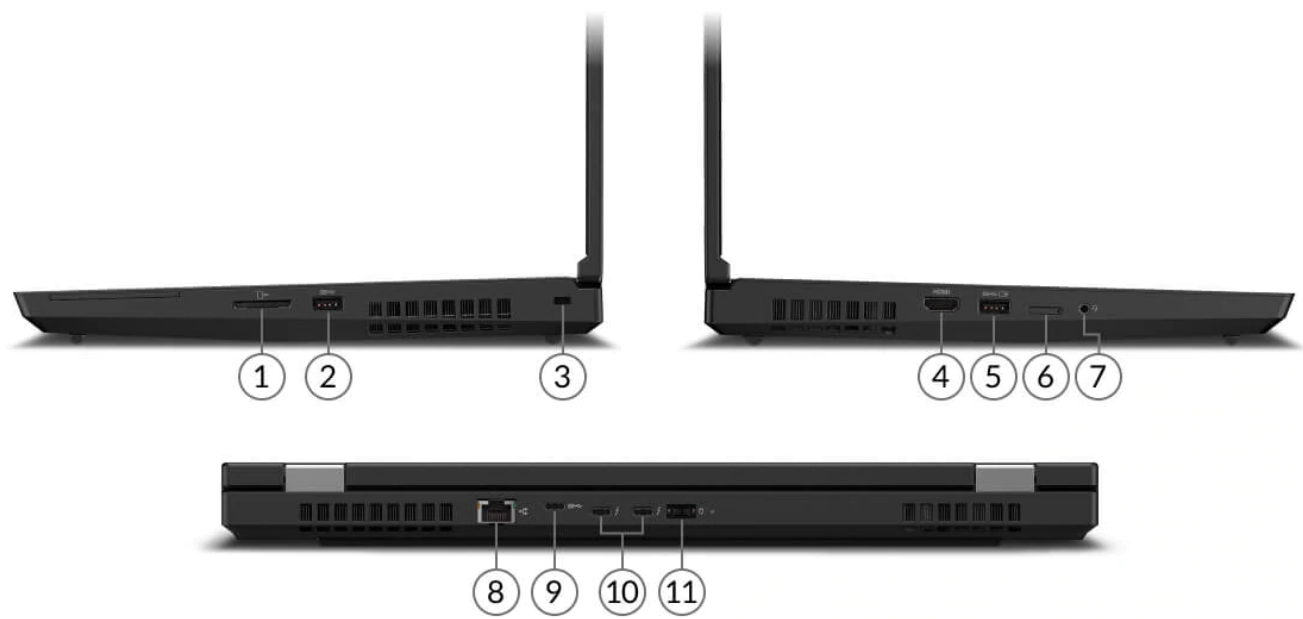
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|-----------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.2 Gen 1 | 8. Ethernet (RJ-45) |
| 3. Kensington Security Slot | 9. USB-C 3.2 Gen 1 |
| 4. HDMI 2.0 | 10. 2x USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 5. USB 3.2 Gen 1 | 11. Power connector |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 / i9 or Intel Xeon® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10400H | 4 | 8 | 2.6GHz | 4.6GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-10885H | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |
| Core i9-10980HK | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-10855M | 6 | 12 | 2.8GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Xeon W-10885M | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------------|----------|------------|--------------|
| NVIDIA® Quadro® T1000 | Discrete | 4GB GDDR6 | DirectX® 12 |
| NVIDIA Quadro T2000 | Discrete | 4GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 3000 | Discrete | 6GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 4000 Max-Q | Discrete | 8GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 5000 Max-Q | Discrete | 16GB GDDR6 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors; supports external monitors via HDMI® (up to 4K@60Hz), USB-C (up to 4K@60Hz) or Thunderbolt™ (one supports up to 5K@60Hz and the other supports up to 4K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2933 ECC
- DDR4-2933 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Storage**Storage Support**

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID

RAID 0/1 support

Removable Storage**Optical**

None

Card Reader

SD card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers

Stereo speakers, Dolby® Atmos®

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery**Battery**

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 16.4 hr

MobileMark 2018: 10.3 hr

JEITA 2.0: 17.4 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter**Power Adapter**

- 170W slim tip AC adapter (2-pin)

- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|-------------------------------|-----------------------------|--------------|----------------|-----------------|---------------|--------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 160° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1200:1 | 72% NTSC | 160° | Dolby Vision™, HDR |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 178° | Dolby Vision, HDR |
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 500nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision, HDR |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro (for UHD OLED models)
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------------------|
| Non-touch models | 375.4 x 252.3 x 24.5-31.45 mm (14.24 x 9.67 x 0.96-1.24 inches) |
| Touch models | 375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches) |

Weight^[1]

2.74 kg (6.05 lbs)

Case Color

Black

Case Material

PPS695 + GF 50% (top), PPS + GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

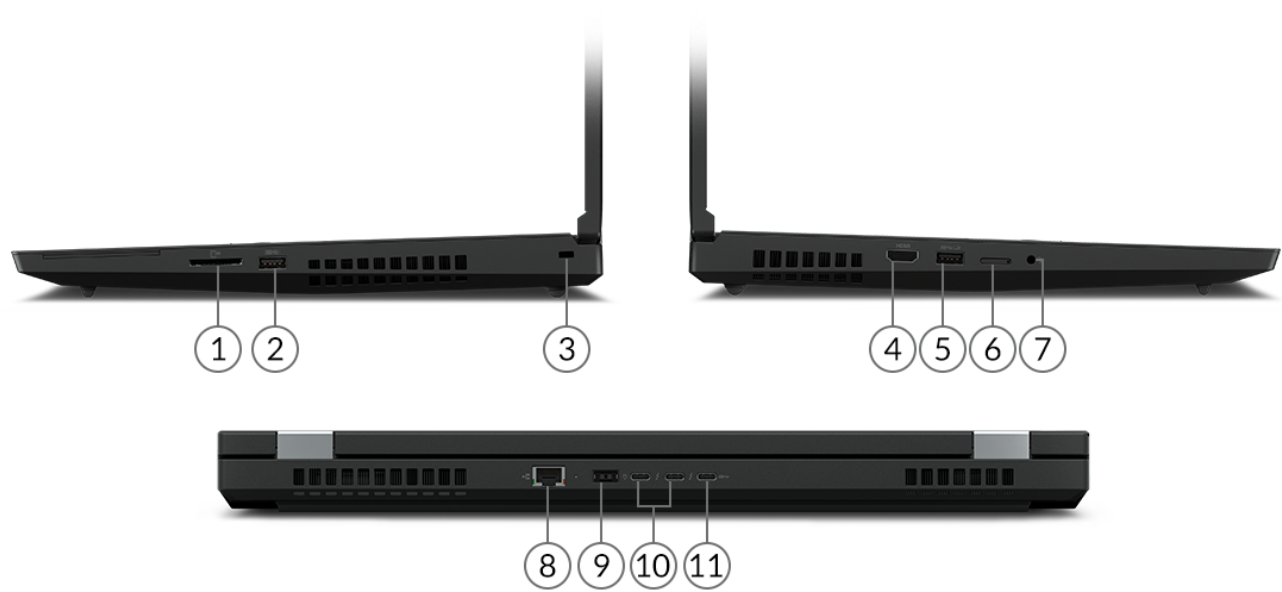
ISV Certifications

ISV Certifications

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OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.2 Gen 1 | 8. 2.5GbE (RJ-45) |
| 3. Kensington Security Slot | 9. Power connector |
| 4. HDMI 2.1 / 2.0 | 10. 2x Thunderbolt 4 |
| 5. USB 3.2 Gen 1 (Always On) | 11. USB-C 3.2 Gen 2 |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® W Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-11500H | 6 | 12 | 2.9GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11855M | 6 | 12 | 3.2GHz | 4.9GHz | 18MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11955M | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Ubuntu Linux LTS

Graphics

Graphics

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|-------------------|----------|------------|-------------|-----|-----------|----------------|--------------|--------|
| NVIDIA® RTX A2000 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX® 12 | - |
| NVIDIA RTX A3000 | Discrete | 6GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A5000 | Discrete | 16GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA T1200 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A4000 | Discrete | 8GB GDDR6 | - | - | - | - | DirectX 12 | - |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors, hybrid mode only; supports external monitors via HDMI® (up to 4K@60Hz on NVIDIA T1200 / 8K@60Hz on other discrete graphics), USB-C (up to 5120x3200@60Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 128GB, both ECC and non-ECC

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-3200 ECC
- DDR4-3200 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

- 1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three M.2 2280 SSD, up to 2TB each

Storage Slot^[1]

Three M.2 2280 PCIe slots for SSD:

- 1x M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD
- 2x M.2 2280 PCIe Gen 3x4 slots, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------|-----|---------------------------|----------|
| M.2 2280 SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal2 |

RAID

RAID 0/1 support on two M.2 PCIe Gen 3x4 slots

Notes:

- 1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds

Removable Storage

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, Dolby® Atmos® Speaker System certified

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 9 hr
JEITA 2.0: 11.5 hr

Notes:

- 1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|-------------------------------|--------------------------------|--------------|----------------|-----------------|---------------|-----------------------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 100% sRGB | 170° | - |
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 500nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR 500 True Black |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | Dolby Vision |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1200:1 | 100% Adobe® RGB | 170° | Dolby Vision, HDR 400 |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
- For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------------------|
| Touch models | 375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches) |
| Non-touch models | 375.4 x 252.3 x 24.5-31.45 mm (14.24 x 9.67 x 0.96-1.24 inches) |

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Touch models | 3.07 kg (6.75 lbs) |
| Non-touch models | 2.87 kg (6.32 lbs) |

Case Color

Black

Case Material

PPS695 + GF 50% (top), PA+ 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- 2.5GbE, Intel Ethernet Connection I225-LM (vPro models), supports Wake-on-LAN
- 2.5GbE, Intel Ethernet Connection I225-V (non-vPro models), supports Wake-on-LAN

WLAN + Bluetooth™

- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- None

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4a)
- 1x HDMI 2.1 (HDMI 2.0 on NVIDIA T1200 model)
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole
- 1x 2.5GbE RJ-45

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot (3 x 7 mm)

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

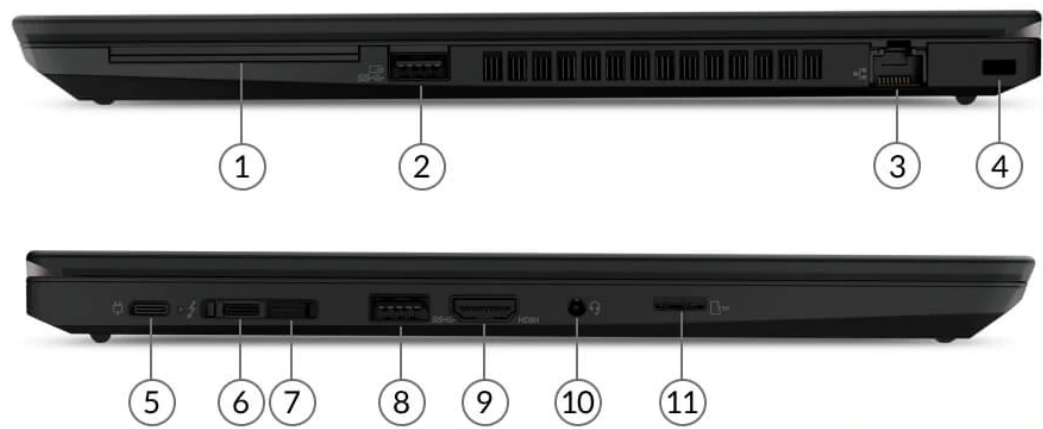
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 1.4b |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 1 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 / Thunderbolt 3 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Government Edition 64 (for special bids models)
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|----------------------|----------|-----------|--------------|
| NVIDIA® Quadro® P520 | Discrete | 2GB GDDR5 | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 48GB (16GB soldered + 32GB SO-DIMM)
- Up to 40GB (8GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type^[2]

DDR4-2666 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually DDR4-3200 but may run at DDR4-2666 due to processor limitation

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Security |
|---------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane™ Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Notes:

- M.2 2242 is special bid only

Removable Storage

- Optical**
- None
- Card Reader**
- MicroSD card reader

Multi-Media

- Audio Chip**
- High Definition (HD) Audio, Realtek® ALC3287 codec
- Speakers**
- Stereo speakers, 2W x2, Dolby® Audio™
- Microphone**
- Dual array microphone, near-field
 - No microphone

- Camera**
- 720p, with ThinkShutter, fixed focus
 - IR & 720p hybrid, with ThinkShutter, fixed focus
 - No camera

Battery

- Battery**
- Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
- Max Battery Life^[1]**
- MobileMark® 2014: 16.5 hr
- MobileMark 2018: 10.48 hr
- JEITA 2.0: 16.5 hr

Notes:

- All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

- Power Adapter**
- 65W USB-C slim AC adapter (3-pin)
 - 65W USB-C slim AC adapter (2-pin)
 - 65W USB-C AC adapter (2-pin)
 - 65W USB-C AC adapter (3-pin)
 - No power adapter

DESIGN

- Display
- Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|------------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch on selected FHD models, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

Weight^[1]

1.75 kg (3.86 lbs)

Case Color

Black

Case Material

PPS / 50% GF (top), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.1 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

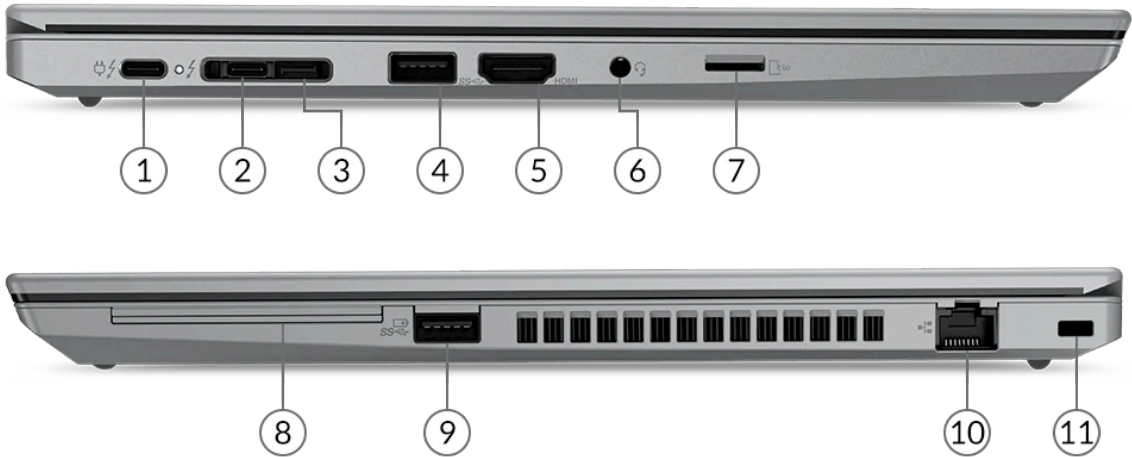
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Thunderbolt 4 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Smart card reader * |
| 3. Side docking connector | 9. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 10. Ethernet (RJ-45) |
| 5. HDMI 2.0 | 11. Kensington Security Slot |
| 6. Headphone / microphone combo jack (3.5mm) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |
| NVIDIA® Quadro® T500 | Discrete | 4GB GDDR6 | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics requires dual channel memory. On models with single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics.

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM)
- Up to 48GB (16GB soldered + 32GB SO-DIMM)

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot^[1]

One M.2 2280 PCIe Gen 3 slot, supports one M.2 PCIe Gen 4 or Gen 3 SSD

Storage Type^[2]

| Disk Type | Interface | RPM | Offering | Security |
|--------------|---------------------|-----|---------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 | - | 2TB | Opal2 |

RAID

No support

Notes:

- 1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
- 2. System comes with one M.2 SSD slot that supports PCIe 3.0

Removable Storage

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

Battery life data is still under tuning and pending availability

Notes:

- 1. All battery life claims are approximate maximum and based on results using the MobileMark® 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter (2-pin)
- 45W USB-C AC adapter (3-pin)
- 65W USB-C slim AC adapter (3-pin)
- 65W USB-C slim AC adapter (2-pin)
- 65W USB-C AC adapter (2-pin)
- 65W USB-C AC adapter (3-pin)

- No power adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|------------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

Weight^[1]

| Models | Weight |
|------------------|---------------------|
| Aluminium models | 1.783 kg (3.93 lbs) |
| PC + ABS models | 1.75 kg (3.86 lbs) |

Case Color

- Black
- Storm grey

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

- eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps / USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified Notebooks 8
- RoHS compliant

Other Certifications

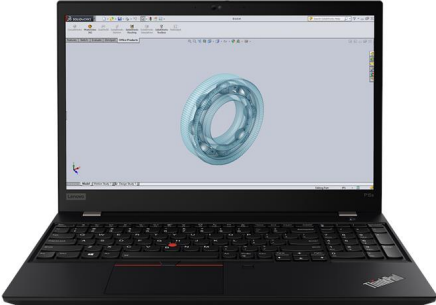
Mil-Spec Test

MIL-STD-810H military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 6. Kensington Security Slot |
| 2. SD card reader | 7. Power connector |
| 3. HDMI 2.0 | 8. USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 4. 2x USB 3.2 Gen 1 | 9. Smart card reader * |
| 5. Ethernet (RJ-45) | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 or Intel Xeon® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10300H | 4 | 8 | 2.5GHz | 4.5GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-10855M | 6 | 12 | 2.8GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|----------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® Quadro® P620 | Discrete | 4GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2933 ECC
- DDR4-2933 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
- Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Storage

Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, Dolby® Audio™

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 68Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2014: 10 hr
MobileMark 2018: 7.2 hr
JEITA 2.0: 11 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 135W slim tip AC adapter (2-pin)
- 135W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD | None | IPS | 250 nits | Anti- | 16:9 | 800:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|--------------------|-------------|-----|----------|------------|------|--------|-----------------|------|------------------------|
| | (1920x1080) | | | | glare | | | | | |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 22.7 mm (14.43 x 9.84 x 0.89 inches)

Weight⁽¹⁾

2.07 kg (4.57 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, MIMO 2x2, M.2 card

- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 6. Kensington Security Slot |
| 2. SD card reader | 7. Power connector |
| 3. HDMI 2.0 | 8. Thunderbolt 4 |
| 4. 2x USB 3.2 Gen 1 | 9. Smart card reader * |
| 5. Ethernet (RJ-45) | |

- Notes:
- Ports with * are only available on selected models
 - Nano-SIM card slot on the rear side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-11400H | 6 | 12 | 2.7GHz | 4.5GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS

Graphics

Graphics

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|--------------------|------------|-----------|-------------|-----|-----------|----------------|--------------|--------|
| Intel UHD Graphics | Integrated | Shared | | | - | - | DirectX® 12 | - |
| NVIDIA® RTX A2000 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA T600 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA T1200 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2x M.2 2280 SSD, up to 2TB each

Storage Slot

Two M.2 2280 PCIe Gen 3 slots for SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------------|-----|---------------------|----------|
| M.2 2280 SSD | PCIe Gen 3 NVMe | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe Gen 4 NVMe | - | 2TB | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, Dolby® Audio™

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 68Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2018: 7.5 hr
JEITA 2.0: 9.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

135W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |
| 15.6" | FHD | None | IPS | 300 nits | Anti- | 16:9 | 800:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|--------------------|-------------|-----|----------|------------|------|--------|-----------------|------|------------------------|
| | (1920x1080) | | | | glare | | | | | |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch on selected FHD models, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

366.5 x 250 x 22.7 mm (14.43 x 9.84 x 0.89 inches)

Weight^[1]

2.07 kg (4.58 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth™

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

- Nano SIM card, Lenovo Connect 24 months, 4G LTE
- No SIM card inbox

NFC

No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

MANAGEABILITY**System Management**

System Management

- Intel vPro Technology, DASH
- None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature^[1]**

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications**Mil-Spec Test**

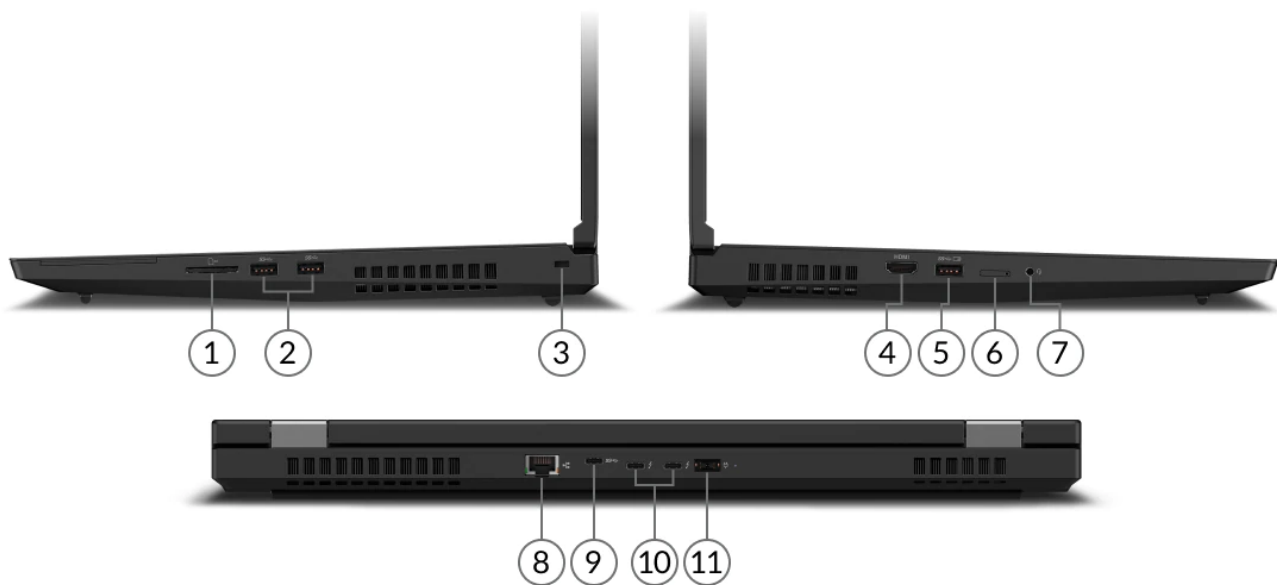
MIL-STD-810H military test passed

ISV Certifications**ISV Certifications**

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|-----------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. 2x USB 3.2 Gen 1 | 8. Ethernet (RJ-45) |
| 3. Kensington Security Slot | 9. USB-C 3.2 Gen 1 |
| 4. HDMI 2.0 | 10. 2x USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 5. USB 3.2 Gen 1 | 11. Power connector |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 / i9 or Intel Xeon® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10400H | 4 | 8 | 2.6GHz | 4.6GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-10885H | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |
| Core i9-10980HK | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-10855M | 6 | 12 | 2.8GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Xeon W-10885M | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------------|----------|------------|--------------|
| NVIDIA® Quadro® T1000 | Discrete | 4GB GDDR6 | DirectX® 12 |
| NVIDIA Quadro T2000 | Discrete | 4GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 3000 | Discrete | 6GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 4000 Max-Q | Discrete | 8GB GDDR6 | DirectX 12 |
| NVIDIA Quadro RTX 5000 Max-Q | Discrete | 16GB GDDR6 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors; supports external monitors via HDMI® (up to 4K@60Hz), USB-C (up to 4K@60Hz) or Thunderbolt™ (one supports up to 5K@60Hz and the other supports up to 4K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2933 ECC

- DDR4-2933 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Storage

Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers

Stereo speakers, Dolby® Atmos®

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 14.6 hr

MobileMark 2018: 9.75 hr

JEITA 2.0: 16.6 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 170W slim tip AC adapter (2-pin)
- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|------------------------|
| 17.3" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 160° | - |
| 17.3" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% Adobe® | 178° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

415.44 x 280.81 x 25.11-33.25 mm (16.36 x 11.06 x 0.99-1.31 inches)

Weight^[1]

3.5 kg (7.7 lbs)

Case Color

Black

Case Material

PPS695 + GF 50% (top), PPS + GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card

- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

No SIM card inbox

Ports^[1]**Standard Ports^[2]**

- 3x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password

- Hard disk password
- Self-healing BIOS

Other Security

(Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0

- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

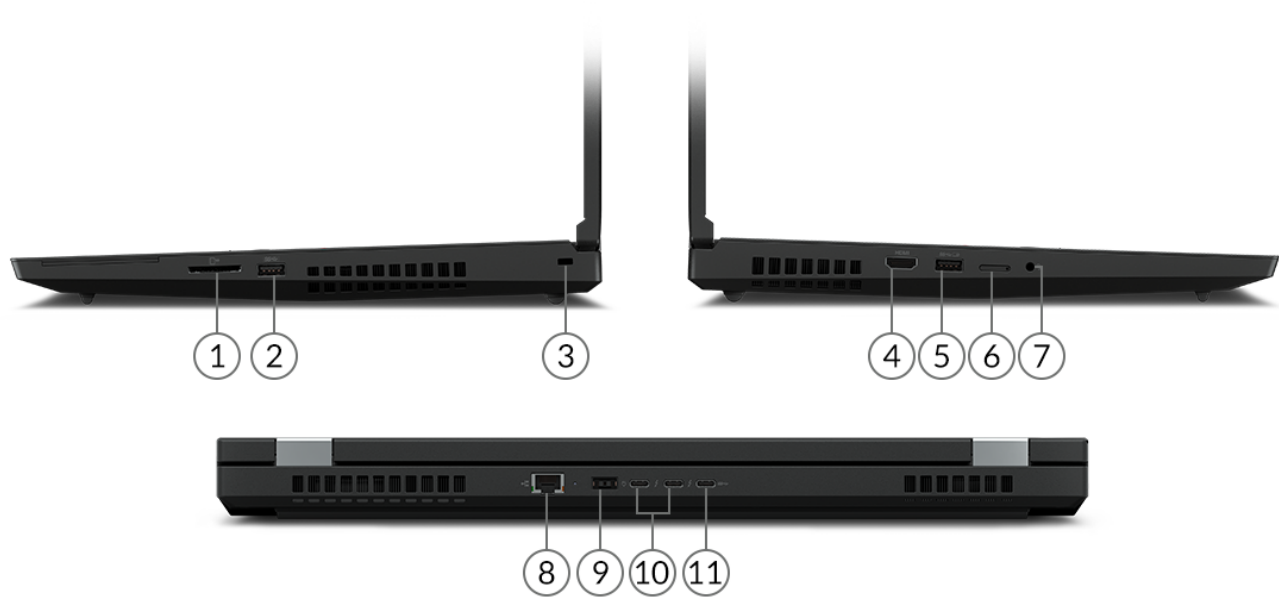
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.2 Gen 1 | 8. 2.5GbE (RJ-45) |
| 3. Kensington Security Slot | 9. Power connector |
| 4. HDMI 2.1 / 2.0 | 10. 2x Thunderbolt 4 |
| 5. USB 3.2 Gen 1 (Always On) | 11. USB-C 3.2 Gen 2 |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 / i9 or Intel Xeon® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-11500H | 6 | 12 | 2.9GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11855M | 6 | 12 | 3.2GHz | 4.9GHz | 18MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11955M | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Ubuntu Linux LTS

Graphics

Graphics

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|-------------------|----------|------------|-------------|-----|-----------|----------------|--------------|--------|
| NVIDIA® RTX A2000 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX® 12 | - |
| NVIDIA RTX A3000 | Discrete | 6GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A5000 | Discrete | 16GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA T1200 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |
| NVIDIA RTX A4000 | Discrete | 8GB GDDR6 | - | - | - | - | DirectX 12 | - |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors, hybrid mode only; supports external monitors via HDMI® (up to 4K@60Hz on NVIDIA T1200 / 8K@60Hz on other discrete graphics), USB-C (up to 5120x3200@60Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 128GB, both ECC and non-ECC

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-3200 ECC
- DDR4-3200 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three M.2 2280 SSD, up to 2TB each

Storage Slot^[1]

Three M.2 2280 PCIe slots for SSD:

- 1x M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD
- 2x M.2 2280 PCIe Gen 3x4 slots, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------|-----|---------------------------|----------|
| M.2 2280 SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal2 |

RAID

RAID 0/1 support on two M.2 PCIe Gen 3x4 slots

Notes:

1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, Dolby® Atmos®

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 8.3 hr
JEITA 2.0: 11 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|------------------------|
| 17.3" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 100% sRGB | 170° | - |
| 17.3" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 100% Adobe® | 170° | Dolby Vision™, HDR 400 |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
- For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

415.44 x 280.81 x 24.31-32.45 mm (16.36 x 11.06 x 0.96-1.28 inches)

Weight^[1]

3.67 kg (8.09 lbs)

Case Color

Black

Case Material

PPS695 + GF 50% (top), PA + 50% GF (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- 2.5GbE, Intel Ethernet Connection I225-LM (vPro models), supports Wake-on-LAN
- 2.5GbE, Intel Ethernet Connection I225-V (non-vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4a)
- 1x HDMI 2.1 (HDMI 2.0 on NVIDIA T1200 model)
- 1x SD card reader
- 1x Ethernet (2.5GbE RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot (3 x 7 mm)

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

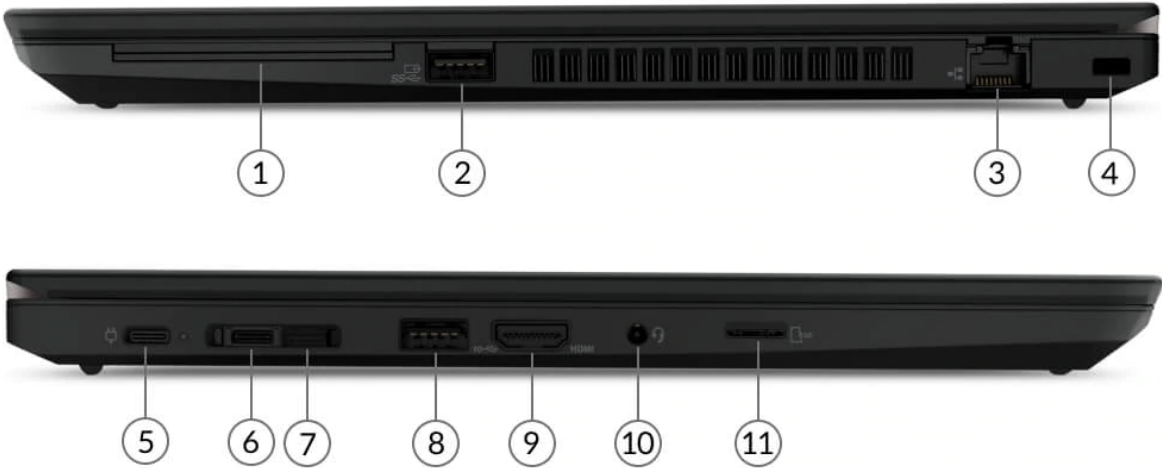
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 2.0 |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 PRO 4450U | 4 | 8 | 2.5GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 24GB (8GB soldered + 16GB SO-DIMM) DDR4-3200
- Up to 32GB (16GB soldered + 16GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 14 hr

MobileMark 2018: 11.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|----------|------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight^[1]

| Models | Weight |
|---------------------------------------|--------------------|
| FHD Low Power / Privacy Guard models | 1.46 kg (3.22 lbs) |
| HD / FHD touch / FHD non-touch models | 1.55 kg (3.41 lbs) |

Case Color

Black

Surface Treatment

- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

Case Material

PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN^[2]

ThinkPad T14 Gen 1 (AMD)

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

DASH

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant



Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



AMD



AMD



AMD



AMD

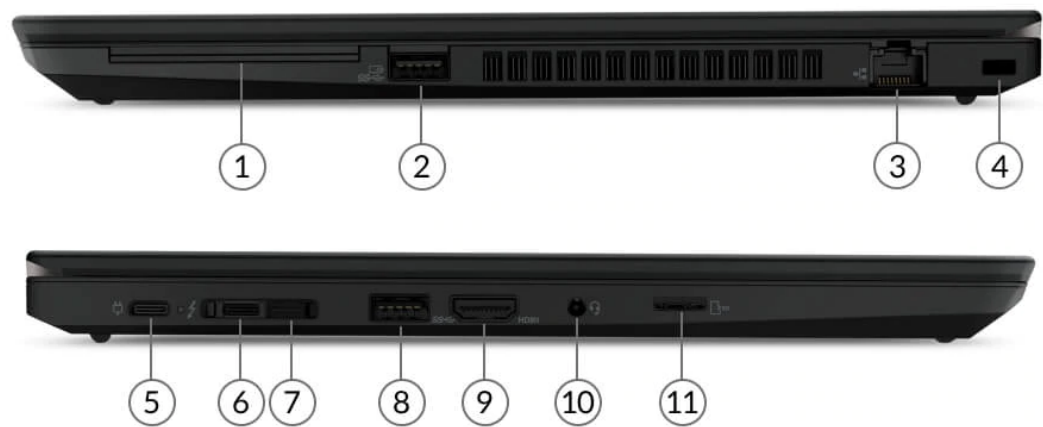


AMD



AMD

OVERVIEW



| | |
|------------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 1.4b |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 1 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 / Thunderbolt 3 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® MX330 | Discrete | 2GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-2666
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-2666

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type^[2]

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 16.5 hr

MobileMark 2018: 11.45 hr

JEITA 2.0: 17.05 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|---------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | HD (1366x768) | None | TN | 220 nits | Anti-glare | 16:9 | 400:1 | 45% NTSC | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-------------|------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 178° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Glossy | 16:9 | 1500:1 | 100% Adobe® | 178° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight⁽¹⁾

| Models | Weight |
|--------------------------|--------------------|
| FHD Low Power models | 1.49 kg (3.28 lbs) |
| FHD non-touch models | 1.55 kg (3.41 lbs) |
| FHD Privacy Guard models | 1.61 kg (3.56 lbs) |
| FHD touch models | 1.55 kg (3.41 lbs) |
| HD models | 1.53 kg (3.37 lbs) |
| UHD models | 1.49 kg (3.28 lbs) |

Case Color

Black

Surface Treatment

- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

Case Material

PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

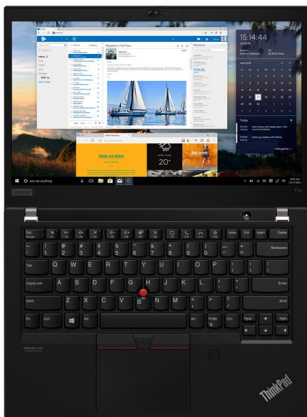
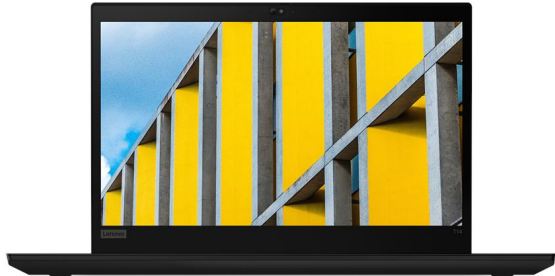
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

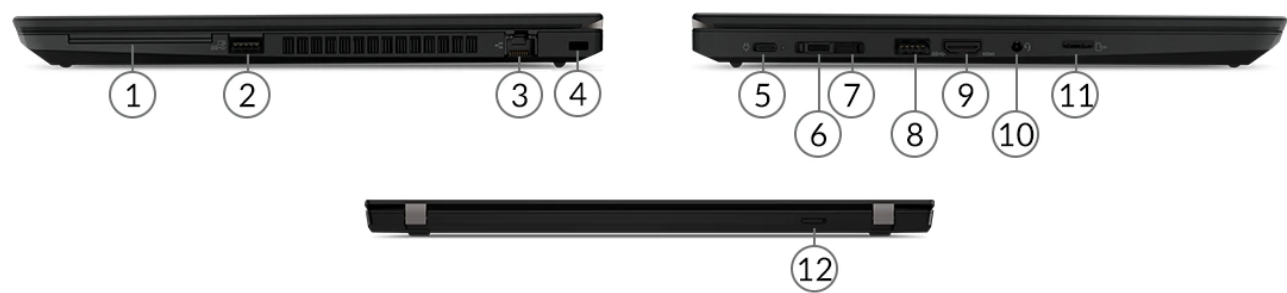
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 2.0 |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 | 12. Nano-SIM card slot * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 PRO 5450U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-3200
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

- One drive, 1x M.2 SSD
- M.2 2280 SSD up to 2TB
 - M.2 2242 SSD up to 128GB

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------------------|-----|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | - | Opal2 |

- Notes:
1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

- Notes:
1. No microphone is for speical bid only

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 13.0 hr
JEITA 2.0: 16.9 hr

- Notes:
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

- 1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 1200:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 178° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% Adobe® RGB | 178° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- 1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight^[1]

| Models | Weight |
|------------------------------------------------|--------------------|
| FHD Low Power / FHD Privacy Guard / UHD models | 1.46 kg (3.23 lbs) |
| HD / FHD touch / FHD non-touch models | 1.55 kg (3.41 lbs) |

Case Color^[2]

- Black
- Storm grey

Surface Treatment

Not anti-microbial surface treatment

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111H-CG

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel AX200 is for special bid only
Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. WWAN upgradable is only available in EMEA

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty^[1]

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

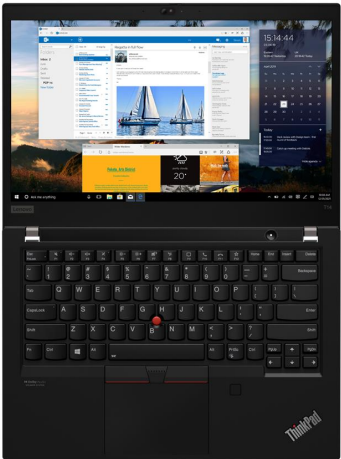
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



AMD



AMD



AMD



AMD

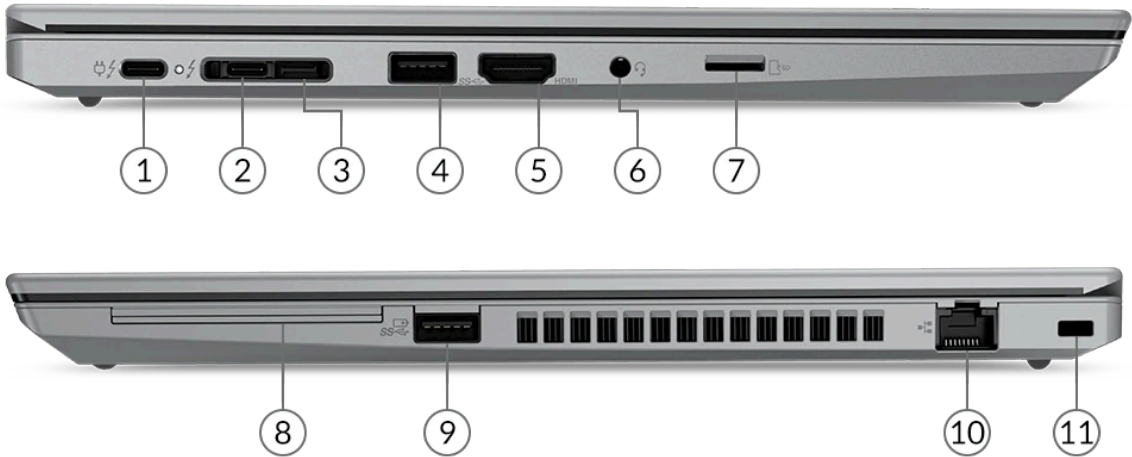


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Thunderbolt 4 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Smart card reader * |
| 3. Side docking connector | 9. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 10. Ethernet (RJ-45) |
| 5. HDMI 2.0 | 11. Kensington Security Slot |
| 6. Headphone / microphone combo jack (3.5mm) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® MX450 | Discrete | 2GB GDDR6 | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics capability requires system to be configured with Intel Core i5 or i7 processor and dual channel memory. On the system with Intel Core i5 or i7 processor and single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-3200
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type^[1]

| Disk Type | Interface | Offering | Security |
|--------------|------------------------------------|----------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | Opal2 |

Notes:

1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Notes:

1. No microphone is for speical bid only

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 10.7 hr
JEITA 2.0: 14.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

- No power adapter

Notes:

1. 45W USB-C AC adapter is only available for the models with integrated graphics
No power adapter is for special bid only
In EMEA only 65W USB-C AC adapter is available

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 178° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% Adobe® RGB | 178° | Dolby Vision™, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|------------------------------------------------------|
| Aluminium models | 329.4 x 227.5 x 17.9 mm (12.97 x 8.96 x 0.70 inches) |
| PPS models | 329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches) |

Weight^[1]

| Models | Weight |
|----------------------------------------|--------------------|
| FHD low power model with PPS top cover | 1.47 kg (3.23 lbs) |

| | |
|--------------------------------------------------|--------------------|
| FHD non-touch model with aluminium top cover | 1.502 kg (3.31 lb) |
| FHD non-touch model with PPS top cover | 1.53 kg (3.37 lb) |
| FHD Privacy Guard model with aluminium top cover | 1.55 kg (3.42 lbs) |
| FHD Privacy Guard model with PPS top cover | 1.58 kg (3.49 lbs) |
| FHD touch model with aluminium top cover | 1.502 kg (3.31 lb) |
| FHD touch model with PPS top cover | 1.53 kg (3.37 lb) |
| UHD model with PPS top cover | 1.47 kg (3.24 lbs) |

Case Color^[2]

- Black
- Storm grey

Surface Treatment^[3]

- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA
3. Anti-microbial surface treatment is NOT available for aluminium models

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC^[3]

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later
2. WWAN is NOT available for aluminium models
3. NFC is NOT available for aluminium models, and is mutually exclusive with FIPS 201 fingerprint reader and RFID reader

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0

ThinkPad T14 Gen 2 (Intel)

- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports^[3]

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed
3. RFID reader is ONLY available with FIPS 201 fingerprint reader and anti-microbial covers, and NOT available on Aluminium models
Smart card reader is NOT available with FIPS 201 fingerprint reader and anti-microbial covers

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader^[1]

- FIPS 201 fingerprint reader on palm rest
- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- (Optional) RFID reader

Notes:

1. Match-on-card fingerprint reader is mutually exclusive with RFID reader
FIPS 201 fingerprint reader is ONLY available for the models with anti-microbial black covers, and is mutually exclusive with NFC
No fingerprint reader is ONLY available for the models with black cover

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty^[1]

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for special bid only

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

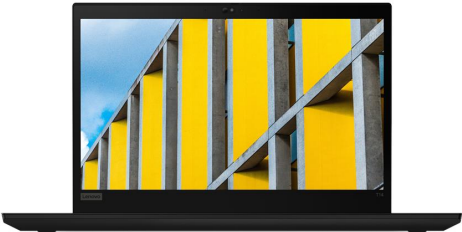
Other Certifications

Mil-Spec Test

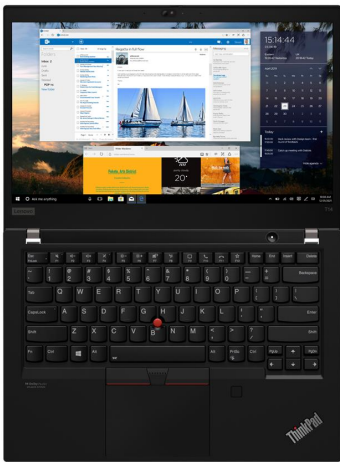
MIL-STD-810H military test passed



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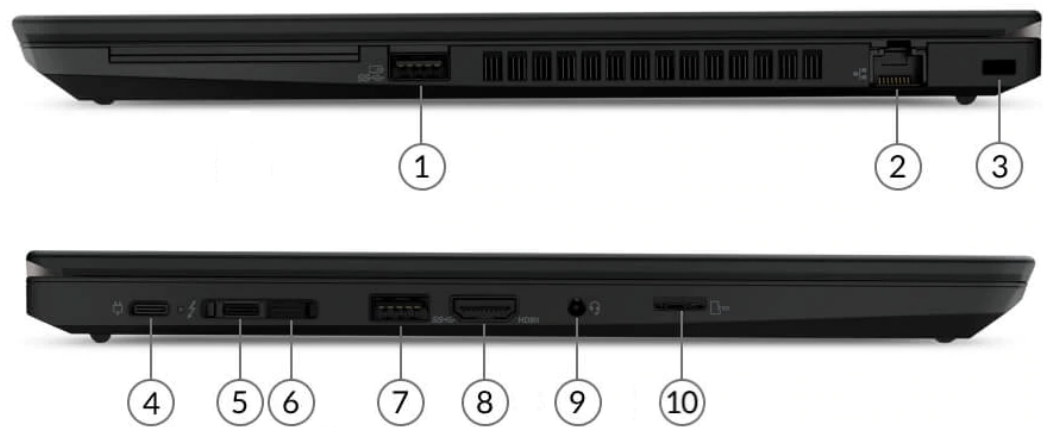


intel



intel

OVERVIEW



| | |
|------------------------------------|----------------------------------------------|
| 1. USB 3.2 Gen 1 (Always On) | 6. Side docking connector |
| 2. Ethernet (RJ-45) | 7. USB 3.2 Gen 1 |
| 3. Kensington Security Slot | 8. HDMI 1.4b |
| 4. USB-C 3.2 Gen 1 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 / Thunderbolt 3 | 10. MicroSD card reader |

- Notes:
- Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® MX330 | Discrete | 2GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-2666
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-2666

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type^[2]

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

| | | | |
|--------------------------------------------------------|------------------------|---|---|
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |
|--------------------------------------------------------|------------------------|---|---|

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 16.5 hr
MobileMark 2018: 10.5 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 178° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch

- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)

Weight^[1]

| Models | Weight |
|--------------------------|--------------------|
| FHD Privacy Guard models | 1.61 kg (3.56 lbs) |
| FHD non-touch models | 1.55 kg (3.41 lbs) |
| FHD touch models | 1.55 kg (3.41 lbs) |

Case Color

Black

Surface Treatment

ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)

Case Material

PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Others

RFID reader supporting RFID / NFC

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth™^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

NFC support via RFID reader

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

FIPS 201 fingerprint reader on palm rest

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover

- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- RFID reader

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

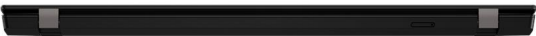
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

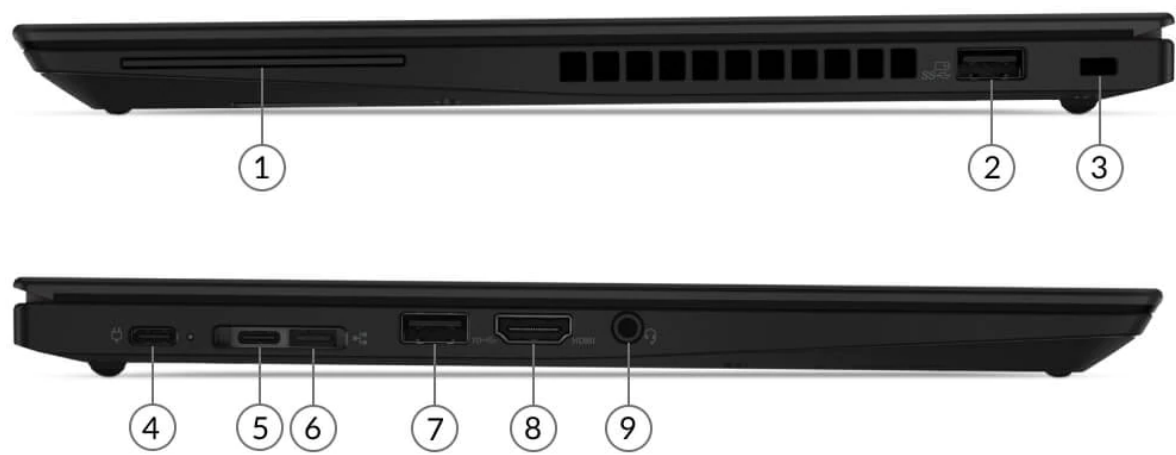
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. Smart card reader * | 6. Ethernet extension connector |
| 2. USB 3.2 Gen 1 (Always On) | 7. USB 3.2 Gen 1 |
| 3. Kensington Security Slot | 8. HDMI 2.0 |
| 4. USB-C 3.2 Gen 2 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | |

- Notes:
- Ports with * are only available on selected models
 - Card slot on the rear side (not shown on the sample product above) is for microSD card (WLAN model) or nano-SIM + microSD card (WWAN model)
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-3200

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|-----------|-----------|-----|----------|
|-----------|-----------|-----|----------|

| | | | |
|--------------|------------------------|---|-------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

- MicroSD card slot (WLAN model)
- Nano-SIM + microSD card slot (WWAN model)

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 1W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 15.9 hr
MobileMark 2018: 13.6 hr
JEITA 2.0: 17.4 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|----------|------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------------------------------------------|-------------------------------------------------------|
| FHD Low Power models | 328.8 x 225.8 x 16.1 mm (12.94 x 8.89 x 0.63 inches) |
| FHD touch / FHD non-touch / FHD Privacy Guard models | 329.0 x 226.15 x 16.7 mm (12.95 x 8.90 x 0.66 inches) |

Weight^[1]

| Models | Weight |
|------------------------------------------|--------------------|
| FHD Low Power / FHD Privacy Guard models | 1.27 kg (2.81 lbs) |
| FHD touch / FHD non-touch models | 1.35 kg (2.98 lbs) |

Case Color

Black

Case Material

Carbon fiber hybrid (top), magnesium (keyboard cover & bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card

- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip

- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

DASH

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS



Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



AMD



AMD



AMD



AMD

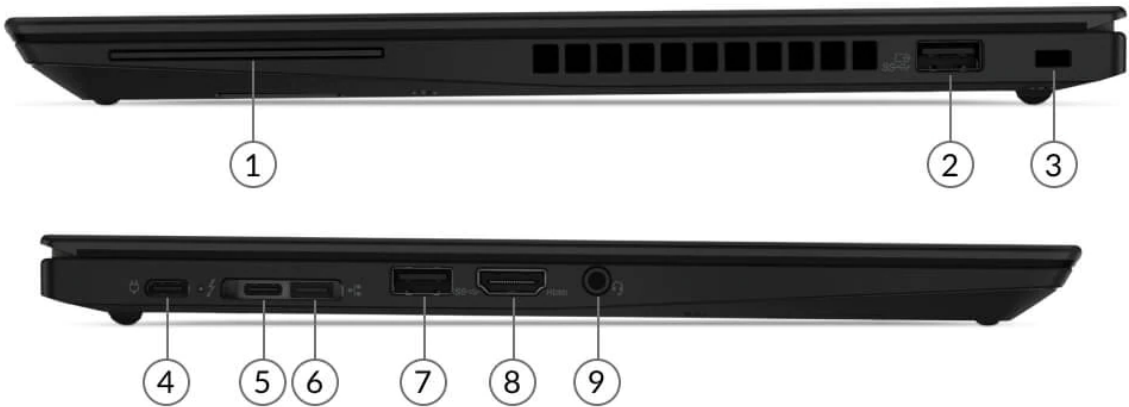


AMD



AMD

OVERVIEW



| | |
|------------------------------------|----------------------------------------------|
| 1. Smart card reader * | 6. Ethernet extension connector |
| 2. USB 3.2 Gen 1 (Always On) | 7. USB 3.2 Gen 1 |
| 3. Kensington Security Slot | 8. HDMI 1.4b |
| 4. USB-C 3.2 Gen 1 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 / Thunderbolt 3 | |

- Notes:
- Ports with * are only available on selected models
 - Card slot on the rear side (not shown on the sample product above) is for microSD card (WLAN model) or nano-SIM + microSD card (WWAN model)
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type^[2]

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

- MicroSD card slot (WLAN model)
- Nano-SIM + microSD card slot (WWAN model)

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 1W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 21 hr

MobileMark 2018: 14.28 hr

JEITA 2.0: 23.1 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 14.0" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-------------|------|-------------------------|
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Glossy | 16:9 | 1500:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------------------------------|--------------------------------------------------------|
| Silver models | 329.15 x 226.45 x 17.2 mm (12.96 x 8.92 x 0.68 inches) |
| Black with FHD touch / FHD non-touch / FHD Privacy Guard models | 329.0 x 226.15 x 16.7 mm (12.95 x 8.90 x 0.66 inches) |
| Black with FHD Low Power / UHD models | 328.8 x 225.8 x 16.1 mm (12.94 x 8.89 x 0.63 inches) |

Weight^[1]

| Models | Weight |
|-----------------------------------------------------------------|--------------------|
| Silver models | 1.49 kg (3.29 lbs) |
| Black with FHD Low Power / UHD models | 1.27 kg (2.81 lbs) |
| Black with FHD touch / FHD non-touch / FHD Privacy Guard models | 1.35 kg (2.98 lbs) |

Case Color

- Black
- Silver

Case Material^[2]

- Black models: carbon fiber hybrid (top), magnesium (keyboard cover & bottom)
- Silver models: aluminium (top), magnesium (keyboard cover & bottom)

Notes:

- The system weight varies depending on configurations
- CFRP Hybrid top cover for black models; Aluminum top cover for silver models

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

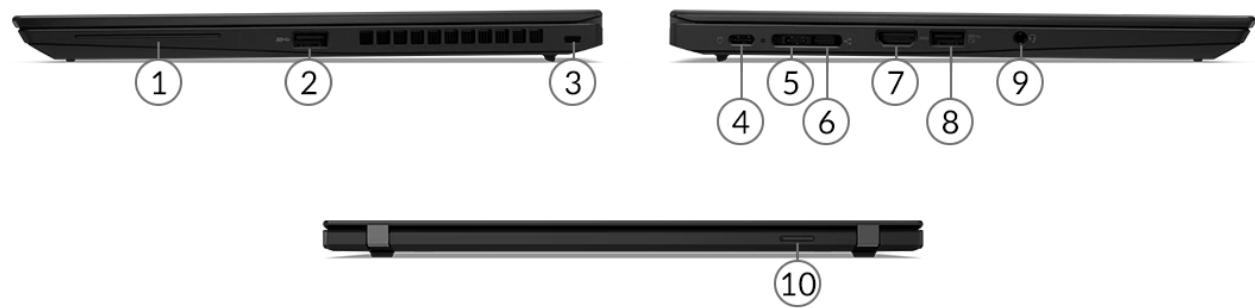
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------|----------------------------------------------|
| 1. Smart card reader * | 6. Ethernet extension connector |
| 2. USB 3.2 Gen 1 | 7. HDMI 2.0 |
| 3. Kensington Nano Security Slot | 8. USB 3.2 Gen 1 (Always On) |
| 4. USB-C 3.2 Gen 2 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 | 10. Nano-SIM card slot * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 PRO 5450U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | LPDDR4-4266 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |

Notes:

1. Ryzen 3 PRO 5450U and Ryzen 5 5600U are NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------------------|-----|---------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | 2TB | Opal2 |

Notes:

1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 14.9 hr
JEITA 2.0: 19.4 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. 45W USB-C AC adapter is only available for the models with integrated graphics
No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 1200:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 178° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% Adobe® RGB | 178° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight^[1]

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Notes:

1. Non-backlit keyboard is only available for the models with black cover

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------------------------------|-------------------------------------------------------|
| Black with FHD Low Power / UHD models | 327.5 x 224 x 16.14 mm (12.89 x 8.82 x 0.64 inches) |
| Black with FHD touch / FHD non-touch / FHD Privacy Guard models | 327.5 x 224.4 x 16.81 mm (12.89 x 8.83 x 0.66 inches) |
| Storm grey models | 327.5 x 225.3 x 16.81 mm (12.89 x 8.87 x 0.66 inches) |

Weight^[1]

| Models | Weight |
|---------------------------------------------|---------------------|
| Black with FHD Low Power / UHD models | 1.28 kg (2.83 lbs) |
| Black with FHD Privacy Guard models | 1.415 kg (3.12 lbs) |
| Black with FHD touch / FHD non-touch models | 1.36 kg (2.99 lbs) |

| | |
|--------------------------------------------------|--------------------|
| Storm grey with FHD Low Power / UHD models | 1.51 kg (3.32 lbs) |
| Storm grey with FHD Privacy Guard models | 1.62 kg (3.57 lbs) |
| Storm grey with FHD touch / FHD non-touch models | 1.57 kg (3.46 lbs) |

Case Color^[2]

- Storm grey
- Villi black

Case Material

- Villi black models: carbon fiber hybrid (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey models: aluminium (top), aluminium (keyboard cover & bottom)

Notes:

1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC^[3]

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. WWAN is NOT available for the models with storm grey cover
3. NFC is NOT available for the models with storm grey cover

Ports

^[1]**Standard Ports**^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

Work in progress



AMD



AMD



AMD



AMD

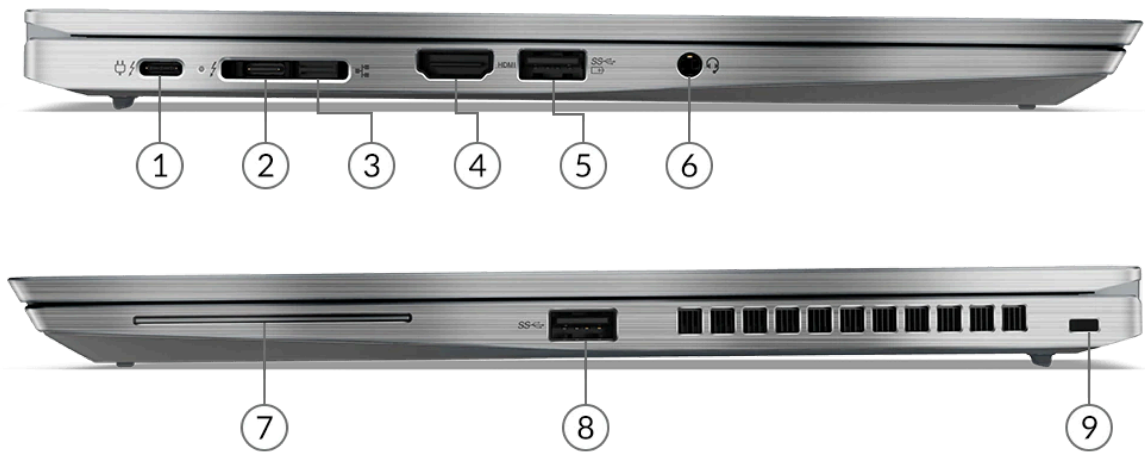


AMD



AMD

OVERVIEW



| | |
|---------------------------------|----------------------------------------------|
| 1. Thunderbolt 4 | 6. Headphone / microphone combo jack (3.5mm) |
| 2. Thunderbolt 4 | 7. Smart card reader * |
| 3. Ethernet extension connector | 8. USB 3.2 Gen 1 |
| 4. HDMI 2.0 | 9. Kensington Nano Security Slot |
| 5. USB 3.2 Gen 1 (Always On) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | Security |
|--------------|------------------------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | Opal2 |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 14.5 hr
JEITA 2.0: 23.6 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-----------------|------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1500:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------------------------------|-------------------------------------------------------|
| Black with FHD Low Power / UHD models | 327.5 x 224 x 16.14 mm (12.89 x 8.82 x 0.64 inches) |
| Black with FHD touch / FHD non-touch / FHD Privacy Guard models | 327.5 x 224.4 x 16.81 mm (12.89 x 8.83 x 0.66 inches) |
| Storm grey models | 327.5 x 225.3 x 16.81 mm (12.89 x 8.87 x 0.66 inches) |

Weight^[1]

| Models | Weight |
|----------------------------------------------------------------------|--------------------|
| Black with FHD Low Power / UHD models | 1.28 kg (2.83 lbs) |
| Black with FHD touch / FHD non-touch / FHD Privacy Guard models | 1.36 kg (2.99 lbs) |
| Storm grey with FHD Low Power / UHD models | 1.51 kg (3.32 lbs) |
| Storm grey with FHD touch / FHD non-touch / FHD Privacy Guard models | 1.57 kg (3.46 lbs) |

Case Color

- Storm grey
- Villi black

Case Material

- Villi black models: carbon fiber hybrid (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey models: aluminium (top), aluminium (keyboard cover & bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- (Optional) Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications^[1]

(Optional) Intel Evo™ Platform

Notes:

1. Intel Evo is only available for the models with FHD Low Power, FHD Privacy Guard, or UHD display



intel



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intel



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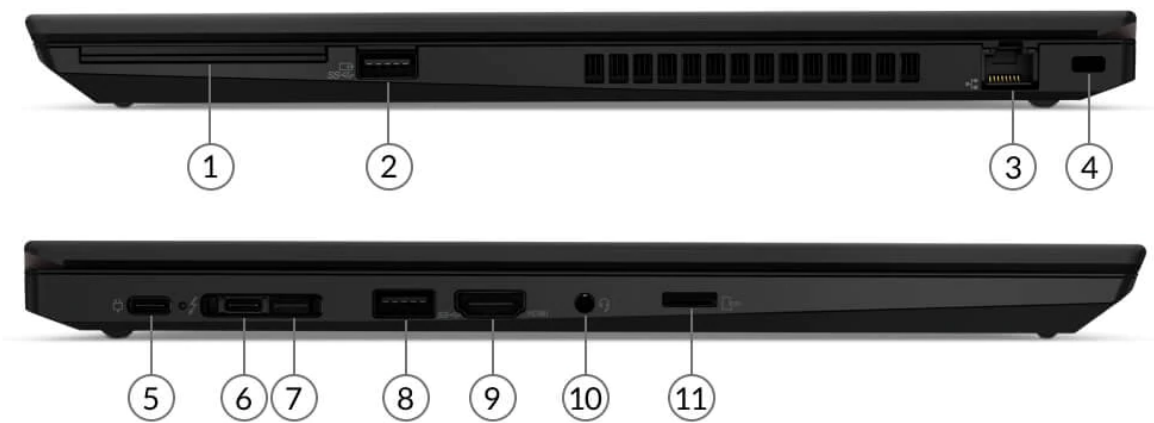


intel



intel

OVERVIEW



| | |
|------------------------------------|-----------------------------------------------|
| 1. Smart card reader * | 7. Side docking connector |
| 2. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 3. Ethernet (RJ-45) | 9. HDMI 1.4b |
| 4. Kensington Security Slot | 10. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 1 | 11. MicroSD card reader |
| 6. USB-C 3.2 Gen 2 / Thunderbolt 3 | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® MX330 | Discrete | 2GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-2666
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-2666

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type^[2]

DDR4-2666

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
- Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 15.26 hr
MobileMark 2018: 10.81 hr
JEITA 2.0: 14.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|-----------------|------|------------------------|
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 500 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

Weight^[1]

| Models | Weight |
|----------------------|--------------------|
| UHD models | 1.74 kg (3.84 lbs) |
| FHD non-touch models | 1.81 kg (3.99 lbs) |
| FHD touch models | 1.81 kg (3.99 lbs) |

Case Color

Black

Surface Treatment

- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

Case Material

PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

- The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader

- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

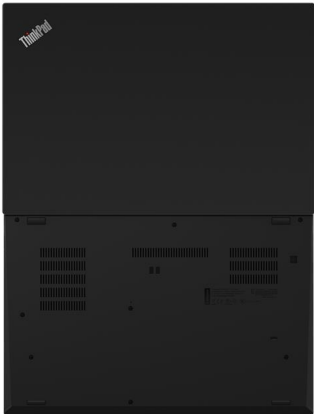
- EPEAT™ Gold
- ENERGY STAR® 8.0

- TCO
- RoHS compliant

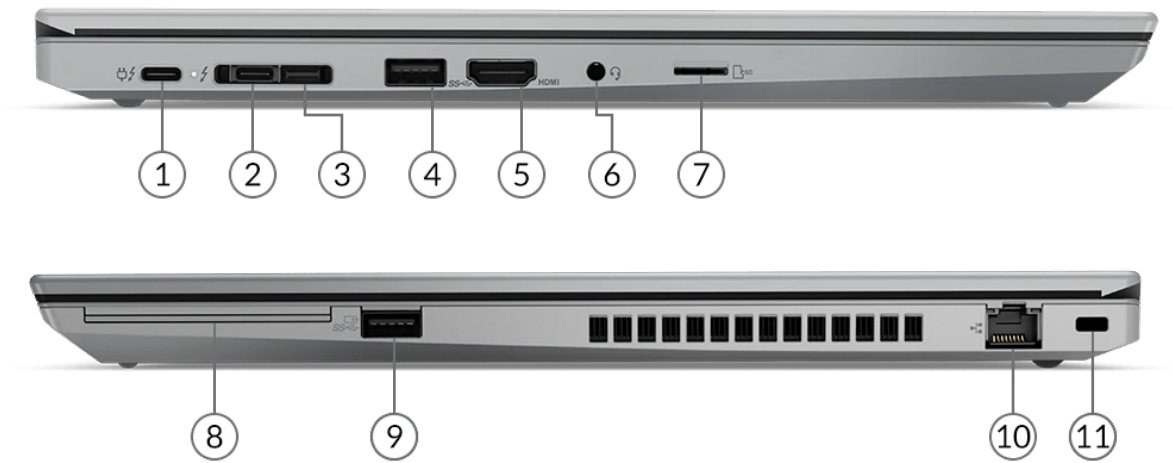
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Thunderbolt 4 | 7. MicroSD card reader |
| 2. Thunderbolt 4 | 8. Smart card reader * |
| 3. Side docking connector | 9. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 10. Ethernet (RJ-45) |
| 5. HDMI 2.0 | 11. Kensington Security Slot |
| 6. Headphone / microphone combo jack (3.5mm) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | DDR4-3200 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | DDR4-3200 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|-----------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® MX450 | Discrete | 2GB GDDR6 | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics capability requires system to be configured with Intel Core i5 or i7 processor and dual channel memory. On the system with Intel Core i5 or i7 processor and single channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-3200
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type^[1]

| Disk Type | Interface | Security |
|--------------|------------------------------------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | Opal2 |

Notes:

- 1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Notes:

- 1. No microphone is for speical bid only

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 12 hr

JEITA 2.0: 16.8 hr

Notes:

- 1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

- No power adapter

Notes:

1. No power adapter is for special bid only
In EMEA only 65W USB-C AC adapter is available

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|---------------|------------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

Weight^[1]

| Models | Weight |
|----------------------------------------------|--------------------|
| FHD non-touch model with aluminium top cover | 1.79 kg (3.96 lb) |
| FHD non-touch model with PPS top cover | 1.82 kg (4.02 lb) |
| FHD touch model with aluminium top cover | 1.81 kg (3.999 lb) |
| FHD touch model with PPS top cover | 1.84 kg (4.07 lb) |
| UHD model with PPS top cover | 1.75 kg (3.86 lbs) |

Case Color^[2]

- Black
- Storm grey

Surface Treatment

- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

Case Material

- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:

- The system weight varies depending on configurations
- Storm grey case is NOT available in EMEA

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Intel Ethernet Connection I219-LM

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

- Intel Wi-Fi 6 full features might be limited by country level restrictions
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

- The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
- Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY**System Management****System Management**

- Intel vPro Technology, DASH
- None

SERVICE**Warranty****Base Warranty^[1]**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for special bid only

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



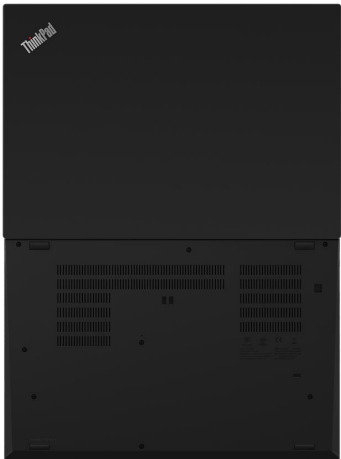
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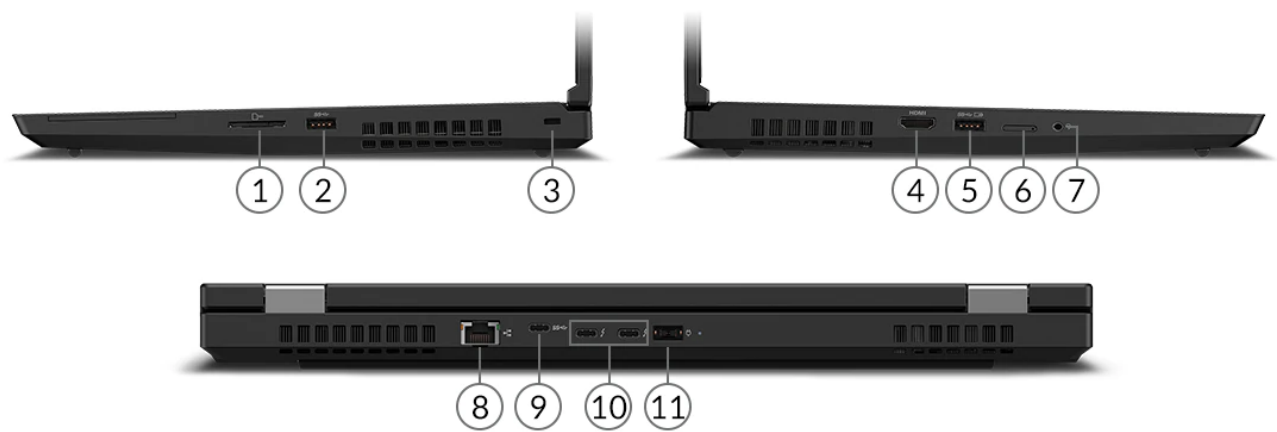


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OVERVIEW



| | |
|-----------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.2 Gen 1 | 8. Ethernet (RJ-45) |
| 3. Kensington Security Slot | 9. USB-C 3.2 Gen 1 |
| 4. HDMI 2.0 | 10. 2x USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 5. USB 3.2 Gen 1 | 11. Power connector |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 / i9 or Intel Xeon® Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10400H | 4 | 8 | 2.6GHz | 4.6GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-10885H | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |
| Core i9-10980HK | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-10855M | 6 | 12 | 2.8GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Xeon W-10885M | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|----------------------------------------|----------|-----------|-----------------------|
| NVIDIA® GeForce® RTX™ 2070 SUPER Max-Q | Discrete | 8GB GDDR6 | VR ready, DirectX® 12 |
| NVIDIA GeForce RTX 2080 SUPER Max-Q | Discrete | 8GB GDDR6 | VR ready, DirectX 12 |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors; supports external monitors via HDMI® (up to 4K@60Hz), USB-C (up to 4K@60Hz) or Thunderbolt™ (one supports up to 5K@60Hz and the other supports up to 4K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2933 ECC
- DDR4-2933 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

- Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
 2. Non-ECC memory is actually DDR4-3200 but may run at DDR4-2933 due to processor limitation

Storage

Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers

Stereo speakers, Dolby® Atmos®

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 16.4 hr
MobileMark 2018: 10.3 hr
JEITA 2.0: 17.4 hr

- Notes:
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 170W slim tip AC adapter (2-pin)
- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|-------------------------------|--------------------------------|--------------|----------------|-----------------|---------------|--------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 160° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1200:1 | 72% NTSC | 160° | Dolby Vision™, HDR |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 178° | Dolby Vision, HDR |
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 500nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision, HDR |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
- For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro (for UHD OLED models)
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------------------|
| Non-touch models | 375.4 x 252.3 x 24.5-31.45 mm (14.24 x 9.67 x 0.96-1.24 inches) |
| Touch models | 375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches) |

Weight^[1]

2.74 kg (6.05 lbs)

Case Color

Black

Case Material

PPS695 + GF 50% (top), PPS + GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN

WLAN + Bluetooth®

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- No support

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[2]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)
2. When charging the battery pack, the environment temperature must be no lower than 10 °X (50 °X)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

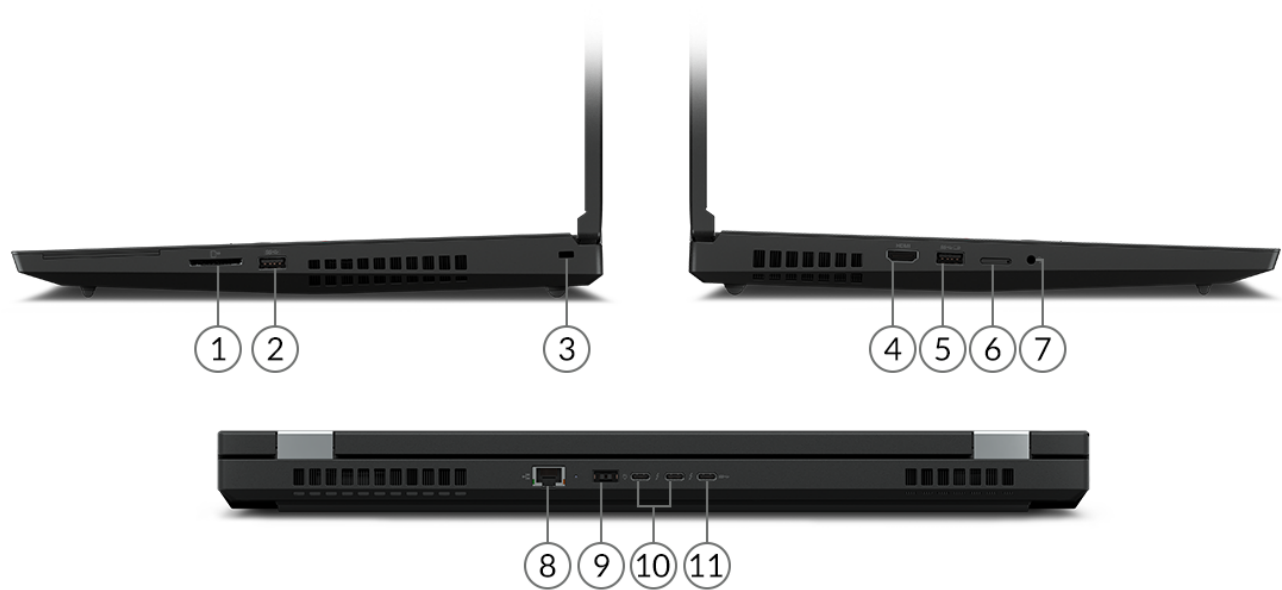
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|----------------------------------------------|
| 1. SD card reader | 7. Headphone / microphone combo jack (3.5mm) |
| 2. USB 3.2 Gen 1 | 8. 2.5GbE (RJ-45) |
| 3. Kensington Security Slot | 9. Power connector |
| 4. HDMI 2.1 / 2.0 | 10. 2x Thunderbolt 4 |
| 5. USB 3.2 Gen 1 (Always On) | 11. USB-C 3.2 Gen 2 |
| 6. Nano-SIM card slot * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 / i9 Processor or Intel Xeon® W Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-11500H | 6 | 12 | 2.9GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11855M | 6 | 12 | 3.2GHz | 4.9GHz | 18MB | DDR4-3200 | Intel UHD Graphics |
| Xeon W-11955M | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System^[1]

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Fedora Linux
- Ubuntu Linux LTS

Notes:

1. As preloaded OS, Fedora and Ubuntu Linux will be available on October 2021

Graphics

Graphics

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|----------------------------|----------|------------|-------------|-----|-----------|----------------|--------------|--------|
| NVIDIA® GeForce® RTX™ 3070 | Discrete | 8GB GDDR6 | - | - | - | - | DirectX® 12 | - |
| NVIDIA GeForce RTX 3080 | Discrete | 16GB GDDR6 | - | - | - | - | DirectX 12 | - |

Monitor Support

Monitor Support

Supports up to 5 independent displays via native display and 4 external monitors, hybrid mode only; supports external monitors via HDMI® (up to 4K@60Hz on NVIDIA T1200 / 8K@60Hz on other discrete graphics), USB-C (up to 5120x3200@60Hz) or Thunderbolt™ (up to 5120x3200@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 128GB, both ECC and non-ECC

Memory Slots

Four DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-3200 ECC
- DDR4-3200 non-ECC

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

- Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three M.2 2280 SSD, up to 2TB each

Storage Slot^[1]

- Three M.2 2280 PCIe slots for SSD:
- 1x M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD
 - 2x M.2 2280 PCIe Gen 3x4 slots, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------|-----|---------------------------|----------|
| M.2 2280 SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal2 |

RAID

RAID 0/1 support on two M.2 PCIe Gen 3x4 slots

- Notes:
1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, Dolby® Atmos® Speaker System certified

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 230W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 7 hr
JEITA 2.0: 11 hr

- Notes:
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 170W slim tip AC adapter (3-pin)
- 230W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|-------------------------------|--------------------------------|--------------|----------------|-----------------|---------------|-----------------------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 100% sRGB | 170° | - |
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 500nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision™, HDR 500 True Black |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | Dolby Vision |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1200:1 | 100% Adobe® RGB | 170° | Dolby Vision, HDR 400 |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro
- None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------------------|
| Touch models | 375.4 x 252.3 x 25.25-32.2 mm (14.24 x 9.67 x 0.99-1.27 inches) |
| Non-touch models | 375.4 x 252.3 x 24.5-31.45 mm (14.24 x 9.67 x 0.96-1.24 inches) |

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Touch models | 3.07 kg (6.75 lbs) |
| Non-touch models | 2.87 kg (6.32 lbs) |
| All models | 2.87 kg (6.32 lbs) |

Case Color

Black

Case Material

PPS695 + GF 50% (top), PA+ 50% GF (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- 2.5GbE, Intel Ethernet Connection I225-LM (vPro models), supports Wake-on-LAN
- 2.5GbE, Intel Ethernet Connection I225-V (non-vPro models), supports Wake-on-LAN

WLAN + Bluetooth™

- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Ports^[1]

Standard Ports^[2]

- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4a)
- 1x HDMI 2.1 (HDMI 2.0 on NVIDIA T1200 model)
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole
- 1x 2.5GbE RJ-45

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot (3 x 7 mm)

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 6. Kensington Security Slot |
| 2. Card reader | 7. Power connector |
| 3. HDMI 2.0 | 8. USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 4. 2x USB 3.2 Gen 1 (one Always On) | 9. Smart card reader * |
| 5. Ethernet (RJ-45) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10300H | 4 | 8 | 2.5GHz | 4.5GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i5-10400H | 4 | 8 | 2.6GHz | 4.6GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10875H | 8 | 16 | 2.3GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics |

Notes:

- 1. i7-10875H is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® GTX 1050 | Discrete | 3GB GDDR5 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

DDR4-2933

Notes:

- 1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
- 2. Installed memory is actually 3200MHz but run at 2933MHz due to processor limitation

Storage

Storage Support

- Up to two drives, 2x M.2 2280 SSD
- M.2 2280 SSD up to 2TB
 - RAID 0/1 support

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader, supports UHS-II SD card

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 68Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2014: 12.1 hr
MobileMark 2018: 7.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

135W slim tip AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|--------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 700:1 | 45% NTSC | 170° | - |
| 15.6" | FHD | Multi- | IPS | 300 nits | Anti- | 16:9 | 800:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|--------------------|-------|-----|----------|------------|------|--------|-----------------------|------|---------------------------|
| | (1920x1080) | touch | | | glare | | | | | |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 178° | Dolby Vision™, HDR 400 |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device**Keyboard**

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

366.5 x 250 x 22.7 mm (14.43 x 9.84 x 0.89 inches)

Weight^[1]

2.07 kg (4.57 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions

- Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 6. Kensington Security Slot |
| 2. SD card reader | 7. Power connector |
| 3. HDMI 2.0 | 8. Thunderbolt 4 |
| 4. 2x USB 3.2 Gen 1 | 9. Smart card reader * |
| 5. Ethernet (RJ-45) | |

- Notes:
- Ports with * are only available on selected models
 - Nano-SIM card slot on the rear side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-11400H | 6 | 12 | 2.7GHz | 4.5GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-11500H | 6 | 12 | 2.9GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS

Graphics

Graphics

| Graphics | Type | Memory | Boost Clock | TGP | Connector | Max Resolution | Key Features | Remark |
|---------------------------|------------|-----------|-------------|-----|-----------|----------------|--------------|--------|
| Intel UHD Graphics | Integrated | Shared | | | - | - | DirectX® 12 | - |
| NVIDIA® GeForce® GTX 1650 | Discrete | 4GB GDDR6 | - | - | - | - | DirectX 12 | - |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200 non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2x M.2 2280 SSD, up to 2TB each

Storage Slot

Two M.2 2280 PCIe Gen 3 slots for SSD

Storage Type

| Disk Type | Interface | Offering | Security |
|--------------|-----------------|---------------------|----------|
| M.2 2280 SSD | PCIe Gen 3 NVMe | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe Gen 4 NVMe | 2TB | Opal2 |

RAID

RAID 0/1 support

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, Dolby® Audio™

Microphone

- Dual array microphone, near-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 68Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2018: 10 hr

JEITA 2.0: 10.6 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

135W slim tip AC adapter (3-pin)

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 1200:1 | 100% sRGB | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |

| | | | | | | | | | | |
|-------|--------------------|-------------|-----|----------|------------|------|--------|-----------------|------|------------------------|
| 15.6" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 45% NTSC | 170° | - |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 170° | Dolby Vision™, HDR 400 |

Color Calibration

X-Rite Pantone factory color calibration (UHD display)

Touchscreen

- On-cell touch on selected FHD models, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee

In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device**Pen**

None

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

- LED backlight
- No support

UltraNav™

3-button TrackPoint® pointing device and mylar surface multi-touch touchpad

Mechanical**Dimensions (WxDxH)**

366.5 x 250 x 22.7 mm (14.43 x 9.84 x 0.89 inches)

Weight^[1]

2.07 kg (4.58 lbs)

Case Color

Black

Case Material

PC + ABS (top), PC + ABS (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

- Gigabit Ethernet, Intel Ethernet Connection I219-V, supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM, supports Wake-on-LAN

WLAN + Bluetooth™

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

- Nano SIM card, Lenovo Connect 24 months, 4G LTE

- No SIM card inbox

NFC

No support

Ports^[1]**Standard Ports^[2]**

- 2x USB 3.2 Gen 1 (one Always On)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x SD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x Security keyhole

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

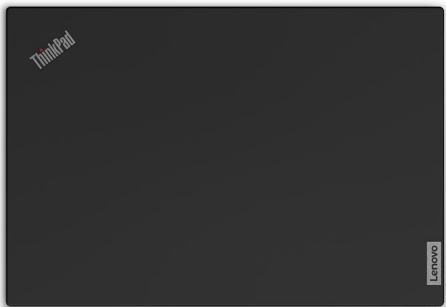
Mil-Spec Test

MIL-STD-810H military test passed

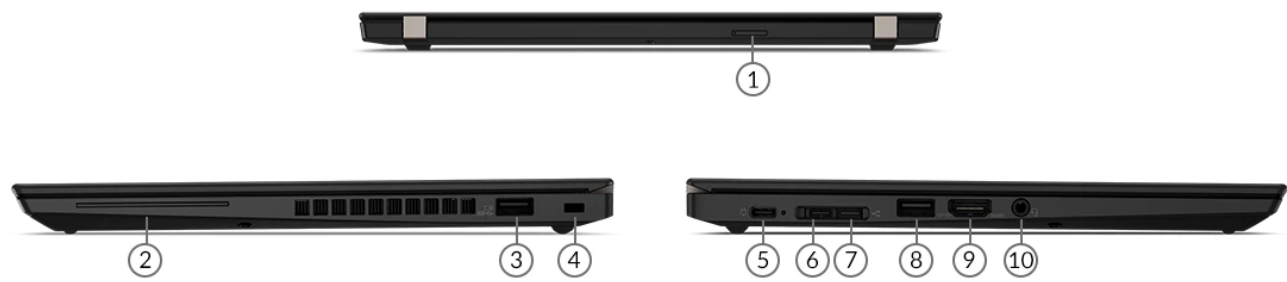
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|------------------------------|-----------------------------------------------|
| 1. Card slot | 6. USB-C 3.2 Gen 2 |
| 2. Smart card reader * | 7. Ethernet extension connector |
| 3. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 4. Kensington Security Slot | 9. HDMI 2.0 |
| 5. USB-C 3.2 Gen 2 | 10. Headphone / microphone combo jack (3.5mm) |

Notes:

- Ports with * are only available on selected models
- Card slot is for microSD card (WLAN model) or nano-SIM + microSD card (WWAN model)
- The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Ryzen 3 PRO 4450U | 4 | 8 | 2.5GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon™ Graphics |
| AMD Ryzen 5 PRO 4650U | 6 | 12 | 2.1GHz | 4.0GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 4750U | 8 | 16 | 1.7GHz | 4.1GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Optical

None

Card Reader

- MicroSD card slot (WLAN model)
- Nano-SIM + microSD card slot (WWAN model)

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 1W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 12.8 hr
MobileMark 2018: 10.35 hr
JEITA 2.0: 13.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | HD | None | TN | 250 nits | Anti- | 16:9 | 300:1 | 45% | 90° | - |

| | | | | | | | | | | |
|-------|-----------------|-------------|-----|----------|------------|------|--------|----------|------|-------------------------|
| | (1366x768) | | | | glare | | | NTSC | | |
| 13.3" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

311.9 x 217.2 x 16.9 mm (12.28 x 8.55 x 0.67 inches)

Weight^[1]

| Models | Weight |
|-----------------------------------------------|--------------------|
| HD / FHD non-touch / FHD Privacy Guard models | 1.29 kg (2.85 lbs) |
| FHD touch models | 1.28 kg (2.84 lbs) |

Case Color

Black

Case Material

PPS / GF (top), magnesium-aluminium (keyboard cover & bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth®^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

DASH

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

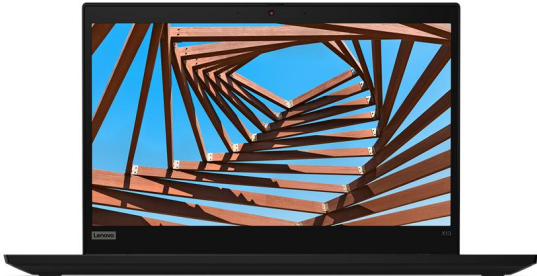
Other Certifications

Mil-Spec Test

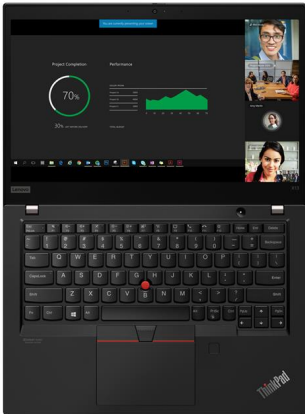
MIL-STD-810G military test passed



AMD



AMD



AMD



AMD

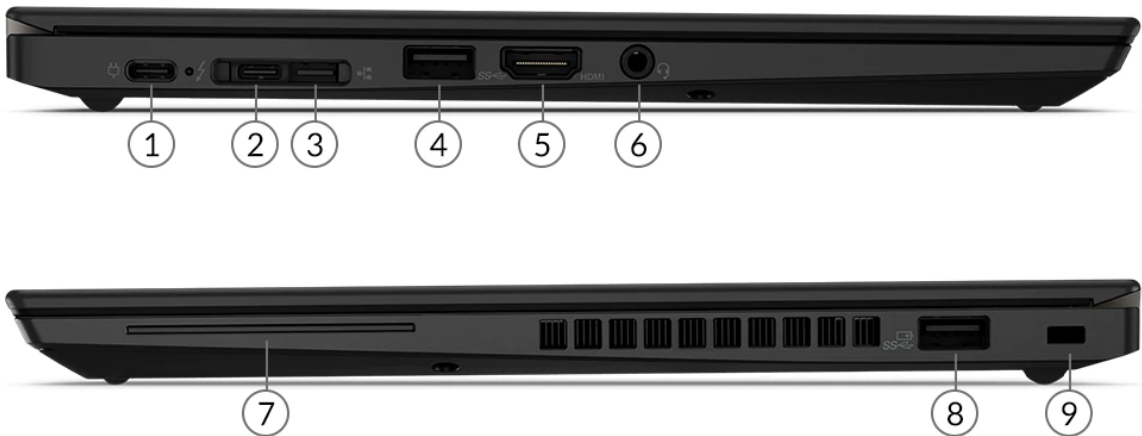


AMD



AMD

OVERVIEW



| | |
|------------------------------------|----------------------------------------------|
| 1. USB-C 3.2 Gen 1 | 6. Headphone / microphone combo jack (3.5mm) |
| 2. USB-C 3.2 Gen 2 / Thunderbolt 3 | 7. Smart card reader * |
| 3. Ethernet extension connector | 8. USB 3.2 Gen 1 (Always On) |
| 4. USB 3.2 Gen 1 | 9. Kensington Security Slot |
| 5. HDMI 1.4b | |

- Notes:
- Ports with * are only available on selected models
 - Card slot on the rear side (not shown on the sample product above) is for microSD card (WLAN model) or nano-SIM + microSD card (WWAN model)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-10110U | 2 | 4 | 2.1GHz | 4.1GHz | 4MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type^[2]

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

- MicroSD card slot (WLAN model)
- Nano-SIM + microSD card slot (WWAN model)

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 1W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 15.9 hr

MobileMark 2018: 10.45 hr

JEITA 2.0: 16 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|--------------------|-------------|-----|----------|------------|------|--------|----------|------|-------------------------|
| 13.3" | HD (1366x768) | None | TN | 250 nits | Anti-glare | 16:9 | 300:1 | 45% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |
| 13.3" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------------------------------------|------------------------------------------------------|
| FHD non-touch models with carbon fiber case | 311.9 x 217.0 x 16.5 mm (12.28 x 8.54 x 0.65 inches) |
| FHD non-touch models with PPS case | 312.0 x 217.2 x 16.9 mm (12.28 x 8.55 x 0.67 inches) |
| HD / FHD touch / FHD Privacy Guard models with PPS case | 311.9 x 217.2 x 16.9 mm (12.28 x 8.55 x 0.67 inches) |

Weight^[1]

| Models | Weight |
|----------------------------------------------------|--------------------|
| FHD non-touch models with Carbon Fiber case | 1.22 kg (2.70 lbs) |
| FHD non-touch models with PPS case | 1.29 kg (2.85 lbs) |
| FHD touch / FHD Privacy Guard models with PPS case | 1.28 kg (2.84 lbs) |
| HD models with PPS case | 1.33 kg (2.93 lbs) |

Case Color

Black

Case Material^[2]

Carbon fiber or PPS (top), magnesium-aluminium (keyboard cover & bottom)

Notes:

- The system weight varies depending on configurations
- Carbon Fiber top cover is for FHD non-touch models only

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension

Adapter Gen 2

- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- Integrated Mobile Broadband 4G LTE, Quectel EM05-CE, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

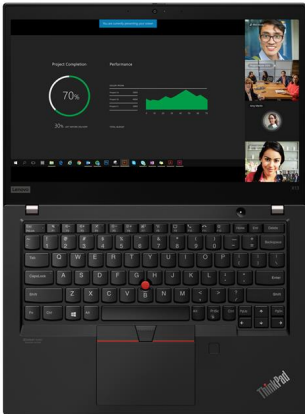
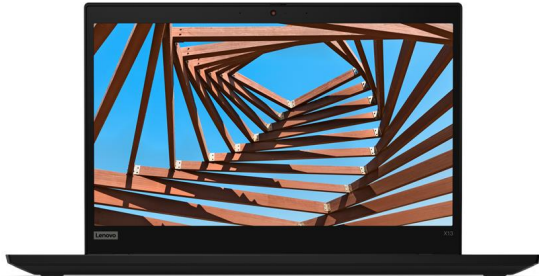
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

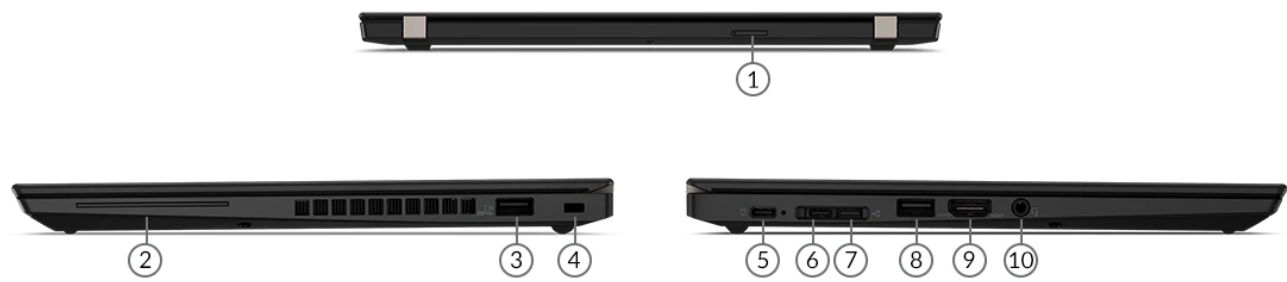
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------|-----------------------------------------------|
| 1. Nano-SIM card slot * | 6. USB-C 3.2 Gen 2 |
| 2. Smart card reader * | 7. Ethernet extension connector |
| 3. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 4. Kensington Nano Security Slot | 9. HDMI 2.0 |
| 5. USB-C 3.2 Gen 2 | 10. Headphone / microphone combo jack (3.5mm) |

- Notes:
- Ports with * are only available on selected models
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|----------------------|
| AMD Ryzen 3 PRO 5450U | 4 | 8 | 2.6GHz | 4.0GHz | 2MB L2 / 8MB L3 | LPDDR4-4266 | AMD Radeon™ Graphics |
| AMD Ryzen 5 5600U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650U | 6 | 12 | 2.3GHz | 4.2GHz | 3MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5850U | 8 | 16 | 1.9GHz | 4.4GHz | 4MB L2 / 16MB L3 | LPDDR4-4266 | AMD Radeon Graphics |

Notes:

1. Ryzen 5 5600U is NOT available in EMEA

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|---------------------|------------|--------|--------------|
| AMD Radeon Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or USB-C (up to 5K@60Hz)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 128GB M.2 2242 SSD or 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

Storage Type^[1]

| Disk Type | Interface | RPM | Offering | Security |
|--------------|------------------------------------|-----|---------------------|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | 128GB | - |
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | 2TB | Opal2 |

Notes:

- 1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

- Integrated Li-Polymer 41Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
- Integrated Li-Polymer 54.7Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

- Model with 41Wh battery:
MobileMark® 2018: 10.7 hr
JEITA 2.0: 13.5 hr
- Model with 54.7Wh battery:
MobileMark 2018: 15.4 hr
JEITA 2.0: 18.1 hr

Notes:

- 1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter

- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-------------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|---------------------------|
| 13.3" | WUXGA (1920x1200) | None | IPS | 300 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | - |
| 13.3" | WUXGA (1920x1200) | None | IPS | 500 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 13.3" | WUXGA (1920x1200) | Multi-touch | IPS | 300 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | - |
| 13.3" | WQXGA (2560x1600) | None | IPS | 400 nits | Anti-glare | 16:10 | 1200:1 | 100% sRGB | 170° | Low power, low blue light |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight^[1]

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Notes:

1. Non-backlit keyboard is only available for the models with black cover

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------------------------|--------------------------------------------------------|
| Models with aluminium top cover | 305.8 x 217.89 x 18.06 mm (12.04 x 8.58 x 0.71 inches) |
| Models with carbon fiber top cover | 305.8 x 217.39 x 18.97 mm (12.04 x 8.56 x 0.75 inches) |
| Models with PPS top cover | 305.8 x 217.06 x 18.19 mm (12.04 x 8.55 x 0.72 inches) |

Weight^[1]

| Models | Weight |
|-------------------------------------------------------------------|--------------------|
| Models with WQXGA display, 41Wh battery, and black PPS top cover | 1.21 kg (2.67 lbs) |
| Models with WQXGA display, 41Wh battery, and storm grey top cover | 1.28 kg (2.82 lbs) |

| | |
|-----------------------------------------------------------------------------|--------------------|
| Models with WQXGA display, 54.7Wh battery, and black PPS top cover | 1.26 kg (2.78 lbs) |
| Models with WQXGA display, 54.7Wh battery, and storm grey top cover | 1.34 kg (2.94 lbs) |
| Models with WUXGA display, 41Wh battery, and black carbon fiber top cover | 1.19 kg (2.62 lbs) |
| Models with WUXGA display, 41Wh battery, and black PPS top cover | 1.25 kg (2.77 lbs) |
| Models with WUXGA display, 41Wh battery, and storm grey top cover | 1.33 kg (2.93 lbs) |
| Models with WUXGA display, 54.7Wh battery, and black carbon fiber top cover | 1.26 kg (2.77 lbs) |
| Models with WUXGA display, 54.7Wh battery, and black PPS top cover | 1.31 kg (2.88 lbs) |
| Models with WUXGA display, 54.7Wh battery, and storm grey top cover | 1.38 kg (3.04 lbs) |

Case Color

- Storm grey
- Villi black

Case Material

- Villi black models: carbon fiber or PPS (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey & WWAN models: aluminium (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey & non-WWAN models: aluminium (top), aluminium (keyboard cover & bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC^[2]

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. NFC is NOT available for the models with storm grey cover

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)

- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

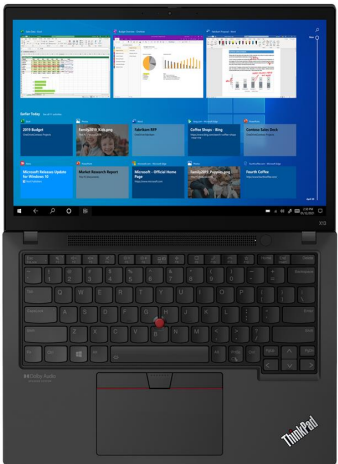
Other Certifications

Mil-Spec Test

Work in progress



AMD



AMD



AMD



AMD

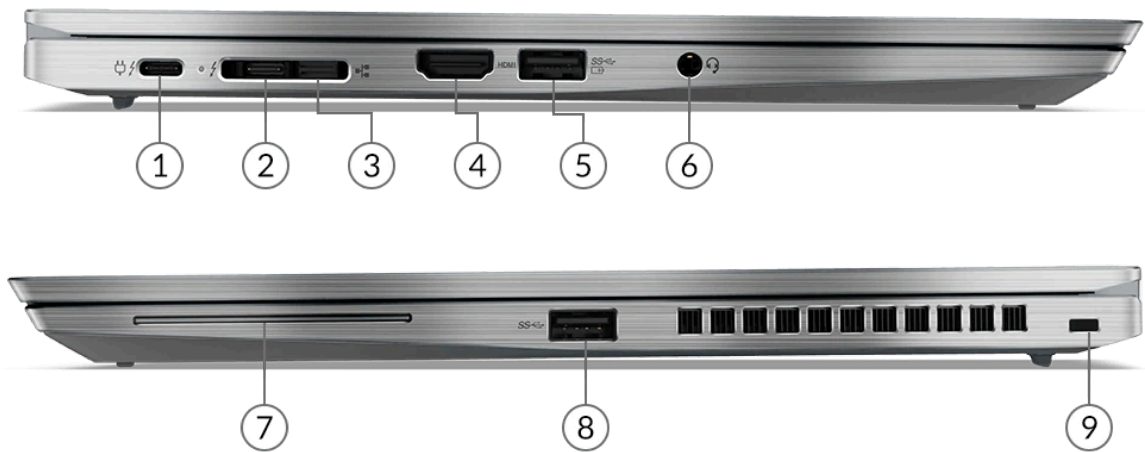


AMD



AMD

OVERVIEW



| | |
|---------------------------------|----------------------------------------------|
| 1. Thunderbolt 4 | 6. Headphone / microphone combo jack (3.5mm) |
| 2. Thunderbolt 4 | 7. Smart card reader * |
| 3. Ethernet extension connector | 8. USB 3.2 Gen 1 |
| 4. HDMI 2.0 | 9. Kensington Nano Security Slot |
| 5. USB 3.2 Gen 1 (Always On) | |

- Notes:
- Ports with * are only available on selected models
 - Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 1, 2 and 3 is side docking connector

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-1115G4 | 2 | 4 | 3.0GHz | 4.1GHz | 6MB | LPDDR4x-3733 | Intel UHD Graphics |
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise LTSC
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |

Notes:

1. Intel Iris Xe Graphics is not available for Intel Core i3 models

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type^[2]

LPDDR4x-4266

- Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
 2. Installed memory is actually 4266MHz, but may run at 3733MHz depending on the memory support capability of processor

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | Security |
|--------------|------------------------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | Opal2 |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

- Integrated Li-Polymer 41Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter
- Integrated Li-Polymer 54.7Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 14.5 hr
JEITA 2.0: 24 hr

- Notes:
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

- Notes:
1. No power adapter is for special bid only

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-------------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|---------------------------|
| 13.3" | WUXGA (1920x1200) | None | IPS | 300 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | - |
| 13.3" | WUXGA (1920x1200) | None | IPS | 500 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 13.3" | WUXGA (1920x1200) | Multi-touch | IPS | 300 nits | Anti-glare | 16:10 | 1000:1 | 72% NTSC | 170° | - |
| 13.3" | WQXGA (2560x1600) | None | IPS | 400 nits | Anti-glare | 16:10 | 1200:1 | 100% sRGB | 170° | Low power, low blue light |

Touchscreen

- On-cell touch, supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

- LED backlight
- No support

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------------------------|--------------------------------------------------------|
| Models with aluminium top cover | 305.8 x 217.89 x 18.06 mm (12.04 x 8.58 x 0.71 inches) |
| Models with carbon fiber top cover | 305.8 x 217.39 x 18.97 mm (12.04 x 8.56 x 0.75 inches) |
| Models with PPS top cover | 305.8 x 217.06 x 18.19 mm (12.04 x 8.55 x 0.72 inches) |

Weight^[1]

| Models | Weight |
|-----------------------------------------------------------------------------|--------------------|
| Models with WQXGA display, 41Wh battery, and black PPS top cover | 1.21 kg (2.67 lbs) |
| Models with WQXGA display, 41Wh battery, and storm grey top cover | 1.28 kg (2.82 lbs) |
| Models with WQXGA display, 54.7Wh battery, and black PPS top cover | 1.26 kg (2.78 lbs) |
| Models with WQXGA display, 54.7Wh battery, and storm grey top cover | 1.34 kg (2.94 lbs) |
| Models with WUXGA display, 41Wh battery, and black carbon fiber top cover | 1.19 kg (2.62 lbs) |
| Models with WUXGA display, 41Wh battery, and black PPS top cover | 1.25 kg (2.77 lbs) |
| Models with WUXGA display, 41Wh battery, and storm grey top cover | 1.33 kg (2.93 lbs) |
| Models with WUXGA display, 54.7Wh battery, and black carbon fiber top cover | 1.26 kg (2.77 lbs) |
| Models with WUXGA display, 54.7Wh battery, and black PPS top cover | 1.31 kg (2.88 lbs) |
| Models with WUXGA display, 54.7Wh battery, and storm grey top cover | 1.38 kg (3.04 lbs) |

Case Color

- Storm grey
- Villi black

Case Material

- Villi black models: carbon fiber or PPS (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey & WWAN models: aluminium (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey & non-WWAN models: aluminium (top), aluminium (keyboard cover & bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

- Touch style fingerprint reader on power button, match-on-chip
- No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- (Optional) Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications^[1]

(Optional) Intel Evo™ Platform

Notes:

1. Intel Evo is NOT available for the models with i3 processor, 41Wh battery, or 128GB storage



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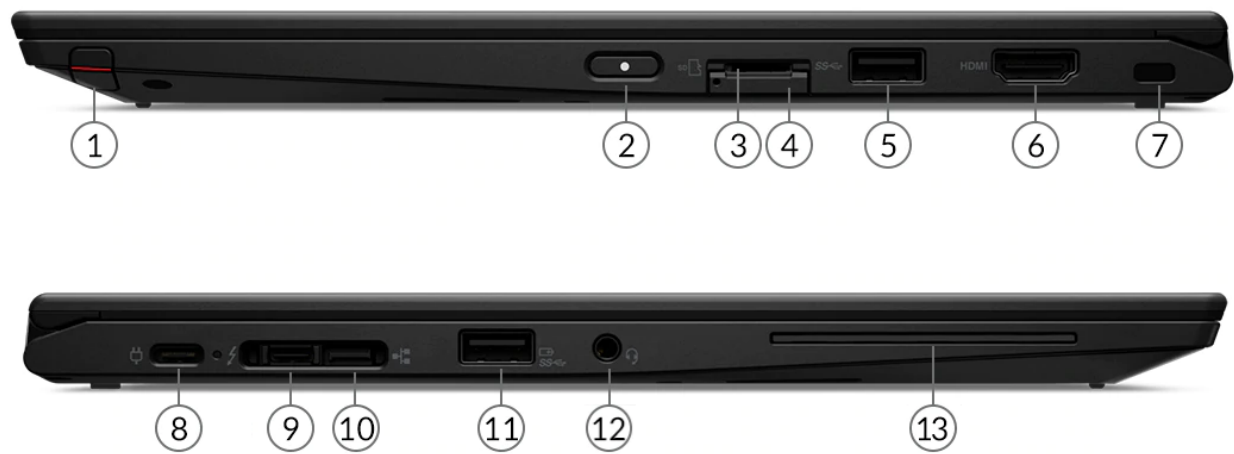


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OVERVIEW



| | |
|-----------------------------|-----------------------------------------------|
| 1. Pen slot | 8. USB-C 3.2 Gen 1 |
| 2. Power button | 9. USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 3. MicroSD card reader | 10. Ethernet extension connector |
| 4. Nano-SIM card slot * | 11. USB 3.2 Gen 1 (Always On) |
| 5. USB 3.2 Gen 1 | 12. Headphone / microphone combo jack (3.5mm) |
| 6. HDMI 1.4b | 13. Smart card reader * |
| 7. Kensington Security Slot | |

- Notes:
- Ports with * are only available on selected models
 - The combination of 8, 9 and 10 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type^[2]

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2666MHz due to processor limitation

Storage

Storage Support

One drive, up to 512GB M.2 2242 SSD or 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

MicroSD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone, far-field

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)
- Gyroscope sensor

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 18.2 hr

MobileMark 2018: 12.05 hr

JEITA 2.0: 16.2 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect | Contrast | Color | Viewing | Key Features |
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|

| | | | | | | Ratio | Ratio | Gamut | Angle | |
|-------|-----------------|-------------|------|----------|------------------------------|-------|-----------|-------------|-------|-------------------------|
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-reflection, Anti-smudge | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 400 nits | Anti-reflection, Anti-smudge | 16:9 | 1500:1 | 72% NTSC | 170° | Low power |
| 13.3" | FHD (1920x1080) | Multi-touch | IPS | 300 nits | Anti-reflection, Anti-smudge | 16:9 | 800:1 | 72% NTSC | 170° | - |
| 13.3" | UHD (3840x2160) | Multi-touch | OLED | 400 nits | Anti-reflection, Anti-smudge | 16:9 | 1000000:1 | 100% DCI-P3 | 170° | - |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch, could reduce the brightness by up to 10%

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- ThinkPad Pen Pro, on-board garaged and rechargeable
- No pen (pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

310.4 x 219 x 15.95 mm (12.22 x 8.62 x 0.63 inches)

Weight^[1]

1.25 kg (2.76 lbs)

Case Color

Black

Case Material

Carbon fiber hybrid (top), carbon fiber hybrid (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth®^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

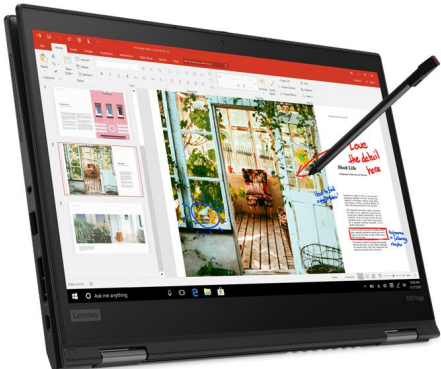
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Pen slot | 6. Thunderbolt 4 |
| 2. Headphone / microphone combo jack (3.5mm) | 7. Thunderbolt 4 |
| 3. Nano-SIM card slot * | 8. HDMI 2.0 |
| 4. USB 3.2 Gen 1 | 9. USB 3.2 Gen 1 (Always On) |
| 5. Kensington Nano Security Slot | 10. Smart card reader * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | Security |
|--------------|------------------------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | Opal2 |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™

Microphone

Dual array microphone, far-field

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)
- Gyroscope sensor

Battery

Battery

Integrated Li-Polymer 52.8Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2018: 12.2 hr

JEITA 2.0: 18.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------|--------|------|------------|------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | WUXGA | Multi- | IPS | 300 nits | Anti-glare | 16:10 | 1000:1 | 100% | 170° | - |

| | | | | | | | | | | |
|-------|-------------------|-------------|-----|----------|------------------------------|-------|--------|-----------|------|---------------------------|
| | (1920x1200) | touch | | | | | | sRGB | | |
| 13.3" | WUXGA (1920x1200) | Multi-touch | IPS | 300 nits | Anti-reflection, Anti-smudge | 16:10 | 1000:1 | 100% sRGB | 170° | - |
| 13.3" | WUXGA (1920x1200) | Multi-touch | IPS | 500 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | ThinkPad® Privacy Guard |
| 13.3" | WQXGA (2560x1600) | Multi-touch | IPS | 400 nits | Anti-reflection, Anti-smudge | 16:10 | 1200:1 | 100% sRGB | 170° | Low power, low blue light |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- Lenovo Integrated Pen, on-board garaged and rechargeable
- No pen (pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

305 x 213.9 x 15.39 mm (12.0 x 8.42 x 0.61 inches)

Weight^[1]

1.2 kg (2.65 lbs)

Case Color

Black

Case Material

Carbon fiber hybrid (top), carbon fiber hybrid (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- No support

SIM Card

ThinkPad X13 Yoga Gen 2 (Intel)

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- (Optional) Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO

- RoHS compliant

Other Certifications

Mil-Spec Test

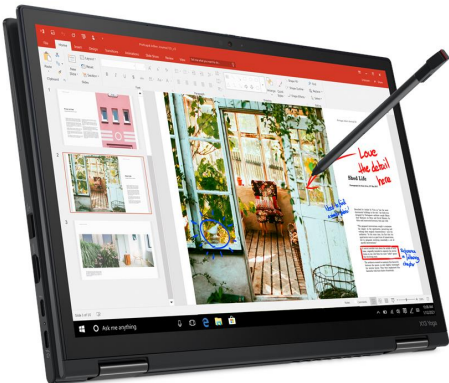
MIL-STD-810H military test passed

Other Certifications

(Optional) Intel Evo™ Platform



intel



intel



intel



intel

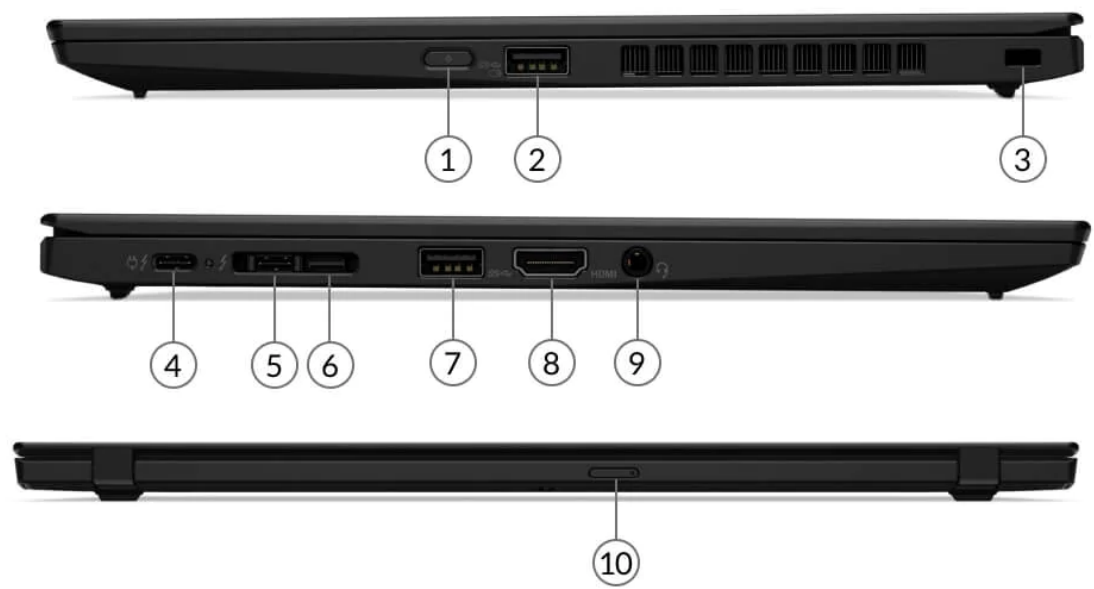


intel



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OVERVIEW



| | |
|------------------------------------|----------------------------------------------|
| 1. Power button | 6. Ethernet extension connector |
| 2. USB 3.2 Gen 1 (Always On) | 7. USB 3.2 Gen 1 |
| 3. Kensington Security Slot | 8. HDMI 1.4b |
| 4. USB-C 3.2 Gen 2 / Thunderbolt 3 | 9. Headphone / microphone combo jack (3.5mm) |
| 5. USB-C 3.2 Gen 2 / Thunderbolt 3 | 10. Nano-SIM card slot * |

- Notes:
- Ports with * are only available on selected models
 - The combination of 4, 5 and 6 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Fedora Linux
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@24Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR3-2133

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, USI 4551-513711-00 codec

Speakers

Stereo speakers, 2W x2 and 0.8W x2, Dolby® Atmos®

Microphone

Four array microphones, 360° far-field

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus

Battery

Battery

Integrated Li-Polymer 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 19.5 hr

MobileMark 2018: 13.8 hr

JEITA 2.0: 19.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|---------------|-------------------------|
| 14.0" | FHD (1920x1080) | None | IPS | 400 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 400 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |

| | | | | | | | | | | |
|-------|---------------------|------|-----|----------|------------|------|--------|------------|------|------------------------|
| 14.0" | WQHD (2560x1440) | None | IPS | 300 nits | Anti-glare | 16:9 | 1000:1 | 72% NTSC | 170° | - |
| 14.0" | UHD (3840x2160) | None | IPS | 500 nits | Glossy | 16:9 | 1500:1 | 90% DCI-P3 | 170° | Dolby Vision™, HDR 400 |

Touchscreen

- Capacitive-type multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. WQHD is not available in EMEA

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------|---------------------------------------------------|
| FHD Privacy Guard models | 323 x 217 x 15.4 mm (12.72 x 8.54 x 0.61 inches) |
| Non-Privacy Guard models | 323 x 217 x 14.95 mm (12.72 x 8.54 x 0.59 inches) |

Weight^[1]

| Models | Weight |
|--------------------------|--------------------|
| FHD Privacy Guard models | 1.21 kg (2.66 lbs) |
| Non-Privacy Guard models | 1.09 kg (2.4 lbs) |

Case Color

- Black, paint
- Black, weave

Case Material

Carbon fiber (top), magnesium alloy (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth®^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- Integrated Mobile Broadband 4G LTE, Quectel EM05-CE, M.2 card
- No support

SIM Card

- Gemalto eSIM
- Nano SIM card, Lenovo Connect 4 months, 4G LTE
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

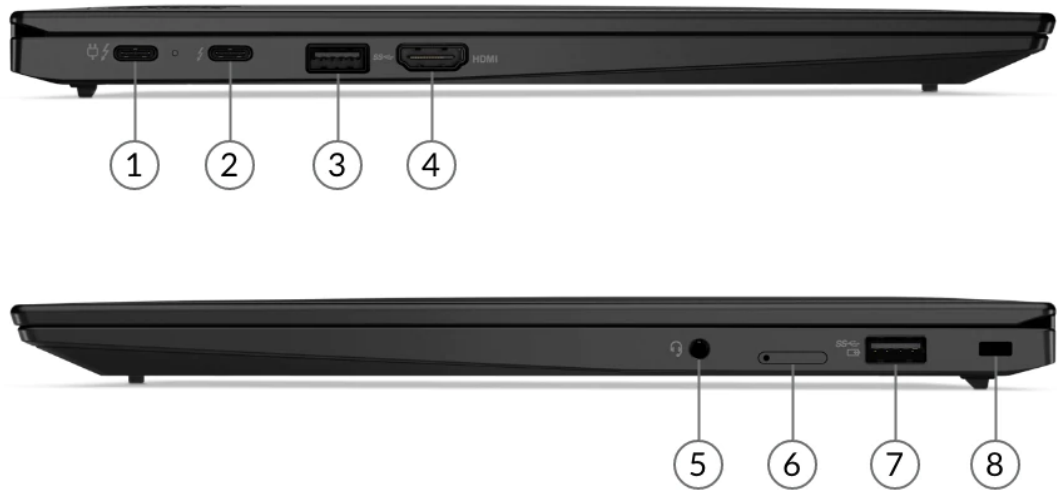
MIL-STD-810G military test passed

Other Certifications

Athena certified



OVERVIEW



| | |
|------------------|----------------------------------------------|
| 1. Thunderbolt 4 | 5. Headphone / microphone combo jack (3.5mm) |
| 2. Thunderbolt 4 | 6. Nano-SIM card slot * |
| 3. USB 3.2 Gen 1 | 7. USB 3.2 Gen 1 (Always On) |
| 4. HDMI 2.0 | 8. Kensington Nano Security Slot |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Fedora Linux
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, 8-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | Security |
|--------------|------------------------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | Opal2 |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, 2W x2 and 0.8W x2, Dolby® Atmos®

Microphone

Four array microphones, 360° far-field

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 21.3 hr
MobileMark 2018: 16.7 hr
JEITA 2.0: 26.0 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect | Contrast | Color | Viewing | Key Features |
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|

| | | | | | | Ratio | Ratio | Gamut | Angle | |
|-------|--------------------|-------------|-----|----------|------------|-------|--------|-------------|-------|------------------------------------|
| 14.0" | WUXGA (1920x1200) | None | IPS | 400 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, low blue light |
| 14.0" | WUXGA (1920x1200) | Multi-touch | IPS | 400 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, low blue light |
| 14.0" | WUXGA (1920x1200) | Multi-touch | IPS | 500 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, ThinkPad® Privacy Guard |
| 14.0" | WQUXGA (3840x2400) | None | IPS | 500 nits | Glossy | 16:10 | 1500:1 | 100% DCI-P3 | 170° | Low blue light |

Touchscreen

- Capacitive-type on-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. In marketing terms, WUXGA is FHD+ and WQUXGA is UHD+

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

315 x 221.6 x 14.9 mm (12.4 x 8.72 x 0.59 inches)

Weight^[1]

1.133 kg (2.49 lbs)

Case Color

- Black, paint
- Black, weave

Case Material

Carbon fiber (top), magnesium alloy (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello

- (Optional) Privacy Guard with Privacy Alert
- (Optional) Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty^[1]

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for special bid only

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0

- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

- (Optional) Intel Evo™ Platform
- (Optional) TÜV Rheinland Low Blue Light
- TÜV Rheinland Dynamic Privacy Filter (DPF) Certification



intel



intel



intel



intel

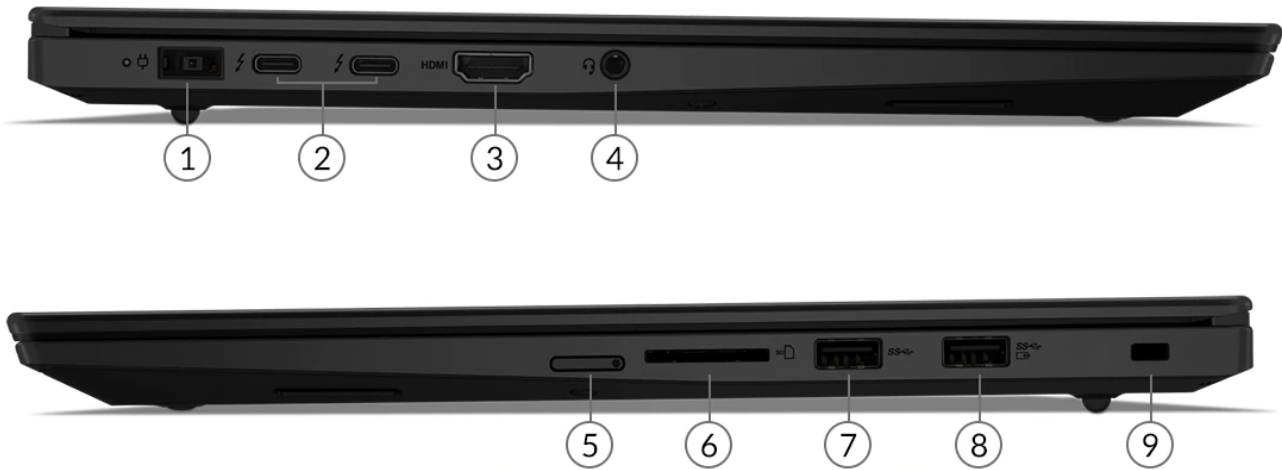


intel



intel

OVERVIEW



| | |
|----------------------------------------------|------------------------------|
| 1. Power connector | 6. Card reader |
| 2. 2x USB-C 3.2 Gen 2 / Thunderbolt 3 | 7. USB 3.2 Gen 1 |
| 3. HDMI 2.0 | 8. USB 3.2 Gen 1 (Always On) |
| 4. Headphone / microphone combo jack (3.5mm) | 9. Kensington Security Slot |
| 5. Nano-SIM card slot * | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10400H | 4 | 8 | 2.6GHz | 4.6GHz | 8MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10750H | 6 | 12 | 2.6GHz | 5.0GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i7-10850H | 6 | 12 | 2.7GHz | 5.1GHz | 12MB | DDR4-2933 | Intel UHD Graphics |
| Core i9-10885H | 8 | 16 | 2.4GHz | 5.3GHz | 16MB | DDR4-2933 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------------------------------|------------|-----------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® GTX 1650 Ti with Max-Q Design | Discrete | 4GB GDDR6 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz for hybrid model / 4K@60Hz for integrated model)

Chipset

Chipset

Intel WM490 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

DDR4-2933

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz but run at 2933MHz due to processor limitation

Storage

Storage Support

Up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB
- RAID 0/1 support

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

RAID
RAID 0/1 support

Removable Storage

Optical
None

Card Reader
SD card reader, supports UHS-II SD card

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers
Stereo speakers, 2W x2, Dolby® Atmos®, 3-magnet

Microphone^[1]

- Dual array microphone
- No microphone

Camera^[2]

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus
- No camera

Notes:

- No microphone is for speical bid only
- No camera is for speical bid only

Battery

Battery
Integrated Li-Polymer 80Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]
MobileMark® 2014: 15.6 hr
MobileMark 2018: 11.8 hr

Notes:

- All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 135W slim tip AC adapter
- 170W slim tip AC adapter

Notes:

- 170W for i9-10885H models only

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect | Contrast | Color | Viewing | Key |
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|-----|
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|-----|

| | | | | | | Ratio | Ratio | Gamut | Angle | Features |
|-------|-----------------|-------------|------|-------------------------------|--------------------------------|-------|----------|-----------------|-------|--------------------|
| 15.6" | FHD (1920x1080) | None | IPS | 300 nits | Anti-glare | 16:9 | 700:1 | 72% NTSC | 170° | - |
| 15.6" | FHD (1920x1080) | None | IPS | 500 nits | Anti-glare | 16:9 | 800:1 | 72% NTSC | 170° | Dolby Vision™, HDR |
| 15.6" | UHD (3840x2160) | None | IPS | 600 nits | Anti-glare | 16:9 | 1400:1 | 100% Adobe® RGB | 178° | Dolby Vision, HDR |
| 15.6" | UHD (3840x2160) | Multi-touch | OLED | SDR 400nit, HDR 500nit (peak) | Anti-reflection Anti-smudge | 16:9 | 100000:1 | 100% DCI-P3 | 170° | Dolby Vision, HDR |

Color Calibration

- X-Rite Pantone factory color calibration (UHD display)
- No color calibration

Touchscreen

- Capacitive-type multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode

Input Device

Pen

- Lenovo Pen Pro
- No pen (pen needs to be purchased separately)
- No support (non-touch display doesn't support pen input)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------|
| Non-touch models | 361.8 x 245.7 x18.4 mm (14.24 x 9.67 x 0.72 inches) |
| Touch models | 361.8 x 245.7 x18.7 mm (14.24 x 9.67 x 0.74 inches) |

Weight^[1]

| Models | Weight |
|------------------|-------------------|
| Non-touch models | 1.7 kg (3.75 lbs) |
| Touch models | 1.81 kg (4.0 lbs) |

Case Color

- Black, paint
- Black, weave

Case Material

Carbon fiber hybrid (top), aluminium alloy (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort™ 1.2, for integrated graphics models)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.4, for discrete graphics models)
- 1x HDMI 2.0
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on keyboard bezel, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

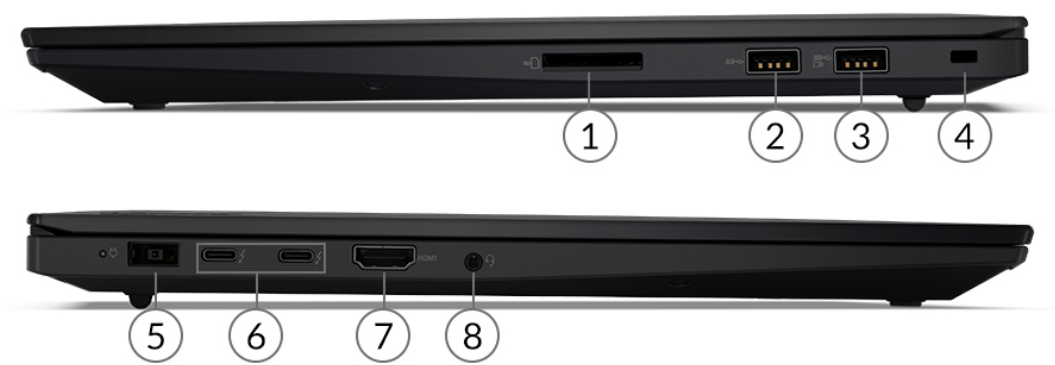
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



OVERVIEW



| | |
|----------------------------------|----------------------------------------------|
| 1. SD card reader | 5. Power connector |
| 2. USB 3.2 Gen 1 | 6. 2x Thunderbolt 4 |
| 3. USB 3.2 Gen 1 (Always On) | 7. HDMI 2.0 / 2.1 |
| 4. Kensington Nano Security Slot | 8. Headphone / microphone combo jack (3.5mm) |

- Notes:
- Nano-SIM card slot on the right side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i7-11800H | 8 | 16 | 2.3GHz | 4.6GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i7-11850H | 8 | 16 | 2.5GHz | 4.8GHz | 24MB | DDR4-3200 | Intel UHD Graphics |
| Core i9-11950H | 8 | 16 | 2.6GHz | 5.0GHz | 24MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|-------------------------------|------------|------------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| NVIDIA® GeForce® RTX™ 3050 Ti | Discrete | 4GB GDDR6 | DirectX 12 |
| NVIDIA GeForce RTX 3060 | Discrete | 8GB GDDR6 | DirectX 12 |
| NVIDIA GeForce RTX 3070 | Discrete | 8GB GDDR6 | DirectX 12 |
| NVIDIA GeForce RTX 3080 | Discrete | 16GB GDDR6 | DirectX 12 |

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI® (up to 4K@60Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel WM590 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

- Model with Intel UHD Graphics or RTX 3050 Ti Graphics:
up to two drives, 2x M.2 2280 SSD

- M.2 2280 SSD up to 2TB
- RAID 0/1 support
- Model with RTX 3060/3070/3080 Graphics:
one drive, up to 2TB M.2 2280 SSD

Storage Slot^[1]

- Model with Intel UHD Graphics or RTX 3050 Ti Graphics: two M.2 slots
 - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2280 SSD
 - One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD
- Model with RTX 3060/3070/3080 Graphics: one M.2 slot
 - One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | Offering | Security |
|--------------|------------------------------------|---------------------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | 256GB / 512GB / 1TB | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | 512GB / 1TB / 2TB | Opal2 |

RAID^[2]

RAID 0/1 support

Notes:

1. M.2 PCIe Gen 4 SSD in the M.2 PCIe Gen 3 slot is downgraded to PCIe Gen 3 performance
2. Both SSD drives work at PCIe Gen 3 performance in RAID mode

Removable Storage

Optical

None

Card Reader

SD card reader, supports UHS-II SD card

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, 2W x2, Dolby® Atmos®

Microphone^[1]

- Dual array microphone, far-field
- No microphone

Camera^[2]

- 1080p, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Notes:

1. No microphone is for speical bid only
2. No camera is for speical bid only

Battery

Battery

Integrated Li-Polymer 90Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2018: 10.7 hr
JEITA 2.0: 12.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter^[1]

- 135W slim tip AC adapter
- 170W slim tip AC adapter
- 230W slim tip AC adapter

Notes:

1. 135W for Intel UHD Graphics, 170W for RTX 3050 Ti Graphics, and 230W for RTX 3060/3070/3080 Graphics

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|--------------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|----------------------------------------|
| 16.0" | WQXGA (2560x1600) | None | IPS | 400 nits | Anti-glare | 16:10 | 1200:1 | 100% sRGB | 170° | Low blue light |
| 16.0" | WQUXGA (3840x2400) | None | IPS | 600 nits | Anti-glare | 16:10 | 1500:1 | 100% Adobe® | 170° | Low blue light, Dolby Vision™, HDR 400 |
| 16.0" | WQUXGA (3840x2400) | Multi-touch | IPS | 600 nits | Anti-reflection, Anti-smudge | 16:10 | 1500:1 | 100% Adobe | 170° | Low blue light, Dolby Vision, HDR 400 |

Color Calibration

- X-Rite Pantone factory color calibration (WQUXGA display)
- No color calibration

Touchscreen

- Capacitive-type multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

2. In marketing terms, WQXGA is QHD+ and WQUXGA is UHD+
WQXGA display comes with black paint top cover only
WQUXGA display comes with black weave top cover only

Input Device

Pen

- Lenovo Precision Pen 2
- No pen (pen needs to be purchased separately)
- No support (non-touch display doesn't support pen input)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|-----------------------------------------------------|
| Non-touch models | 359.5 x 253.8 x 17.7 mm (14.15 x 9.99 x 0.7 inches) |

| | |
|--------------|------------------------------------------------------|
| Touch models | 359.5 x 253.8 x 18.2 mm (14.15 x 9.99 x 0.72 inches) |
|--------------|------------------------------------------------------|

Weight^[1]

| Models | Weight |
|------------------|--------------------|
| Non-touch models | 1.81 kg (3.99 lbs) |
| Touch models | 1.86 kg (4.1 lbs) |

Case Color

- Black, paint
- Black, weave

Case Material

Carbon fiber hybrid (top), aluminium alloy (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. 6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation
Bluetooth 5.2 is supported with driver version 22.30 and later
2. WWAN is not available for the models with RTX 3060/3070/3080 graphics

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x SD card reader
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

Optional Ports

- 1x Nano-SIM card slot (WWAN model)
- 1x HDMI 2.0 (model with integrated graphics)
- 1x HDMI 2.1 (model with discrete graphics)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- Lenovo USB-C to DisplayPort Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty^[1]

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for special bid only

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

Work in progress



intel



intel



intel



intel



intel



intel

OVERVIEW



| | |
|-----------------------|-------------------------|
| 1. 2x USB-C 3.2 Gen 2 | 2. Nano-SIM card slot * |
|-----------------------|-------------------------|

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Core™ Processor with Intel Hybrid Technology

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|-------------------------|--------------------|
| Core i5-L16G7 | 5 | 5 | 1.4GHz | 3.0GHz | 4MB | LPDDR4x-4266 POP Memory | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via USB-C (up to 3840x2160@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266, PoP (Package on Package) memory

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 1TB M.2 2242 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, 1W x2, Dolby® Atmos®

Microphone

Four array microphones

Camera

IR & 5.0-megapixel hybrid, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)
- Gyroscope sensor

Battery

Battery

Integrated Li-Polymer 50Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Max Battery Life^[1]

MobileMark® 2018: 8.5 hr

Video Playback: 10.6 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

65W USB-C slim AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------------|-------------|--------------|------------|------------------|--------------|----------------|-------------|---------------|--------------|
| 13.3" | QXGA (2048x1536) | Multi-touch | Folding OLED | 300 nits | Anti-fingerprint | 4:3 | 5000:1 | 95% DCI-P3 | 170° | - |

Touchscreen

On-cell touch, supports 10-point touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- Lenovo Mod Pen
- Lenovo Pen Pro
- No pen (pen needs to be purchased separately)

Keyboard

Lenovo Fold Mini Keyboard, Bluetooth® pairing, with a pen loop (left side), magnetically attachable to X1 Fold (the side without camera), wireless charging when closed inside folded device or charging via micro USB cable

Keyboard Backlight

No support

Touchpad

- Glass surface touchpad on Lenovo Fold Mini Keyboard, 2-finger scrolling support
- No touchpad

Mechanical**Dimensions (WxDxH)**

Folded: 158 x 235.6 x 27.8 mm (6.22 x 9.28 x 1.09 inches)

Unfolded: 299 x 235.6 x 11.3 mm (11.77 x 9.28 x 0.44 inches)

Weight^[1]

0.999 kg (2.2 lbs)

Case Color

Black

Case Material

Magnesium alloy + authentic leather (top), magnesium alloy + authentic leather (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY**Network****Onboard Ethernet**

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]**Standard Ports^[2]**

2x USB-C 3.2 Gen 2 (support data transfer, Power Delivery and DisplayPort™ 1.2)

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Smart Card Reader

No smart card reader

Fingerprint Reader

No fingerprint reader

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year + 2-year depot service
- 3-year (1-yr battery) depot service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 10% to 90% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 10% to 90% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo Powered USB-C Travel Hub
- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

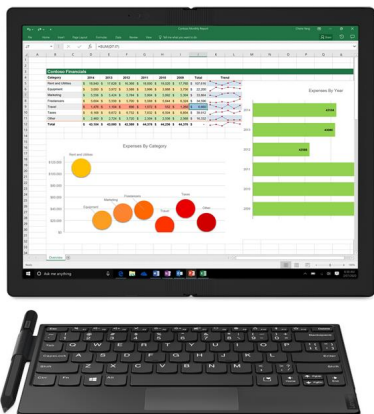
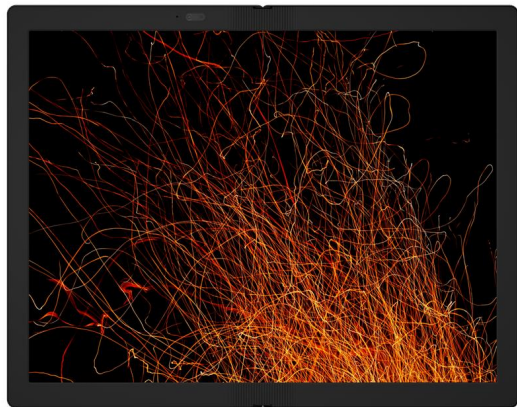
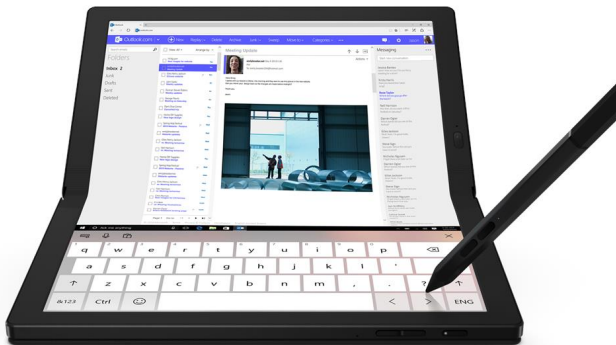
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

Athena certified



OVERVIEW



| | |
|----------------------------------------------|------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 3. Thunderbolt 4 |
| 2. Thunderbolt 4 | 4. Power button |

- Notes:
- Optional nano-SIM card slot on the rear side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1130G7 | 4 | 8 | 1.8GHz | 4.0GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1140G7 | 4 | 8 | 1.8GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1160G7 | 4 | 8 | 2.1GHz | 4.4GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1180G7 | 4 | 8 | 2.2GHz | 4.6GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via Thunderbolt™ (5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[2]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. 8GB memory is NOT available in EMEA

Storage

Storage Support

One drive, up to 1TB M.2 2242 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|-----------|-----------|-----|----------|
|-----------|-----------|-----|----------|

| | | | |
|--------------|------------------------|---|---|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
|--------------|------------------------|---|---|

Removable Storage

- Optical
- None
- Card Reader
- No card reader

Multi-Media

- Audio Chip
- High Definition (HD) Audio, Realtek® ALC3306 codec
- Speakers
- Stereo speakers, 2W x2 woofers and 1W x2 tweeters, Dolby® Atmos®
- Microphone
- Four array microphones, 360° far-field
- Camera
- IR & 720p hybrid, with privacy shutter, fixed focus

Battery

- Battery
- Integrated Li-Polymer 48Wh battery, supports Rapid Charge (charge up to 80% in 1hr)
- Max Battery Life^[1]
- MobileMark® 2018: 13.6 hr
- JEITA 2.0: 22.87 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

- Power Adapter^[1]
- 65W USB-C slim AC adapter
 - No power adapter

Notes:

1. No power adapter is for special bid only

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|----------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|--------------|
| 13.0" | 2K (2160x1350) | None | IPS | 450 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power |
| 13.0" | 2K (2160x1350) | Multi-touch | IPS | 450 nits | Anti-reflection, Anti-smudge | 16:10 | 1000:1 | 100% sRGB | 170° | Low power |

- Touchscreen
- Capacitive-type on-cell multi-touch, supports 10-point touch
 - Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|----------------------------------------------------------------|
| Non-touch models | 292.8x 207.7 x 13.87-16.7 mm (11.53 x 8.18 x 0.55-0.66 inches) |
| Touch models | 292.9x 207.8 x 14.27-17.2 mm (11.53 x 8.18 x 0.56-0.68 inches) |

Weight^[1]

| Models | Weight |
|-----------------------------|-------------------|
| Non-touch with Wi-Fi models | 907 g (1.99 lbs) |
| Non-touch with WWAN models | 939 g (2.07lbs) |
| Touch with Wi-Fi models | 969 g (2.14 lbs) |
| Touch with WWAN models | 1001 g (2.21 lbs) |

Case Color

- Black, paint
- Black, weave

Case Material

Carbon fiber (top), magnesium alloy (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Wireless WAN upgradable to 4G or 5G
- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions

Bluetooth 5.2 is supported with driver version 22.30 and later

2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
 - USB 2.0: 480 Mbit/s;
 - USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
 - USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
 - USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
 - Thunderbolt 3: 40 Gbit/s;
 - FireWire 400: 400 Mbit/s;
 - FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Firmware Resiliency 2.0

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C Port Replicator
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

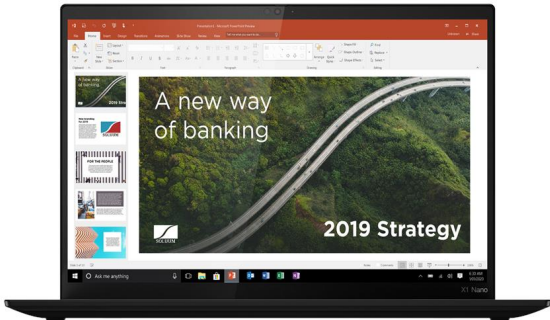
Other Certifications

Mil-Spec Test

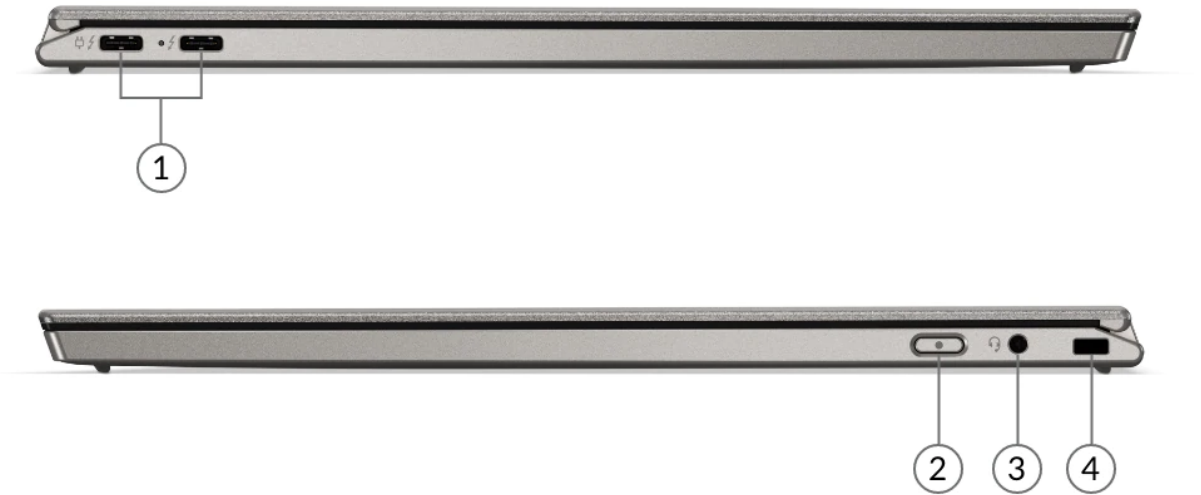
MIL-STD-810H military test passed

Other Certifications

(Optional) Intel Evo™ Platform



OVERVIEW



| | |
|---------------------|----------------------------------------------|
| 1. 2x Thunderbolt 4 | 3. Headphone / microphone combo jack (3.5mm) |
| 2. Power button | 4. Kensington Nano Security Slot |

- Notes:
- Optional nano-SIM card slot on the left side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1130G7 | 4 | 8 | 1.8GHz | 4.0GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1140G7 | 4 | 8 | 1.8GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1160G7 | 4 | 8 | 2.1GHz | 4.4GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1180G7 | 4 | 8 | 2.2GHz | 4.6GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via Thunderbolt™ (5120x3200@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[2]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR4x-4266, PoP (Package on Package) memory

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. 8GB memory is NOT available in EMEA

Storage

Storage Support

One drive, up to 1TB M.2 2242 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical
None

Card Reader
No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC3286 codec

Speakers
Stereo speakers, 2W x2, optimized with Dolby® Atmos®

Microphone
Four array microphones

Camera
IR & 720p hybrid, with privacy shutter, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)
- Gyroscope sensor
- ToF sensor

Battery

Battery
Integrated Li-Polymer 44.5Wh battery

Max Battery Life^[1]
MobileMark® 2018: 11.7 hr
JEITA 2.0: 16.8 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter
65W USB-C slim AC adapter

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|---------------|
| 13.5" | QHD (2256x1504) | Multi-touch | IPS | 450 nits | Anti-reflection, Anti-smudge | 3:2 | 1200:1 | 72% NTSC | 170° | Dolby Vision™ |

Touchscreen
Capacitive-type multi-touch, supports 10-point touch

Multi-mode
Laptop, tent, stand and tablet modes supported by 360° hinge

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

- Pen
- Lenovo Precision Pen, magnetically attached to the system
 - No pen (pen needs to be purchased separately)

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

297.5 x 232.7 x 11.5 mm (11.71 x 9.16 x 0.45 inches)

Weight^[1]

| Models | Weight |
|-------------|--------------------|
| WLAN models | 1.15 kg (2.54 lbs) |
| WWAN models | 1.18 kg (2.60 lbs) |

Case Color

Titanium

Case Material

Titanium + carbon fiber (top), magnesium-aluminium (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

- Gemalto eSIM
- No SIM card inbox

NFC

No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]

Standard Ports^[2]

- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo USB-C to HDMI® Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on the top right of keyboard bezel with Prometheus slim type sensor, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- IR camera for Windows Hello
- Human Presence Detection

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- Lenovo USB-C Port Replicator
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

(Optional) Intel Evo™ Platform



intel



intel



intel



intel

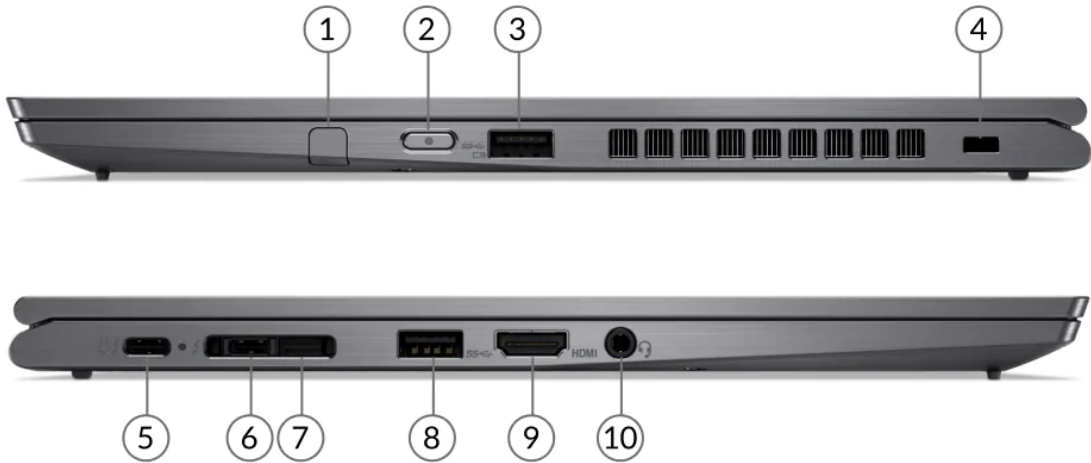


intel



intel

OVERVIEW



| | |
|------------------------------------|-----------------------------------------------|
| 1. Pen slot | 6. USB-C 3.2 Gen 2 / Thunderbolt 3 |
| 2. Power button | 7. Ethernet extension connector |
| 3. USB 3.2 Gen 1 (Always On) | 8. USB 3.2 Gen 1 |
| 4. Kensington Security Slot | 9. HDMI 1.4b |
| 5. USB-C 3.2 Gen 2 / Thunderbolt 3 | 10. Headphone / microphone combo jack (3.5mm) |

- Notes:
- Optional nano-SIM card slot on the rear side (not shown on the sample product above)
 - The combination of 5, 6 and 7 is side docking connector

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i5-10210U | 4 | 8 | 1.6GHz | 4.2GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i5-10310U | 4 | 8 | 1.7GHz | 4.4GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10510U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10610U | 4 | 8 | 1.8GHz | 4.9GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics |
| Core i7-10710U | 6 | 12 | 1.1GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics |
| Core i7-10810U | 6 | 12 | 1.1GHz | 4.9GHz | 12MB | DDR4-2666 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|--------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4K@24Hz) or Thunderbolt™ (up to 5K@60Hz)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR3-2133

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD, optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, USI 4551-513711-00 codec

Speakers

Stereo speakers, 2W x2 and 0.8W x2, Dolby® Atmos®

Microphone

Four array microphones, 360° far-field

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p hybrid, with ThinkShutter, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor
- Ambient light sensor (ALS)
- e-Compass
- Gyroscope sensor

Battery

Battery

Integrated Li-Polymer 51Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 19.3 hr
MobileMark 2018: 13.0 hr
JEITA 2.0: 19.3 hr

Notes:

- All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|
|------|------------|-------|------|------------|---------|--------------|----------------|-------------|---------------|--------------|

| | | | | | | | | | | |
|-------|---------------------|-------------|-----|----------|--------------------------------|------|--------|------------|------|-------------------------|
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 400 nits | Anti-reflection Anti-smudge | 16:9 | 700:1 | 72% NTSC | 170° | Low power |
| 14.0" | FHD (1920x1080) | Multi-touch | IPS | 500 nits | Anti-reflection Anti-smudge | 16:9 | 1000:1 | 72% NTSC | 170° | ThinkPad® Privacy Guard |
| 14.0" | WQHD (2560x1440) | Multi-touch | IPS | 300 nits | Anti-reflection Anti-smudge | 16:9 | 1000:1 | 72% NTSC | 170° | - |
| 14.0" | UHD (3840x2160) | Multi-touch | IPS | 500 nits | Anti-reflection Anti-smudge | 16:9 | 1500:1 | 90% DCI-P3 | 170° | Dolby Vision™, HDR 400 |

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. WQHD is not available in EMEA

Input Device

Pen

ThinkPad Pen Pro, on-board garaged and rechargeable

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------|---------------------------------------------------|
| Non-Privacy Guard models | 323 x 218 x 15.5 mm (12.71 x 8.58 x 0.61 inches) |
| Privacy Guard models | 323 x 218 x 15.95 mm (12.71 x 8.58 x 0.63 inches) |

Weight^[1]

| Models | Weight |
|--------------------------|--------------------|
| Non-Privacy Guard models | 1.36 kg (2.99 lbs) |
| Privacy Guard models | 1.47 kg (3.24 lbs) |

Case Color

Iron grey

Case Material

Aluminium (top), magnesium (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- No support

SIM Card

- Gemalto eSIM
- Nano SIM card, Lenovo Connect 4 months, 4G LTE
- No SIM card in box

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later
2. For non-WWAN model, it means the model is NOT WWAN upgradable

Ports^[1]

Standard Ports^[2]

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.2)
- 1x HDMI 1.4b
- 1x Ethernet extension connector
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable

- Lenovo HDMI to VGA Monitor Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- Hard disk password
- Self-healing BIOS

Other Security

- ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES

Bundled Accessories

Bundled Accessories

- ThinkPad Ethernet Extension Adapter Gen 2
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

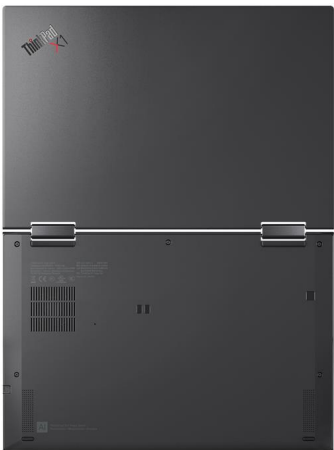
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

Other Certifications

Athena certified



OVERVIEW



| | |
|------------------|----------------------------------------------|
| 1. Thunderbolt 4 | 5. Pen slot |
| 2. Thunderbolt 4 | 6. Headphone / microphone combo jack (3.5mm) |
| 3. USB 3.2 Gen 1 | 7. USB 3.2 Gen 1 (Always On) |
| 4. HDMI 2.0 | 8. Kensington Nano Security Slot |

- Notes:
- Optional nano-SIM card slot on the right side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-1135G7 | 4 | 8 | 2.4GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1145G7 | 4 | 8 | 2.6GHz | 4.4GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1165G7 | 4 | 8 | 2.8GHz | 4.7GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1185G7 | 4 | 8 | 3.0GHz | 4.8GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel Iris Xe Graphics | Integrated | Shared | DirectX® 12 |

Monitor Support

Monitor Support^[1]

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:

1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, 8-channel

Memory Type

LPDDR4x-4266

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 2TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD

Storage Type

| Disk Type | Interface | Offering | Security |
|--------------|------------------------------------|----------|----------|
| M.2 2280 SSD | PCIe NVMe, PCIe x4 | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 4.0 x4 Performance | - | Opal2 |

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, 2W x2 and 0.8W x2, Dolby® Atmos®

Microphone

Four array microphones, 360° far-field

Camera

- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

Sensor

Sensors

- Accelerometer (G) sensor
- Proximity (P) sensor

Battery

Battery

Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life^[1]

MobileMark® 2014: 21.0 hr
MobileMark 2018: 16.1 hr
JEITA 2.0: 23.9 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect | Contrast | Color | Viewing | Key Features |
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|
|------|------------|-------|------|------------|---------|--------|----------|-------|---------|--------------|

| | | | | | | Ratio | Ratio | Gamut | Angle | |
|-------|--------------------|-------------|-----|----------|------------------------------|-------|--------|-------------|-------|------------------------------------|
| 14.0" | WUXGA (1920x1200) | Multi-touch | IPS | 400 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, low blue light |
| 14.0" | WUXGA (1920x1200) | Multi-touch | IPS | 400 nits | Anti-reflection, Anti-smudge | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, low blue light |
| 14.0" | WUXGA (1920x1200) | Multi-touch | IPS | 500 nits | Anti-glare | 16:10 | 1000:1 | 100% sRGB | 170° | Low power, ThinkPad® Privacy Guard |
| 14.0" | WQUXGA (3840x2400) | Multi-touch | IPS | 500 nits | Anti-reflection, Anti-smudge | 16:10 | 1500:1 | 100% DCI-P3 | 170° | Low blue light |

Touchscreen

Capacitive-type on-cell multi-touch, supports 10-point touch

Multi-mode

Laptop, tent, stand and tablet modes supported by 360° hinge

Notes:

1. California Electronic Waste Recycling Fee
- In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
- For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

Lenovo Integrated Pen, on-board garaged and rechargeable

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

Keyboard Backlight

LED backlight

UltraNav™

TrackPoint® pointing device and glass surface multi-touch touchpad

Mechanical

Dimensions (WxDxH)

314.4 x 223 x 14.99 mm (12.38 x 8.78 x 0.59 inches)

Weight^[1]

1.399 kg (3 lbs)

Case Color

Storm grey

Case Material

Aluminium (top), aluminium (bottom)

Notes:

1. The system weight varies depending on configurations

CONNECTIVITY

Network

Onboard Ethernet

Ethernet support via optional Lenovo USB-C to Ethernet Adapter

WLAN + Bluetooth^[1]

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Intel WiFi 6 full features might be limited by country level restrictions
Bluetooth 5.2 is supported with driver version 22.30 and later

Ports^[1]**Standard Ports^[2]**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports

1x Nano-SIM card slot (WWAN model)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable**Monitor Cable**

- Lenovo HDMI to VGA Monitor Adapter
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Nano Security Slot

Smart Card Reader

No smart card reader

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

Other Security

- Camera privacy shutter
- (Optional) IR camera for Windows Hello
- (Optional) Privacy Guard with Privacy Alert
- (Optional) Human Presence Detection

MANAGEABILITY**System Management****System Management**

- Intel vPro Technology, DASH
- None

SERVICE**Warranty****Base Warranty^[1]**

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL**Operating Environment****Temperature^[1]**

- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F)

ACCESSORIES**Bundled Accessories****Bundled Accessories**

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS**Green Certifications**

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

- (Optional) Intel Evo™ Platform
- (Optional) TÜV Rheinland Low Blue Light
- TÜV Rheinland Dynamic Privacy Filter (DPF) Certification



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Warranty: For a copy of applicable warranties, write to: Lenovo Warranty Information, 1009 Think Place, Morrisville, NC, 27560. Lenovo makes no representation or warranty regarding third party products or services. The Lenovo Limited Warranty applies only to Lenovo hardware products purchased for your own use, and does not transfer upon resale.

Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.

Lenovo Services:

Carry-in or Mail-in Service: Parts and labor repair coverage where the customer is responsible for shipping (including packaging) or delivery to authorized warranty provider or repair center.

Depot or Courier Service: Parts and labor repair coverage where shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Expedited Depot: Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Onsite / In-home Service: Parts and labor repair coverage where labor is provided onsite at your place of business.

If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.

International Warranty Service (IWS): PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

Included software: may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit <http://psref.lenovo.com/> for the latest version of Product Specifications Reference.

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Lenovo 1009 Think Place Morrisville, NC 27560 U.S.A.

PSREF

Product Specifications Reference

ThinkPad Tablets

The ThinkPad logo is displayed in white text against a dark background. The 'i' in 'Think' has a red dot above it. The background of the entire page is a low-angle, upward-looking photograph of a modern building's glass facade, showing geometric patterns and reflections of the sky and clouds.

Version 573
February 24, 2021

The Lenovo logo is shown in white text on a blue rectangular background, oriented vertically. The background of the entire page is a low-angle, upward-looking photograph of a modern building's glass facade, showing geometric patterns and reflections of the sky and clouds.

Contents

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Summary of Changes

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

February 24, 2021 - Version 573

Additions in this update

► **New product(s)**

None

► **Spec updated**

ThinkPad X12 Detachable

Withdrawals in this update

► **Withdrawn product(s)**

None

PERFORMANCE

Processor

Processor Family

8th generation Intel® Core™ i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i5-8250U | 4 | 8 | 1.6GHz | 3.4GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics 620 |
| Core i5-8350U | 4 | 8 | 1.7GHz | 3.6GHz | 6MB | LPDDR3-2133 | Intel UHD Graphics 620 |
| Core i7-8550U | 4 | 8 | 1.8GHz | 4.0GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics 620 |
| Core i7-8650U | 4 | 8 | 1.9GHz | 4.2GHz | 8MB | LPDDR3-2133 | Intel UHD Graphics 620 |

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics 620 | Integrated | Shared | DirectX® 12 |

Chipset

Intel SoC (System on Chip) platform

Memory

Memory Type

LPDDR3-2133

Storage

Storage Support

One drive, up to 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2280 SSD | SATA 6Gb/s | - | - |
| M.2 2280 SSD | SATA 6Gb/s | - | Opal2 |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal2 |

Removable Storage

Card Reader

- MicroSD card slot (WiFi model)
- Nano-SIM + microSD card slot (WWAN model)

Multi-Media

Speakers

Stereo speakers, 1W x2

Microphone

Dual array microphone

Camera

- Front 2.0-megapixel, fixed focus + IR; and rear 8.0-megapixel, auto Focus
- Front 2-megapixel, fixed focus; and rear 8.0-megapixel, auto Focus

Notes:

- IR camera is mutually exclusive with NFC

Sensor

Vibrator

No vibrator

Sensors

- Ambient light sensor (ALS)
- Gyroscope sensor
- Accelerometer (G) sensor

Battery

Battery

Integrated Li-Polymer 42Wh battery

Max Battery Life

MobileMark® 2014: 9.5 hr

Notes:

- All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C AC adapter

DESIGN

Display

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|-------------------------|
| 13.0" | QHD+ (3000x2000) | Multi-touch | IPS | 400 nits | Anti-reflection, Anti-smudge | 3:2 | 1200:1 | - | 160° | Corning® Gorilla® Glass |

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo® charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Input Device

Pen

- ThinkPad® Pen Pro, batteries required, on-board garaged
- Lenovo Pen Pro with replaceable battery
- No pen (pen needs to be purchased separately)

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|----------------------------|---------------------------------------------------|
| Tablet | 304.1 x 226 x 8.9 mm (11.97 x 8.9 x 0.35 inches) |
| Tablet with folio keyboard | 304.1 x 226 x 14.4 mm (11.97 x 8.9 x 0.57 inches) |

Weight

| Models | Weight |
|----------------------------|--------------------------------------------------------------------------|
| Tablet | 0.89 kg (1.96 lbs) |
| Tablet with folio keyboard | Tablet: 0.89 kg (1.96 lbs) Tablet with folio keyboard: 1.27 kg (2.8 lbs) |

Case Color

Black

Case Material

Magnesium-aluminium

Others

Kensington® Security Slot

Buttons

- Reset switch
- Volume button
- Power button

CONNECTIVITY

Network

WLAN + Bluetooth™

Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2

WWAN

- Integrated Mobile Broadband 4G LTE-A, Sierra Wireless EM7430
- Integrated Mobile Broadband 4G LTE-A, Sierra Wireless EM7430C
- Integrated Mobile Broadband 4G LTE-A, Sierra Wireless EM7455
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not support

Notes:

- NFC is mutually exclusive with IR camera

Ports

Standard Ports

- 2x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™)
- 1x Pen holder slot
- 1x headphone / microphone combo jack (3.5mm)
- 1x Pogo pin keyboard connector

Notes:

- Depending on many factors, actual data transfer speed may be lower than theoretical speed

Optional Ports

- 1x microSD card slot (WiFi model)
- 1x Nano-SIM + microSD card slot (LTE model)

Docking

- Thin Keyboard (magnetic detachable)
- ThinkPad USB-C Dock Gen 2
- No docking

Monitor Cable

- Lenovo USB-C to HDMI® Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Disabled (in some regions)

Fingerprint Reader

Touch style fingerprint reader on display cover

MANAGEABILITY

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

ACCESSORIES

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- Lenovo USB-C to USB-A Adapter
- Lenovo USB-C Travel Hub
- None

CERTIFICATIONS

Green Certifications

- EPEAT™ Silver
- GREENGUARD®
- Low Halogen
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed



PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i3 / i5 /i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-1110G4 | 2 | 4 | 2.5GHz | 3.9GHz | 6MB | LPDDR4x-4266 | Intel UHD Graphics |
| Core i5-1130G7 | 4 | 8 | 1.8GHz | 4.0GHz | 8MB | LPDDR4x-4266 | Intel Iris® Xe Graphics |
| Core i5-1140G7 | 4 | 8 | 1.8GHz | 4.2GHz | 8MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1160G7 | 4 | 8 | 2.1GHz | 4.4GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |
| Core i7-1180G7 | 4 | 8 | 2.2GHz | 4.6GHz | 12MB | LPDDR4x-4266 | Intel Iris Xe Graphics |

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

Graphics

| Graphics | Type | Memory | Key Features |
|------------------------|------------|--------|--------------|
| Intel UHD Graphics | Integrated | Shared | DirectX® 12 |
| Intel Iris Xe Graphics | Integrated | Shared | DirectX 12 |

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via USB-C (5120x3200@60Hz) or Thunderbolt™ (5120x3200@60Hz)

Chipset

Intel SoC (System on Chip) platform

Memory

Memory Type

LPDDR4x-4266

Notes:

- 8GB or 16GB LPDDR4x-4266 soldered, dual-channel capable

Storage

Storage Support

One drive, up to 1TB M.2 2242 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

Multi-Media

Speakers

Stereo speakers, Realtek® ALC3306-GRT codec, 1W x2, Dolby® Audio™

Microphone

Dual array microphone, 360° far-field for Cortana, near-field for Alexa

Camera

5.0-megapixel front user-facing Hybrid RGB/IR camera with webcam privacy shutter, fixed focus; 8.0-megapixel rear world-facing, auto focus

Sensor

Vibrator

No vibrator

Sensors

- Gyroscope sensor
- Hall sensor
- Inclinometer sensor
- Accelerometer (G) sensor
- Proximity sensor (WWAN model)

Battery

Battery

Integrated Li-Polymer 42Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

Max Battery Life

MobileMark® 2018: 10.36 hr

JEITA 2.0: 12.42 hr

Notes:

- All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Charging Time

In operation: 2.0 hr

Off -80%: 0.83 hr

Off -100%: 2.0 hr

Power Adapter

- 45W USB-C AC adapter
- 65W USB-C AC adapter
- 65W USB-C slim AC adapter

DESIGN

Display

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|------------------|-------------|------|------------|------------------------------|--------------|----------------|-------------|---------------|---------------------------|
| 12.3" | FHD+ (1920x1280) | Multi-touch | IPS | 400 nits | Anti-reflection, Anti-smudge | 3:2 | 1500:1 | 100% sRGB | 178° | Corning® Gorilla® Glass 5 |

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo® charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Touchscreen

GF2 Direct Bonding, capacitive-type multi-touch, supports 10-point touch

Input Device

Pen

- Lenovo Precision Pen, magnetically attached to the system
- Lenovo Digital Pen with replaceable battery
- Lenovo Digital Pen without replaceable battery
- No pen (pen needs to be purchased separately)

Mechanical

Dimensions (WxDxH)

| Models | Dimensions |
|----------------|-----------------------------------------------------|
| Tablet | 283.3 x 203.5 x 8.8 mm (11.15 x 8.01 x 0.34 inches) |
| Folio keyboard | 283.3 x 217.8 x 5.7 mm (11.15 x 8.57 x 0.22 inches) |

Weight

| Models | Weight |
|----------------|------------------|
| Tablet | 760 g (1.67 lbs) |
| Folio keyboard | 340 g (0.75 lbs) |

Case Color

Black

Case Material

Magnesium-aluminium

Notes:

- Surface treatment: Peachskin paint

Others

- Hinge locking: 170°
- Kensington® Security Slot

Buttons

- Volume button
- Power button

CONNECTIVITY

Network

WLAN + Bluetooth™

Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, MU-MIMO

WWAN

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Not Support

SIM Card

- No SIM card
- Nano-SIM card slot for WWAN (eSIM support: Gemalto)

NFC

- Near Field Communication
- Not support

WIFI Direct

Support

WIFI Display

Support

Ports

Standard Ports

- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x Nano-SIM card slot
- 1x headphone / microphone combo jack (3.5mm)
- 1x Pogo pin connector (8-point)

Notes:

- Depending on many factors, actual data transfer speed may be lower than theoretical speed

Docking

- ThinkPad® X12 Folio Keyboard with touchpad (Pogo Pin, Detachable), 3-level backlight
- No docking

Monitor Cable

- Lenovo USB-C to HDMI® Adapter
- Lenovo USB-C to VGA Adapter
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

- Discrete TPM 2.0, TCG certified
- Disabled (in some regions)

Fingerprint Reader

- Touch style fingerprint reader on folio keyboard, match-on-chip
- No fingerprint reader

BIOS Security

- Power-on password
- Supervisor password
- System management password
- Hard disk password
- Self-healing BIOS

MANAGEABILITY

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ACCESSORIES

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS

Green Certifications

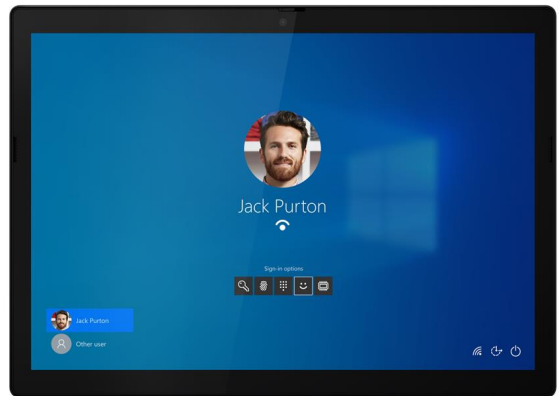
- EPEAT™ Gold (tablet mode)
- EPEAT Silver (notebook mode)

- ENERGY STAR® 8.0
- ErP Lot 3
- FAA Certified
- Low Halogen
- TCO Certified 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



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Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.

Lenovo Services:

Carry-in or Mail-in Service: Parts and labor repair coverage where the customer is responsible for shipping (including packaging) or delivery to authorized warranty provider or repair center.

Depot or Courier Service: Parts and labor repair coverage where shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Expedited Depot: Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Onsite / In-home Service: Parts and labor repair coverage where labor is provided onsite at your place of business.

If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.

International Warranty Service (IWS): PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

Included software: may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit <http://psref.lenovo.com/> for the latest version of Product Specifications Reference.

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Lenovo 1009 Think Place Morrisville, NC 27560 U.S.A.

PSREF

Product Specifications Reference

ThinkCentre

A low-angle, upward-looking photograph of a modern skyscraper with a glass facade. The building's structure is composed of numerous triangular and polygonal glass panels that reflect the sky and clouds, creating a complex geometric pattern. The sky is a pale blue with soft, white clouds. The overall tone is professional and architectural.

ThinkCentre

Version 576
April 28, 2021

Lenovo™

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Summary of Changes

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

5 df] 2021 - Version 57*

Additions in this update

► **New product(s)**

None

► **New model(s)**

None

► **Others**

Add overview information for ThinkCentre products

Withdrawals in this update

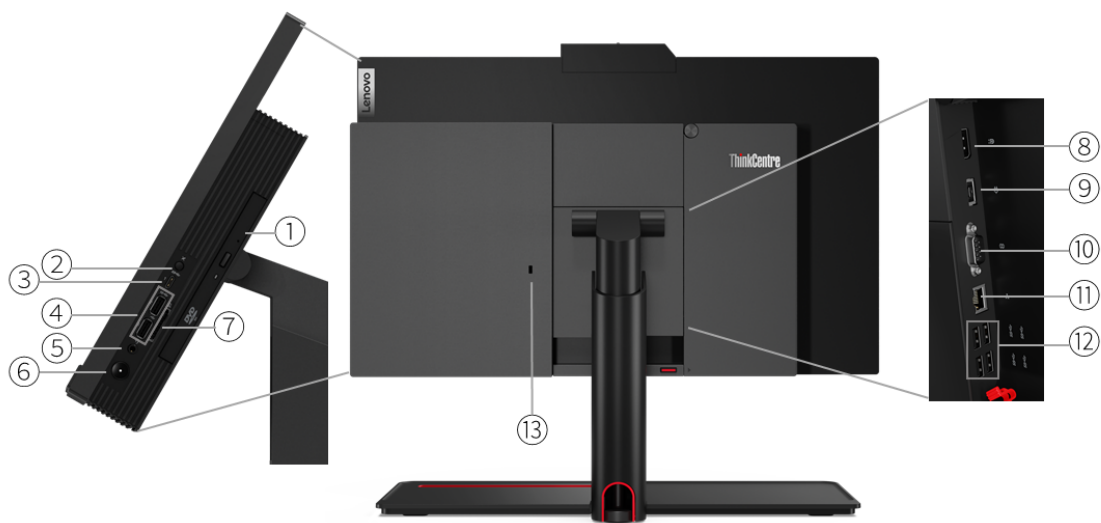
► **Withdrawn product(s)**

ThinkCentre M725 SFF

► **Withdrawn model(s)**

None

OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Optical drive * | 7. Card reader * |
| 2. Microphone mute button | 8. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 9. Power connector |
| 4. 1x USB 3.2 Gen 2 + 1x USB 3.2 Gen 1 | 10. Serial * |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Ethernet (RJ-45) |
| 6. Power button | 12. 4x USB 3.2 Gen 1 |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------|--------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via DisplayPort™

Chipset

Chipset

Intel H470 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage**Storage Support**

Up to two drives, 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 2TB
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage**Optical**

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader
- No card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC233 codec

Speakers

Stereo speakers, 2W x2

Microphone

Dual array microphone

Camera

- 1080p, with ThinkShutter (physical switch on/off)
- IR & 1080p, with ThinkShutter (physical switch on/off), Windows Hello support
- No camera

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 135W | Adapter | 89% | Autosensing |
| 170W | Adapter | 89% | Autosensing |

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|----------------------------------------|----------------------------------------------|
| 21.5" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design (88% screen to body ratio) |
| 21.5" | FHD (1920x1080) | Multi-touch | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design (88% screen to body ratio) |

Touchscreen

- Advanced In-cell Touch (AIT), supports 10-point touch
- Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
- IPS (In Plane Switching) technology may refer to IPS, PLS, ADS, AHVA, AAS

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Buttons

- Power button
- Microphone mute button

Form Factor

AIO (21.5 inches)

Dimensions (WxDxH)

| Models | Dimensions |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Models (with full function monitor stand, with camera) | 490.14 x 199.82 x 386.05 to 466.04 mm (19.3 x 7.9 x 15.2 to 18.3 inches) |
| Models (with UltraFlex IV stand, with camera) | Lowest in flat mode: 490.17 x 288.17 x 197.04 mm (19.3 x 11.3 x 7.8 inches) Highest in vertical mode: 490.17 x 232.75 x 439.28 mm (19.3 x 9.2 x 17.3 inches) |
| Models (without stand, with ODD, with Camera) | 490.14 x 57.8 x 297.75 mm (19.3 x 2.3 x 11.7 inches) |

| | |
|--------------------------------------------------|----------------------------------------------------|
| Models (without stand, without ODD, with camera) | 490.14 x 46 x 297.75 mm (19.3 x 1.8 x 11.7 inches) |
|--------------------------------------------------|----------------------------------------------------|

Weight

| Models | Weight |
|--------------------------------------------------------|------------------------------------------------------------|
| Models (with full function monitor stand, with ODD) | Non-touch: 7.33 kg (16.2 lbs) Touch: 7.09 kg (15.6 lbs) |
| Models (with full function monitor stand, without ODD) | Non-touch: 7.07 kg (15.6 lbs) Touch: 6.83 kg (15.1 lbs) |
| Models (with UltraFlex IV stand, with ODD) | Non-touch: 7.88 kg (17.4 lbs) Touch: 7.65 kg (16.9 lbs) |
| Models (with UltraFlex IV stand, without ODD) | Non-touch: 7.62 kg (16.8 lbs) Touch: 7.38 kg (16.3 lbs) |
| Models (without stand, with ODD) | Non-touch: 5.12 kg (11.3 lbs) Touch: 4.88 kg (10.8 lbs) |
| Models (without stand, without ODD) | Non-touch: 4.86 kg (10.7 lbs) Touch: 4.62 kg (10.2 lbs) |

Case Color

Black

Bays

- 1x 2.5" disk bay
- 1x slim ODD bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover and stand assembly / removal

Stand

- Full function monitor stand, supports -5° to +30° tilt, up to 80mm lift
- UltraFlex IV stand, supports -5° to +70° tilt, up to 164mm lift (flat mode) / up to 115mm lift (vertical mode)
- No stand

Mounting

Supports VESA mount 100mm

CONNECTIVITY

Network

Onboard Ethernet

One gigabit Ethernet, Realtek RTL8111K, 1x RJ-45, Wake on LAN®

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822BE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Rear Ports^[2]

- 4x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Optional Rear Ports

1x serial

Right Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1 (5V/3A charging)
- 1x headphone / microphone combo jack (3.5mm)

Optional Right Ports

1x card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

Other Security

- ThinkShutter camera cover
- None

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management**

System Management

None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature**

- Storage: -20°C (-4°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

Operating: 20% to 80%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- TCO edge
- RoHS compliant

Other Certifications**Other Certifications**

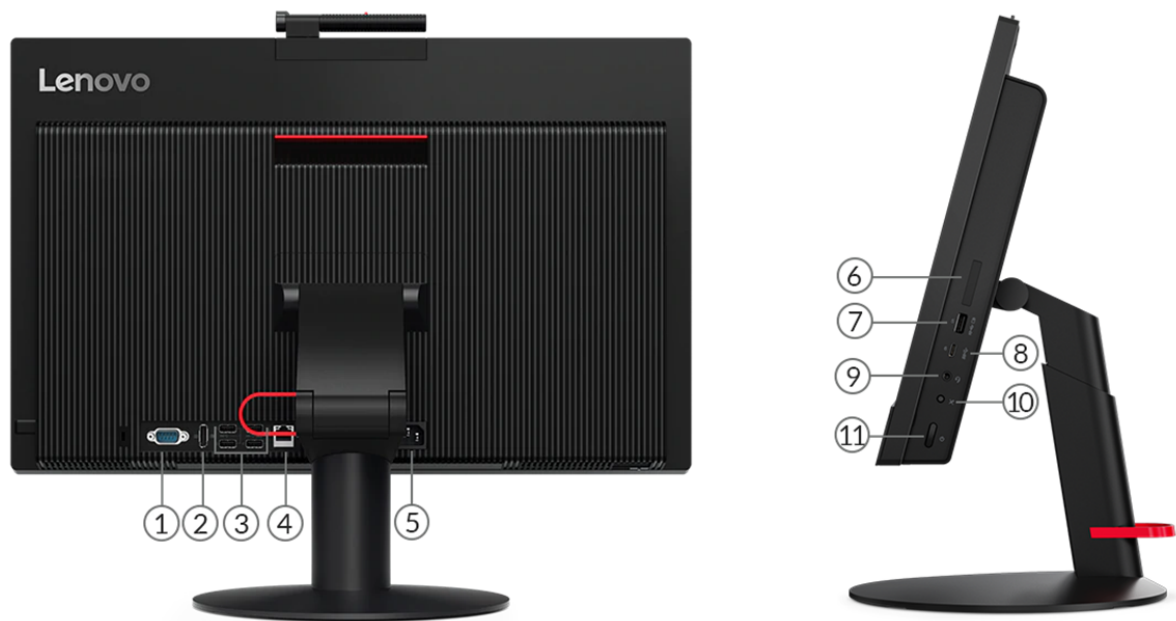
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|---------------------|----------------------------------------------|
| 1. Serial * | 7. USB 3.1 Gen 2 |
| 2. DisplayPort | 8. USB-C 3.1 Gen 1 |
| 3. 4x USB 3.1 Gen 1 | 9. Headphone / microphone combo jack (3.5mm) |
| 4. Ethernet (RJ-45) | 10. Microphone mute button |
| 5. Power connector | 11. Power button |
| 6. Card reader * | |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------|--------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via DisplayPort™

Chipset

Chipset
Intel B360 chipset

Memory

Max Memory^[1]
Up to 32GB DDR4-2666
Memory Slots
Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type
DDR4-2666

Memory Protection
Non-ECC

Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support
Up to two drives, 1x 2.5" HDD + 1x M.2 2242/2280 SSD
• 2.5" HDD up to 1TB each
• M.2 SSD up to 1TB each
• Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
No support

Removable Storage

Optical
• DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
• DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
• None

Card Reader
• 3-in-1 card reader
• No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233 codec
Speakers
Stereo speakers, 2W x2

Microphone
Dual array microphone

- Camera**
- 1080p, LED indicator, with physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°)
 - No camera

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 150W | Adapter | 90% | - |

DESIGN

Display

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|----------------------------------------|------------------------------------------------|
| 21.5" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |
| 21.5" | FHD (1920x1080) | Multi-touch | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |

- Touchscreen**
- Advanced In-cell Touch (AIT), supports 10-point touch
 - Non-touch

Notes:

- California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

- Keyboard**
- Lenovo Calliope Keyboard (USB connector), black
 - Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse**
- Lenovo Calliope Mouse (USB connector), black
 - Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

- Buttons**
- Power button
 - Microphone mute button

Form Factor
AIO (21.5 inches)

| Models | Dimensions |
|-------------------------------------------------------|--------------------------------------------------------------|
| Models with full function monitor stand and no camera | 491 x 252 x 377 to 486 mm (19.3 x 9.9 x 14.8 to 19.1 inches) |

| | |
|-----------------------------------------------|------------------------------------------------------------|
| Models with UltraFlex III stand and no camera | 491 x252 x335 to 417 mm (19.3 x 9.9 x 13.2 to 16.4 inches) |
| Models without stand and camera | 491 x 49 x 321 mm (19.3 x 1.9 x 12.6 inches) |

Weight

| Models | Weight |
|-------------------------------------------------------|------------------------------------------------------------|
| Models with full function monitor stand and no camera | Non-touch: 7.18 kg (15.8 lbs) Touch: 7.38 kg (16.3 lbs) |
| Models with UltraFlex III stand and no camera | Non-touch: 7.65 kg (16.9 lbs) Touch: 7.85 kg (17.3 lbs) |
| Models without stand and camera | Non-touch: 5.05 kg (11.1 lbs) Touch: 5.25 kg (11.6 lbs) |

Case Color

Black

Bays

- 1x 2.5" disk bay
- 1x slim ODD bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless chassis open and toolless disk, memory, stand assembly / removal

Stand

- Full function monitor stand, supports -5° to +45° tilt, left & right 45° swivel, up to 110mm lift
- UltraFlex III stand, supports -5° to +70° tilt, left & right 45° swivel, up to 136mm lift (flat mode) / up to 82mm lift (vertical mode)
- No stand

Mounting

Supports VESA mount 100mm

Notes:

1. Camera adds 22mm in height (Vertical)

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111G, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Rear Ports^[2]

- 4x USB 3.1 Gen 1 (one supports Smart Power On)
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Optional Rear Ports

1x serial

Right Ports

- 1x USB 3.1 Gen 2 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Right Ports

1x card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management**

None

SERVICE**Warranty**

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature**

- Storage: -20°C (-4°F) to 60°C (140°F)
- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Silver (not for Celeron / Pentium/ non-OS models)
- ENERGY STAR® 8.0 (not for Celeron / Pentium/ non-OS models)
- ErP Lot 3
- GREENGUARD®
- TCO
- RoHS compliant

Other Certifications**Other Certifications**

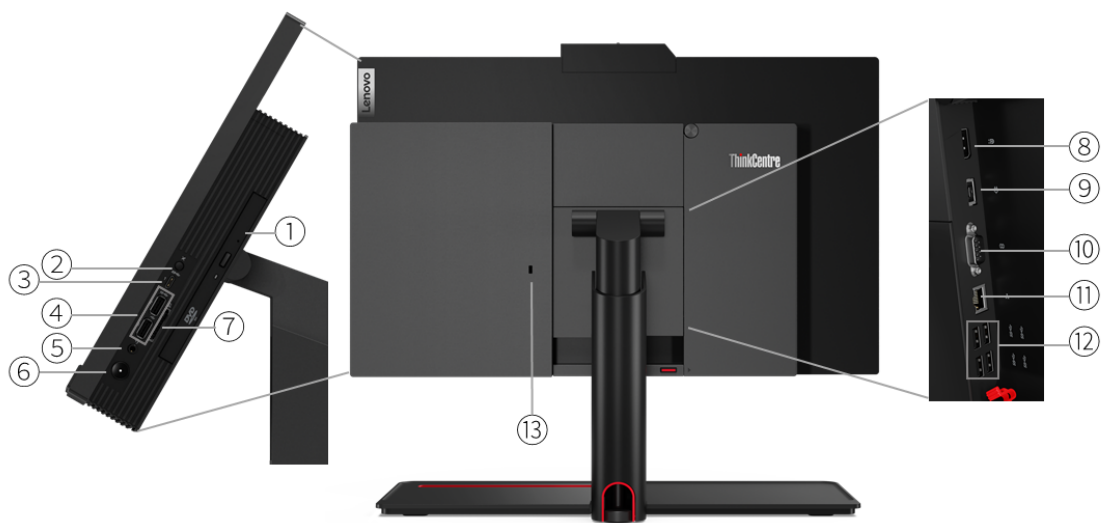
- TÜV Rheinland Eye Comfort Certification
- TÜV Rheinland Low Blue Light
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Optical drive * | 7. Card reader * |
| 2. Microphone mute button | 8. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 9. Power connector |
| 4. 2x USB 3.2 Gen 2 | 10. Serial * |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Ethernet (RJ-45) |
| 6. Power button | 12. 4x USB 3.2 Gen 1 |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|-----------|-----------|--------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 625 | Discrete | 2GB GDDR5 | 1x DP | 4096x2304@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via DisplayPort™

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 2x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 2TB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID^[1]

RAID 0/1 support for HDDs

Notes:

1. RAID is not preset by default, user can config RAID 0/1 according to the demand

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233 codec

Speakers

Stereo speakers, 3W x2

Microphone

Dual array microphone

Camera

- 1080p, with ThinkShutter (physical switch on/off)

- IR & 1080p, with ThinkShutter (physical switch on/off), Windows Hello support
- No camera

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 150W | Adapter | 89% | Autosensing |
| 170W | Adapter | 89% | Autosensing |

DESIGN

Display

Display^[2]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|----------------------------------------|--------------------------------------------------------------|
| 23.8" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |
| 23.8" | FHD (1920x1080) | None | IPS | 350 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode, PrivacyGaurd |
| 23.8" | FHD (1920x1080) | Multi-touch | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |

Touchscreen

- Advanced In-cell Touch (AIT), supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product.
For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. PrivacyGaurd is only available for MT 11JX

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Buttons

- Power button
- PrivacyGaurd on/off botton (PrivacyGaurd model only)
- Microphone mute button

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)

| Models | Dimensions |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera) | 541 x 200 x 414.2 to 494.2 mm (21.3 x 7.9 x 16.3 to 19.5 inches) |
| Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera) | 541 x 200 x 414.2 to 494.2 mm (21.3 x 7.9 x 16.3 to 19.5 inches) |
| Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera) | 541 x 200 x 414.2 to 494.2 mm (21.3 x 7.9 x 16.3 to 19.5 inches) |
| Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera) | 541 x 200 x 414.2 to 494.2 mm (21.3 x 7.9 x 16.3 to 19.5 inches) |
| Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera) | Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches) Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches) |
| Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera) | Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches) Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches) |
| Models (without stand, with ODD, with PrivacyGuard, with camera) | 541 x 61.3 x 340.5 mm (21.3" x 2.4" x 13.4 inches) |
| Models (without stand, with ODD, without PrivacyGuard, with camera) | 541 x 57.8 x 340.5 mm (21.3 x 2.3 x 13.4 inches) |
| Models (without stand, without ODD, with PrivacyGuard, with camera) | 541 x 49.5 x 340.5 mm (21.3 x 1.9 x 13.4 inches) |
| Models (without stand, without ODD, without PrivacyGuard, with camera) | 541 x 46 x 340.5 mm (21.3 x 1.8 x 13.4 inches) |

Weight

| Models | Weight |
|-------------------------------------------------------------------------------------------|--------------------|
| Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera) | 8.71 kg (19.2 lbs) |
| Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera) | 7.84 kg (17.3 lbs) |
| Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera) | 8.39 kg (18.5 lbs) |
| Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera) | 7.51 kg (16.6 lbs) |
| Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera) | 8.58 kg (18.9 lbs) |
| Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera) | 8.26 kg (18.2 lbs) |
| Models (without stand, with ODD, with PrivacyGuard, with camera) | 6.45 kg (14.2 lbs) |
| Models (without stand, with ODD, without PrivacyGuard, with camera) | 5.57 kg (12.3 lbs) |
| Models (without stand, without ODD, with PrivacyGuard, with camera) | 6.13 kg (13.5 lbs) |
| Models (without stand, without ODD, without PrivacyGuard, with camera) | 5.25 kg (11.6 lbs) |

Case Color

Black

Bays

- 2x 2.5" disk bay (2nd 2.5" HDD occupies ODD bay)
- 1x slim ODD bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover and stand assembly / removal

Stand

- Full function monitor stand, supports -5° to +30° tilt, up to 80mm lift
- UltraFlex IV stand, supports -5° to +70° tilt, up to 164mm lift (flat mode) / up to 115mm lift (vertical mode)
- No stand

Mounting

Supports VESA mount 100mm

CONNECTIVITY

Network^[1]

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Notes:

1. This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.

Ports^[1]

Rear Ports^[2]

- 4x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Optional Rear Ports

1x serial

Right Ports

- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1 (5V/3A charging)
- 1x headphone / microphone combo jack (3.5mm)

Optional Right Ports

1x card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

Other Security

- ThinkShutter camera cover
- None

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -20°C (-4°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

Operating: 20% to 80%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- TCO edge
- RoHS compliant

Notes:

1. Energy Star 8.0 and EPEAT are only available for MT 11CD/11CE, TCO 8.0 and TCO Edge are not for the models with PrivacyGuard.

Other Certifications

Other Certifications

- TÜV Rheinland Eye Comfort Certification
- TÜV Rheinland Low Blue Light
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|---------------------------------------|-----------------------------------------------|
| 1. Serial * | 7. USB 3.1 Gen 2 |
| 2. DisplayPort (DP in/out combo port) | 8. USB 3.1 Gen 1 |
| 3. 4x USB 3.1 Gen 1 | 9. USB-C 3.1 Gen 1 |
| 4. Ethernet (RJ-45) | 10. Headphone / microphone combo jack (3.5mm) |
| 5. Power connector | 11. Microphone mute button |
| 6. Card reader * | 12. Power button |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------|--------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x DP | 4096x2304@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via DisplayPort™; work as standalone monitor via DisplayPort (DP in / out combo)

Chipset

Chipset
Intel Q370 chipset

Memory

Max Memory^[1]
Up to 32GB DDR4-2666
Memory Slots
Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type
DDR4-2666

Memory Protection
Non-ECC

Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support
Up to three drives, 2x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD
• 2.5" HDD up to 1TB each
• 2.5 SSD up to 256GB each
• M.2 SSD up to 1TB
• Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical
• DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
• DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
• None

Card Reader
• 3-in-1 card reader
• No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233 codec
Speakers

Stereo speakers, 3W x2

Microphone

Dual array microphone

Camera

- 1080p, LED indicator, with physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°)
- IR & 1080p, with physical switch on/off, supports multi-degree rotation (horizontal 0° to 180°, vertical -25° to 25°), Windows Hello support
- No camera

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 150W | Adapter | 90% | - |

DESIGN

Display

Display^[1]

| Size | Resolution | Touch | Type | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Viewing Angle | Key Features |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-------------|----------------------------------------|------------------------------------------------|
| 23.8" | FHD (1920x1080) | None | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |
| 23.8" | FHD (1920x1080) | Multi-touch | IPS | 250 nits | Anti-glare | 16:9 | 1000:1 | - | horizontal: +/- 89°, vertical: +/- 89° | Borderless design, support low blue light mode |

Touchscreen

- Advanced In-cell Touch (AIT), supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Buttons

- Power button
- Microphone mute button

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)^[1]

| Models | Dimensions |
|-------------------------------------------------------|--------------------------------------------------------------|
| Models with full function monitor stand and no camera | 542 x 252 x 405 to 514 mm (21.3 x 9.9 x 15.9 to 20.2 inches) |
| Models with UltraFlex III stand and no camera | 542 x 252 x 363 to 444 mm (21.3 x 9.9 x 14.3 to 17.5 inches) |
| Models without stand and camera | 542 x 46 x 349 mm (21.3 x 1.8 x 13.7 inches) |

Weight

| Models | Weight |
|-------------------------------------------------------|------------------------------------------------------------|
| Models with full function monitor stand and no camera | Non-touch: 8.26 kg (18.2 lbs) Touch: 8.47 kg (18.7 lbs) |
| Models with UltraFlex III stand and no camera | Non-touch: 8.73 kg (19.2 lbs) Touch: 8.94 kg (19.7 lbs) |
| Models without stand and camera | Non-touch: 6.13 kg (13.5 lbs) Touch: 6.34 kg (14.0 lbs) |

Case Color

Black

Bays

- 2x 2.5" disk bay (2nd 2.5" HDD occupies ODD bay)
- 1x slim ODD bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless chassis open and toolless disk, memory, stand assembly / removal

Stand

- Full function monitor stand, supports -5° to +45° tilt, left & right 45° swivel, up to 110mm lift
- UltraFlex III stand, supports -5° to +70° tilt, left & right 45° swivel, up to 136mm lift (flat mode) / up to 81mm lift (vertical mode)
- No stand

Mounting

Supports VESA mount 100mm

Notes:

1. Camera adds 22mm in height (Vertical)

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Rear Ports^[2]

- 4x USB 3.1 Gen 1 (one supports Smart Power On)
- 1x DisplayPort (DP in/out combo port)
- 1x Ethernet (RJ-45)

Optional Rear Ports

1x serial

Right Ports

- 1x USB 3.1 Gen 1
- 1x USB 3.1 Gen 2 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Right Ports

1x card reader

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management^[1]**

- Intel vPro with Intel AMT 12.0

- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -20°C (-4°F) to 60°C (140°F)
- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver (not for Celeron / Pentium/ non-OS models)
- ENERGY STAR® 8.0 (not for Celeron / Pentium/ non-OS models)
- ErP Lot 3
- GREENGUARD®
- TCO
- RoHS compliant

Other Certifications

Other Certifications

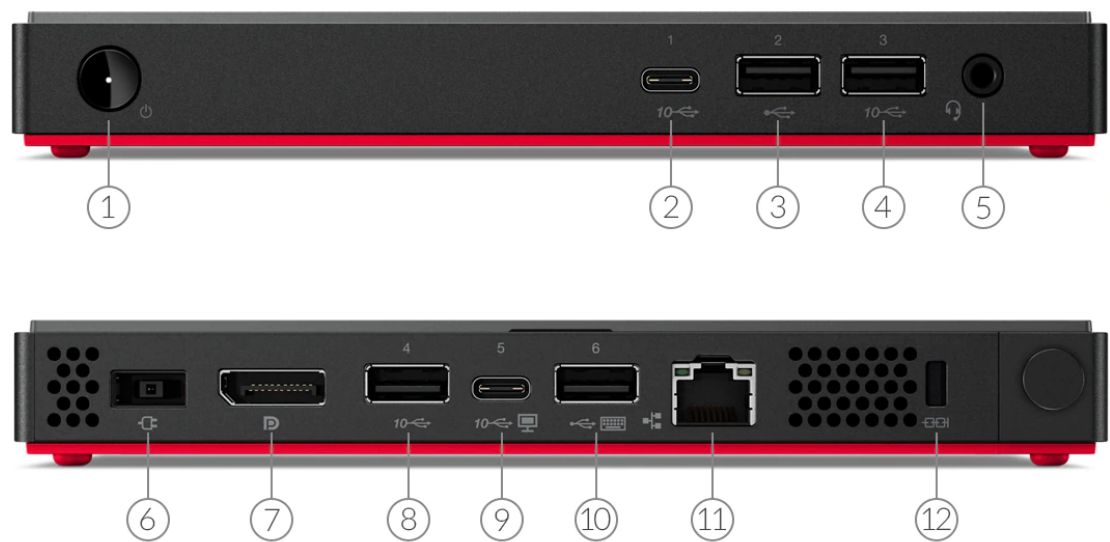
- TÜV Rheinland Eye Comfort Certification
- TÜV Rheinland Low Blue Light
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus)



OVERVIEW



| | |
|----------------------------------------------|-------------------------------------------|
| 1. Power button | 7. DisplayPort |
| 2. USB-C 3.2 Gen 2 | 8. USB 3.2 Gen 2 |
| 3. USB 2.0 | 9. USB-C 3.2 Gen 2 (display and power-in) |
| 4. USB 3.2 Gen 2 | 10. USB 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Ethernet (RJ-45) |
| 6. Power connector | |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|-----------------------------|
| AMD Ryzen 3 PRO 3300U | 4 | 4 | 2.1GHz | 3.5GHz | 2MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon™ Vega 6 Graphics |
| AMD Ryzen 5 PRO 3500U | 4 | 8 | 2.1GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon Vega 8 Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|----------------------------|------------|--------|---------------------------|-------------------------------------------|--------------|
| AMD Radeon Vega 6 Graphics | Integrated | Shared | 1x DisplayPort™, 1x USB-C | 3840x2160@60Hz(DP), 3840x2160@60Hz(USB-C) | DirectX® 12 |
| AMD Radeon Vega 8 Graphics | Integrated | Shared | 1x DisplayPort, 1x USB-C | 3840x2160@60Hz(DP), 3840x2160@60Hz(USB-C) | DirectX 12 |

Notes:

- The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort and USB-C)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-2400

Memory Protection

Non-ECC

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 2x M.2 2242/2280 SSD (one supports up to PCIe 3.0 x4, one supports up to PCIe 3.0 x2)

- M.2 SSD up to 1TB each

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Nano (0.35L)

Dimensions (WxDxH)

179 x 88 x 22 mm (7.05 x 3.46 x 0.87 inches)

Weight

0.505 kg (1.11 lbs)

Case Color

Iron grey (top cover), black (mid bezel), red (bottom cover)

Bays

No bays

Expansion Slots

Three M.2 slots (one for WLAN, two for SSD)

Stand

No stand

IO Box

No IO box

Mounting

- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111FP-CG, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Qualcomm® QCA6174A, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 2.0
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 1x USB 2.0
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- USB-C to DP dongle

- USB-C to HDMI® dongle
- USB-C to VGA dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

DASH 1.1 / 1.2

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- REACH
- WEEE

Other Certifications

Other Certifications

TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



AMD



AMD



AMD



AMD



AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|--------------------------------------------|
| 1. Power button | 7. Power connector |
| 2. 2x Serial (RS232) | 8. DisplayPort |
| 3. USB-C 3.2 Gen 2 | 9. USB 3.2 Gen 2 |
| 4. USB 2.0 | 10. USB-C 3.2 Gen 2 (display and power-in) |
| 5. USB 3.2 Gen 2 | 11. Ethernet (RJ-45) |
| 6. Headphone / microphone combo jack (3.5mm) | 12. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

AMD Athlon™ Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-------------------------|-------|---------|----------------|---------------|-----------------|----------------|----------------------|
| AMD Athlon Silver 3050e | 2 | 4 | 1.4GHz | 2.8GHz | 1MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon™ Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- LeTOS V2 (Lenovo® Terminal Operating System, Linux-based)
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|---------------------|------------|--------|---------------------------|-------------------------------------------|--------------|
| AMD Radeon Graphics | Integrated | Shared | 1x DisplayPort™, 1x USB-C | 3840x2160@60Hz(DP), 3840x2160@60Hz(USB-C) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort and USB-C)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

4GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type

DDR4-2400

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 1TB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | SATA 6Gb/s | - | Opal |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|-------------------------------|
| 65W | Adapter | 88% | Autosensing, wide temperature |
| 65W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Nano (0.55L)

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|------------------------------------------------|
| Nano only | 179 x 88 x 34.5 mm (7.05 x 3.46 x 1.36 inches) |
| Nano with IO box | 179 x 88 x 61.3 mm (7.05 x 3.46 x 2.41 inches) |

Weight

| Models | Weight |
|------------------|--------------------|
| Nano only | 0.72 kg (1.58 lbs) |
| Nano with IO box | 1.2 kg (2.65 lbs) |

Case Color

Iron grey (top cover), black (mid bezel), black (bottom cover)

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

Stand

No stand

IO Box

- IO box: 2x serial (RS232 / RS422 / RS485, SDK selectable) and 2x Ethernet (RJ-45, Realtek RTL8153B, gigabit Ethernet) on front, 1x DIO (4DI / 4DO), 1x USB-C (connect to Nano) and 1x DC-in connector (9V - 36V) on rear
- No IO box

Mounting

- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111FP-CG, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Qualcomm® QCA6174A, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 2.0
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 2x serial (RS-232)

Optional Front Ports

- 2x gigabit Ethernet (RJ-45) on SE30 IO box
- 2x serial (RS232 / RS422 / RS485, SDK selectable) on SE30 IO box

Rear Ports^[2]

- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Optional Rear Ports

- 1x DC-in 3pin Phoenix connector on SE30 IO box
- 1x DIO (4DI / 4DO) on SE30 IO box

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- USB-C to DP dongle
- USB-C to HDMI® dongle
- USB-C to VGA dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

DASH 1.1 / 1.2

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating:
 - From 10°C (50°F) to 50°C (122°F): for the machine types of 11GW and 11GX
 - From 10°C (50°F) to 35°C (95°F): for the machine types of 11BW and 11BX

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- REACH
- WEEE

Notes:

1. ENERGY STAR 8.0 and EPEAT are not available for the models with I/O box

Other Certifications

Other Certifications

TÜV Rheinland Ultra Low Noise

Mil-Spec Test

- MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)
- None



AMD



AMD



AMD



AMD

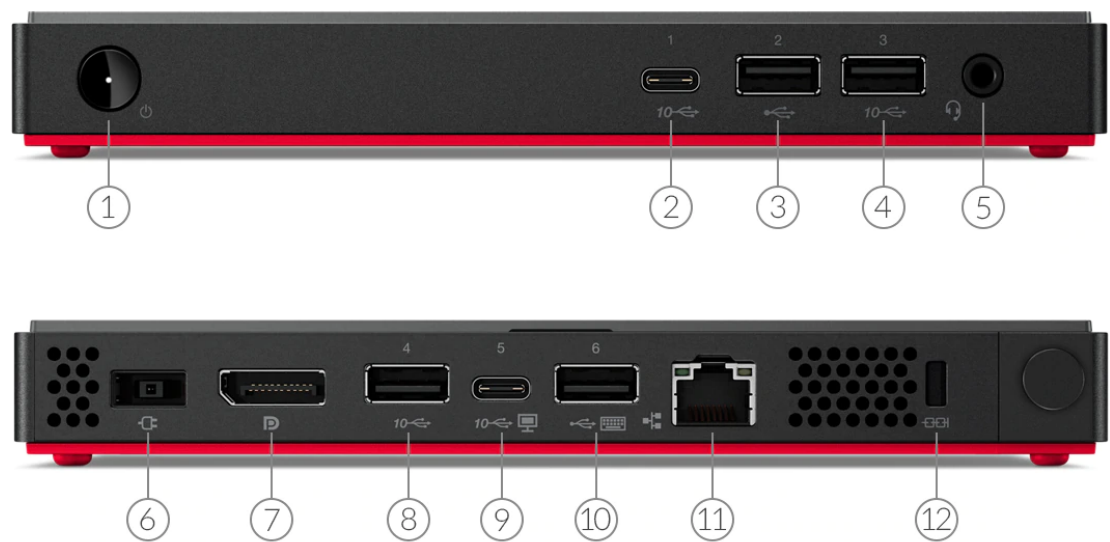


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|-------------------------------------------|
| 1. Power button | 7. DisplayPort |
| 2. USB-C 3.2 Gen 2 | 8. USB 3.2 Gen 2 |
| 3. USB 2.0 | 9. USB-C 3.2 Gen 2 (display and power-in) |
| 4. USB 3.2 Gen 2 | 10. USB 2.0 |
| 5. Headphone / microphone combo jack (3.5mm) | 11. Ethernet (RJ-45) |
| 6. Power connector | |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|-----------------|----------------|-----------------------------|
| AMD Ryzen 3 PRO 3300U | 4 | 4 | 2.1GHz | 3.5GHz | 2MB L2 / 4MB L3 | DDR4-2400 | AMD Radeon™ Vega 6 Graphics |

Operating System

Operating System

- Windows® Embedded Standard 7 V2 (WES 7 V2)
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|----------------------------|------------|--------|---------------------------|-------------------------------------------|--------------|
| AMD Radeon Vega 6 Graphics | Integrated | Shared | 1x DisplayPort™, 1x USB-C | 3840x2160@60Hz(DP), 3840x2160@60Hz(USB-C) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort and USB-C)

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

DDR4-2400

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 2x M.2 2242/2280 SSD (one supports up to PCIe 3.0 x4, one supports PCIe 3.0 x2 or SATA)

- M.2 SSD up to 256GB each

Storage Type

ThinkCentre M75n Thin Client

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | SATA 6Gb/s | - | Opal |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- No mouse

Mechanical

Form Factor

Nano (0.35L)

Dimensions (WxDxH)

179 x 88 x 22 mm (7.05 x 3.46 x 0.87 inches)

Weight

0.505 kg (1.11 lbs)

Case Color

Iron grey (top cover), black (mid bezel), red (bottom cover)

Bays

No bays

Expansion Slots

Three M.2 slots (one for WLAN, two for SSD)

Stand

No stand

IO Box

No IO box

Mounting

- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111FP-CG, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 2.0
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 1x USB 2.0
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- USB-C to DP dongle
- USB-C to HDMI® dongle
- USB-C to VGA dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

DASH 1.1 / 1.2

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

- REACH
- WEEE

Other Certifications

Other Certifications

TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



AMD



AMD



AMD



AMD

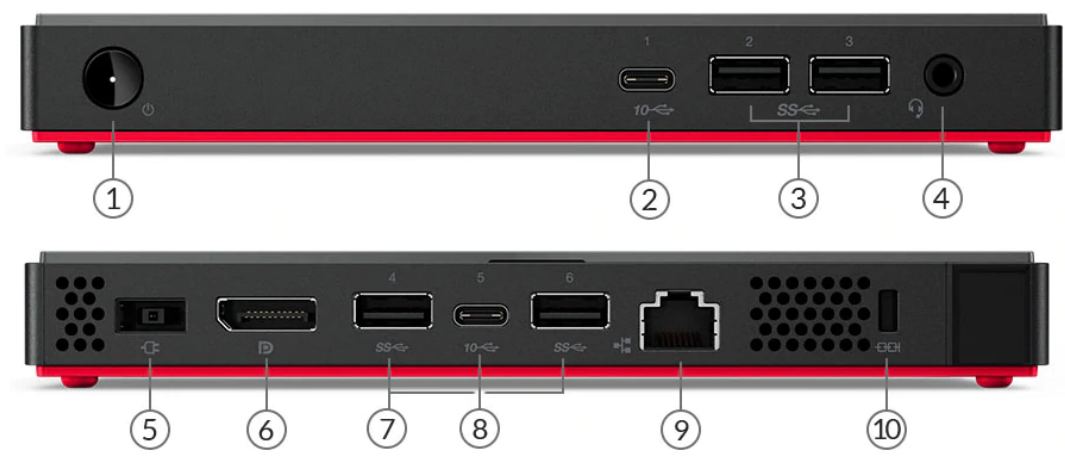


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|-------------------------------------------|
| 1. Power button | 6. DisplayPort |
| 2. USB-C 3.2 Gen 2 | 7. 2x USB 3.2 Gen 2 |
| 3. 2x USB 3.2 Gen 2 | 8. USB-C 3.2 Gen 2 (display and power-in) |
| 4. Headphone / microphone combo jack (3.5mm) | 9. Ethernet (RJ-45) |
| 5. Power connector | 10. Kensington Security Slot |

PERFORMANCE

Processor

Processor Family

8th Generation Intel® Core™ i3 / i5 / i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-8145U | 2 | 4 | 2.1GHz | 3.9GHz | 4MB | DDR4-2400 | Intel UHD Graphics |
| Core i5-8265U | 4 | 8 | 1.6GHz | 3.9GHz | 6MB | DDR4-2400 | Intel UHD Graphics |
| Core i5-8365U | 4 | 8 | 1.6GHz | 4.1GHz | 6MB | DDR4-2400 | Intel UHD Graphics |
| Core i7-8665U | 4 | 8 | 1.9GHz | 4.8GHz | 8MB | DDR4-2400 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------------|-----------------------------------------------|--------------|
| Intel UHD Graphics 620 | Integrated | Shared | 1x DP, 1 Type-C | 4096x2304@60Hz(DP); 4096x2304@60Hz(Type-C) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort™ and USB-C)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type^[2]

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

2. Installed memory is actually 2666MHz, but runs at 2400MHz due to the memory support capability of processor

Storage

Storage Support

- Up to two drives, 2x M.2 2242/2280 SSD
- M.2 SSD up to 1TB each
 - Optional Intel Optane™ Memory Integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

RAID

RAID 0/1 support for M.2 SSDs (RAID preset only available via special bid model)

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | - |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Nano (0.35L)

Dimensions (WxDxH)

179 x 88 x 22 mm (7.05 x 3.46 x 0.87 inches)

Weight

0.505 kg (1.11 lbs)

Case Color

Iron grey (top cover), black (mid bezel), red (bottom cover)

Bays

No bays

Expansion Slots

Three M.2 slots (one for WLAN, two for SSD)

Stand

No stand

IO Box

No IO box

Mounting

- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- 802.11ac 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- USB-C to DP dongle
- USB-C to HDMI® dongle
- USB-C to VGA dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%

- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- REACH
- WEEE

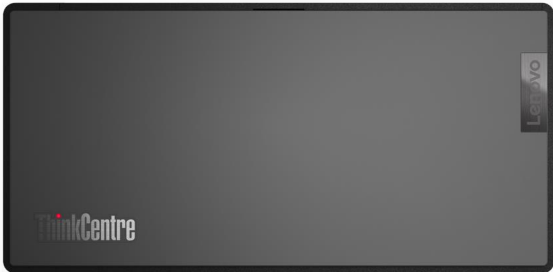
Other Certifications

Other Certifications

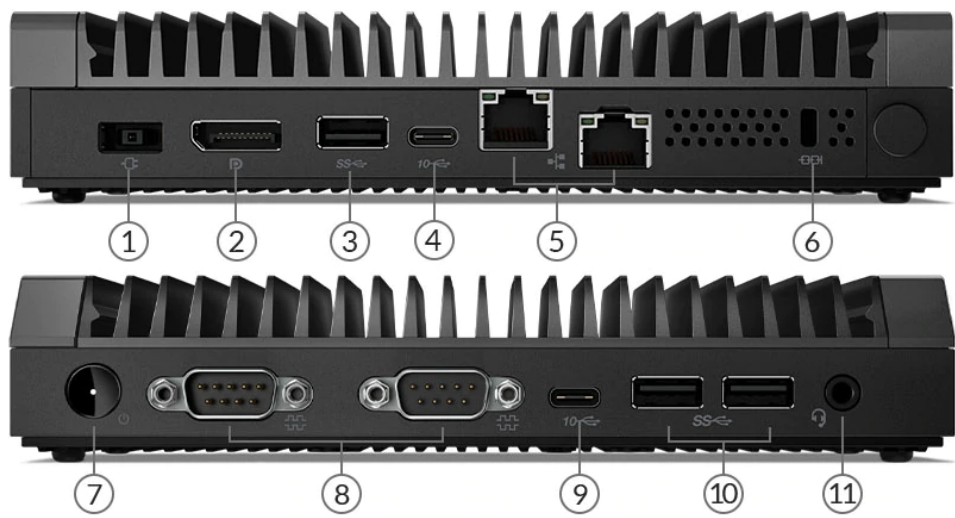
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|-----------------------------------------------|-----------------------------------------------|
| 1. Power connector | 7. Power button |
| 2. HDMI (for 8145UE models) / DP (for others) | 8. 2x Serial (RS232) |
| 3. USB 3.2 Gen 2 (USB 2.0 for Celeron models) | 9. USB-C 3.2 Gen 2 |
| 4. USB-C 3.2 Gen 2 (display and power-in) | 10. 2x USB 3.2 Gen 2 |
| 5. 2x Ethernet (1x Ethernet for Celeron) | 11. Headphone / microphone combo jack (3.5mm) |
| 6. Kensington Security Slot | |

PERFORMANCE

Processor

Processor Family

Intel® Celeron® or 8th Generation Intel Core™ i3 / i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron 4205U | 2 | 2 | 1.8GHz | - | 2MB | DDR4-2133 | Intel UHD Graphics |
| Core i3-8145U | 2 | 4 | 2.1GHz | 3.9GHz | 4MB | DDR4-2400 | Intel UHD Graphics |
| Core i3-8145UE | 2 | 4 | 2.2GHz | 3.9GHz | 4MB | DDR4-2400 | Intel UHD Graphics 620 |
| Core i5-8365U | 4 | 8 | 1.6GHz | 4.1GHz | 6MB | DDR4-2400 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- FreeDOS
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|--------------------|----------------------------------------------|--------------|
| Intel UHD Graphics 620 | Integrated | Shared | 1x HDMI®, 1 Type-C | 4096x2304@60Hz(Type-C) | DirectX® 12 |
| Intel UHD graphics | Integrated | Shared | 1x DP, 1x USB-C | 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort™ and USB-C, 8145UE models support HDMI and USB-C)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots

Memory Type^[2]

DDR4-2666

Memory Protection

Non-ECC

- Notes:
- 1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
 - 2. Installed memory is actually 2666MHz, but runs at 2133MHz or 2400MHz depending on the memory support capability of processor.

Storage

Storage Support

- Up to two drives, 2x M.2 2242/2280 SSD
- M.2 SSD up to 1TB each
 - Optional Intel Optane™ Memory Integrated with SSD, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------------------------------------------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory with Solid State Storage, M.2 2280 | PCIe NVMe, PCIe 3.0 x4 | - | - |

- RAID
- RAID 0/1 support for M.2 SSDs (RAID preset only available via special bid model)

Removable Storage

- Optical
- None
- Card Reader
- No card reader

Multi-Media

- Audio Chip
- High Definition (HD) Audio, Realtek® ALC233VB codec
- Speakers
- Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|-------------------------------|
| 65W | Adapter | 88% | Autosensing, wide temperature |
| 65W | Adapter | 88% | - |
| No power supply | - | - | - |

DESIGN

Input Device

- Keyboard
- Lenovo Calliope Keyboard (USB connector), black
 - Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse
- Lenovo Calliope Mouse (USB connector), black
 - Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

Form Factor

Nano (0.55L)

Dimensions (WxDxH)

| Models | Dimensions |
|------------------|------------------------------------------------|
| Nano only | 179 x 88 x 34.5 mm (7.05 x 3.46 x 1.36 inches) |
| Nano with IO box | 179 x 88 x 61.3 mm (7.05 x 3.46 x 2.41 inches) |

Weight

| Models | Weight |
|------------------|--------------------|
| Nano only | 0.72 kg (1.58 lbs) |
| Nano with IO box | 1.2 kg (2.65 lbs) |

Case Color

Iron grey (top cover), black (mid bezel), black (bottom cover)

Bays

No bays

Expansion Slots

Three M.2 slots (one for WLAN, two for SSD)

Stand

No stand

IO Box

- IO box: 2x serial (RS232 / RS422 / RS485, SDK selectable) and 2x Ethernet (RJ-45, Realtek RTL8153B, gigabit Ethernet) on front, 1x DIO (4DI / 4DO), 1x USB-C (connect to Nano) and 1x DC-in connector (9V - 36V) on rear
- No IO box

Mounting

- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

CONNECTIVITY

Network

Onboard Ethernet

- Two gigabit Ethernet, Intel Ethernet Connection I219-LM and Realtek RTL8111H, 2x RJ45, supports Wake-on-LAN
- One gigabit Ethernet, Realtek RTL8111K, 1x RJ-45, Wake on LAN®
- Two gigabit Ethernet, Realtek RTL8111K and RTL8111H, 2x RJ-45, Wake on LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- 802.11ac 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 2x serial (RS-232)

Optional Front Ports

- 2x gigabit Ethernet (RJ-45) on SE30 IO box
- 2x serial (RS232 / RS422 / RS485, SDK selectable) on SE30 IO box

Rear Ports^[2]

- 1x USB 2.0 (for Celeron models)
- 1x USB 3.2 Gen 2 (for i3 / i5 models only)
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x HDMI (for 8145UE models)
- 1x DisplayPort (for 4205U / 8145U / 8365U models)
- 1x Ethernet (RJ-45, for Celeron models)
- 2x Ethernet (RJ-45, for i3 / i5 models)

Optional Rear Ports

- 1x DC-in 3pin Phoenix connector on SE30 IO box
- 1x DIO (4DI / 4DO) on SE30 IO box

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- USB-C to DP dongle
- USB-C to HDMI dongle
- USB-C to VGA dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Individual USB port disablement

MANAGEABILITY**System Management****System Management**

- Intel vPro Technology, DASH

- None

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating:
 - From 0°C (32°F) to 50°C (122°F): for the machine types of 11AK, 11AL, 11AM, 11AS, 11J3, 11J4, 11J7, and 11J8
 - From 0°C (32°F) to 35°C (95°F): for the machine types of 11AH and 11AJ

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- REACH
- WEEE

Notes:

1. Energy Star 8.0 and EPEAT not for the models with I/O box

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test^[1]

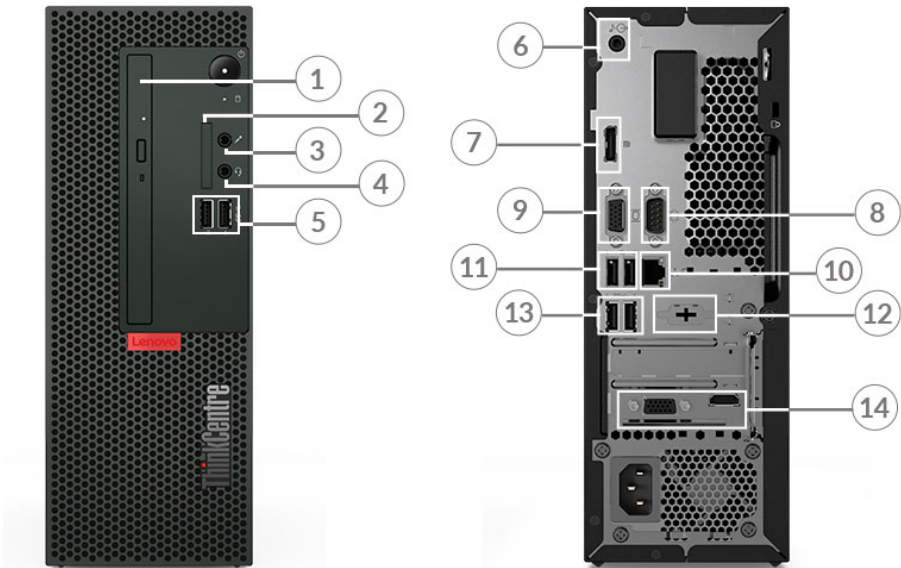
- MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)
- None

Notes:

1. Not for the models with I/O box



OVERVIEW



| | |
|----------------------------------------------|---------------------------------------|
| 1. Optical drive * | 8. Serial |
| 2. Card reader * | 9. VGA |
| 3. Microphone (3.5mm) | 10. Ethernet (RJ-45) |
| 4. Headphone / microphone combo jack (3.5mm) | 11. 2x USB 2.0 |
| 5. 2x USB 3.2 Gen 1 | 12. Serial * |
| 6. Line-out (3.5mm) | 13. 2x USB 3.2 Gen 1 |
| 7. DisplayPort | 14. Optional ports on expansion cards |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6405 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10105 | 4 | 8 | 3.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10305 | 4 | 8 | 3.8GHz | 4.5GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|-----------|----------------------|-------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 1x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x VGA, 1x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 1x HDMI® 1.4, 1x VGA | 3840x2160@30Hz(HDMI), 2048x1536@85Hz(VGA) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (VGA and DisplayPort™), more displays support via discrete graphics

Chipset

Chipset

Intel B460 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2933

Memory Slots

Two DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5"/3.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- 3.5" HDD up to 1TB
- M.2 SSD up to 512GB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 7-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec or ALC897Q codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- No mouse

Mechanical

Form Factor

SFF (7.4L)

Dimensions (WxDxH)^[1]

100 x 303.5 x 274.8 mm (3.9 x 11.9 x 10.8 inches)

Weight

4.5 kg (9.92 lbs)

Case Color

Black

Bays

- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 152mm, height < 64mm)
- One PCIe 3.0 x16, low-profile (length < 152mm, height < 64mm)
- Two M.2 slots (one for WLAN, one for SSD)

Stand

- Vertical stand
- No stand

Notes:

1. Dimensions with bezel & PCI holder & rubber foot

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111HN, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1

- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]**Front Ports**

- 2x USB 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.2 Gen 1
- 1x VGA
- 1x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 1x serial
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch

- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- RoHS compliant

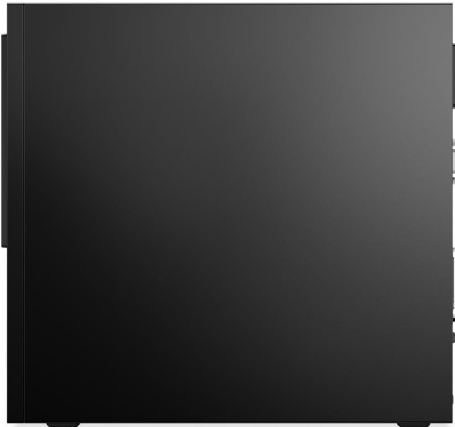
Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11GK/11GJ

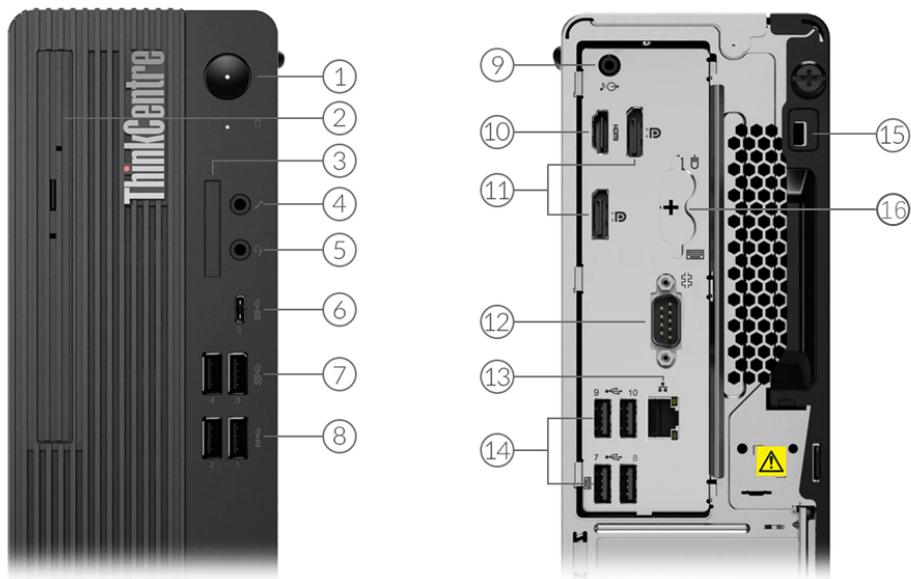
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|----------------------------------------|
| 1. Power button | 9. Line-out (3.5mm) |
| 2. Optical drive * | 10. HDMI |
| 3. Card reader * | 11. 2x DisplayPort |
| 4. Microphone (3.5mm) | 12. Serial |
| 5. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 1 | 14. 4x USB 2.0 |
| 7. 2x USB 3.2 Gen 1 | 15. Kensington Security Slot |
| 8. 2x USB 3.2 Gen 2 | 16. 2x PS/2 ports (keyboard / mouse) * |

- Notes:
- Ports with * are only available on selected models
 - More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-------------------------|------------|-----------|------------------------|-------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort™), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel H470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)

- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |
| 380W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.2L)

Dimensions (WxDxH)

93 x 298 x 340 mm (3.6 x 11.7 x 13.4 inches)

Weight

5.3 kg (11.7 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 155mm, height < 68mm)
- Two dummy slots, only brackets for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

Stand

- Vertical stand
- No stand

Others

- (Optional) Dust filter

- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle

- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11DB/11DC

Other Certifications

Other Certifications

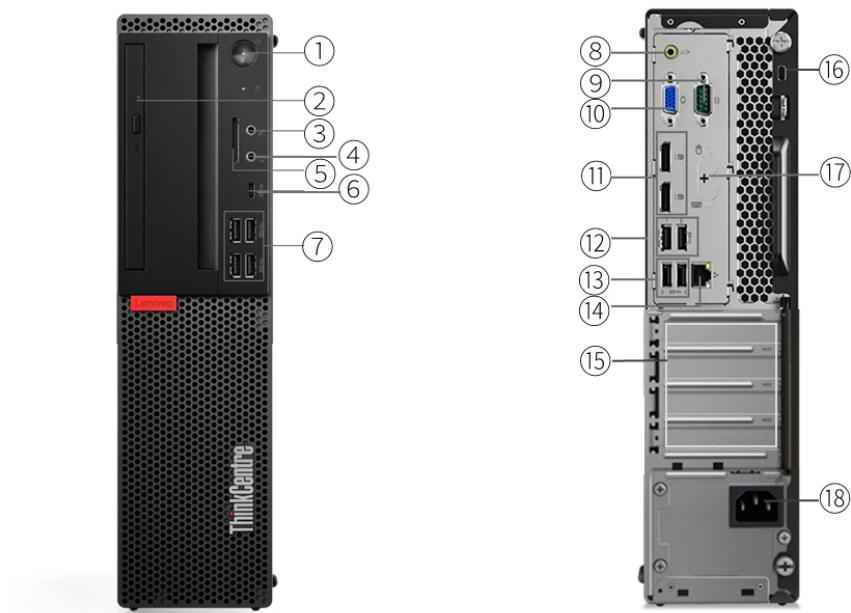
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Optical drive * | 10. VGA |
| 2. Power button | 11. 2x DisplayPort |
| 3. Microphone (3.5mm) | 12. 2x USB 2.0 |
| 4. Headphone / microphone combo jack (3.5mm) | 13. 2x USB 2.0 |
| 5. Card reader * | 14. Ethernet (RJ-45) |
| 6. USB-C 3.1 Gen 1 | 15. Optional ports on expansion cards * |
| 7. 2x USB 3.1 Gen 1 + 2x USB 3.1 Gen 2 | 16. Kensington Security Slot |
| 8. Audio line-out (3.5mm) | 17. 2x PS/2 ports (keyboard / mouse) * |
| 9. Serial | 18. Power connector |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9320 | 4 | 4 | 3.7GHz | 4.4GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500F | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | - |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------|-----------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX 12 |

| | | | | | |
|-------------------------|----------|-----------|-----------|--------------------|------------------------------------|
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 2x DP | 3840x2160@60Hz(DP) | DirectX 12, PCIe 2.0 x16, 35 watts |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort™), more displays support via discrete graphics

Chipset

Chipset

Intel B360 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD/SSD + 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- 2.5" SSD up to 256GB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 7-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 210W | Fixed | 85% | - |
| 260W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Keyboard (PS/2 connector), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Mouse (PS/2 connector), black (only available via special bid)
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.4L)

Dimensions (WxDxH)

92.5 x 290.5 x 343.5 mm (3.6 x 11.4 x 13.5 inches)

Weight

6.0 kg (13.2 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- Two PCIe 3.0 x1, low-profile (length < 147mm, height < 68.9mm)
- One PCIe 3.0 x16, low-profile (length < 147mm, height < 68.9mm)
- One dummy slot, only bracket for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover, disk, optical, extension card assembly / removal

Stand

- Vertical stand
- No stand

Others

(Optional) Dust filter

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]**Front Ports**

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 1x USB 2.0 (via 1-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;

FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

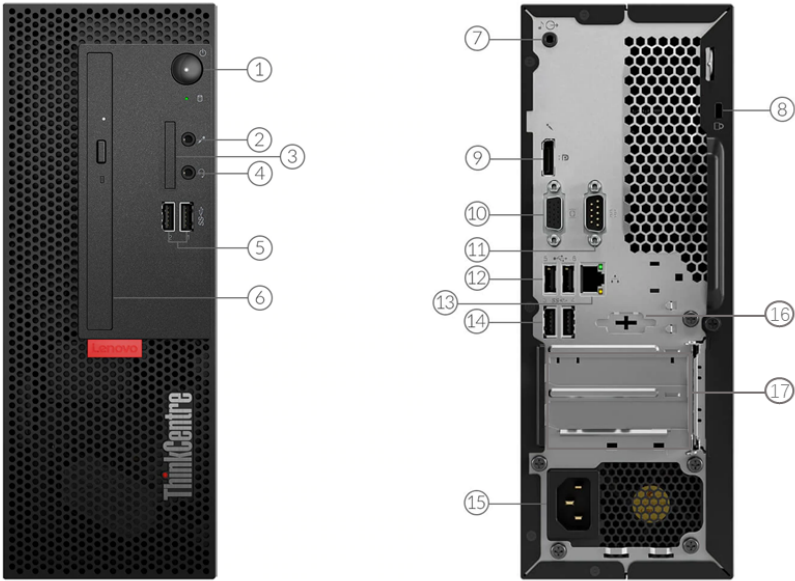
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Power button | 10. VGA |
| 2. Microphone (3.5mm) | 11. Serial |
| 3. Card reader * | 12. 2x USB 2.0 |
| 4. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 5. 2x USB 3.1 Gen 1 | 14. 2x USB 3.1 Gen 1 |
| 6. Optical drive * | 15. Power connector |
| 7. Audio line-out (3.5mm) | 16. Serial * |
| 8. Kensington Security Slot | 17. Optional ports on expansion cards * |
| 9. DisplayPort | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|-----------|---------------|-----------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 1x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x VGA, 1x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (VGA and DisplayPort™), more displays support via discrete graphics

Chipset

Chipset

Intel B365 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2400
- DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5"/3.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 1TB each
- M.2 SSD up to 1TB each
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 7-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (7.4L)

Dimensions (WxDxH)

100 x 274.8 x 303.5 mm (3.9 x 10.8 x 11.9 inches)

Weight

4.25 kg (9.37 lbs)

Case Color

Black

Bays

- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 152mm, height < 64mm)
- One PCIe 3.0 x16, low-profile (length < 152mm, height < 64mm)
- One M.2 slot (for SSD)

Stand

- Vertical stand
- No stand

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111HN, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth®

No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.1 Gen 1
- 1x VGA
- 1x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 1x serial
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password

- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

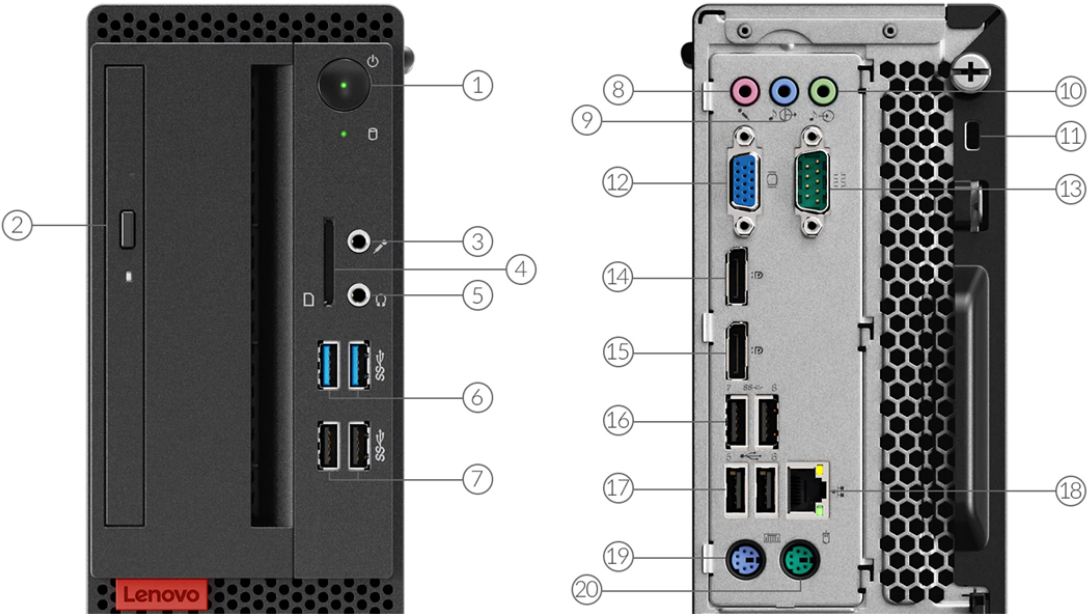
Green Certifications

Green Certifications

- ErP Lot 3
- RoHS compliant
- WEEE



OVERVIEW



| | |
|---------------------------|------------------------------|
| 1. Power button | 11. Kensington Security Slot |
| 2. Optical drive * | 12. VGA |
| 3. Headphone (3.5mm) | 13. Serial |
| 4. Card reader * | 14. DisplayPort |
| 5. Microphone (3.5mm) | 15. DisplayPort |
| 6. 2x USB 3.1 Gen 2 | 16. 2x USB 3.1 Gen 1 |
| 7. 2x USB 3.1 Gen 1 | 17. 2x USB 2.0 |
| 8. Microphone (3.5mm) | 18. Ethernet (RJ-45) |
| 9. Audio line-out (3.5mm) | 19. PS/2 port (keyboard) |
| 10. Audio line-in (3.5mm) | 20. PS/2 port (mouse) |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------|-------|---------|----------------|---------------|------------------|----------------|--------------------------------|
| AMD Athlon 300GE | 2 | 4 | 3.4GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon™ Vega 3 Graphics |
| AMD Athlon PRO 200GE | 2 | 4 | 3.2GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon Vega 3 Graphics |
| AMD Athlon PRO 300GE | 2 | 4 | 3.4GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon Vega 3 Graphics |
| AMD Ryzen 3 3200G | 4 | 4 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 PRO 2200G | 4 | 4 | 3.5GHz | 3.7GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 PRO 3200G | 4 | 4 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 5 2400G | 4 | 8 | 3.6GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon RX Vega 11 Graphics |
| AMD Ryzen 5 3350G | 4 | 8 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon RX Vega 11 Graphics |
| AMD Ryzen 5 3400G | 4 | 8 | 3.7GHz | 4.2GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon RX Vega 11 Graphics |
| AMD Ryzen 5 PRO 3350G | 4 | 8 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3400G | 4 | 8 | 3.7GHz | 4.2GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3600 | 6 | 12 | 3.6GHz | 4.2GHz | 3MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 7 PRO 3700 | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 9 PRO 3900 | 12 | 24 | 3.1GHz | 4.3GHz | 6MB L2 / 64MB L3 | DDR4-3200 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------|-----------------------------------------|--------------|
| AMD Radeon R5 Graphics | Integrated | Shared | 2x DisplayPort™, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX® 12 |
| AMD Radeon R7 Graphics | Integrated | Shared | 2x DisplayPort, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX 12 |

| | | | | | |
|--------------------------------|------------|-----------|------------------------|-----------------------------------------|------------|
| AMD Radeon Vega 3 Graphics | Integrated | Shared | 2x DisplayPort, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX 12 |
| AMD Radeon Vega 8 Graphics | Integrated | Shared | 2x DisplayPort, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX 12 |
| AMD Radeon Vega 11 Graphics | Integrated | Shared | 2x DisplayPort, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX 12 |
| AMD Radeon RX Vega 11 Graphics | Integrated | Shared | 2x DisplayPort, 1x VGA | 4096x2160@60Hz(DP), 1920x1200@60Hz(VGA) | DirectX 12 |
| AMD Radeon 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

AMD PRO 560 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-1866
- DDR4-2133
- DDR4-2400
- DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 1TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

| | | | |
|--------------|------------------------|---|------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
|--------------|------------------------|---|------|

RAID
RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

- Optical**
- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
 - DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
 - None

- Card Reader**
- 7-in-1 card reader
 - No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC662 codec

- Speakers**
- Single speaker, 1W x1
 - No speakers

Power Supply

| | | | |
|-------|-------|------------|--------------|
| Power | Type | Efficiency | Key Features |
| 180W | Fixed | 85% | - |
| 210W | Fixed | 85% | - |
| 260W | Fixed | 92% | - |

DESIGN

Input Device

- Keyboard**
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Keyboard (PS/2 connector), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse**
- Lenovo Calliope Mouse (USB connector), black
 - Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Mouse (PS/2 connector), black (only available via special bid)
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

Form Factor
SFF (8.4L)
Dimensions (WxDxH)
92.5 x 290.5 x 343.5 mm (3.6 x 11.4 x 13.5 inches)

Weight
6.0 kg (13.2 lbs)

Case Color
Black

- Bays**
- 1x 2.5" disk bay (bay comes with disk)

- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 150mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 150mm, height < 68mm)
- Two dummy slots, only brackets for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover, disk, optical, extension card assembly / removal

Stand

- Vertical stand
- No stand

Others

(Optional) Dust filter

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Qualcomm® QCA6174A, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x headphone (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.1 Gen 1
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)
- 2x PS/2 ports (keyboard / mouse)
- 1x Ethernet (RJ-45)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)
- 1x microphone (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 1x serial
- 1x parallel

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;

USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

DASH 1.0 / 1.1

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

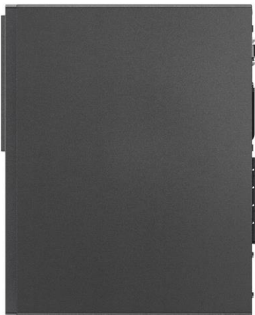
- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

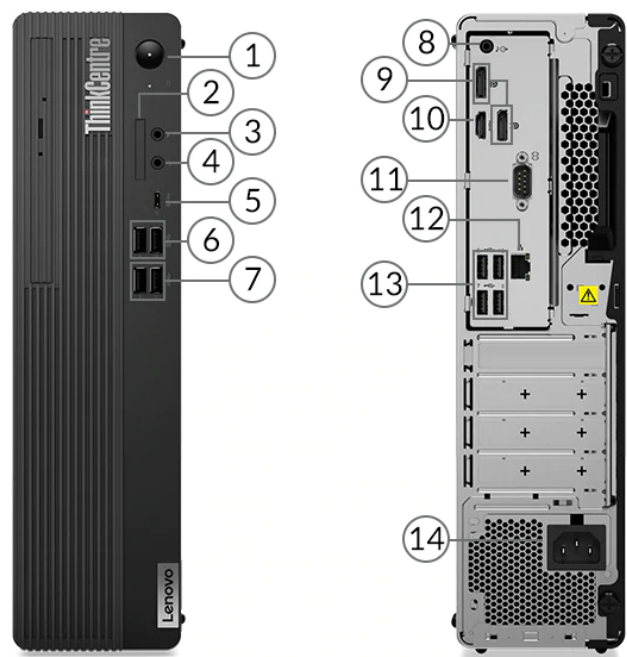
Green Certifications

Green Certifications

- ErP Lot 3
- RoHS compliant
- WEEE



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 8. Line-out (3.5mm) |
| 2. Card reader | 9. 2x DisplayPort |
| 3. Microphone (3.5mm) | 10. HDMI |
| 4. Headphone / microphone combo jack (3.5mm) | 11. Serial |
| 5. USB-C 3.2 Gen 1 | 12. Ethernet (RJ-45) |
| 6. 2x USB 3.2 Gen 1 | 13. 4x USB 2.0 |
| 7. 2x USB 3.2 Gen 2 | 14. Power connector |

Notes:

- More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 / 7 / 9 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------------|-------|---------|----------------|---------------|------------------|----------------|-----------------------------|
| AMD Athlon Silver 3050GE | 2 | 4 | 3.4GHz | 3.4GHz | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon™ Graphics |
| AMD Athlon Gold PRO 3150G | 4 | 4 | 3.5GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Graphics |
| AMD Ryzen 3 3200G | 4 | 4 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 4300G | 4 | 8 | 3.8GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 5300G | 4 | 8 | 4.0GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 4350G | 4 | 8 | 3.8GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 5350G | 4 | 8 | 4.0GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4600G | 6 | 12 | 3.7GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600G | 6 | 12 | 3.9GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 3350G | 4 | 8 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3400G | 4 | 8 | 3.7GHz | 4.2GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3600 | 6 | 12 | 3.6GHz | 4.2GHz | 3MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 5 PRO 4650G | 6 | 12 | 3.7GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650G | 6 | 12 | 3.9GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4700G | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5700G | 8 | 16 | 3.8GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 3700 | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 7 PRO 4750G | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5750G | 8 | 16 | 3.8GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4 3200 | AMD Radeon Graphics |
| AMD Ryzen 9 PRO 3900 | 12 | 24 | 3.1GHz | 4.3GHz | 6MB L2 / 64MB L3 | DDR4-3200 | - |

Operating System

Operating System

- Windows® 10 Home 64

- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-----------------------------|------------|-----------|-----------------------------------|------------------------------------------|--------------|
| AMD Radeon Graphics | Integrated | Shared | 2x DisplayPort™ 1.4, 1x HDMI® 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX® 12 |
| AMD Radeon Vega 8 Graphics | Integrated | Shared | 2x DisplayPort 1.4, 1x HDMI 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX 12 |
| AMD Radeon Vega 11 Graphics | Integrated | Shared | 2x DisplayPort 1.4, 1x HDMI 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX 12 |
| AMD Radeon 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 3840x2160@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort), more displays support via discrete graphics

Chipset

Chipset

AMD PRO 565 chipset

Memory^[1]

Max Memory^[2]

Up to 128GB DDR4-3200

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type^[3]

- DDR4-1866
- DDR4-2133
- DDR4-2400
- DDR4-2666
- DDR4-3200

Memory Protection

Non-ECC

Notes:

1. Recommend to choose the models with more than 4GB for better performance and experience

2. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

3. Installed memory is actually 3200MHz, but may run at 1866MHz, 2133MHz, 2400MHz or 2666MHz depending on the memory support capability of processor

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

- Single speaker, 1W x1
- No speakers

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.2L)

ThinkCentre M75s Gen 2

Dimensions (WxDxH)

93 x 298 x 340 mm (3.6 x 11.7 x 13.4 inches)

Weight

5.3 kg (11.7 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 155mm, height < 68mm)
- Two dummy slots, only brackets for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

Stand

- Vertical stand
- No stand

Others

(Optional) Dust filter

CONNECTIVITY

Network^[1]

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ45, supports Wake-on-LAN

Optional Ethernet^[2]

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Bitland RTL8111FP, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Notes:

1. This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.
2. RTL8111FP is not available for AP countries

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)

ThinkCentre M75s Gen 2

- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 1x parallel
- None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- DASH 1.1
- No DASH

Notes:

1. DASH 1.1 is an optional feature for the selected MTs

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature**

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS**Green Certifications****Green Certifications^[1]**

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11JA/11JB

Other Certifications**Other Certifications**

- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



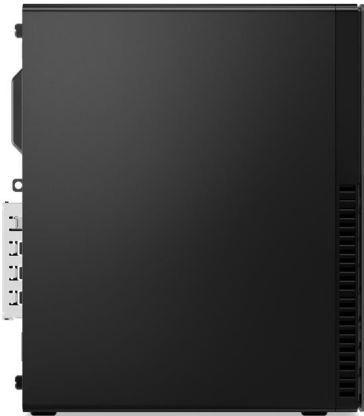
AMD



AMD



AMD



AMD

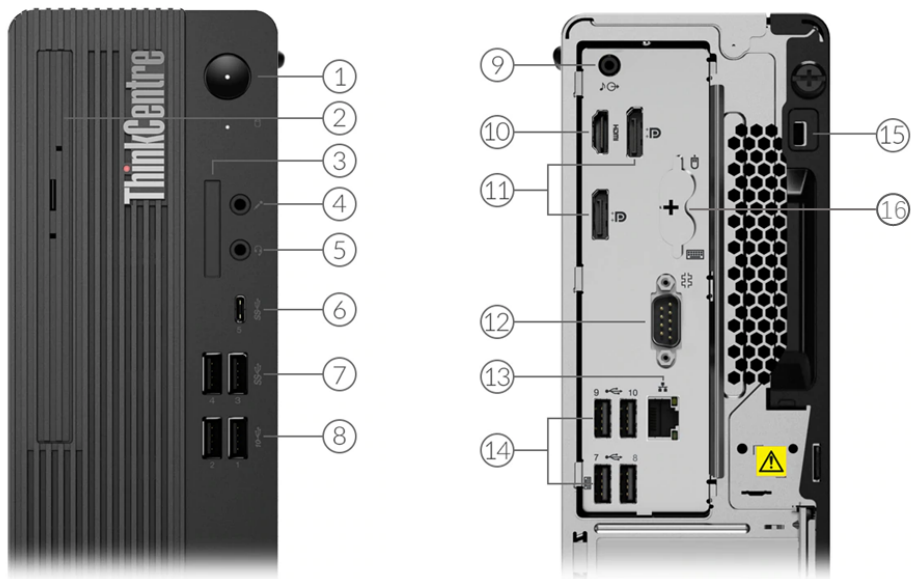


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|----------------------------------------|
| 1. Power button | 9. Line-out (3.5mm) |
| 2. Optical drive * | 10. HDMI |
| 3. Card reader * | 11. 2x DisplayPort |
| 4. Microphone (3.5mm) | 12. Serial |
| 5. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 1 | 14. 4x USB 3.2 Gen 1 |
| 7. 2x USB 3.2 Gen 1 | 15. Kensington Security Slot |
| 8. 2x USB 3.2 Gen 2 | 16. 2x PS/2 ports (keyboard / mouse) * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-------------------------|------------|-----------|------------------------|-------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort™), more displays support via discrete graphics

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |
| 380W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.2L)

Dimensions (WxDxH)

93 x 298 x 340 mm (3.6 x 11.7 x 13.4 inches)

Weight

5.3 kg (11.7 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 155mm, height < 68mm)
- Two dummy slots, only brackets for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

Stand

- Vertical stand
- No stand

Others

- (Optional) Dust filter
- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.2 Gen 1
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS**Green Certifications****Green Certifications**

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Other Certifications**Other Certifications**

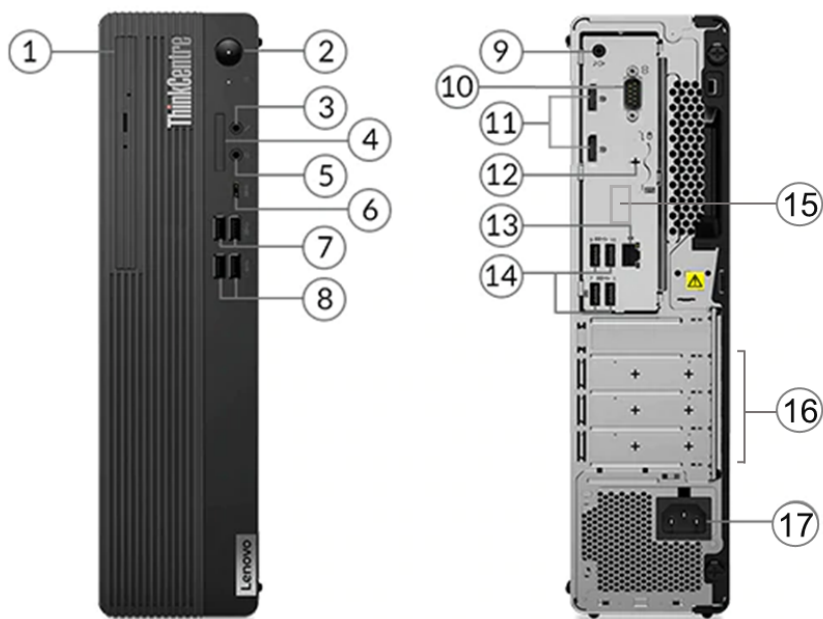
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------------|
| 1. Optical drive * | 10. Serial |
| 2. Power button | 11. 2x DisplayPort |
| 3. Card reader * | 12. 2x PS/2 ports (keyboard / mouse) * |
| 4. Microphone (3.5mm) | 13. Ethernet (RJ-45) |
| 5. Headphone / microphone combo jack (3.5mm) | 14. 4x USB 3.2 Gen 1 |
| 6. USB-C 3.2 Gen 1 | 15. Optional Video Port (HDMI / DP / USB-C) * |
| 7. 2x USB 3.2 Gen 1 | 16. Optional ports on expansion cards * |
| 8. 2x USB 3.2 Gen 2 | 17. Power connector |
| 9. Line-out (3.5mm) | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|-----------|--------------------------------------------------------|-------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 2x DP, 1x optional video port (HDMI® / 3rd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 2x DP, 1x optional video port (HDMI / 3rd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

| | | | | | |
|-----|--|--|--|--|--|
| 730 | | | | | |
|-----|--|--|--|--|--|

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (2x DisplayPort™ and 1x optional port [HDMI / 3rd DP / USB-C]), more displays support via discrete graphics

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to four drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 2x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB each
- M.2 SSD up to 2TB each
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)

- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |
| 380W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.2L)

Dimensions (WxDxH)

93 x 298 x 340 mm (3.6 x 11.7 x 13.4 inches)

Weight

5.3 kg (11.7 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x4, low-profile (length < 155mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 155mm, height < 68mm)
- One dummy slot, only bracket for optional port extension
- Three M.2 slots (one for WLAN, two for SSD)

Stand

- Vertical stand
- No stand

Others

- (Optional) Dust filter
- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- 2.5 Gigabit Ethernet, Realtek RTL8125BS, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.2 Gen 1
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- Optional video port (one of HDMI / DisplayPort / USB-C 3.2 Gen 1 with DisplayPort function)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle

- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)

- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11D1/11D2

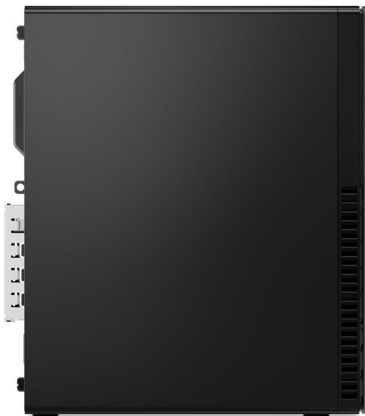
Other Certifications

Other Certifications

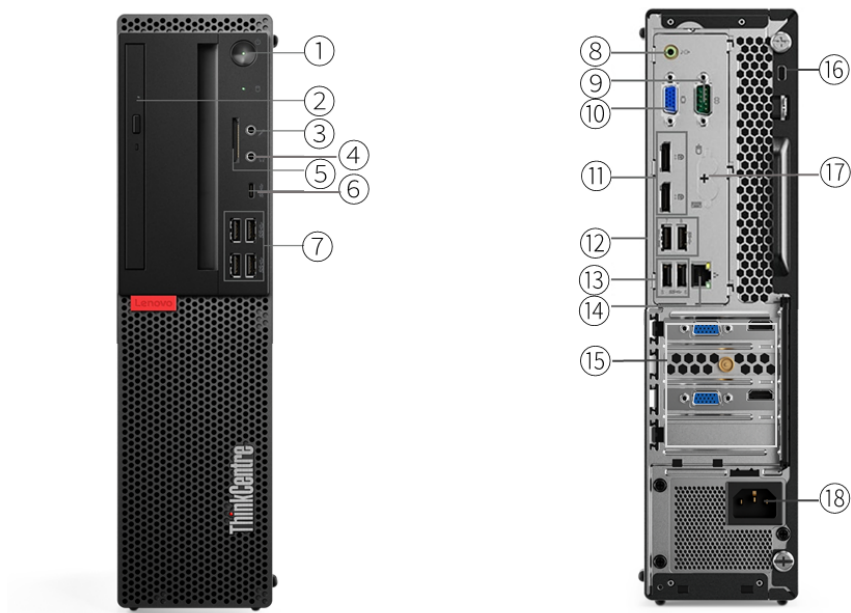
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Optical drive * | 10. VGA |
| 2. Power button | 11. 2x DisplayPort |
| 3. Microphone (3.5mm) | 12. 2x USB 3.2 Gen 1 |
| 4. Headphone / microphone combo jack (3.5mm) | 13. 2x USB 3.2 Gen 1 |
| 5. Card reader * | 14. Ethernet (RJ-45) |
| 6. USB-C 3.1 Gen 1 | 15. Optional ports on expansion cards * |
| 7. 2x USB 3.1 Gen 1 + 2x USB 3.1 Gen 2 | 16. Kensington Security Slot |
| 8. Audio line-out (3.5mm) | 17. 2x PS/2 ports (keyboard / mouse) * |
| 9. Serial | 18. Power connector |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9320 | 4 | 4 | 3.7GHz | 4.4GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500F | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | - |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------|-----------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX 12 |

| | | | | | |
|-------------------------|----------|-----------|-----------|--------------------|------------------------------------|
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 2x DP | 3840x2160@60Hz(DP) | DirectX 12, PCIe 2.0 x16, 35 watts |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort™), more displays support via discrete graphics

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD/SSD + 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- 2.5" SSD up to 256GB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 7-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

Single speaker, 1W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 210W | Fixed | 85% | - |
| 260W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Keyboard (PS/2 connector), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Mouse (PS/2 connector), black (only available via special bid)
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

SFF (8.4L)

Dimensions (WxDxH)

92.5 x 290.5 x 343.5 mm (3.6 x 11.4 x 13.5 inches)

Weight

6.0 kg (13.2 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, low-profile (length < 150mm, height < 68mm)
- One PCIe 3.0 x16 (x4 signal), low-profile (length < 150mm, height < 68mm)
- One PCIe 3.0 x16, low-profile (length < 150mm, height < 68mm)
- One dummy slot, only bracket for optional port extension

- Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover, disk, optical, extension card assembly / removal

Stand

- Vertical stand
- No stand

Others

(Optional) Dust filter

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.1 Gen 1
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x Thunderbolt™ 3 (combo USB-C 3.1 Gen 2 / DisplayPort, via Thunderbolt expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management⁽¹⁾

- Intel vPro with Intel AMT 12.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service

- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

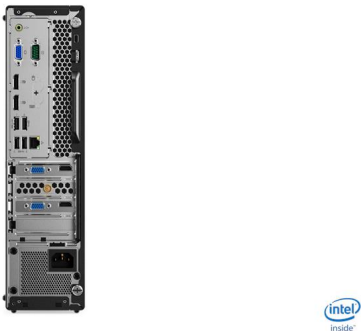
Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 10U2/10U3 with i3/i5/i7/i9 processor

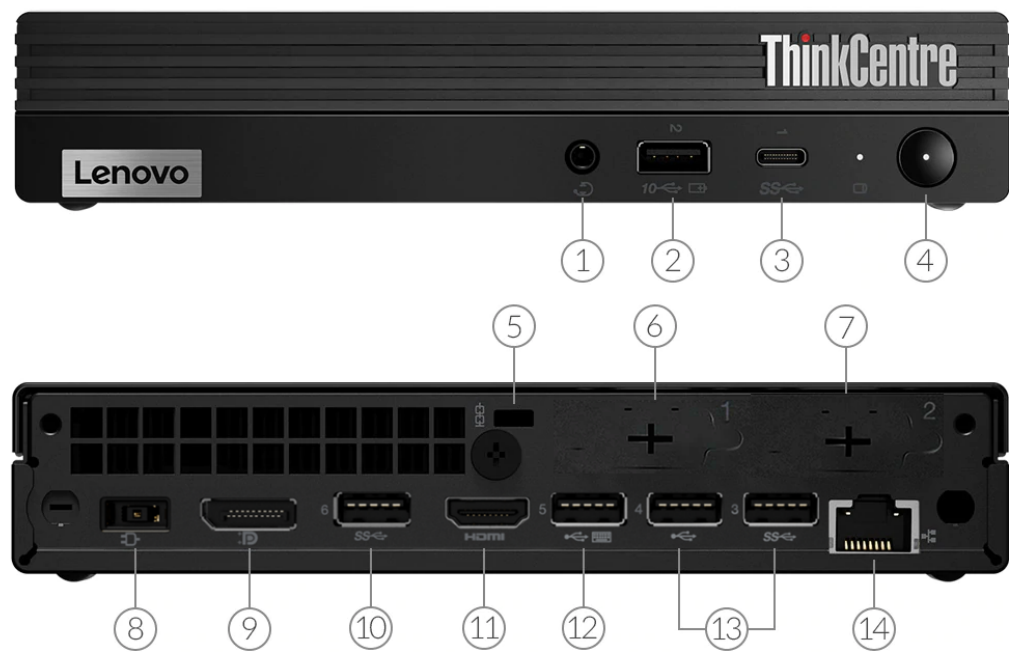
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 8. Power connector |
| 2. USB 3.2 Gen 2 | 9. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 10. USB 3.2 Gen 1 |
| 4. Power button | 11. HDMI |
| 5. Kensington Security Slot | 12. USB 2.0 |
| 6. Dummy port (no function) * | 13. 1x USB 2.0 + 1x USB 3.2 Gen 1 |
| 7. Dummy port (no function) * | 14. Ethernet (RJ-45) |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 / i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Core i3-1005G1 | 2 | 4 | 1.2GHz | 3.4GHz | 4MB | DDR4-3200 | Intel UHD Graphics |
| Core i5-1035G1 | 4 | 8 | 1.0GHz | 3.6GHz | 6MB | DDR4-3200 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|--------------------|------------|--------|-----------------|------------------------------------------|--------------|
| Intel UHD graphics | Integrated | Shared | 1x HDMI®, 1x DP | 4096x2304@24Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort™ + HDMI)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2 drives, 1x 2.5" HDD + 1x M.2 SSD

- 2.5" HDD up to 2TB
- M.2 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Security |
|-----------|-----------|-----|----------|
|-----------|-----------|-----|----------|

| | | | |
|---------------|------------|------|------|
| M.2 2280 SSD | PCIe NVMe | - | Opal |
| M.2 2242 SSD | PCIe NVMe | - | - |
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |

Multi-Media

Audio Chip

High Definition (HD) Audio

Speakers

- No speakers
- Single speaker

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- No keyboard
- USB Traditional Keyboard, black

Mouse

- No mouse
- USB Calliope Mouse, Black

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 182.9 x 36.5 mm (7.05 x 7.20 x 1.4 inches)

Weight

1.25 kg (2.76 lbs)

Case Color

Black

Expansion Slots

- One M.2 slot (for SSD)
- One M.2 slot (for WLAN)

EOU

- (Optional) Toolless chassis open (Toolless Chassis Screw required) and toolless M.2 SSD, HDD, memory assembly / removal
- No support

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, 1x RJ45

WLAN + Bluetooth™

- Realtek® RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- None

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.2 Gen 1
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

1x parallel (USB to parallel dongle)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military testing



intel



intel



intel



intel

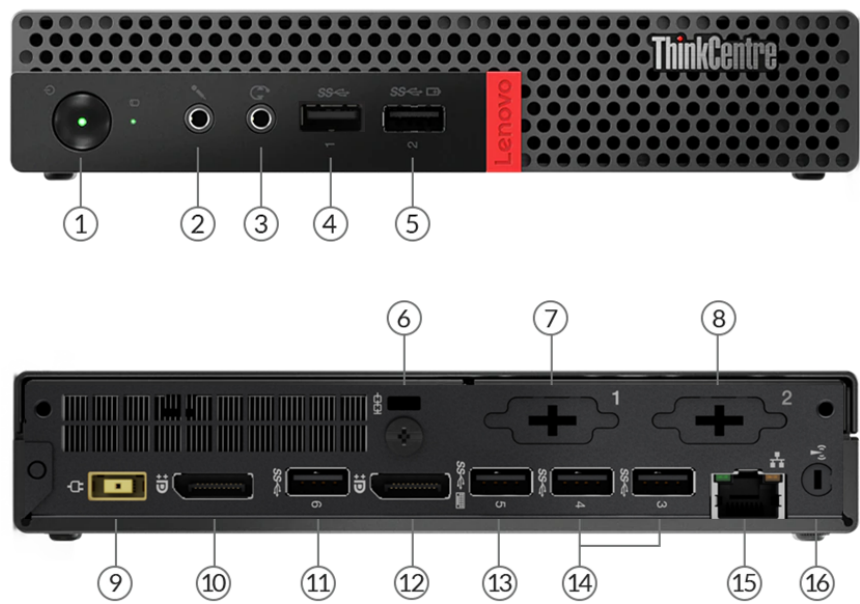


intel



intel

OVERVIEW



| | |
|----------------------------------------------|------------------------|
| 1. Power button | 9. Power connector |
| 2. Microphone (3.5mm) | 10. DisplayPort |
| 3. Headphone / microphone combo jack (3.5mm) | 11. USB 3.1 Gen 1 |
| 4. USB 3.1 Gen 1 | 12. DisplayPort |
| 5. USB 3.1 Gen 1 | 13. USB 2.0 |
| 6. Kensington Security Slot | 14. 2x USB 2.0 |
| 7. Optional port 1 * | 15. Ethernet (RJ-45) |
| 8. Optional port 2 * | 16. Wi-Fi antenna slot |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD E2 / A4 APU

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|--------|----------------|-------------------------|
| AMD E2-9000e | 2 | 2 | 1.5GHz | 2.0GHz | 1MB L2 | DDR4-1866 | AMD Radeon™ R2 Graphics |
| AMD A4-9120e | 2 | 2 | 1.5GHz | 2.2GHz | 1MB L2 | DDR4-1866 | AMD Radeon R3 Graphics |

Operating System

Operating System

- Windows® Embedded Standard 7 V2 (WES 7 V2)
- Windows 10 IoT Enterprise
- LeTOS V2 (Lenovo® Terminal Operating System, Linux-based)

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------------------------------|----------------------------------------------------------------------|--------------|
| AMD Radeon R2 Graphics | Integrated | Shared | 2x DisplayPort™, 1x optional port (VGA / USB-C) | 3840x2160@60Hz(DP), 2048x1280@60Hz(VGA), 3840x2160@60Hz(USB-C) | DirectX® 12 |
| AMD Radeon R3 Graphics | Integrated | Shared | 2x DisplayPort, 1x optional port (VGA / USB-C) | 3840x2160@60Hz(DP), 2048x1280@60Hz(VGA), 3840x2160@60Hz(USB-C) | DirectX 12 |

Notes:

- The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (2x DisplayPort + 1x optional port [VGA / USB-C])

Chipset

Chipset

AMD SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 8GB DDR4-2666

Memory Slots

One DDR4 SO-DIMM slot

Memory Type^[2]

DDR4-2666

Memory Protection

Non-ECC

Notes:

- The max memory is based on the test results with current Lenovo memory offerings. The system may support more memory as the technology develops.
- Installed memory is actually 2666MHz, but run at 1866 due to the memory support capability of processor

Storage

Storage Support

One drive, 1x M.2 2242/2280 SSD

- M.2 SSD up to 128GB

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | SATA 6Gb/s | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233-VB2-CG codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

Lenovo Traditional Keyboard (USB connector), black

Mouse

Lenovo Calliope Mouse (USB connector), black

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 182.9 x 34.5 mm (7.05 x 7.20 x 1.36 inches)

Weight^[1]

1.3 kg (2.9 lbs)

Case Color

Black

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

(Optional) Power adapter cage

Notes:

1. Weight may vary by configuration

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Realtek RTL8111HN, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™^[1]

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Qualcomm® QCA6174A, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Qualcomm QCA9377, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Notes:

1. Win 10 RS3 and Win10 earlier version only support Bluetooth 4.1

Ports^[1]**Front Ports**

- 2x USB 3.1 Gen 1 (one supports Always On and fast charge)
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 3x USB 2.0
- 1x USB 3.1 Gen 1
- 1x Ethernet (RJ-45)
- 2x DisplayPort

Optional Rear Ports

- Optional Port 1 (One of VGA / serial / USB-C 2.0 with DisplayPort function)
- Optional Port 2 (serial)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;

FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- VGA Cable Tiny
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%

- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant
- WEEE

Notes:

1. EnergyStar and EPEAT are not for non-OS models

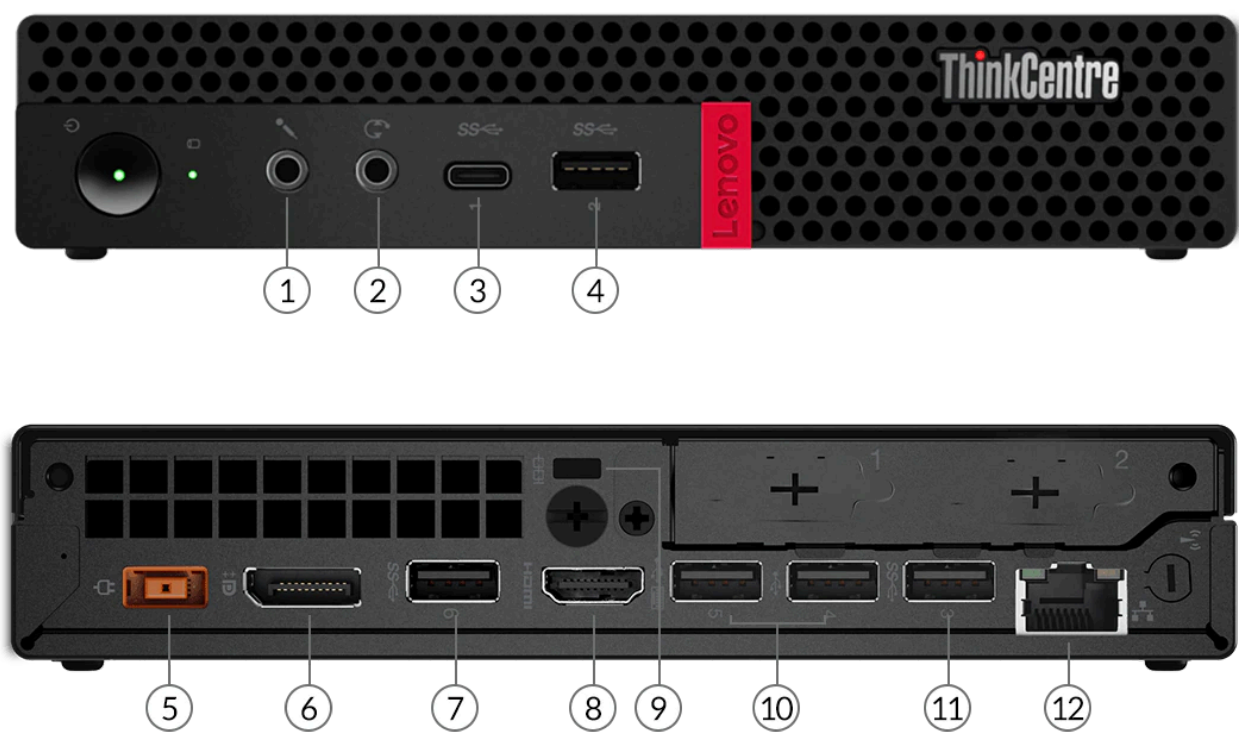
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------|
| 1. Microphone (3.5mm) | 7. USB 3.1 Gen 1 |
| 2. Headphone / microphone combo jack (3.5mm) | 8. HDMI |
| 3. USB-C 3.1 Gen 1 | 9. Kensington Security Slot |
| 4. USB 3.1 Gen 1 | 10. 2x USB 2.0 |
| 5. Power connector | 11. USB 3.1 Gen 1 |
| 6. DisplayPort | 12. Ethernet (RJ-45) |

PERFORMANCE

Processor

Processor Family

Intel® Pentium® Processor or 8th Generation Intel Core™ i3 / i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|--------------------|
| Pentium Gold 5405U | 2 | 4 | 2.3GHz | - | 2MB | DDR4-2133 | Intel UHD Graphics |
| Core i3-8145U | 2 | 4 | 2.1GHz | 3.9GHz | 4MB | DDR4-2400 | Intel UHD Graphics |
| Core i5-8265U | 4 | 8 | 1.6GHz | 3.9GHz | 6MB | DDR4-2400 | Intel UHD Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|--------------------|------------|--------|-----------------|------------------------------------------|--------------|
| Intel UHD graphics | Integrated | Shared | 1x HDMI®, 1x DP | 4096x2304@24Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort™ + HDMI)

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory^[1]

Up to 16GB DDR4-2666

Memory Slots

One DDR4 SO-DIMM slot

Memory Type^[2]

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. System automatically clocks down for the processors with lower memory controller

Storage

Storage Support

Up to two drives, 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 512GB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Traditional Keyboard (USB connector), black

Mouse

- Lenovo Calliope Mouse (USB connector), black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.32 kg (2.91 lbs)

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

No support

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111HN-CG, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- No WLAN and Bluetooth

WWAN

No support

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.1 Gen 1
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

1x parallel (USB to parallel dongle)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Firmware TPM 2.0 integrated in chipset

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant
- REACH
- WEEE

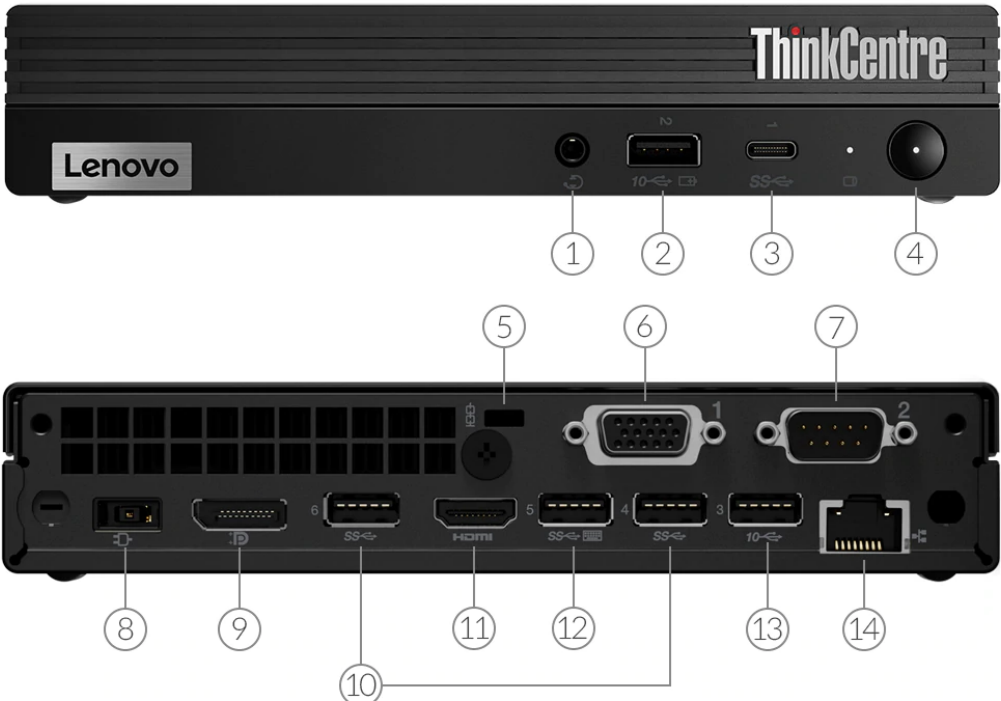
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 8. Power connector |
| 2. USB 3.2 Gen 2 | 9. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 10. USB 3.2 Gen 1 |
| 4. Power button | 11. HDMI |
| 5. Kensington Security Slot | 12. USB 3.2 Gen 1 |
| 6. Optional port 1 (VGA is shown) | 13. USB 3.2 Gen 2 |
| 7. Optional port 2 (serial is shown) | 14. Ethernet (RJ-45) |

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900T | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905T | 2 | 2 | 3.3GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400T | 2 | 4 | 3.4GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500T | 2 | 4 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100T | 4 | 8 | 3.0GHz | 3.8GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300T | 4 | 8 | 3.0GHz | 3.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400T | 6 | 12 | 2.0GHz | 3.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500T | 6 | 12 | 2.3GHz | 3.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700T | 8 | 16 | 2.0GHz | 4.5GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900T | 10 | 20 | 1.9GHz | 4.6GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via two onboard ports (DP + HDMI) + one optional port (VGA / 2nd DP / 2nd HDMI / USB-C) , or via one onboard (DP / HDMI) + optional dual DP (MST mode)

Chipset

Chipset

Intel H470 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz, but may run at 2666MHz or 2933MHz, depending on the memory support capability of processor

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec or ALC897Q codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| 90W | Adapter | 89% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 187 x 183.8 x 66.5 mm (7.36 x 7.24 x 2.62 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny only | 1.25 kg (2.76 lbs) |
| With VESA mount & ODD box | 1.74 kg (3.84 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm

- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 3x USB 3.2 Gen 1
- 1x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort™

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- Dual USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- Dual DisplayPort ports (occupy Optional Port 1 and 2)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

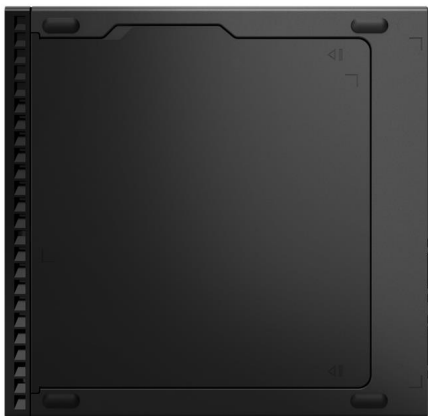
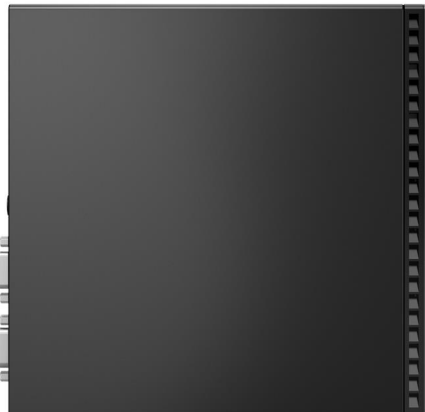
Other Certifications

Other Certifications

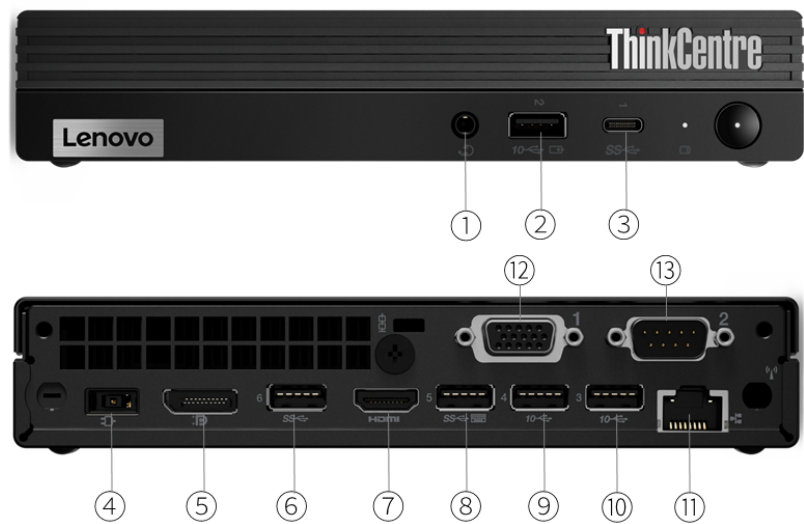
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 8. USB 3.2 Gen 1 |
| 2. USB 3.2 Gen 2 | 9. USB 3.2 Gen 2 |
| 3. USB-C 3.2 Gen 1 | 10. USB 3.2 Gen 2 |
| 4. Power connector | 11. Ethernet (RJ-45) |
| 5. DisplayPort | 12. Optional port 1 (VGA is shown) * |
| 6. USB 3.2 Gen 1 | 13. Optional port 2 (serial is shown) * |
| 7. HDMI | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 10th Generation Intel Core™ i3, or 11th Generation Intel Core i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5905T | 2 | 2 | 3.3GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6405T | 2 | 4 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6505T | 2 | 4 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10105T | 4 | 8 | 3.0GHz | 3.9GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10305T | 4 | 8 | 3.0GHz | 4.0GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-11400T | 6 | 12 | 1.3GHz | 3.7GHz | 12MB | DDR4-3200 | Intel UHD Graphics 730 |
| Core i5-11500T | 6 | 12 | 1.5GHz | 3.9GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600T | 6 | 12 | 1.7GHz | 4.1GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700T | 8 | 16 | 1.4GHz | 4.6GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900T | 8 | 16 | 1.5GHz | 4.9GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics¹

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |
| Intel UHD Graphics 730 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |
| Intel UHD Graphics | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual | DirectX 12 |

| | | | | | |
|-----|--|--|----------------------------------------|-----------------------------------------------------------|--|
| 750 | | | HDMI / VGA / 2nd DP / USB-C / dual DP) | DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | |
|-----|--|--|----------------------------------------|-----------------------------------------------------------|--|

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via two onboard ports (DP + HDMI) + one optional port (VGA / 2nd DP / 2nd HDMI / USB-C) , or via one onboard (DP / HDMI) + optional dual DP (MST mode)

Chipset

Chipset

Intel B560 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2242 / 2280 SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 2TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe | - | - |
| M.2 2280 SSD | PCIe NVMe | - | Opal |

RAID

No support

Removable Storage

Optical

- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard, black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------|------------------------------------------------------------------------------------|
| Tiny only | 179 x 182.9 x 36.5 mm with rubber feet (7.05 x 7.2 x 1.44 inches with rubber feet) |
| With VESA mount & ODD box | 204.2 x 186.6 x 64 mm (8.04 x 7.35 x 2.52 inches with rubber feet) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny only | 1.25 kg (2.76 lbs) |
| With VESA mount & ODD box | 1.74 kg (3.84 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- None

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x HDMI 2.0 (HDMI 1.4 supported on Pentium Gold, Celeron, 10th Generation Intel Core i3 models)
- 1x DisplayPort™
- 1x Ethernet (RJ-45)

Optional Rear Ports

- 2x USB 2.0 ports (share one USB 2.0 bandwidth, occupy optional port 1 and 2)
- 2x DisplayPort ports (occupy Optional port 1 and 2)
- Optional port 1 (one of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 2.0 with DisplayPort function)
- Optional port 2 (serial)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

No physical locks

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Ultra Low Noise



- None

Mil-Spec Test

Work in progress



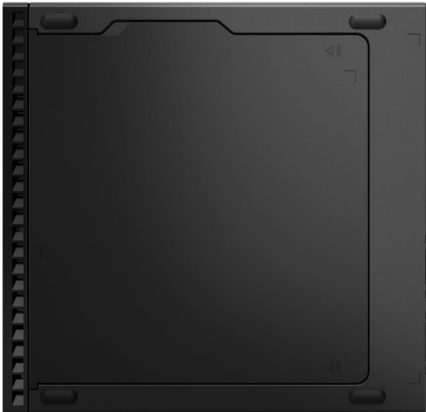
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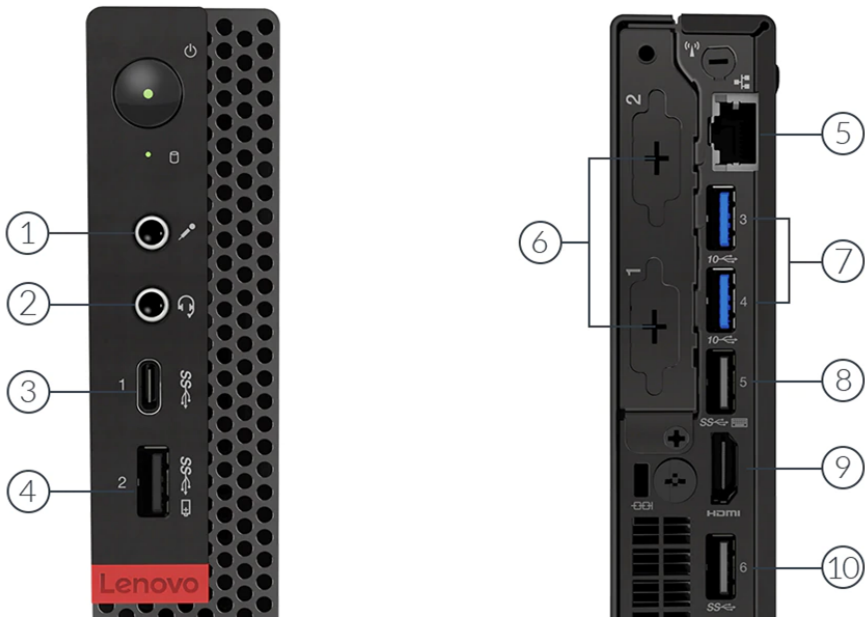


intel



intel

OVERVIEW



| | |
|----------------------------------------------|----------------------------|
| 1. Microphone (3.5mm) | 6. Optional port 1 and 2 * |
| 2. Headphone / microphone combo jack (3.5mm) | 7. 2x USB 3.1 Gen 2 |
| 3. USB-C 3.1 Gen 1 | 8. USB 3.1 Gen 1 |
| 4. USB 3.1 Gen 1 | 9. HDMI |
| 5. Ethernet (RJ-45) | 10. USB 3.1 Gen 1 |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7 Processor, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900T | 2 | 2 | 2.9GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930T | 2 | 2 | 3.0GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400T | 2 | 4 | 3.1GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420T | 2 | 4 | 3.2GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500T | 2 | 4 | 3.2GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600T | 2 | 4 | 3.3GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100T | 4 | 4 | 3.1GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300T | 4 | 4 | 3.2GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100T | 4 | 4 | 3.1GHz | 3.7GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300T | 4 | 4 | 3.2GHz | 3.8GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400T | 6 | 6 | 1.7GHz | 3.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500T | 6 | 6 | 2.1GHz | 3.5GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600T | 6 | 6 | 2.3GHz | 3.7GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400T | 6 | 6 | 1.8GHz | 3.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500T | 6 | 6 | 2.2GHz | 3.7GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9600T | 6 | 6 | 2.3GHz | 3.9GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700T | 8 | 8 | 2.0GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900T | 8 | 16 | 2.1GHz | 4.4GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (DisplayPort™ + HDMI + 1x optional port [VGA / 2nd DP / 2nd HDMI / USB-C])

Chipset

Chipset

Intel B360 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- 2.5" SSD up to 256GB
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

| | | | |
|-------------------------|------------------------|---|------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
No support

Removable Storage

- Optical**
- DVD-ROM, slim (9.0mm), via USB external ODD box
 - DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
 - None

Card Reader
No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB2 codec

- Speakers**
- Single speaker, 2W x1
 - Single speaker, 1.5W x1
 - No speakers

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| 90W | Adapter | 88% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| 135W | Adapter | 88% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

- Keyboard**
- Lenovo Calliope Keyboard (USB connector), black
 - Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse**
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Calliope Mouse (USB connector), black
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

Form Factor
Tiny (1L)

| Models | Dimensions |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 188.4 x 185.38 x 63 mm (7.42 x 7.30 x 2.48 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny Only | 1.32 kg (2.91 lbs) |
| With VESA mount & ODD box | 1.66 kg (3.66 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots^[1]

- One PCIe 3.0 x8, low-profile
- Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

Notes:

1. 2.5" HDD/SSD and PCIe card are mutually exclusive

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x Ethernet (RJ-45)

- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.1 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- 2x USB 3.1 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2 (USB to 2x PS/2 dongle)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- VGA Cable Tiny
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management**

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Other Certifications

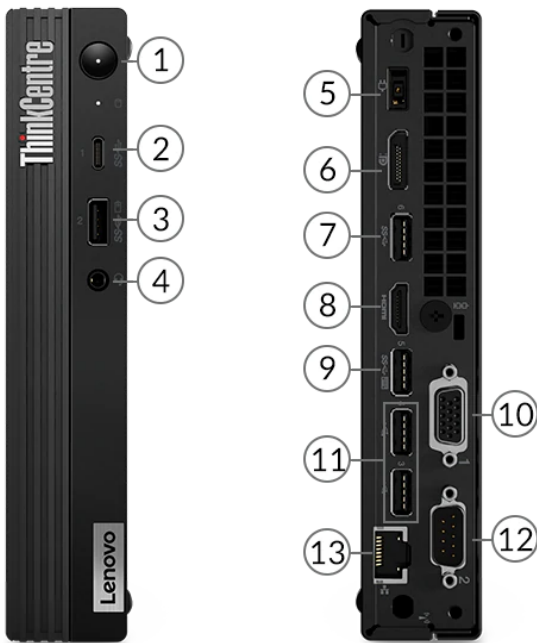
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|---------------------------------------|
| 1. Power button | 8. HDMI |
| 2. USB-C 3.2 Gen 1 | 9. USB 3.2 Gen 1 |
| 3. USB 3.2 Gen 2 | 10. Optional port 1 (VGA is shown) |
| 4. Headphone / microphone combo jack (3.5mm) | 11. 2x USB 2.0 |
| 5. Power connector | 12. Optional port 2 (serial is shown) |
| 6. DisplayPort | 13. Ethernet (RJ-45) |
| 7. USB 3.2 Gen 1 | |

PERFORMANCE

Processor

Processor Family

AMD Ryzen™ 3 / 5 / 7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|------------------------------|-------|---------|----------------|---------------|------------------|----------------|-----------------------------|
| AMD Athlon™ Silver 3050GE | 2 | 4 | 3.4GHz | 3.4GHz | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon™ Graphics |
| AMD Athlon Silver PRO 3125GE | 2 | 4 | 3.4GHz | 3.4GHz | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon Graphics |
| AMD Athlon Gold PRO 3150GE | 4 | 4 | 3.3GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Graphics |
| AMD Ryzen 3 3200GE | 4 | 4 | 3.3GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 4300GE | 4 | 8 | 3.5GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 5300GE | 4 | 8 | 3.6GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 4350GE | 4 | 8 | 3.5GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 5350GE | 4 | 8 | 3.6GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4600GE | 6 | 12 | 3.3GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600GE | 6 | 12 | 3.4GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 3350GE | 4 | 8 | 3.3GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 4650GE | 6 | 12 | 3.3GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650GE | 6 | 12 | 3.4GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4700GE | 8 | 16 | 3.1GHz | 4.3GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5700GE | 8 | 16 | 3.2GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 4750GE | 8 | 16 | 3.1GHz | 4.3GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5750GE | 8 | 16 | 3.2GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-----------------------------|------------|--------|-----------|----------------|--------------|
| AMD Radeon Graphics | Integrated | Shared | - | - | DirectX® 12 |
| AMD Radeon Vega 8 Graphics | Integrated | Shared | - | - | DirectX 12 |
| AMD Radeon Vega 11 Graphics | Integrated | Shared | - | - | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (DisplayPort™ + HDMI® + 2x optional ports [VGA / 2nd DP / 2nd HDMI / USB-C / 2x DP])

Chipset

Chipset

AMD PRO 500 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-3200

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2 drives, 1x 2.5" HDD + 1x M.2 PCIe NVMe SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 1TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC222 codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| 90W | Adapter | 89% | Autosensing |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard, black
- Lenovo Traditional Keyboard (USB connector), black

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), black

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.25 kg (2.76 lbs)

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

- One M.2 slot (for SSD)
- One M.2 slot (for WLAN)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- None

CONNECTIVITY

Network

Onboard Ethernet

- Gigabit Ethernet, Realtek RTL8111HN, 1x RJ45, supports Wake-on-LAN
- Gigabit Ethernet, Realtek RTL8111FP, 1x RJ45, supports DASH and Wake-on-LAN

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card

- Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.2 Gen 1
- 1x HDMI
- 1x DisplayPort
- 1x Ethernet (RJ-45)

Optional Rear Ports

- 2x USB 3.2 Gen 1 (occupies port 1 and 2)
- 4x USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- 2x DisplayPort (occupies port 1 and 2)
- Optional port 1 (one of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional port 2 (serial)
- 1x parallel

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to VGA dongle
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

- DASH 1.2
- No DASH

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold (on some models)
- EPEAT Silver (on some models)
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- TUV Rheinland Low Noise / Ultra Low Noise (on some models)
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed



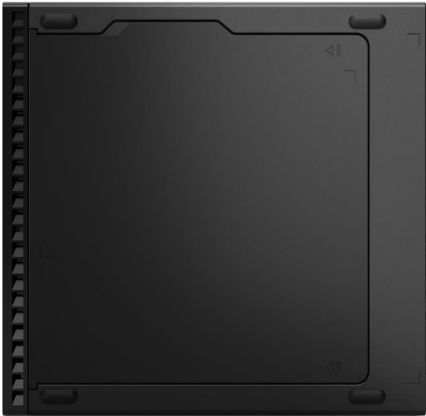
AMD



AMD



AMD



AMD

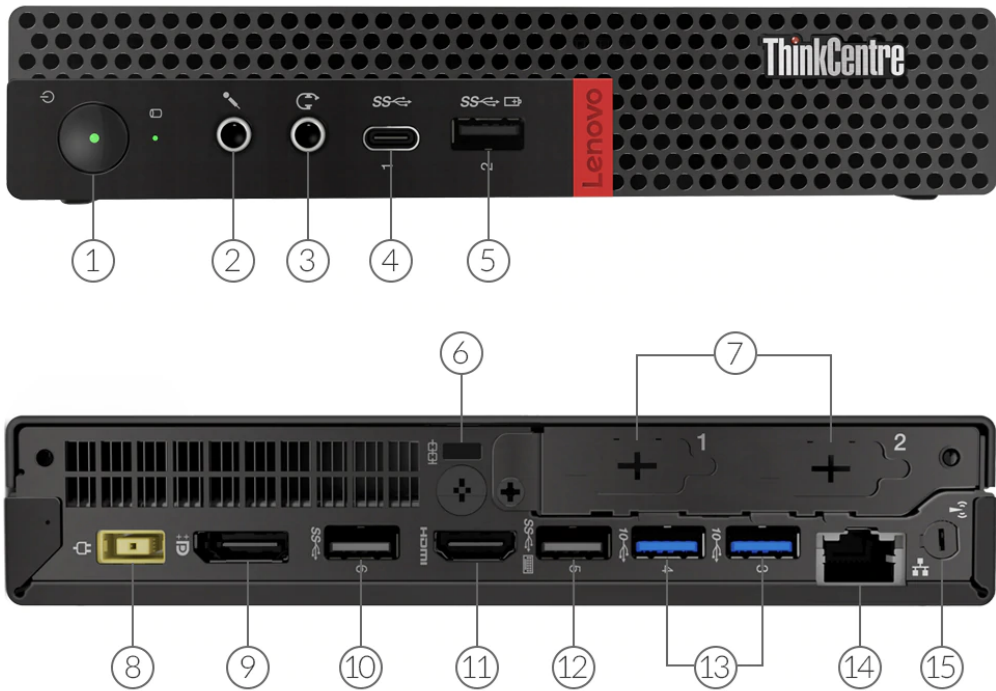


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 9. DisplayPort |
| 2. Microphone (3.5mm) | 10. USB 3.2 Gen 1 |
| 3. Headphone / microphone combo jack (3.5mm) | 11. HDMI |
| 4. USB-C 3.2 Gen 1 | 12. USB 2.0 |
| 5. USB 3.2 Gen 1 | 13. 2x USB 2.0 |
| 6. Kensington Security Slot | 14. Ethernet (RJ-45) |
| 7. Optional port 1 and 2 * | 15. Wi-Fi antenna * |
| 8. Power connector | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|------------------------|-------|---------|----------------|---------------|-----------------|----------------|--------------------------------|
| AMD Athlon 300GE | 2 | 4 | 3.4GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon™ Vega 3 Graphics |
| AMD Athlon PRO 200GE | 2 | 4 | 3.2GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon Vega 3 Graphics |
| AMD Athlon PRO 300GE | 2 | 4 | 3.4GHz | - | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon Vega 3 Graphics |
| AMD Ryzen 3 3200GE | 4 | 4 | 3.3GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 PRO 2200GE | 4 | 4 | 3.2GHz | 3.6GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 PRO 3200GE | 4 | 4 | 3.3GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 5 3350GE | 4 | 8 | 3.3GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon RX Vega 11 Graphics |
| AMD Ryzen 5 3400GE | 4 | 8 | 3.3GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 2400GE | 4 | 8 | 3.2GHz | 3.8GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3350GE | 4 | 8 | 3.3GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3400GE | 4 | 8 | 3.3GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|----------------------------|------------|--------|-----------------------------------------------------------------------|----------------------------------------------------------------|--------------|
| AMD Radeon R5 Graphics | Integrated | Shared | 1x HDMI®, 1x DisplayPort™, 1x optional port (VGA / 2nd DP / 2nd HDMI) | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 (DP)@60Hz | DirectX® 12 |
| AMD Radeon R7 Graphics | Integrated | Shared | 1x HDMI, 1x DisplayPort, 1x optional port (VGA / 2nd DP / 2nd HDMI) | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 (DP)@60Hz | DirectX 12 |
| AMD Radeon Vega 3 Graphics | Integrated | Shared | 1x HDMI, 1x DisplayPort, 1x optional port (VGA / 2nd DP / 2nd HDMI) | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 (DP)@60Hz | DirectX 12 |
| AMD Radeon Vega 8 | Integrated | Shared | 1x HDMI, 1x DisplayPort, 1x optional port (VGA / 2nd DP / | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 | DirectX 12 |

| | | | | | |
|--------------------------------|------------|--------|---------------------------------------------------------------------|----------------------------------------------------------------|------------|
| Graphics | | | 2nd HDMI) | (DP)@60Hz | |
| AMD Radeon Vega 11 Graphics | Integrated | Shared | 1x HDMI, 1x DisplayPort, 1x optional port (VGA / 2nd DP / 2nd HDMI) | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 (DP)@60Hz | DirectX 12 |
| AMD Radeon RX Vega 11 Graphics | Integrated | Shared | 1x HDMI, 1x DisplayPort, 1x optional port (VGA / 2nd DP / 2nd HDMI) | 4096x2160@30Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2160 (DP)@60Hz | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (DisplayPort + HDMI + 1x optional port [VGA / 2nd DP / 2nd HDMI])

Notes:

1. Supports maximum of 2 concurrent HDMI/DVI displays when using HDMI port or DP to DVI/HDMI dongles, and Athlon / Athlon PRO only support 2 display

Chipset

Chipset

AMD PRO 500 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 1TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC222-CG codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| 135W | Adapter | 88% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 188.4 x 185.38 x 63 mm (7.42 x 7.30 x 2.48 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny Only | 1.32 kg (2.91 lbs) |
| With VESA mount & ODD box | 1.66 kg (3.66 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Realtek RTL8111EPV-CG, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Qualcomm® QCA6174A, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]**Front Ports**

- 1x USB 3.2 Gen 1 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 3x USB 2.0
- 1x USB 3.2 Gen 1
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial)
- Optional Port 2 (serial)
- 1x parallel (USB to parallel dongle)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- VGA Cable Tiny
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management**

DASH 1.0 / 1.1

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL**Operating Environment****Temperature**

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%

- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- RoHS compliant

Other Certifications

Other Certifications

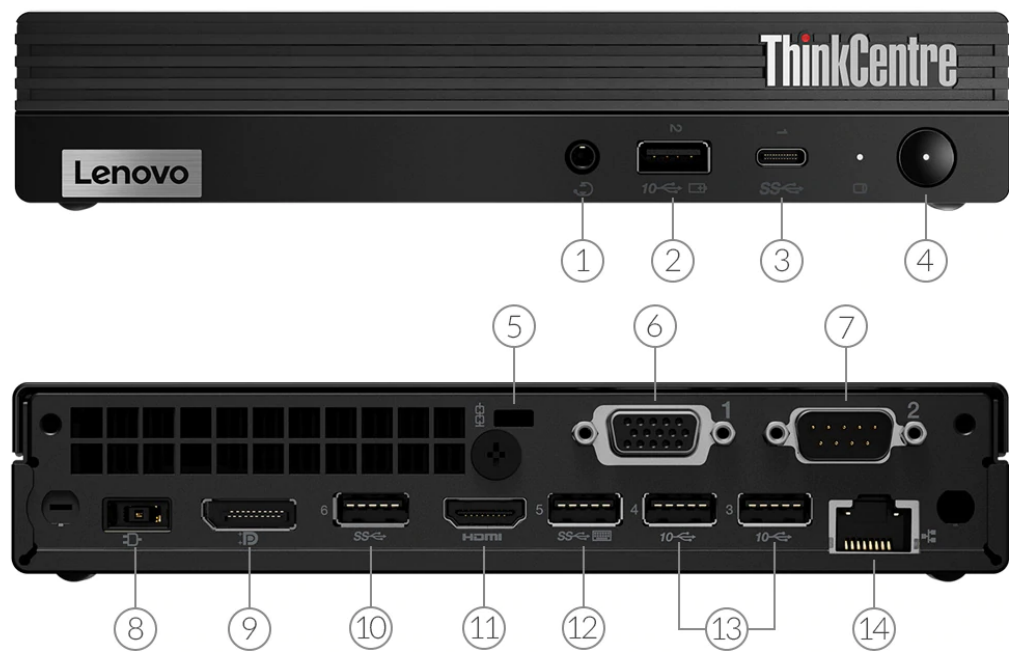
- (Optional) TÜV Rheinland Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 8. Power connector |
| 2. USB 3.2 Gen 2 | 9. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 10. USB 3.2 Gen 2 |
| 4. Power button | 11. HDMI |
| 5. Kensington Security Slot | 12. USB 3.2 Gen 2 |
| 6. Optional port 1 (VGA is shown) * | 13. 2x USB 3.2 Gen 1 |
| 7. Optional port 2 (serial is shown) * | 14. Ethernet (RJ-45) |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900T | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905T | 2 | 2 | 3.3GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400T | 2 | 4 | 3.4GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500T | 2 | 4 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100T | 4 | 8 | 3.0GHz | 3.8GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300T | 4 | 8 | 3.0GHz | 3.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400T | 6 | 12 | 2.0GHz | 3.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500T | 6 | 12 | 2.3GHz | 3.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700T | 8 | 16 | 2.0GHz | 4.5GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900T | 10 | 20 | 1.9GHz | 4.6GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via two onboard ports (DP + HDMI) + one optional port (VGA / 2nd DP / 2nd HDMI / USB-C) , or via one onboard (DP / HDMI) + optional dual DP (MST mode)

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to two drives, 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec or ALC897Q codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| 90W | Adapter | 89% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 187 x 183.8 x 66.5 mm (7.36 x 7.24 x 2.62 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny only | 1.25 kg (2.76 lbs) |
| With VESA mount & ODD box | 1.74 kg (3.84 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust Filter
- (Optional) Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort™

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- Dual USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- Dual DisplayPort ports (occupy Optional Port 1 and 2)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

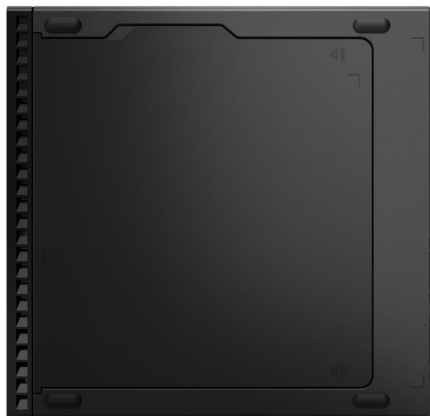
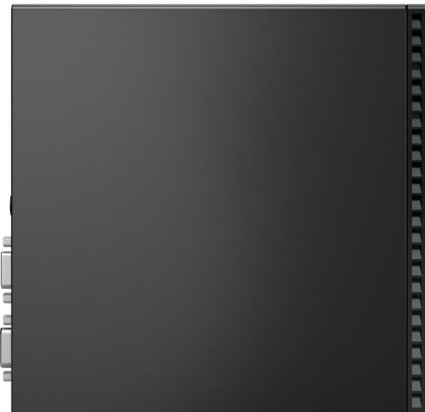
Other Certifications

Other Certifications

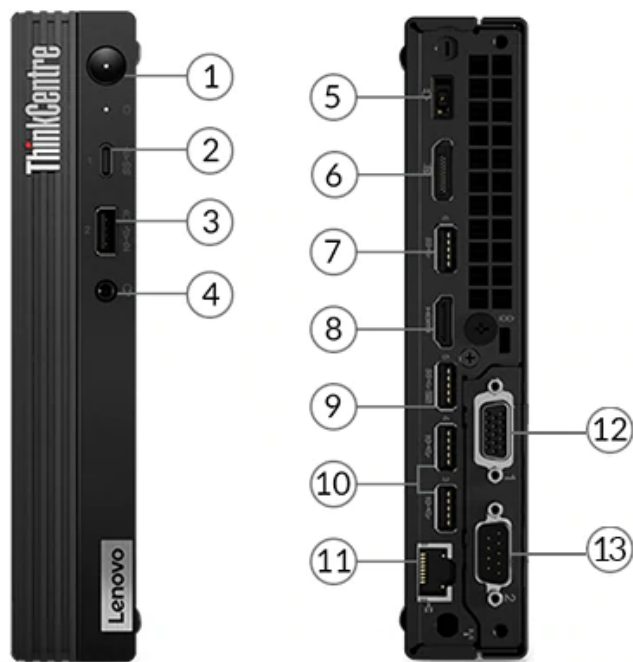
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Power button | 8. HDMI |
| 2. USB-C 3.2 Gen 1 | 9. USB 3.2 Gen 1 |
| 3. USB 3.2 Gen 2 | 10. 2x USB 3.2 Gen 2 |
| 4. Headphone / microphone combo jack (3.5mm) | 11. Ethernet (RJ-45) |
| 5. Power connector | 12. Optional port 1 (VGA is shown) * |
| 6. DisplayPort | 13. Optional port 2 (serial is shown) * |
| 7. USB 3.2 Gen 1 | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5900T | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905T | 2 | 2 | 3.3GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6500T | 2 | 4 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100T | 4 | 8 | 3.0GHz | 3.8GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300T | 4 | 8 | 3.0GHz | 3.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400T | 6 | 12 | 2.0GHz | 3.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500T | 6 | 12 | 2.3GHz | 3.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700T | 8 | 16 | 2.0GHz | 4.5GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900T | 10 | 20 | 1.9GHz | 4.6GHz | 20MB | DDR4-2933 | Intel UHD Graphics |

| | | | | | | | |
|--|--|--|--|--|--|--|-----|
| | | | | | | | 630 |
|--|--|--|--|--|--|--|-----|

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C / dual DP) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 3840x2160@60Hz(Dual DP, MST mode), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via two onboard ports (DP + HDMI) + one optional port (VGA / 2nd DP / 2nd HDMI / USB-C) , or via one onboard (DP / HDMI) + optional dual DP (MST mode)

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2933

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
2. Installed memory is actually 3200MHz, but may run at 2666MHz or 2933MHz, depending on the memory support capability of processor

Storage

Storage Support

Up to three drives, 1x 2.5" HDD + 2x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB

- M.2 SSD up to 2TB each
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support for M.2 SSDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 89% | Autosensing |
| 90W | Adapter | 89% | Autosensing |
| 135W | Adapter | 89% | Autosensing |
| 230W | Adapter | 89% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

| Models | Dimensions |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 187 x 183.8 x 66.5 mm (7.36 x 7.24 x 2.62 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny only | 1.25 kg (2.76 lbs) |
| With VESA mount & ODD box | 1.74 kg (3.84 lbs) |

Case Color

Black

Bays

1x 2.5" disk bay

Expansion Slots^[1]

- One PCIe 3.0 x8, low-profile
- Three M.2 slots (one for WLAN, two for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

Notes:

1. PCIe 3.0 x8 slot is for Lenovo qualified PCIe cards, Intel I350-T4 ethernet card and 4x serial port expansion card. The PCIe card occupies the space of 2.5" HDD/SSD and optional ports, they are mutually exclusive.

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort™

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- Dual USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- Quad USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- Dual DisplayPort ports (occupy Optional Port 1 and 2)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

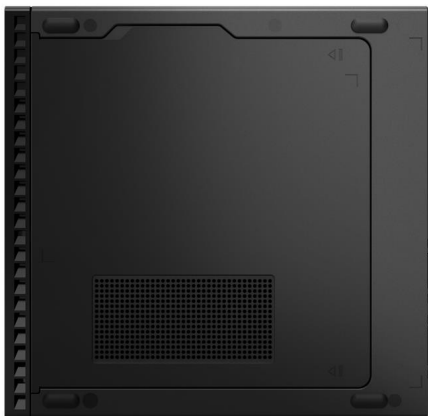
Other Certifications

Other Certifications

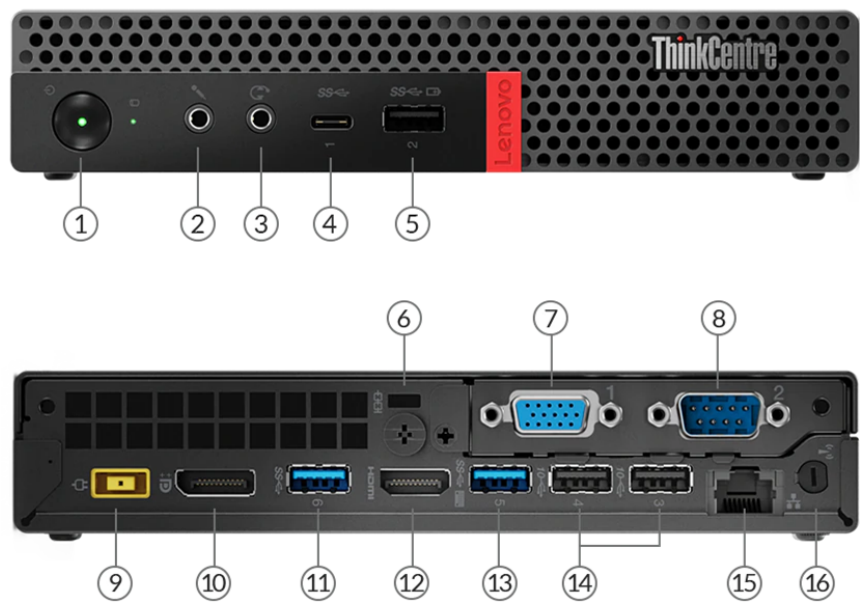
- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 9. Power connector |
| 2. Microphone (3.5mm) | 10. DisplayPort |
| 3. Headphone / microphone combo jack (3.5mm) | 11. USB 3.1 Gen 1 |
| 4. USB-C 3.1 Gen 1 | 12. HDMI |
| 5. USB 3.1 Gen 1 | 13. USB 3.1 Gen 1 |
| 6. Kensington Security Slot | 14. 2x USB 3.1 Gen 2 |
| 7. Optional port 1 (VGA is shown) * | 15. Ethernet (RJ-45) |
| 8. Optional port 2 (serial is shown) * | 16. Wi-Fi antenna * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7 Processor, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900T | 2 | 2 | 2.9GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930T | 2 | 2 | 3.0GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400T | 2 | 4 | 3.1GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420T | 2 | 4 | 3.2GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500T | 2 | 4 | 3.2GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600T | 2 | 4 | 3.3GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100T | 4 | 4 | 3.1GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300T | 4 | 4 | 3.2GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100T | 4 | 4 | 3.1GHz | 3.7GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300T | 4 | 4 | 3.2GHz | 3.8GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400T | 6 | 6 | 1.7GHz | 3.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500T | 6 | 6 | 2.1GHz | 3.5GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600T | 6 | 6 | 2.3GHz | 3.7GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400T | 6 | 6 | 1.8GHz | 3.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500T | 6 | 6 | 2.2GHz | 3.7GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9600T | 6 | 6 | 2.3GHz | 3.9GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700T | 8 | 8 | 2.0GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900T | 8 | 16 | 2.1GHz | 4.4GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 1x DP, 1x optional video port (2nd HDMI / VGA / 2nd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 2048x1536@50Hz(VGA), 4096x2304@60Hz(USB-C) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (DisplayPort™ + HDMI + 1x optional port [VGA / 2nd DP / 2nd HDMI / USB-C])

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type^[2]

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

2. System automatically clocks down for the processors with lower memory controller

Storage

Storage Support

Up to two drives, 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB
- 2.5" SSD up to 256GB
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 5.4K | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |

| | | | |
|-------------------------|------------------------|---|------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
No support

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader
No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

- Single speaker, 2W x1
- Single speaker, 1.5W x1

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| 90W | Adapter | 88% | Autosensing |
| 135W | Adapter | 88% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

| Form Factor | Dimensions (WxDxH) |
|---------------------------|---------------------------------------------------------------------------------------------|
| Tiny (1L) | |
| Models | Dimensions |
| Tiny only | 179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet) |
| With VESA mount & ODD box | 188.4 x 185.38 x 63 mm (7.42 x 7.30 x 2.48 inches) |

Weight

| Models | Weight |
|---------------------------|--------------------|
| Tiny Only | 1.32 kg (2.91 lbs) |
| With VESA mount & ODD box | 1.66 kg (3.66 lbs) |

Case Color

Black

Bays^[1]

1x 2.5" disk bay

Expansion Slots^[2]

- One PCIe 3.0 x8, low-profile
- Two M.2 slots (one for WLAN, one for SSD)

EOU

(Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

Notes:

1. 2.5" HDD/SSD and PCIe card are mutually exclusive
2. 2.5" HDD/SSD and PCIe card are mutually exclusive

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth™

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- No WLAN and Bluetooth

Ports^[1]**Front Ports**

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.1 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- 2x USB 3.1 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 1x Thunderbolt™ 3 (combo USB-C 3.1 Gen 2 / DisplayPort, via Thunderbolt expansion card, PCIe x4)
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel (USB to parallel dongle)
- 2x PS/2 (USB to 2x PS/2 dongle)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- VGA Cable Tiny
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management^[1]**

- Intel vPro with Intel AMT 12.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

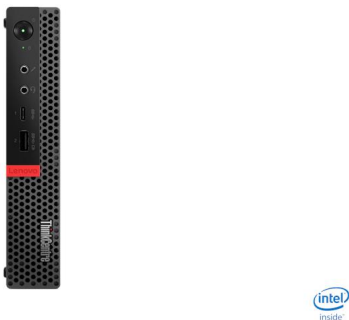
Other Certifications

Other Certifications

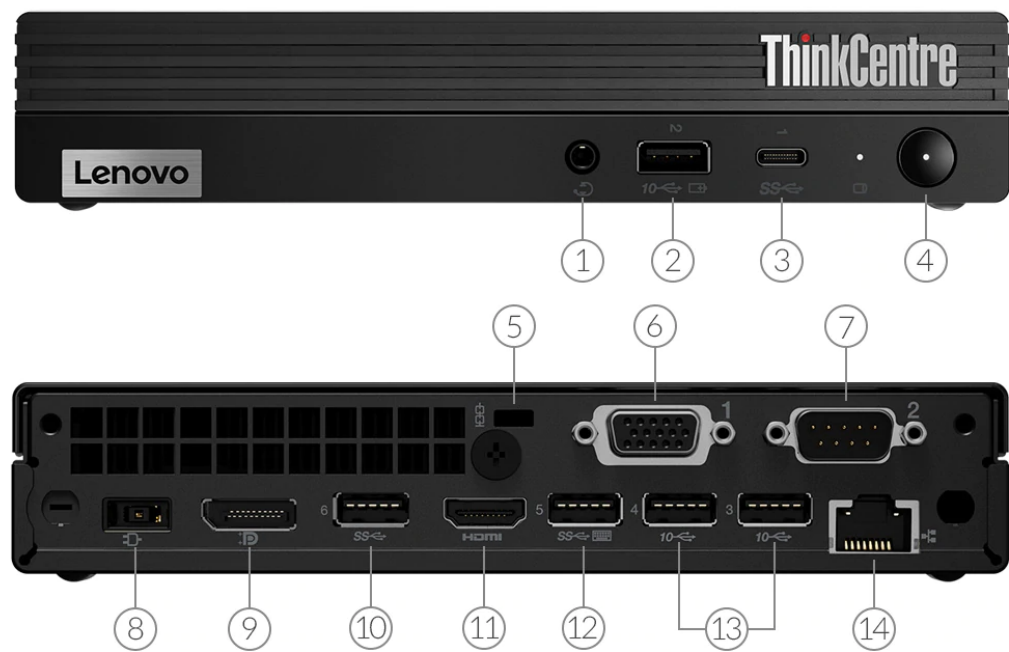
- (Optional) TÜV Rheinland Low Noise
- None

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 8. Power connector |
| 2. USB 3.2 Gen 2 | 9. DisplayPort |
| 3. USB-C 3.2 Gen 1 | 10. USB 3.2 Gen 2 |
| 4. Power button | 11. HDMI |
| 5. Kensington Security Slot | 12. USB 3.2 Gen 2 |
| 6. Optional port 1 (VGA is shown) | 13. 2x USB 3.2 Gen 1 |
| 7. Optional port 2 (serial is shown) | 14. Ethernet (RJ-45) |

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i5-10500T | 6 | 12 | 2.3GHz | 3.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

Windows® 10 IoT Enterprise SAC 64 with Intel Unite

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------------|--------------------------------------------------|--------------|
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI®, 1x DP | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via two onboard ports (DP + HDMI) + one optional port (VGA / 2nd DP / 2nd HDMI / USB-C) , or via one onboard (DP / HDMI) + optional dual DP (MST mode)

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 16GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, up to 1x 256GB M.2 2280 SSD

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |

RAID

No support

Removable Storage

Optical

None

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 135W | Adapter | 89% | Autosensing |

DESIGN

Input Device

Keyboard

- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- No mouse
- USB Calliope Mouse, Black

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.25 kg (2.76 lbs)

Case Color

Black

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

No support

Stand

- Vertical stand
- No stand

IO Box

No IO box

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort™

Optional Rear Ports

1x USB-C 3.2 Gen 1

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- Power-on password

- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 14.0

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

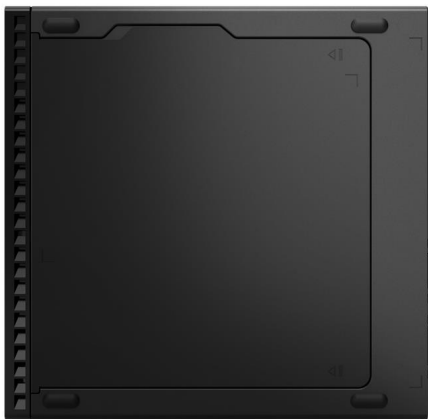
Green Certifications

- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

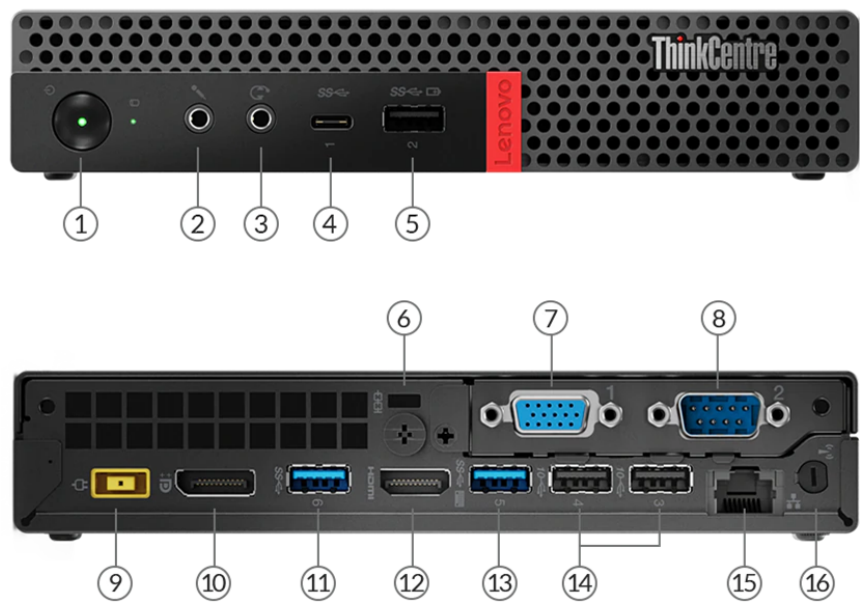
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 9. Power connector |
| 2. Microphone (3.5mm) | 10. DisplayPort |
| 3. Headphone / microphone combo jack (3.5mm) | 11. USB 3.1 Gen 1 |
| 4. USB-C 3.1 Gen 1 | 12. HDMI |
| 5. USB 3.1 Gen 1 | 13. USB 3.1 Gen 1 |
| 6. Kensington Security Slot | 14. 2x USB 3.1 Gen 2 |
| 7. Optional port 1 (VGA is shown) * | 15. Ethernet (RJ-45) |
| 8. Optional port 2 (serial is shown) * | 16. Wi-Fi antenna * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

9th Generation Intel® Core™ i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i5-9600T | 6 | 6 | 2.3GHz | 3.9GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

Windows® 10 IoT Enterprise with Microsoft® Teams room for Logitech

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------------------------------------------------------|--------------------------------------------------|--------------|
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI®, 1x 2nd HDMI (internal DP to HDMI dongle), 1x DP | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via (2x HDMI, DP)

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 8GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, 1x 128GB SSD M.2 2242 PCIe 3.0x2 NVMe

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 135W | Adapter | 88% | Autosensing |

DESIGN

Input Device

Keyboard

No keyboard

Mouse

No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.32 kg (2.91 lbs)

Case Color

Black

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

No support

Stand

No stand

IO Box

No IO box

Mounting

VESA mount bracket kit, supports VESA 75mm and 100mm

Others

Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

WLAN + Bluetooth™

Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x Ethernet (RJ-45)
- 1x DisplayPort™
- 2x HDMI

Optional Rear Ports

None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password

- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 12.0

SERVICE

Warranty

Base Warranty

3-year premier support service

CERTIFICATIONS

Green Certifications

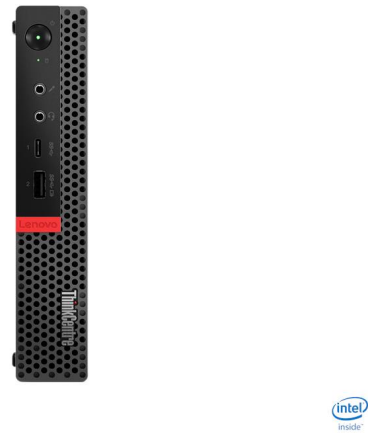
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

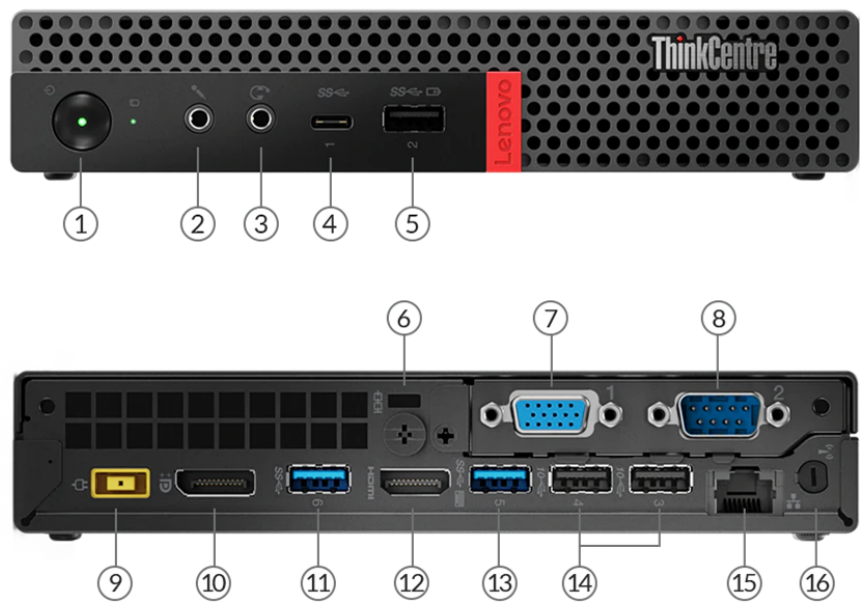
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 9. Power connector |
| 2. Microphone (3.5mm) | 10. DisplayPort |
| 3. Headphone / microphone combo jack (3.5mm) | 11. USB 3.1 Gen 1 |
| 4. USB-C 3.1 Gen 1 | 12. HDMI |
| 5. USB 3.1 Gen 1 | 13. USB 3.1 Gen 1 |
| 6. Kensington Security Slot | 14. 2x USB 3.1 Gen 2 |
| 7. Optional port 1 (VGA is shown) * | 15. Ethernet (RJ-45) |
| 8. Optional port 2 (serial is shown) * | 16. Wi-Fi antenna * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

9th Generation Intel® Core™ i5 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i5-9600T | 6 | 6 | 2.3GHz | 3.9GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

Windows® 10 IoT Enterprise with Microsoft® Teams room for Poly

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------------------------------------------------------|--------------------------------------------------|--------------|
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI®, 1x 2nd HDMI (internal DP to HDMI dongle), 1x DP | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via (2x HDMI, DP)

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 8GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, 1x 128GB SSD M.2 2242 PCIe 3.0x2 NVMe

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 135W | Adapter | 88% | Autosensing |

DESIGN

Input Device

Keyboard

No keyboard

Mouse

No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.32 kg (2.91 lbs)

Case Color

Black

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

No support

Stand

No stand

IO Box

No IO box

Mounting

VESA mount bracket kit, supports VESA 75mm and 100mm

Others

Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

WLAN + Bluetooth™

Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x Ethernet (RJ-45)
- 1x DisplayPort™
- 2x HDMI

Optional Rear Ports

None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Power-on password
- Administrator password
- Hard disk password

- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 12.0

SERVICE

Warranty

Base Warranty

Please consult with Poly

CERTIFICATIONS

Green Certifications

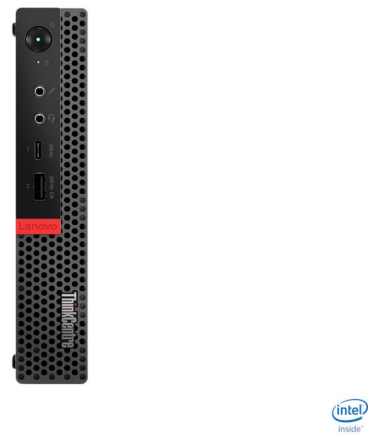
Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

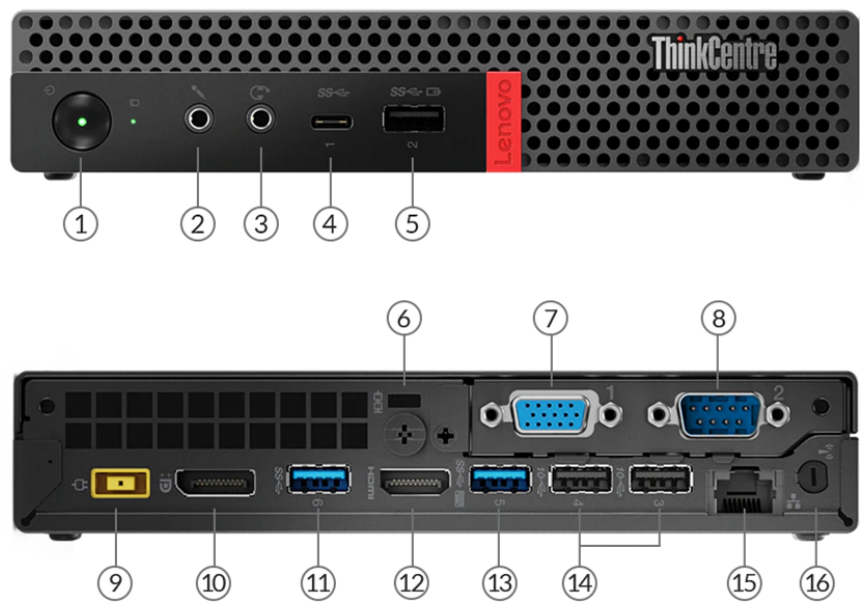
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Power button | 9. Power connector |
| 2. Microphone (3.5mm) | 10. DisplayPort |
| 3. Headphone / microphone combo jack (3.5mm) | 11. USB 3.1 Gen 1 |
| 4. USB-C 3.1 Gen 1 | 12. HDMI |
| 5. USB 3.1 Gen 1 | 13. USB 3.1 Gen 1 |
| 6. Kensington Security Slot | 14. 2x USB 3.1 Gen 2 |
| 7. Optional port 1 (VGA is shown) * | 15. Ethernet (RJ-45) |
| 8. Optional port 2 (serial is shown) * | 16. Wi-Fi antenna * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

9th Generation Intel® Core™ i7 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i7-9700T | 8 | 8 | 2.0GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

Windows® 10 IoT Enterprise with Zoom Rooms preload

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|-----------------------------------------------------------------------------|--------------------------------------------------|--------------|
| Intel UHD graphics 630 | Integrated | Shared | 2x HDMI® (one onboard HDMI, one HDMI via internal DP to HDMI dongle), 1x DP | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (DisplayPort™ + 2x HDMI)

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 16GB DDR4-2666

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

One drive, 1x 128GB SSD M.2 2242 PCIe 3.0x2 NVMe

Storage Type

| Disk Type | Interface | RPM | Security |
|--------------|------------------------|-----|----------|
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, slim (9.0mm), via USB external ODD box
- DVD burner (DVD±RW), slim (9.0mm), via USB external ODD box
- None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

- Single speaker, 2W x1
- Single speaker, 1.5W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-----------------|---------|------------|--------------|
| 65W | Adapter | 88% | Autosensing |
| 90W | Adapter | 88% | Autosensing |
| 135W | Adapter | 88% | Autosensing |
| No power supply | - | - | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

179 x 183 x 34.5 / 37 mm with rubber feet (7.05 x 7.2 x 1.36 / 1.5 inches with rubber feet)

Weight

1.32 kg (2.91 lbs)

Case Color

Black

Bays

No bays

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

No support

Stand

- Vertical stand
- No stand

Mounting

- VESA mount bracket kit, supports VESA 75mm and 100mm
- Not configured

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth™

Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

None

Rear Ports^[2]

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x Ethernet (RJ-45)
- 1x DisplayPort
- 2x HDMI

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

Intel vPro with Intel AMT 12.0

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

3-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

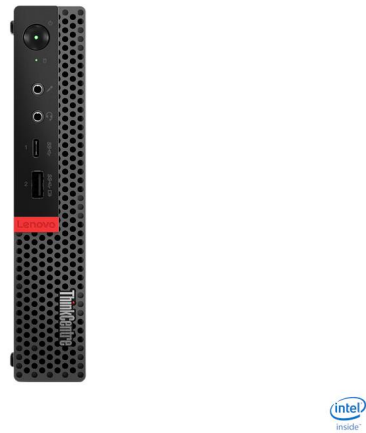
- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO

- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



PERFORMANCE

Panel

- Panel
- In-Plane Switching (IPS)
- Display Size
- 21.5 inches (546.1mm)
- Max View Area
- WxH: 476.1 x 267.8 mm (18.74 x 10.54 inches)
- Native Resolution
- 1920x1080
- Aspect Ratio
- 16:9
- Pixel Pitch
- 0.24795 x 0.24795 mm
- DPI
- 102.4 dpi
- Brightness
- 250 nits
- Contrast Ratio
- 1000:1
- Pixel Response Time
- 4 ms (extreme mode) / 6 ms (typical mode) / 14 ms (off mode)
- Color Gamut
- 72% NTSC
- Viewing Angle
- Horizontal: +/- 89°, vertical: +/- 89°
- Anti-glare
- Anti-glare

Multi-Media

- Camera
- 720p, with dual microphone and LED indicator
- Microphone
- Dual array microphone
- Speakers
- Stereo speakers, 2W x2

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 90W | Adapter | 88% | - |

- Power Consumption
- 19 watts typical, 32 watts max

DESIGN

Menu

- Presets and User Settings
- Presets: 25

- User settings: 25

On Screen Display

On screen display with digital user controls (8 languages)

Display

Touchscreen

(Optional)10-point multi-touch, supports Wake on Touch. ONLY for model 10R0PAT1 and 10R0PAR1.

Mechanical

Compatible Tiny

P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M93p / M83 / M73 / M53 / Chromebox Tiny

Bezel Width

- Top / side: 2mm
- Bottom: 22.1mm

Buttons

- Power button
- Exit button
- Menu button
- Mode-switching button
- Brightness button

Cables

Undetachable 3-in-1 cable (power connector, USB [supports USB 3.1 Gen 1 / USB 2.0], DisplayPort™)

Case Color

Black

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------|---------------------------------------------------------|
| Models without stand | 489 x 72.5 x 339 mm (19.26 x 2.85 x 13.35 inches) |
| Models with full function monitor stand | 489.3 x 273.3 x 370.7 mm (19.26 x 10.76 x 14.59 inches) |

Weight

| Models | Weight |
|-----------------------------------------|---------------------|
| Models without stand | 3.19 kg (7.01 lbs) |
| Models with full function monitor stand | 5.34 kg (11.77 lbs) |

Mounting

Supports VESA mount 100mm

Stand

Full function monitor stand, supports -5° to +30° tilt, left & right 45° swivel, up to 150mm lift, -5° to +90° pivot

In the Box

- TIO (monitor)
- Detachable stand
- Driver CD
- Power adapter
- Power cord
- Quick start and safety poster
- User's guide

CONNECTIVITY

Ports

Rear Ports

- 1x USB upstream port
- 1x DisplayPort
- 1x power connector

Left Ports^[1]

- 1x USB 3.1 Gen 1 (on TIO)
- Side ports offered by installed Tiny (on Tiny)

Notes:

1. The availability and version depends on the Tiny installed or the PC connected via USB upstream port

SERVICE

Warranty

Base Warranty

3-year customer carry-in or mail-in via rapid replacement service

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- TCO Certified 7.0
- TCO edge 2.0
- TUV
- ULE Gold
- RoHS compliant
- VOC
- WEEE

Other Certifications

Other Certifications

- FCC Class B
- ISO 9241-307
- TÜV Rheinland Eye Comfort Certification



PERFORMANCE

Panel

- Panel
- In-Plane Switching (IPS)
- Display Size
- 21.5 inches (546.1mm)
- Max View Area
- WxH: 476.1 x 267.8 mm (18.74 x 10.54 inches)
- Native Resolution
- 1920x1080
- Aspect Ratio
- 16:9
- Pixel Pitch
- 0.24795 x 0.24795 mm
- DPI
- 102.4 dpi
- Brightness
- 250 nits
- Contrast Ratio
- 1000:1
- Pixel Response Time
- 4 ms (extreme mode) / 6 ms (typical mode) / 14 ms (off mode)
- Color Gamut
- 72% NTSC
- Viewing Angle
- Horizontal: +/- 89°, vertical: +/- 89°
- Anti-glare
- Anti-glare

Multi-Media

- Camera
- 720p, with dual microphone and Think Shutter
- Microphone
- Dual array microphone
- Speakers
- Stereo speakers, 2W x2

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 90W | Adapter | 88% | - |

- Power Consumption
- 14 watts typical, 25 watts max

DESIGN

Menu

- Presets and User Settings
- Presets: 25

- User settings: 25

On Screen Display

On screen display with digital user controls (8 languages)

Display

Touchscreen

(Optional)Advanced In-cell Touch (AIT), supports 10-point touch. ONLY for model 11GTPAT1 and 11GTPAR1.

Mechanical

Compatible Tiny

P340 / P330 / P320 / M90q / M80q / M70q / M75q / M920(x) / M720 / M910(x) / M710 / M715 / M900(x) / M700 / M630e / M625 / M600 Tiny / M90n / M75n Nano (with TIO kit)

Bezel Width

- Top / side: 2mm
- Bottom: 22.1mm

Buttons

- Power button
- Exit button
- Menu button
- Mode-switching button
- Brightness button

Cables

Undetachable 3-in-1 cable (power connector, USB [supports USB 3.1 Gen 1 / USB 2.0], DisplayPort™)

Case Color

Black

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------|------------------------------------------------------|
| Models with full function monitor stand | 489 x 220.4 x 568.2 mm (19.26 x 8.68 x 22.37 inches) |
| Models without stand | 489 x 65.3 x 339 mm (19.26 x 2.57 x 13.35 inches) |

Weight

| Models | Weight |
|-----------------------------------------|---------------------|
| Models without stand | 3.41 kg (7.52 lbs) |
| Models with full function monitor stand | 6.58 kg (14.51 lbs) |

Mounting

Supports VESA mount 100mm

Stand

Full function monitor stand, supports -5° to +30° tilt, left & right 45° swivel, up to 150mm lift, -5° to +90° pivot

In the Box

- TIO (monitor)
- Detachable stand
- Driver CD
- Information flyer
- Power adapter
- Power cord
- User's guide

CONNECTIVITY

Ports

Rear Ports

- 1x USB upstream port
- 1x DisplayPort
- 1x power connector

Left Ports^[1]

- 1x USB 3.1 Gen 1 (on TIO)
- Side ports offered by installed Tiny (on Tiny)

Notes:

1. The availability and version depends on the Tiny installed or the PC connected via USB upstream port

SERVICE

Warranty

Base Warranty

3-year customer carry-in or mail-in via rapid replacement service

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 5
- GREENGUARD®
- TCO Certified 8.0
- TCO edge 2.0
- RoHS compliant
- WEEE

Other Certifications

Other Certifications

TÜV Rheinland Eye Comfort Certification



PERFORMANCE

Panel

- Panel
- In-Plane Switching (IPS)
- Display Size
- 23.8 inches (604.7mm)
- Max View Area
- WxH: 527 x 296.5 mm (20.75 x 11.67 inches)
- Native Resolution
- 1920x1080
- Aspect Ratio
- 16:9
- Pixel Pitch
- 0.2745 x 0.2745 mm
- DPI
- 92.6 dpi
- Brightness
- 250 nits
- Contrast Ratio
- 1000:1
- Pixel Response Time
- 4 ms (extreme mode) / 6 ms (typical mode) / 14 ms (off mode)
- Color Gamut
- 72% NTSC
- Viewing Angle
- Horizontal: +/- 89°, vertical: +/- 89°
- Anti-glare
- Anti-glare

Multi-Media

- Camera
- 1080p, with dual microphone and LED indicator
- Microphone
- Dual array microphone
- Speakers
- Stereo speakers, 2W x2

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 90W | Adapter | 88% | - |

- Power Consumption
- 19 watts typical, 32 watts max

DESIGN

Menu

- Presets and User Settings
- Presets: 25

- User settings: 25

On Screen Display

On screen display with digital user controls (8 languages)

Display

Touchscreen

(Optional)10-point multi-touch, supports Wake on Touch. ONLY for model 10QXPAT1 and 10QXPAT1.

Mechanical

Compatible Tiny

P330 / P320 / M920(x) / M720 / M910(x) / M710 / M900(x) / M700 / M630e / M625 / M600 / M75q / M715 / M93p / M83 / M73 / M53 / Chromebox Tiny

Bezel Width

- Top / side: 2mm
- Bottom: 22.1mm

Buttons

- Volume button
- Power button
- Exit button
- Menu button
- Mode-switching button
- Brightness button

Cables

Undetachable 3-in-1 cable (power connector, USB [supports USB 3.1 Gen 1 / USB 2.0], DisplayPort™)

Case Color

Black

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------|---------------------------------------------------------|
| Models with full function monitor stand | 539.8 x 282.3 x 509.4 mm (21.25 x 11.11 x 20.06 inches) |
| Models without stand | 539.8 x 72.5 x 367.6 mm (21.25 x 2.85 x 14.47 inches) |

Weight

| Models | Weight |
|-----------------------------------------|---------------------|
| Models without stand | 3.61 kg (7.96 lbs) |
| Models with full function monitor stand | 5.86 kg (12.92 lbs) |

Mounting

Supports VESA mount 100mm

Stand

Full function monitor stand, supports -5° to +30° tilt, left & right 45° swivel, up to 110mm lift, 0° to +90° pivot

In the Box

- TIO 24 (monitor)
- Detachable stand
- Driver CD
- Power adapter
- Power cord
- Quick start and safety poster
- User's guide

CONNECTIVITY

Ports

Rear Ports

- 1x USB upstream port
- 1x DisplayPort

- 1x power connector

Left Ports^[1]

- 1x USB 3.1 Gen 1 (on TIO)
- Side ports offered by installed Tiny (on Tiny)

Notes:

1. The availability and version depends on the Tiny installed or the PC connected via USB upstream port

SERVICE

Warranty

Base Warranty

3-year carry-in or courier service

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- TCO Certified 7.0
- TCO edge 2.0
- TUV
- ULE Gold
- RoHS compliant
- VOC
- WEEE

Other Certifications

Other Certifications

- FCC Class B
- ISO 9241-307
- TÜV Rheinland Eye Comfort Certification



PERFORMANCE

Panel

- Panel
- In-Plane Switching (IPS)
- Display Size
- 23.8 inches (604.7mm)
- Max View Area
- WxH: 527 x 296.5 mm (20.75 x 11.67 inches)
- Native Resolution
- 1920x1080
- Aspect Ratio
- 16:9
- Pixel Pitch
- 0.2745 x 0.2745 mm
- DPI
- 92.6 dpi
- Brightness
- 250 nits
- Contrast Ratio
- 1000:1
- Pixel Response Time
- 4 ms (extreme mode) / 6 ms (typical mode) / 14 ms (off mode)
- Color Gamut
- 72% NTSC
- Viewing Angle
- Horizontal: +/- 89°, vertical: +/- 89°
- Anti-glare
- Anti-glare

Multi-Media

- Camera
- 1080p, with dual microphone and Think Shutter
 - RGBIR camera, with dual microphone and Think Shutter
- Microphone
- Dual array microphone
- Speakers
- Stereo speakers, 2W x2

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 90W | Adapter | 88% | - |

- Power Consumption
- 15 watts typical, 27 watts max

DESIGN

Menu

- Presets and User Settings

- Presets: 25
- User settings: 25

On Screen Display

On screen display with digital user controls (8 languages)

Display

Touchscreen

(Optional)Advanced In-cell Touch (AIT), supports 10-point touch. ONLY for model 11GCPAT1 and 11GCPAR1.

Mechanical

Compatible Tiny

P340 / P330 / P320 / M90q / M80q / M70q / M75q / M920(x) / M720 / M910(x) / M710 / M715 / M900(x) / M700 / M630e / M625 / M600 Tiny / M90n / M75n Nano (with TIO kit)

Bezel Width

- Top / side: 2mm
- Bottom: 22.1mm

Buttons

- Volume button
- Power button
- Exit button
- Menu button
- Mode-switching button
- Brightness button

Cables

Undetachable 3-in-1 cable (power connector, USB [supports USB 3.1 Gen 1 / USB 2.0], DisplayPort™)

Case Color

Black

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------|-------------------------------------------------------|
| Models without stand | 539.8 x 65.3 x 367.6 mm (21.25 x 2.57 x 14.47 inches) |
| Models with full function monitor stand | 539.8 x 230.4 x 596.9 mm (21.25 x 9.07 x 23.5 inches) |

Weight

| Models | Weight |
|-----------------------------------------|---------------------|
| Models without stand | 3.61 kg (7.96 lbs) |
| Models with full function monitor stand | 6.66 kg (12.92 lbs) |

Mounting

Supports VESA mount 100mm

Stand

Full function monitor stand, supports -5° to +30° tilt, left & right 45° swivel, up to 150mm lift, -5° to +90° pivot

In the Box

- TIO (monitor)
- Detachable stand
- Driver CD
- Information flyer
- Power adapter
- Power cord
- User's guide

CONNECTIVITY

Ports

Rear Ports

- 1x USB upstream port

- 1x DisplayPort
- 1x power connector

Left Ports^[1]

- 1x USB 3.1 Gen 1 (on TIO)
- Side ports offered by installed Tiny (on Tiny)

Notes:

1. The availability and version depends on the Tiny installed or the PC connected via USB upstream port

SERVICE

Warranty

Base Warranty

3-year carry-in or courier service

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 5
- GREENGUARD®
- TCO edge 2.0
- RoHS compliant
- WEEE

Other Certifications

Other Certifications

TÜV Rheinland Eye Comfort Certification



PERFORMANCE

Panel

- Panel
- In-Plane Switching (IPS)
- Display Size
- 27 inches (685.8mm)
- Max View Area
- WxH: 596.7 x 335.7 mm (23.49 x 13.22 inches)
- Native Resolution
- 2560x1440
- Aspect Ratio
- 16:9
- Pixel Pitch
- 0.2331 x 0.2331 mm
- DPI
- 109 dpi
- Brightness
- 350 nits
- Contrast Ratio
- 1000:1
- Pixel Response Time
- 4 ms (extreme mode) / 6 ms (typical mode) / 14 ms (off mode)
- Color Gamut
- 99% sRGB
- Viewing Angle
- Horizontal: +/- 89°, vertical: +/- 89°
- Anti-glare
- Anti-glare

Multi-Media

- Camera
- RGBIR camera, with dual microphone , Think Shutter, LED indicator. Supports Window Hello and Facial Recognition
- Microphone
- Dual array microphone
- Speakers
- Stereo speakers, 2W x2

Power Supply

| Power Supply | | | |
|--------------|---------|------------|--------------|
| Power | Type | Efficiency | Key Features |
| 170W | Adapter | 88% | - |

- Power Consumption
- 37 watts typical, 57 watts max

DESIGN

Menu

- Presets and User Settings
- Presets: 25

ThinkCentre Tiny-In-One 27

- User settings: 25

On Screen Display

On screen display with digital user controls (8 languages)

Display

Touchscreen

Non-touch

Mechanical

Compatible Tiny

ThinkCentre® Tiny, ThinkCentre Nano, and ThinkStaion Tiny

Bezel Width

- Top / side: 2mm
- Bottom: 23.3mm

Buttons

- Volume button
- Power button
- Exit button
- Menu button
- Mode-switching button
- Brightness button

Cables

Undetachable 3-in-1 cable (power connector, USB [supports USB 3.1 Gen 1 / USB 2.0], DisplayPort™)

Case Color

Black

Dimensions (WxDxH)

| Models | Dimensions |
|-----------------------------------------|------------------------------------------------------|
| Models with full function monitor stand | 614 x 329 x 554.25 mm (24.17 x 12.95 x 21.82 inches) |
| Models without stand | 614 x 73.89 x 413.1 mm (24.17 x 2.91 x 16.26 inches) |

Weight

| Models | Weight |
|-----------------------------------------|---------------------|
| Models without stand | 4.90 kg (10.82 lbs) |
| Models with full function monitor stand | 7.95 kg (17.53 lbs) |

Mounting

Supports VESA mount 100mm

Stand

Full function monitor stand, supports -5° to +30° tilt, left & right 45° swivel, up to 110mm lift, -5° to +90° pivot

In the Box

- TIO 27 (monitor)
- Detachable stand
- Power adapter
- Power cord
- Reference and driver CD

CONNECTIVITY

Ports

Rear Ports

- 1x USB upstream port
- 1x HDMI®-in
- 1x DisplayPort
- 1x power connector

Left Ports^[1]

- 2x USB 3.1 Gen 1 (on TIO)
- Side ports offered by installed Tiny (on Tiny)
- 1x headphone / microphone combo jack (on TIO)

Notes:

1. The USB ports are enabled by installing a Tiny or connecting USB upstream port; the audio port is enabled by installing a Tiny or connecting USB upstream, DisplayPort(in), or HDMI(in) port

SERVICE

Warranty

Base Warranty

3-year product exchange service (US and EMEA) or customer carry-in service (EMEA)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- TCO edge 2.0
- TUV
- ULE Gold
- RoHS compliant
- VOC
- WEEE

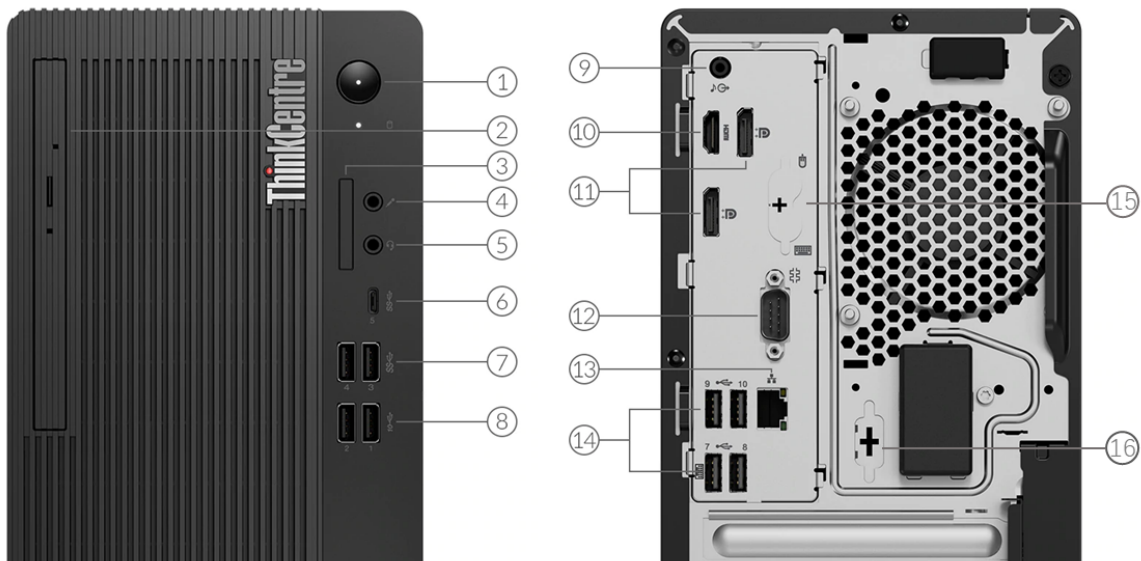
Other Certifications

Other Certifications

- ISO 9241-307
- TÜV Rheinland Eye Comfort Certification



OVERVIEW



| | |
|----------------------------------------------|----------------------------------------|
| 1. Power button | 9. Line-out (3.5mm) |
| 2. Optical drive * | 10. HDMI |
| 3. Card reader * | 11. 2x DisplayPort |
| 4. Microphone (3.5mm) | 12. Serial |
| 5. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 1 | 14. 4x USB 2.0 |
| 7. 2x USB 3.2 Gen 1 | 15. 2x PS/2 ports (keyboard / mouse) * |
| 8. 2x USB 3.2 Gen 2 | 16. Serial * |

- Notes:
- Ports with * are only available on selected models
 - More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-------------------------|------------|-----------|--------------------------------|---------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort™), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel H470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

No support

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)

- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 2W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |
| 380W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tower (13.6L)

Dimensions (WxDxH)

WxDxH:145 x 296 x 346 mm (5.7 x 11.7 x 13.6 inches)

Weight

4.8 kg (10.6 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, full-height (length < 215mm)
- One PCIe 3.0 x16, full-height (length < 215mm)
- Two M.2 slots (one for WLAN, one for SSD)

Others

- (Optional) Dust filter
- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable
- HDMI to VGA dongle

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

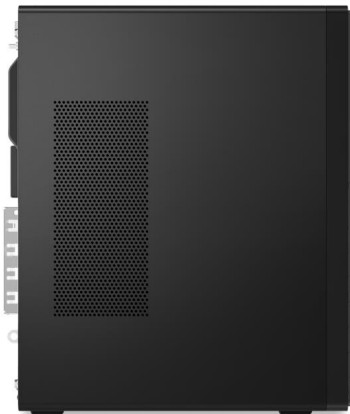
Green Certifications

- EPEAT™ Gold
- EPEAT Silver
- ENERGY STAR® 8.0 (only available for MT 11D9/11DA)
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

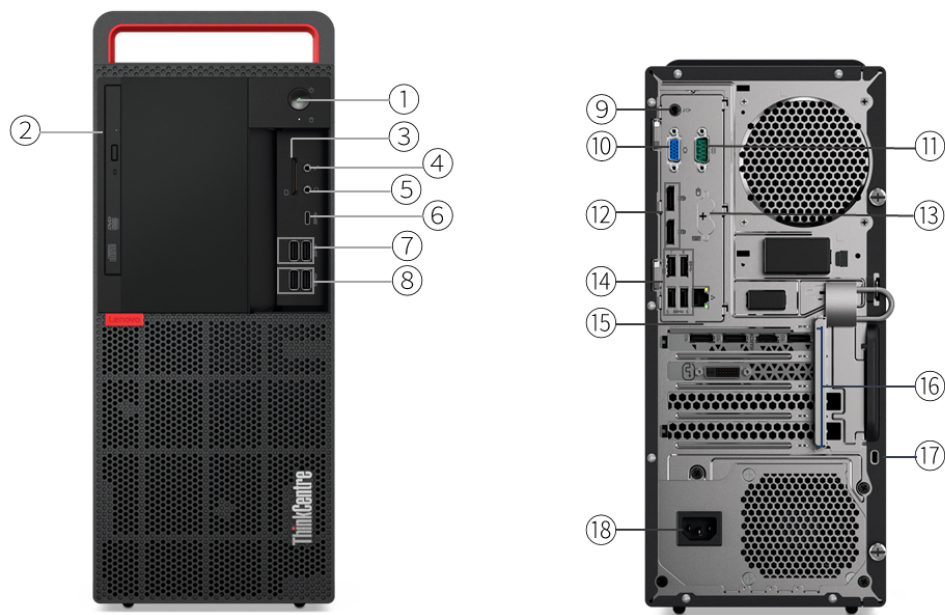
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|----------------------------------------|
| 1. Power button | 9. Serial |
| 2. Optical drive * | 10. VGA |
| 3. Card reader * | 11. 2x DisplayPort |
| 4. Microphone (3.5mm) | 12. 4x USB 3.1 Gen 1 |
| 5. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 6. USB-C 3.1 Gen 1 | 14. 2x PS/2 ports (keyboard / mouse) * |
| 7. 2x USB 3.1 Gen 1 | 15. 2x USB 3.1 Gen 2 |
| 8. Line-out (3.5mm) | |

- Notes:
- Ports with * are only available on selected models
 - More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9320 | 4 | 4 | 3.7GHz | 4.4GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500F | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | - |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------|-----------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX 12 |

| | | | | | |
|-------------------------|----------|-----------|---------------------------------|---------------------------------------------------------------|------------------------------------|
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI® 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 2x DP | 3840x2160@60Hz(DP) | DirectX 12, PCIe 2.0 x16, 35 watts |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort™), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel B360 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD/SSD + 1x 2.5" HDD/SSD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- 2.5" SSD up to 256GB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |

| | | | |
|-------------------------|------------------------|---|------|
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
No support

Removable Storage

- Optical**
- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
 - DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
 - None

- Card Reader**
- 7-in-1 card reader
 - No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers
Single speaker, 2W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 210W | Fixed | 85% | - |
| 260W | Fixed | 92% | - |

DESIGN

Input Device

- Keyboard**
- Lenovo Calliope Keyboard (USB connector), black
 - Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Keyboard (PS/2 connector), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse**
- Lenovo Calliope Mouse (USB connector), black
 - Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Mouse (PS/2 connector), black (only available via special bid)
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

Form Factor
Tower (15L)

Dimensions (WxDxH)
150 x 270.5 x 360 mm (5.91 x 10.65 x 14.17 inches)

Weight
6.9 kg (15.21 lbs)

Case Color
Black

Bays

- 1x 3.5" disk bay
- 1x 3.5" disk bay (optional, or bay comes with disk)
- 1x slim ODD bay

Expansion Slots

- Two PCIe 3.0 x1, half-length (< 189mm) full-height (< 104mm)
- One PCIe 3.0 x16, half-length (< 189mm) full-height (< 104mm)
- One dummy slot, only bracket for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

Stand

No stand

Others

(Optional) Dust filter

CONNECTIVITY**Network****Onboard Ethernet**

Gigabit Ethernet, Intel Ethernet Connection I219-V, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]**Front Ports**

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 1x USB 2.0 (via 1-port adapter)
- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable**Monitor Cable**

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management****System Management**

None

SERVICE**Warranty****Base Warranty**

- 1-year depot service
- 1-year limited onsite service

- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO
- RoHS compliant

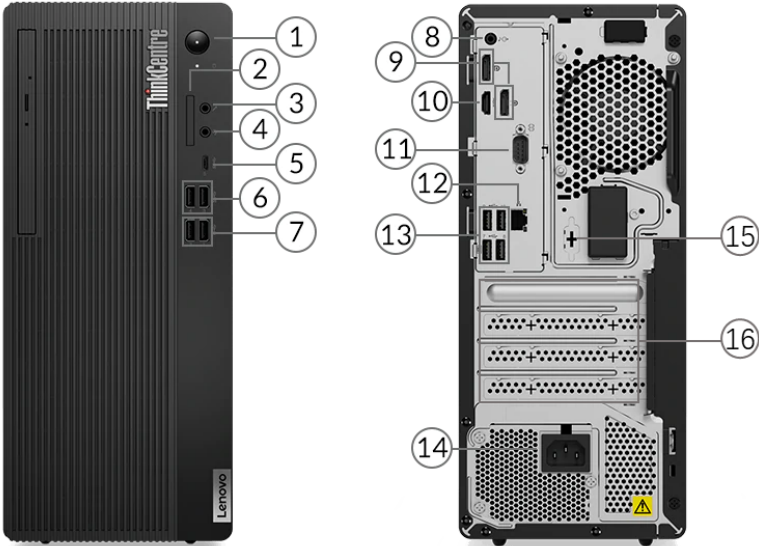
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Power button | 9. 2x DisplayPort |
| 2. Card reader * | 10. HDMI |
| 3. Microphone (3.5mm) | 11. Serial |
| 4. Headphone / microphone combo jack (3.5mm) | 12. Ethernet (RJ-45) |
| 5. USB-C 3.2 Gen 1 | 13. 4x USB 2.0 |
| 6. 2x USB 3.2 Gen 1 | 14. Power connector |
| 7. 2x USB 3.2 Gen 2 | 15. Serial * |
| 8. Line-out (3.5mm) | 16. Optional ports on expansion cards * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

AMD Athlon™ or AMD Ryzen™ 3 / 5 / 7 / 9 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|---------------------------|-------|---------|----------------|---------------|------------------|----------------|-----------------------------|
| AMD Athlon Silver 3050GE | 2 | 4 | 3.4GHz | 3.4GHz | 1MB L2 / 4MB L3 | DDR4-2666 | AMD Radeon™ Graphics |
| AMD Athlon Gold PRO 3150G | 4 | 4 | 3.5GHz | 3.9GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Graphics |
| AMD Ryzen 3 3200G | 4 | 4 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 8 Graphics |
| AMD Ryzen 3 4300G | 4 | 8 | 3.8GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 5300G | 4 | 8 | 4.0GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 4350G | 4 | 8 | 3.8GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 3 PRO 5350G | 4 | 8 | 4.0GHz | 4.2GHz | 2MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 4600G | 6 | 12 | 3.7GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 5600G | 6 | 12 | 3.9GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 3350G | 4 | 8 | 3.6GHz | 4.0GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3400G | 4 | 8 | 3.7GHz | 4.2GHz | 2MB L2 / 4MB L3 | DDR4-2933 | AMD Radeon Vega 11 Graphics |
| AMD Ryzen 5 PRO 3600 | 6 | 12 | 3.6GHz | 4.2GHz | 3MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 5 PRO 4650G | 6 | 12 | 3.7GHz | 4.2GHz | 3MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 5 PRO 5650G | 6 | 12 | 3.9GHz | 4.4GHz | 3MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 4700G | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 5700G | 8 | 16 | 3.8GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 3700 | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 32MB L3 | DDR4-3200 | - |
| AMD Ryzen 7 PRO 4750G | 8 | 16 | 3.6GHz | 4.4GHz | 4MB L2 / 8MB L3 | DDR4-3200 | AMD Radeon Graphics |
| AMD Ryzen 7 PRO 5750G | 8 | 16 | 3.8GHz | 4.6GHz | 4MB L2 / 16MB L3 | DDR4 3200 | AMD Radeon Graphics |
| AMD Ryzen 9 PRO 3900 | 12 | 24 | 3.1GHz | 4.3GHz | 6MB L2 / 64MB L3 | DDR4-3200 | - |

Operating System

Operating System

- Windows® 10 Home 64

- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-----------------------------|------------|-----------|-----------------------------------|---------------------------------------------------------------|--------------|
| AMD Radeon Graphics | Integrated | Shared | 2x DisplayPort™ 1.4, 1x HDMI® 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX® 12 |
| AMD Radeon Vega 8 Graphics | Integrated | Shared | 2x DisplayPort 1.4, 1x HDMI 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX 12 |
| AMD Radeon Vega 11 Graphics | Integrated | Shared | 2x DisplayPort 1.4, 1x HDMI 1.4 | 4096x2160@60Hz(DP), 4096x2160@24Hz(HDMI) | DirectX 12 |
| AMD Radeon 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort), more displays support via discrete graphics

Chipset

Chipset

AMD PRO 565 chipset

Memory^[1]

Max Memory^[2]

Up to 128GB DDR4-3200

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type^[3]

- DDR4-1866
- DDR4-2133
- DDR4-2400
- DDR4-2666
- DDR4-3200

Memory Protection

Non-ECC

Notes:

1. Recommend to choose the models with more than 4GB for better performance and experience
2. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.
3. Installed memory is actually 3200MHz, but may run at 1866MHz, 2133MHz, 2400MHz or 2666MHz depending on the memory support capability of processor

Storage

Storage Support

- Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD
- 2.5" HDD up to 1TB each
 - 3.5" HDD up to 2TB
 - M.2 SSD up to 2TB

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

- Single speaker, 2W x1
- No speakers

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tower (13.6L)

Dimensions (WxDxH)

WxDxH:145 x 296 x 346 mm (5.7 x 11.7 x 13.6 inches)

Weight

4.8 kg (10.6 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, full-height (length < 215mm)
- One PCIe 3.0 x16, full-height (length < 215mm)
- Two M.2 slots (one for WLAN, one for SSD)

EOU

EOU design for HDD

CONNECTIVITY

Network^[1]

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ45, supports Wake-on-LAN

Optional Ethernet^[2]

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Bitland RTL8111FP, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- No WLAN and Bluetooth

Notes:

1. This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.
2. RTL8111FP is not available for AP countries.

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 2.0
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 1x parallel
- None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to DVI dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- DASH 1.1

- No DASH

Notes:

1. DASH 1.1 is an optional feature for the selected MTs

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11KB/11KC

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- None

Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)



AMD



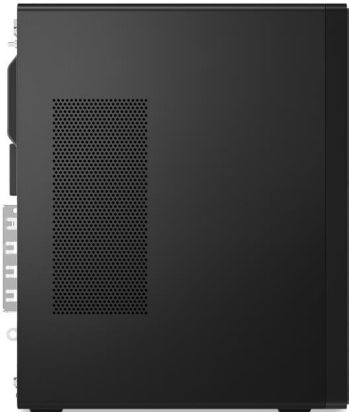
AMD



AMD



AMD

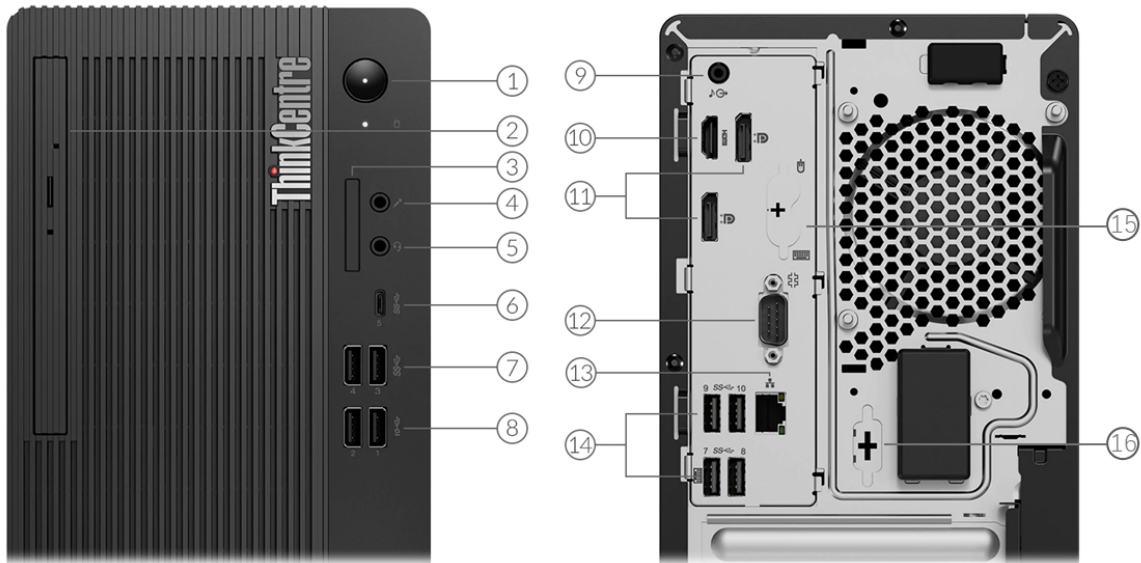


AMD



AMD

OVERVIEW



| | |
|----------------------------------------------|----------------------------------------|
| 1. Optical drive * | 9. Line-out (3.5mm) |
| 2. Power button | 10. HDMI |
| 3. Card reader * | 11. 2x DisplayPort |
| 4. Microphone (3.5mm) | 12. Serial |
| 5. Headphone / microphone combo jack (3.5mm) | 13. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 1 | 14. 4x USB 3.2 Gen 1 |
| 7. 2x USB 3.2 Gen 1 | 15. 2x PS/2 ports (keyboard / mouse) * |
| 8. 2x USB 3.2 Gen 2 | 16. Serial * |

- Notes:
- Ports with * are only available on selected models
 - More ports are available through the optional expansion cards (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|-------------------------|------------|-----------|--------------------------------|---------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x HDMI®, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 1x HDMI, 2x DP | 1920x1080@60Hz(HDMI), 4096x2304@60Hz(DP) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (HDMI and 2x DisplayPort™), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to three drives, 1x 2.5"/3.5" HDD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB
- M.2 SSD up to 2TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)

- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 2W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 260W | Fixed | 85% | - |
| 310W | Fixed | 92% | - |
| 380W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tower (13.6L)

Dimensions (WxDxH)

WxDxH:145 x 296 x 346 mm (5.7 x 11.7 x 13.6 inches)

Weight

4.8 kg (10.6 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, full-height (length < 215mm)
- One PCIe 3.0 x4, full-height (length < 215mm)
- One PCIe 3.0 x16, full-height (length < 215mm)
- One dummy slot, only bracket for optional port extension
- Two M.2 slots (one for WLAN, one for SSD)

Others

- (Optional) Dust filter
- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.2 Gen 1
- 1x HDMI
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- HDMI to HDMI cable (1.5m)
- HDMI to VGA dongle

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications^[1]

- (Optional) EPEAT™ Gold
- (Optional) EPEAT Silver
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

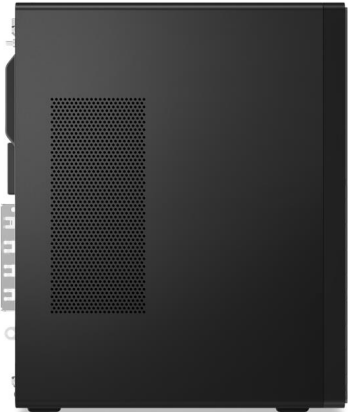
Notes:

1. ENERGY STAR 8.0 and EPEAT are only available for MT 11CS/11CT

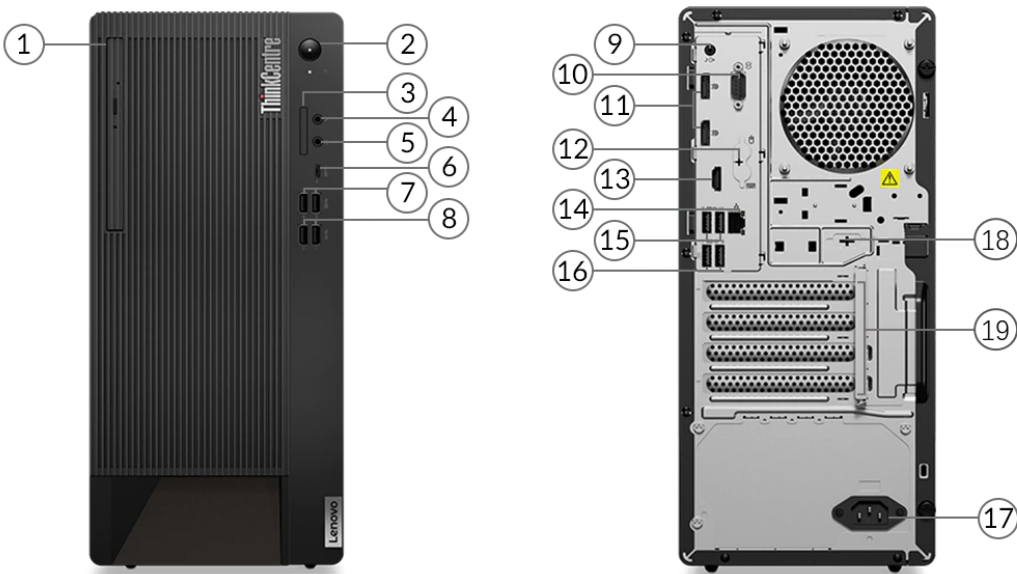
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------------|
| 1. Optical drive * | 11. 2x DisplayPort |
| 2. Power button | 12. 2x PS/2 ports (keyboard / mouse) * |
| 3. Card reader * | 13. Optional Video Port (HDMI / DP / USB-C) * |
| 4. Microphone (3.5mm) | 14. Ethernet (RJ-45) |
| 5. Headphone / microphone combo jack (3.5mm) | 15. 2x USB 3.2 Gen 1 |
| 6. USB-C 3.2 Gen 1 | 16. 2x USB 3.2 Gen 1 |
| 7. 2x USB 3.2 Gen 1 | 17. Power connector |
| 8. 2x USB 3.2 Gen 2 | 18. Serial * |
| 9. Line-out (3.5mm) | 19. Optional ports on expansion cards * |
| 10. Serial | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, or 10th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G5900 | 2 | 2 | 3.4GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5905 | 2 | 2 | 3.5GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5920 | 2 | 2 | 3.5GHz | - | 2MB | DDR4-2666 | Intel UHD Graphics 610 |
| Celeron G5925 | 2 | 2 | 3.6GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6400 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 610 |
| Pentium Gold G6500 | 2 | 4 | 4.1GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Pentium Gold G6600 | 2 | 4 | 4.2GHz | - | 4MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400F | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | - |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700F | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | - |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900F | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | - |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|-----------|--------------------------------------------------------|-------------------------------------------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 2x DP, 1x optional video port (HDMI® / 3rd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C) | DirectX® 12 |
| Intel UHD graphics 630 | Integrated | Shared | 2x DP, 1x optional video port (HDMI / 3rd DP / USB-C) | 4096x2160@24Hz(onboard HDMI), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C) | DirectX 12 |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT | Discrete | 2GB GDDR5 | 1x VGA, 1x HDMI 1.4 | 2048x1536@75Hz(VGA), 3840x2160@30Hz(HDMI) | DirectX 12 |

| | | | | | |
|-------------------------------|----------|-----------|-----------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------|
| 730 | | | | | |
| NVIDIA GeForce GTX 1660 SUPER | Discrete | 6GB GDDR6 | 1x HDMI 2.0b, 1x DP 1.4, 1x DVI-D | 4096x2160@60Hz(HDMI), 7680x4320@60Hz with DSC(DP), 2560x1600@60Hz(DVI-D) | DirectX 12, PCIe 3.0 x16, 125 watts, occupies two slots |
| NVIDIA GeForce RTX™ 2060 | Discrete | 6GB GDDR6 | 1x HDMI 3x DP | 4096x2160@60Hz(HDMI), 7680x4320@60Hz with DSC(DP) | DirectX 12, PCIe 3.0 x16, 125 watts |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (2x DisplayPort™ and 1x optional port [HDMI / 3rd DP / USB-C]), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

- DDR4-2666
- DDR4-2933

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to five drives, 2x 2.5"/3.5" HDD + 1x 2.5" HDD + 2x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB each
- M.2 SSD up to 2TB each
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|-------------------------|------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support (RAID preset only available via special bid model)

Removable Storage

Optical

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers

Single speaker, 2W x1

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | - |
| 300W | Fixed | 85% | - |
| 300W | Fixed | 90% | - |
| 500W | Fixed | 92% | - |

DESIGN

Input Device

Keyboard

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical

Form Factor

Tower (17L)

Dimensions (WxDxH)

170 x 298 x 376 mm (6.7 x 11.7 x 14.8 inches)

Weight

6.5 kg (14.3 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay
- 1x 3.5" disk bay (optional, or bay comes with disk)
- 1x slim ODD bay

Expansion Slots

- One PCIe 3.0 x1, full-height (length < 245mm)
- One PCIe 3.0 x4, full-height (length < 245mm)
- One PCIe 3.0 x16, full-height (length < 245mm)
- One dummy slot, only bracket for optional port extension
- Three M.2 slots (one for WLAN, two for SSD)

Others

- (Optional) Dust filter
- Supports Smart Power On

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- 2.5 Gigabit Ethernet, Realtek RTL8125BS, 1x RJ-45, PCIe x1
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.2 Gen 1
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- Optional video port (one of HDMI / DisplayPort / USB-C 3.2 Gen 1 with DisplayPort function)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;

FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 14.0
- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

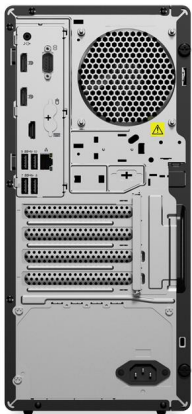
Green Certifications

- EPEAT™ Gold
- EPEAT Silver
- ENERGY STAR® 8.0 (only available for MT 11DO/11CY)
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

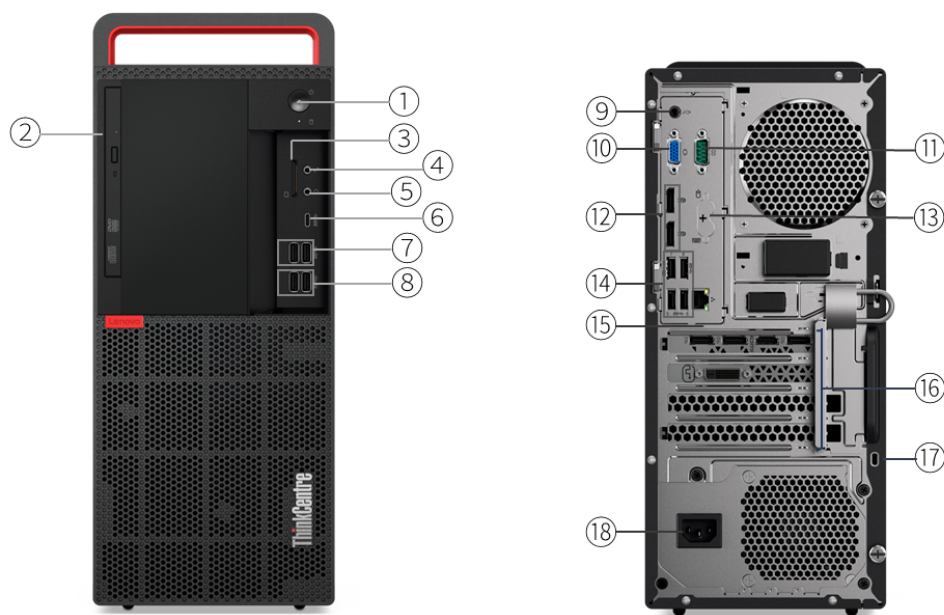
Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Ultra Low Noise
- None



OVERVIEW



| | |
|----------------------------------------------|-----------------------------------------|
| 1. Power button | 10. VGA |
| 2. Optical drive * | 11. Serial |
| 3. Card reader * | 12. 2x DisplayPort |
| 4. Microphone (3.5mm) | 13. 2x PS/2 ports (keyboard / mouse) * |
| 5. Headphone / microphone combo jack (3.5mm) | 14. 4x USB 3.1 Gen 1 |
| 6. USB-C 3.1 Gen 1 | 15. Ethernet (RJ-45) |
| 7. 2x USB 3.1 Gen 1 | 16. Optional ports on expansion cards * |
| 8. 2x USB 3.1 Gen 2 | 17. Kensington Security Slot |
| 9. Line-out (3.5mm) | 18. Power connector |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100F | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | - |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9320 | 4 | 4 | 3.7GHz | 4.4GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500F | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | - |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux
- No operating system

Graphics

Graphics^[1]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------|-----------------------------------------|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), | DirectX 12 |

| | | | | | |
|-------------------------|----------|-----------|---------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|
| graphics 630 | | | | 4096x2304@60Hz(DP) | |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI® 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 2x DP | 3840x2160@60Hz(DP) | DirectX 12, PCIe 2.0 x16, 35 watts |
| NVIDIA GeForce GTX 1060 | Discrete | 6GB GDDR5 | 1x HDMI, 3x DP, 1x DVI-D | 4096x2160@60Hz(HDMI), 5120x3200@60Hz(DP), 2560x1600@60Hz(DVI-D) | DirectX 12, PCIe 3.0 x16, 120 watts, occupies two slots |

Notes:

1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort™), more displays support via discrete graphics

Notes:

1. Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Memory Protection

Non-ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to four drives, 2x 2.5"/3.5" HDD/SSD + 1x 2.5" HDD + 1x M.2 2242/2280 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB each
- 2.5" SSD up to 256GB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type

| Disk Type | Interface | RPM | Security |
|---------------|------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |

| | | | |
|-------------------------|------------------------|------|------|
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| M.2 2242 SSD | PCIe NVMe, PCIe 3.0 x2 | - | - |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | Opal |
| M.2 2280 SSD | PCIe NVMe, PCIe 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID
RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Removable Storage

- Optical**
- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
 - DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)

- Card Reader**
- 7-in-1 card reader (SD, SDHC, SDXC, MMC, MS, MS-Pro, XD)
 - No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers
Single speaker, 2W x1

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 180W | Fixed | 85% | 100V - 240V |
| 250W | Fixed | 85% | 100V - 240V |
| 400W | Fixed | 92% | 100V - 240V |

DESIGN

Input Device

- Keyboard**
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
 - Lenovo Keyboard (PS/2 connector), black
 - Lenovo Traditional Keyboard (USB connector), black
 - No keyboard

- Mouse**
- Lenovo Calliope Mouse (USB connector), black
 - Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
 - Lenovo Mouse (PS/2 connector), black (only available via special bid)
 - Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
 - No mouse

Mechanical

Form Factor
Tower (18L)

Dimensions (WxDxH)
165 x 321.35 x 410.25 mm (6.5 x 12.65 x 16.15 inches)

Weight
7 kg (15.45 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x 3.5" disk bay (optional, or bay comes with disk)
- 1x slim ODD bay
- 1x 5.25" ODD / optional front access HDD

Expansion Slots

- One PCIe 3.0 x1, full-length (< 268mm) full-height (< 112mm)
- One PCIe 3.0 x16 (x4 signal), full-length (< 268mm) full-height (< 112mm)
- One PCIe 3.0 x16, full-length (< 268mm) full-height (< 112mm)
- One dummy slot, only bracket for optional port extension

EOU

Toolless cover, disk, optical, extension card assembly / removal

Others

- (Optional) Carry handle
- (Optional) Dust filter
- (Optional) Front access HDD

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®

- Realtek RTL8821CE, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro technology support, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.1 Gen 1
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB 2.0 (via 2-port adapter)

- 2x USB 3.1 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x Thunderbolt™ 3 (combo USB-C 3.1 Gen 2 / DisplayPort, via Thunderbolt expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

Monitor Cable

Monitor Cable

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management^[1]

- Intel vPro with Intel AMT 12.0

- None

Notes:

1. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Storage: -40°C (-40°F) to 60°C (140°F)
- Operating: 5°C (41°F) to 35°C (95°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (only available for MT 10U0/10U1 models with i3/i5/i7/i9 processor)
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland Low Noise
- None



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Carry-in or Mail-in Service: Parts and labor repair coverage where the customer is responsible for shipping (including packaging) or delivery to authorized warranty provider or repair center.

Depot or Courier Service: Parts and labor repair coverage where shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Expedited Depot: Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Onsite / In-home Service: Parts and labor repair coverage where labor is provided onsite at your place of business.

If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.

International Warranty Service (IWS): PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

Included software: may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit <http://psref.lenovo.com/> for the latest version of Product Specifications Reference.

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Lenovo 1009 Think Place Morrisville, NC 27560 U.S.A.

PSREF

Product Specifications Reference

ThinkStation



ThinkStation

Version 580
July 21, 2021

Lenovo™

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Summary of Changes

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

July 21, 2021 - Version 580

Additions in this update

► **New product(s)**

ThinkStation P350 Tower

ThinkStation P350 SFF

ThinkStation P350 Tiny

► **Spec updated**

ThinkStation P920

ThinkStation P720

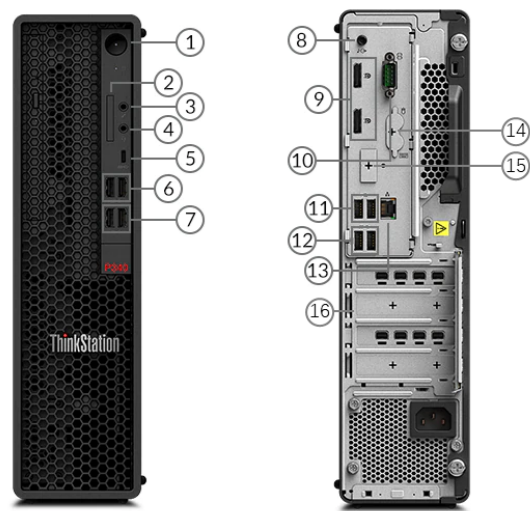
ThinkStation P520

Withdrawals in this update

► **Withdrawn product(s)**

None

OVERVIEW



| | |
|----------------------------------------------|------------------------------------------------|
| 1. Power button | 9. 2x DisplayPort |
| 2. Card reader * | 10. Serial |
| 3. Microphone (3.5mm) | 11. 2x USB 2.0 |
| 4. Headphone / microphone combo jack (3.5mm) | 12. 2x USB 3.2 Gen 1 |
| 5. USB-C 3.2 Gen 1 | 13. Ethernet (RJ-45) |
| 6. 2x USB 3.2 Gen 1 | 14. 2x PS/2 ports (keyboard / mouse) * |
| 7. 2x USB 3.2 Gen 2 | 15. Video port (DisplayPort, HDMI, or USB-C) * |
| 8. Line-out (3.5mm) | 16. Optional ports on expansion cards * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one Intel® Xeon®, Core™ i9, i7, i5, or i3 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Xeon W-1250 | 6 | 12 | 3.3GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics P630 |
| Xeon W-1270 | 8 | 16 | 3.4GHz | 5.0GHz | 16MB | DDR4-2933 | Intel UHD Graphics P630 |
| Xeon W-1290 | 10 | 20 | 3.2GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics P630 |

Processor Sockets

1x FCLGA1200

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

- Intel UHD Graphics 630
- Intel UHD Graphics P630

Discrete Graphics Support

Supports up to two NVIDIA® Quadro® P1000

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-----------|-------|-----------|--------------|
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel W480 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Type

- DDR4-2933 UDIMM ECC
- DDR4-2933 UDIMM non-ECC

Memory Slots

4 DIMM sockets with 2 channels

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 1x 3.5" SATA HDD / 2x 2.5" SATA HDD / SSD + 4x M.2 PCIe SSD

- 3.5" HDD up to 4TB
- 2.5" SATA HDD up to 1TB each
- 2.5" SATA SSD up to 1TB each
- M.2 SSD up to 2TB each
- Optional Intel Optane™ Memory

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|------------|------|---------------------------|
| 2.5" SATA SSD | SATA 6Gb/s | - | 512GB / 1TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB FIPS |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|--------------|------|-------|
| Onboard Intel RST PCIe RAID | Standard | PCIe NVMe | 0/1 | None |
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1 | None |

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 310W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 380W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Mini-tower (8.2L)

Dimensions (WxDxH)

92.5 x 309.7 x 339.5 mm (3.6 x 9.3 x 13.4 inches)

Weight

5.65 kg (12.46 lbs, maximum configuration)

Bays

- 1x 2.5" disk bay (optional, comes with disk or Storage Bay Upgrade Kit)
- 1x 3.5" disk bay (optional, comes with disk or Storage Bay Upgrade Kit)

M.2 Slots

Up to 4x M.2 SSD:

- 2 via onboard slots
- 2 via Single M.2 to PCIe adapter

Expansion Slots

- Two PCIe 3.0 x16
- One PCIe 3.0 x1

Expansion Slots Offering

Slot 1: PCIe 3.0 x16, low profile, links to CPU

Slot 2: PCIe 3.0 x1, low profile, links to PCH

Slot 3: PCIe 3.0 x16 (negotiable link width x4), low profile, links to PCH

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.2 Gen 1
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort™

Optional Rear Ports

- 2x USB 2.0
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card)
- 1x video (DisplayPort, HDMI®, or USB-C)
- 1x Thunderbolt™
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)

- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
 - USB 2.0: 480 Mbit/s;
 - USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
 - USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
 - USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
 - Thunderbolt 3: 40 Gbit/s;
 - FireWire 400: 400 Mbit/s;
 - FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Cable lock
- Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- Standard Manageability

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- RoHS compliant

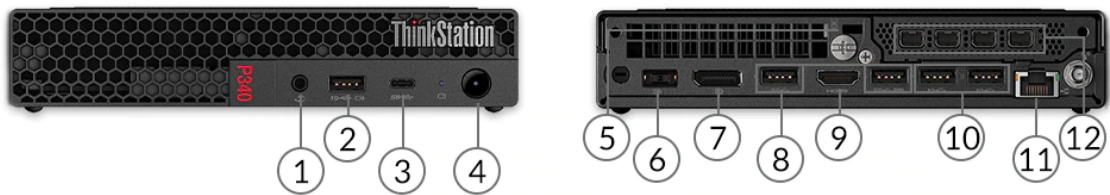
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 7. DisplayPort |
| 2. USB 3.2 Gen 2 (Always On and fast charge) | 8. 2x USB 3.2 Gen 1 |
| 3. USB-C 3.2 Gen 1 | 9. HDMI |
| 4. Power button | 10. 2x USB 3.2 Gen 2 |
| 5. Kensington Security Slot | 11. Ethernet (RJ-45) |
| 6. Power connector | 12. 4x MiniDP * |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one Intel® Core™ i9, i7, i5, or i3 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10100T | 4 | 8 | 3.0GHz | 3.8GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300T | 4 | 8 | 3.0GHz | 3.9GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400T | 6 | 12 | 2.0GHz | 3.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500T | 6 | 12 | 2.3GHz | 3.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600T | 6 | 12 | 2.4GHz | 4.0GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700T | 8 | 16 | 2.0GHz | 4.5GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900T | 10 | 20 | 1.9GHz | 4.6GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |

Processor Sockets

1x FCLGA1200

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

Intel UHD Graphics 630

Discrete Graphics Support

Supports one optional discrete graphics card

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-----------|-------|-----------|--------------|
| Quadro® P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel Q470 chipset

Memory

Max Memory^[1]

Up to 64GB

Memory Type

DDR4-2933 non-ECC

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Notes:

- 1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2x M.2 SSD

- M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|--------------|-----------|-----|---------------------------|
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |

Removable Storage

Optical Support

Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±RW

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 170W | Adapter | 89% | 100V - 240V |
| 230W | Adapter | 89% | 100V - 240V |

DESIGN

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

37 x 182.9 x 179 mm (1.5 x 7.2 x 7.0 inches)

Weight

1.4 kg (3 lbs, maximum configuration)

Bays

No bays

M.2 Slots

Up to 2x M.2 SSD via onboard slots

Expansion Slots

One PCIe 3.0 x16 or x4 slot, low-profile, via riser card

Expansion Slots Offering

One PCIe slot via specific riser card:
PCIe 3.0 x16 (negotiable link width x8) and low profile for discrete graphics card,
PCIe 3.0 x4 and low profile for ethernet adapter and Thunderbolt™ adapter

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 3.2 Gen 1 (one supports Smart Power On)
- 2x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI®
- 1x DisplayPort™

Optional Rear Ports

- 2x USB-A 3.2 Gen 1
- 1x Thunderbolt
- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro with Intel AMT 14 (vPro-enable processor and WiFi needed)
- Standard Manageability

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed

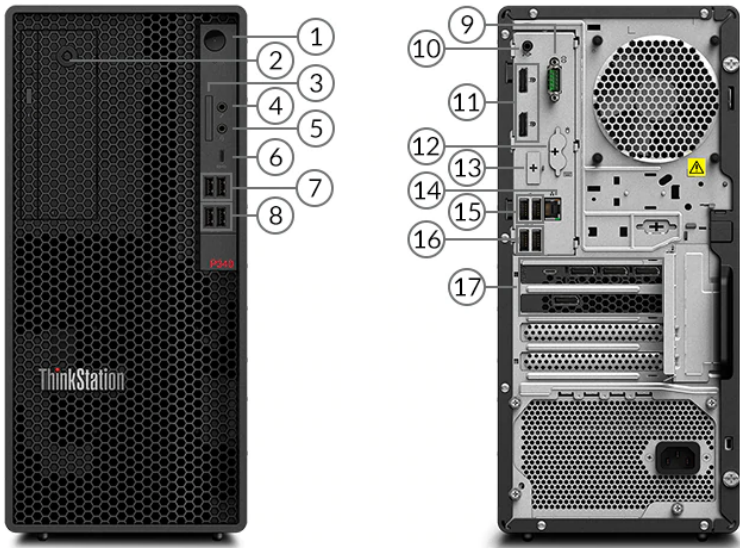
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------------------------|
| 1. Power button | 10. Line-out (3.5mm) |
| 2. Optical drive * | 11. 2x DisplayPort |
| 3. Card reader | 12. 2x PS/2 ports (keyboard / mouse) * |
| 4. Microphone (3.5mm) | 13. Video port (DisplayPort, HDMI, or USB-C) * |
| 5. Headphone / microphone combo jack (3.5mm) | 14. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 1 | 15. 2x USB 2.0 |
| 7. 2x USB 3.2 Gen 1 | 16. 2x USB 3.2 Gen 1 |
| 8. 2x USB 3.2 Gen 2 | 17. Optional ports on expansion cards * |
| 9. Serial | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one Intel® Xeon®, Core™ i9, i7, i5, or i3 processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-10100 | 4 | 8 | 3.6GHz | 4.3GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10300 | 4 | 8 | 3.7GHz | 4.4GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10320 | 4 | 8 | 3.8GHz | 4.6GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10400 | 6 | 12 | 2.9GHz | 4.3GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10500 | 6 | 12 | 3.1GHz | 4.5GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600 | 6 | 12 | 3.3GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-10600K | 6 | 12 | 4.1GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-10700 | 8 | 16 | 2.9GHz | 4.8GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i7-10700K | 8 | 16 | 3.8GHz | 5.1GHz | 16MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900 | 10 | 20 | 2.8GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Core i9-10900K | 10 | 20 | 3.7GHz | 5.3GHz | 20MB | DDR4-2933 | Intel UHD Graphics 630 |
| Xeon W-1250 | 6 | 12 | 3.3GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics P630 |
| Xeon W-1250P | 6 | 12 | 4.1GHz | 4.8GHz | 12MB | DDR4-2666 | Intel UHD Graphics P630 |
| Xeon W-1270 | 8 | 16 | 3.4GHz | 5.0GHz | 16MB | DDR4-2933 | Intel UHD Graphics P630 |
| Xeon W-1270P | 8 | 16 | 3.8GHz | 5.1GHz | 16MB | DDR4-2933 | Intel UHD Graphics P630 |
| Xeon W-1290 | 10 | 20 | 3.2GHz | 5.2GHz | 20MB | DDR4-2933 | Intel UHD Graphics P630 |
| Xeon W-1290P | 10 | 20 | 3.7GHz | 5.3GHz | 20MB | DDR4-2933 | Intel UHD Graphics P630 |

Processor Sockets

1x FCLGA1200

Operating System

Operating System

- Windows® 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

- Intel UHD Graphics 630
- Intel UHD Graphics P630

Discrete Graphics Support

Supports up to one NVIDIA® Quadro® RTX 5000, or two NVIDIA Quadro P2200, 500W PSU is needed

Discrete Graphics Offering^[1]

| Graphics | Memory | Power | Connector | SLI / NVlink |
|-----------------|------------|-------|-----------------------|--------------|
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | None |

Notes:

1. NVIDIA Quadro RTX 5000 supports manufacture configure only, none standalone option is available

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel W480 chipset

Memory

Max Memory^[1]

Up to 128GB DDR4-2933

Memory Type

- DDR4-2933 UDIMM ECC
- DDR4-2933 UDIMM non-ECC

Memory Slots

Four DDR4 UDIMM slots, dual-channel capable

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 2x 3.5" SATA HDD / 4x 2.5" SATA HDD / SSD + 4x M.2 PCIe SSD

- 3.5" HDD up to 4TB each
- 2.5" SATA HDD up to 1TB each
- 2.5" SATA SSD up to 1TB each
- M.2 PCIe SSD up to 2TB each
- Optional Intel Optane™ Memory

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------------|------------|------|---------------------------|
| 2.5" SATA SSD | SATA 6Gb/s | - | 512GB / 1TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB FIPS |
| Intel Optane Memory | PCIe NVMe | - | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|--------------|----------|-------|
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |
| Onboard Intel RST PCIe RAID | Standard | PCIe NVMe | 0/1 | None |

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader

- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 300W | Fixed | 90% | 100V - 240V, 80 PLUS Gold qualified |
| 500W | Fixed | 92% | 100V - 240V, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (17L)

Dimensions (WxDxH)

170 x 315.35 x 376 mm (6.7 x 12.4 x 14.8 inches)

Weight

9.38 kg (20.68 lbs, maximum configuration)

Bays

- 1x 3.5" disk bay (standard)
- 1x 3.5" disk bay (optional, via Flex bay)
- 2x 2.5" disk bay (optional, comes with disk or optional upgrade kit)

M.2 Slots

Up to 4x M.2 SSD:

- 2 via onboard slots
- 2 via Single M.2 to PCIe adapter

Expansion Slots

- Two PCIe 3.0 x16
- One PCIe 3.0 x1

Expansion Slots Offering

Slot 1: PCIe 3.0 x16, full height, full length, links to CPU
Slot 2: PCIe 3.0 x1, full height, full length, links to PCH
Slot 3: PCIe 3.0 x16 (negotiable link width x4), full height, full length, links to PCH

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1

- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 2x USB 2.0
- 2x USB 3.2 Gen 1
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort™

Optional Rear Ports

- 2x USB 2.0
- 2x USB-C 3.2 Gen 2 (via 2-port USB-C expansion card)
- 1x video (DisplayPort, HDMI®, or USB-C)
- 1x Thunderbolt™
- 2x USB 3.2 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Cable lock
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro with Intel AMT 14 (vPro-enable processor and WiFi needed)
- Standard Manageability

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0
- RoHS compliant

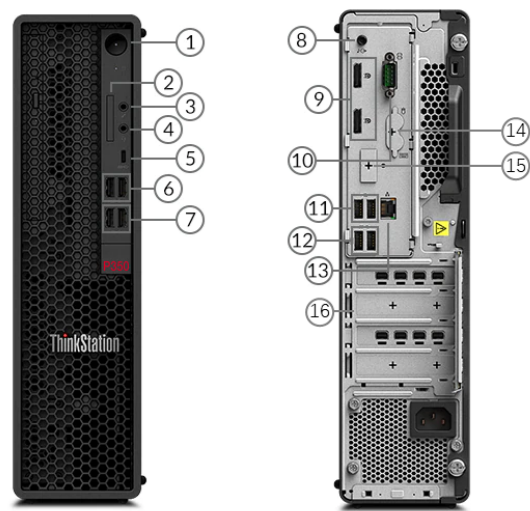
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------------------------|
| 1. Power button | 9. 2x DisplayPort |
| 2. Card reader * | 10. Serial |
| 3. Microphone (3.5mm) | 11. 2x USB 3.2 Gen 1 |
| 4. Headphone / microphone combo jack (3.5mm) | 12. 2x USB 3.2 Gen 1 |
| 5. USB-C 3.2 Gen 2 (data transfer only) | 13. Ethernet (RJ-45) |
| 6. 2x USB 3.2 Gen 1 | 14. 2x PS/2 ports (keyboard / mouse) * |
| 7. 2x USB 3.2 Gen 2 | 15. Video port (DisplayPort, HDMI, or USB-C) * |
| 8. Line-out (3.5mm) | 16. Optional ports on expansion cards * |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 Processor, 11th Generation Intel Core i5 / i7 / i9 Processor, or Intel Xeon® W Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i3-10105 | 4 | 8 | 3.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10305 | 4 | 8 | 3.8GHz | 4.5GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10325 | 4 | 8 | 3.9GHz | 4.7GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-11400 | 6 | 12 | 2.6GHz | 4.4GHz | 12MB | DDR4-3200 | Intel UHD Graphics 730 |
| Core i5-11500 | 6 | 12 | 2.7GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600 | 6 | 12 | 2.8GHz | 4.8GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700 | 8 | 16 | 2.5GHz | 4.9GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900 | 8 | 16 | 2.5GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Xeon W-1350 | 6 | 12 | 3.3GHz | 5.0GHz | 12MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1370 | 8 | 16 | 2.9GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1390 | 8 | 16 | 2.8GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |

Operating System

Operating System

- Windows® 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

- Intel UHD Graphics 630
- Intel UHD Graphics 730
- Intel UHD Graphics 750
- Intel UHD Graphics P750

Discrete Graphics Support^[1]

Supports up to one NVIDIA® T1000, or two NVIDIA T400

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-----------|-------|-----------|--------------|
| NVIDIA T600 | 4GB GDDR6 | 40W | 4x miniDP | None |
| NVIDIA T1000 | 4GB GDDR6 | 50W | 4x miniDP | None |

Notes:

- Dual NVIDIA T400 will be available on August 2021

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel W580 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Type

- DDR4-3200 UDIMM Non-ECC
- DDR4-3200 UDIMM ECC

Memory Slots

Four DDR4 UDIMM slots, dual-channel capable

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

Up to 1x 3.5" SATA HDD + 1x 2.5" SATA HDD + 3x M.2 SSD

- 3.5" HDD up to 4TB each
- 2.5" HDD up to 1TB each
- M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|---------------|-----------------|------|---------------------------|----------|
| M.2 2280 SSD | PCIe Gen 4 NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 1TB FIPS | - |

Storage Controllers^[2]

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|--------------|------|-------|
| Onboard Intel RST PCIe RAID | Standard | PCIe NVMe | 0/1 | None |
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1 | None |

Notes:

1. Model with 10th Core processor supports 2x M.2 SSD
2. Cannot install OS in SATA RAID 1 volume

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 380W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Mini-tower (8.2L)

Dimensions (WxDxH)

92.5 x 309.7 x 339.5 mm (3.6 x 9.3 x 13.4 inches)

Weight

5.62 kg (12.39 lbs, maximum configuration)

Bays

- 1x 2.5" disk bay (Optional)
- 1x 3.5" disk bay (optional)

M.2 Slots^[1]

- Up to 2x M.2 SSD on model with 10th Core processor:
 - 1 via onboard slot with M.2 PCIe Gen 3
 - 1 via Single M.2 to PCIe adapter, PCIe Gen 3
- Up to 3x M.2 SSD on models with Xeon or 11th Core processor:
 - 2 via onboard slots with 1x M.2 PCIe Gen 4 and 1x M.2 PCIe Gen 3
 - 1 via Single M.2 to PCIe adapter, PCIe Gen 3

Expansion Slots

- One PCIe 4.0 x16
- One PCIe 4.0 x16 (x4 lanes)
- One PCIe 3.0 x1

Notes:

1. M.2 Gen 4 SSD works at Gen 3 speed on Gen 3 slot

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 4x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort™

Optional Rear Ports

- 2x USB-C
- 2x USB 2.0
- 1x video (DisplayPort, HDMI®, or USB-C)
- 1x serial
- 1x parallel

- 2x PS/2
- None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Cable lock
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro with Intel AMT 14 (vPro-enable processor and WiFi needed)
- Standard Manageability

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)

- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold (on some models)
- ENERGY STAR® 8.0
- RoHS compliant

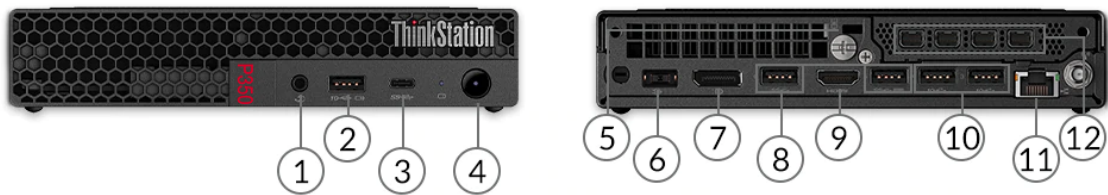
ISV Certifications

ISV Certifications

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OVERVIEW



| | |
|----------------------------------------------|----------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 7. DisplayPort |
| 2. USB 3.2 Gen 2 (Always On and fast charge) | 8. 2x USB 3.2 Gen 1 |
| 3. USB-C 3.2 Gen 2 (data transfer only) | 9. HDMI |
| 4. Power button | 10. 2x USB 3.2 Gen 2 |
| 5. Kensington Security Slot | 11. Ethernet (RJ-45) |
| 6. Power connector | 12. 4x MiniDP * |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

10th Generation Intel® Core™ i3 Processor or 11th Generation Intel Core i5 / i7 / i9 Processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Core i3-10105 | 4 | 8 | 3.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10105T | 4 | 8 | 3.0GHz | 3.9GHz | 6MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10305 | 4 | 8 | 3.8GHz | 4.5GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10305T | 4 | 8 | 3.0GHz | 4.0GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10325 | 4 | 8 | 3.9GHz | 4.7GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-11400 | 6 | 12 | 2.6GHz | 4.4GHz | 12MB | DDR4-3200 | Intel UHD Graphics 730 |
| Core i5-11400T | 6 | 12 | 1.3GHz | 3.7GHz | 12MB | DDR4-3200 | Intel UHD Graphics 730 |
| Core i5-11500 | 6 | 12 | 2.7GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11500T | 6 | 12 | 1.5GHz | 3.9GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600 | 6 | 12 | 2.8GHz | 4.8GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600T | 6 | 12 | 1.7GHz | 4.1GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700 | 8 | 16 | 2.5GHz | 4.9GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700T | 8 | 16 | 1.4GHz | 4.6GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900 | 8 | 16 | 2.5GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900T | 8 | 16 | 1.5GHz | 4.9GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |

Processor Sockets

1x FCLGA1200

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

- Intel UHD Graphics 630
- Intel UHD Graphics 730
- Intel UHD Graphics 750

Discrete Graphics Support

Supports up to one NVIDIA® T600 or NVIDIA Quadro® P1000 on model with 35W processor

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-----------|-------|-----------|--------------|
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| NVIDIA T600 | 4GB GDDR6 | 40W | 4x miniDP | None |

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset
Intel Q570 Chipset

Memory

Max Memory^[1]
Up to 64GB

Memory Type
DDR4-3200 non-ECC

Memory Slots
Two DDR4 SO-DIMM slots, dual-channel capable

Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support
Up to 2x M.2 SSD, 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|--------------|-----------------|-----|---------------------------|----------|
| M.2 2280 SSD | PCIe Gen 4 NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal |

Removable Storage

Optical Support
Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±RW

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|---------|------------|--------------|
| 170W | Adapter | 89% | 100V - 240V |
| 230W | Adapter | 89% | 100V - 240V |

DESIGN

Mechanical

Form Factor

Tiny (1L)
Dimensions (WxDxH)
37 x 182.9 x 179 mm (1.5 x 7.2 x 7.0 inches)

Weight
1.4 kg (3 lbs, maximum configuration)

Bays
No bays

M.2 Slots^[1]
• Up to 2x M.2 SSD on models with 10th Core processor:
• 1x M.2 2280 onboard slot, M.2 PCIe Gen 3

- 1x M.2 2280 /2242 onboard slot, M.2 PCIe Gen 3
- Up to 2x M.2 SSD on models with 11th Core processor:
 - 1x M.2 2280 onboard slot, M.2 PCIe Gen 4
 - 1x M.2 2280 /2242 onboard slot, M.2 PCIe Gen 4

Expansion Slots

One PCIe slot via specific riser card:

PCIe 3.0 x16 (negotiable link width x8) and low profile for discrete graphics card,
PCIe 3.0 x4 and low profile for ethernet adapter and Thunderbolt™ adapter

Notes:

1. M.2 Gen 4 SSD works at Gen 3 speed on Gen 3 slot

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 3.2 Gen 1 (one supports Smart Power On)
- 2x USB 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x HDMI®
- 1x DisplayPort™

Optional Rear Ports

- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort function)
- Optional Port 2 (serial)
- 1x Thunderbolt 4

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro with Intel AMT 14 (vPro-enable processor and WiFi needed)
- Standard Manageability

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

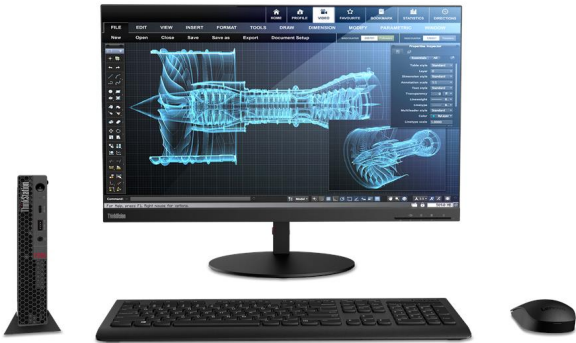
Mil-Spec Test

MIL-STD-810G military test passed

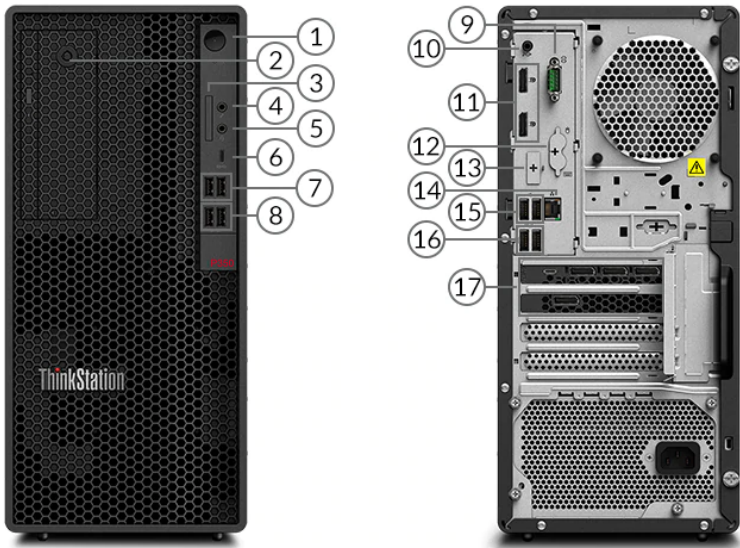
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------------------------------|
| 1. Power button | 10. Line-out (3.5mm) |
| 2. Optical drive * | 11. 2x DisplayPort |
| 3. Card reader * | 12. 2x PS/2 ports (keyboard / mouse) * |
| 4. Microphone (3.5mm) | 13. Video port (DisplayPort, HDMI, or USB-C) * |
| 5. Headphone / microphone combo jack (3.5mm) | 14. Ethernet (RJ-45) |
| 6. USB-C 3.2 Gen 2 (data transfer only) | 15. 2x USB 3.2 Gen 1 |
| 7. 2x USB 3.2 Gen 1 | 16. 2x USB 3.2 Gen 1 |
| 8. 2x USB 3.2 Gen 2 | 17. Optional ports on expansion cards * |
| 9. Serial | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor^[1]

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core™ i3-10105 | 4 | 8 | 3.7GHz | 4.4GHz | 6MB | DDR4-2666 | Intel® UHD Graphics 630 |
| Core i3-10305 | 4 | 8 | 3.8GHz | 4.5GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i3-10325 | 4 | 8 | 3.9GHz | 4.7GHz | 8MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-11400 | 6 | 12 | 2.6GHz | 4.4GHz | 12MB | DDR4-3200 | Intel UHD Graphics 730 |
| Core i5-11500 | 6 | 12 | 2.7GHz | 4.6GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600 | 6 | 12 | 2.8GHz | 4.8GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i5-11600K | 6 | 12 | 3.9GHz | 4.9GHz | 12MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700 | 8 | 16 | 2.5GHz | 4.9GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i7-11700K | 8 | 16 | 3.6GHz | 5.0GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900 | 8 | 16 | 2.5GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Core i9-11900K | 8 | 16 | 3.5GHz | 5.3GHz | 16MB | DDR4-3200 | Intel UHD Graphics 750 |
| Xeon W-1350 | 6 | 12 | 3.3GHz | 5.0GHz | 12MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1350P | 6 | 12 | 4.0GHz | 5.1GHz | 12MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1370 | 8 | 16 | 2.9GHz | 5.1GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1370P | 8 | 16 | 3.6GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1390 | 8 | 16 | 2.8GHz | 5.2GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |
| Xeon W-1390P | 8 | 16 | 3.5GHz | 5.3GHz | 16MB | DDR4-3200 | Intel UHD Graphics P750 |

Notes:

- 1. 10th Core i5, i7, and i9 processors are available after August 2021

Operating System

Operating System

- Windows® 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- No operating system

Graphics

Integrated Graphics

- Intel UHD Graphics 630
- Intel UHD Graphics 730
- Intel UHD Graphics 750
- Intel UHD Graphics P750

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|------------------|---------------------|-------|-----------|--------------|
| Quadro® P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| NVIDIA® T400 | 2GB GDDR6 | 40W | 3x miniDP | None |
| NVIDIA T600 | 4GB GDDR6 | 40W | 4x miniDP | None |
| NVIDIA T1000 | 4GB GDDR6 | 50W | 4x miniDP | None |
| NVIDIA RTX A4000 | 16GB GDDR6 with ECC | 140W | 4x DP | None |
| NVIDIA RTX A5000 | 24GB GDDR6 with ECC | 230W | 4x DP | None |

Monitor Support

Monitor Support

Supports multiple displays via onboard video ports and discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel W580 chipset

Memory

Max Memory^[1]

Up to 128GB

Memory Type

- DDR4-3200 UDIMM Non-ECC
- DDR4-3200 UDIMM ECC

Memory Slots

Four DDR4 UDIMM slots, dual-channel capable

Memory Protection

ECC on models with ECC DIMMs and Xeon processor

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]

Up to 2x 3.5" SATA HDD / 4x 2.5" SATA HDD + 3x M.2 SSD

- 3.5" HDD up to 4TB each
- 2.5" HDD up to 1TB each
- M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering | Security |
|---------------|-----------------|------|---------------------------|----------|
| M.2 2280 SSD | PCIe Gen 4 NVMe | - | 256GB / 512GB / 1TB / 2TB | Opal |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB | - |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 1TB FIPS | - |

Storage Controllers^[2]

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|--------------|------|-------|
| Onboard Intel RST PCIe RAID | Standard | PCIe NVMe | 0/1 | None |
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1 | None |

Notes:

1. Model with Core i3 processor supports 2x M.2 SSD
2. Cannot install OS in SATA RAID 1 volume

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC623-CG codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 500W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 750W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (17L)

Dimensions (WxDxH)

170 x 315.35 x 376 mm (6.7 x 12.4 x 14.8 inches)

Weight

9.4 kg (20.7 lbs, maximum configuration)

Bays

- 1x 3.5" disk bay (standard)
- 1x 3.5" disk bay (optional)
- 2x 2.5" disk bay (optional)

M.2 Slots^[1]

- Up to 2x M.2 SSD on model with 10th Core processor:
 - 1 via onboard slot with M.2 PCIe Gen 3
 - 1 via Single M.2 to PCIe adapter, PCIe Gen 3
- Up to 3x M.2 SSD on models with Xeon or 11th Core processor:
 - 2 via onboard slots with 1x M.2 PCIe Gen 4 and 1x M.2 PCIe Gen 3
 - 1 via Single M.2 to PCIe adapter, PCIe Gen 3

Expansion Slots

- One PCIe 4.0 x16
- One PCIe 4.0 x16 (x4 lanes)
- One PCIe 3.0 x1

Notes:

1. M.2 Gen 4 SSD works at Gen 3 speed on Gen 3 slot

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.2 Gen 1
- 2x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Rear Ports^[2]

- 4x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort™

Optional Rear Ports

- 2x USB-C
- 2x USB 2.0
- 1x video (DisplayPort, HDMI®, or USB-C)
- 1x serial
- 1x parallel
- 2x PS/2
- None

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt™ 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Cable lock
- Kensington® Security Slot
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

- Intel vPro with Intel AMT 14 (vPro-enable processor and WiFi needed)
- Standard Manageability

SERVICE

Warranty

Base Warranty

- 1-year limited onsite service
- 2-year limited onsite service

- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold (on some models)
- ENERGY STAR® 8.0
- RoHS compliant

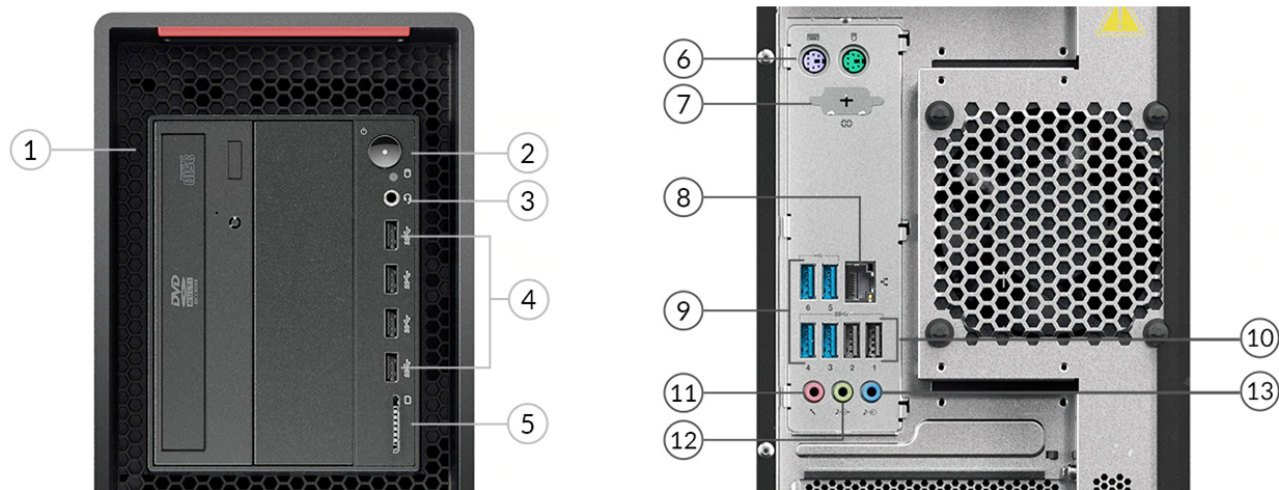
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|------------------------|
| 1. 2x Flex bay | 8. Ethernet (RJ-45) |
| 2. Power button | 9. 4x USB 3.1 Gen 1 |
| 3. Headphone / microphone combo jack (3.5mm) | 10. 2x USB 2.0 |
| 4. 4x USB 3.1 Gen 1 | 11. Microphone (3.5mm) |
| 5. Card reader | 12. Line-out (3.5mm) |
| 6. 2x PS/2 ports (keyboard / mouse) | 13. Line-in (3.5mm) |
| 7. Serial * | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one Intel® Xeon® W-2200 / W-2100 series processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|---------|----------------|--------------------|
| Xeon W-2102 | 4 | 4 | 2.9GHz | - | 8.25MB | DDR4-2400 | - |
| Xeon W-2104 | 4 | 4 | 3.2GHz | - | 8.25MB | DDR4-2400 | - |
| Xeon W-2123 | 4 | 8 | 3.6GHz | 3.9GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2125 | 4 | 8 | 4.0GHz | 4.5GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2133 | 6 | 12 | 3.6GHz | 3.9GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2135 | 6 | 12 | 3.7GHz | 4.5GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2145 | 8 | 16 | 3.7GHz | 4.5GHz | 11MB | DDR4-2666 | - |
| Xeon W-2155 | 10 | 20 | 3.3GHz | 4.5GHz | 13.75MB | DDR4-2666 | - |
| Xeon W-2175 | 14 | 28 | 2.5GHz | 4.3GHz | 19MB | DDR4-2666 | - |
| Xeon W-2195 | 18 | 36 | 2.3GHz | 4.3GHz | 24.75MB | DDR4-2666 | - |
| Xeon W-2223 | 4 | 8 | 3.6GHz | 3.9GHz | 8.25MB | DDR4 2666 | - |
| Xeon W-2225 | 4 | 8 | 4.1GHz | 4.6GHz | 8.25MB | DDR4 2933 | - |
| Xeon W-2235 | 6 | 12 | 3.8GHz | 4.6GHz | 8.25MB | DDR4 2933 | - |
| Xeon W-2245 | 8 | 16 | 3.9GHz | 4.5GHz | 16.5MB | DDR4 2933 | - |
| Xeon W-2255 | 10 | 20 | 3.7GHz | 4.5GHz | 19.25MB | DDR4 2933 | - |
| Xeon W-2265 | 12 | 24 | 3.5GHz | 4.6GHz | 19.25MB | DDR4 2933 | - |
| Xeon W-2275 | 14 | 28 | 3.3GHz | 4.6GHz | 19.25MB | DDR4 2933 | - |
| Xeon W-2295 | 18 | 36 | 3.0GHz | 4.6GHz | 24.75MB | DDR4 2933 | - |

Processor Sockets

1x FCLGA2066

Operating System

Operating System

- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to one NVIDIA® Quadro® RTX 8000, or two NVIDIA Quadro RTX 6000 with NVLink

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-----------|-------|-----------|--------------|
| NVS 810 | 4GB DDR3 | 68W | 8x miniDP | None |
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P600 | 2GB GDDR5 | 45W | 4x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2000 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P4000 | 8GB GDDR5 | 120W | 4x DP | None |

| | | | | |
|------------------|---------------------|------|-----------------------|--------|
| Quadro P5000 | 16GB GDDR5X | 180W | 1x DVI-D DL, 4x DP | SLI |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 6000 | 24GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 8000 | 48GB GDDR6 | 295W | 4x DP, 1x VirtualLink | None |
| Quadro GP100 | 16GB HBM2 | 235W | 1x DVI-D DL, 4x DP | NVLink |
| Quadro GV100 | 32GB HBM2 | 250W | 4x DP | None |
| NVIDIA RTX A5000 | 24GB GDDR6 with ECC | 230W | 4x DP | NVLink |
| NVIDIA RTX A6000 | 48GB GDDR6 with ECC | 300W | 4x DP | None |

Monitor Support

Monitor Support

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel C422 chipset

Memory

Max Memory^[1]

- Up to 256GB (with 8 x 32GB DDR4-2666 RDIMMs) on models with Intel Xeon W-2100 Series processor
- Up to 512GB (with 8 x 64GB DDR4-2933 RDIMMs) on models with Intel Xeon W-2200 Series processor

Memory Type

- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

Memory Slots

8 DIMM sockets with 4 channels

Memory Protection

ECC

Notes:

- The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 6x 3.5" SATA HDD / 2.5" SATA HDD / 2.5" SATA SSD + 9x M.2 PCIe SSD + 1x PCIe AIC SSD

- 3.5" HDD up to 6TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SATA SSD up to 2TB each
- M.2 PCIe SSD up to 2TB each
- PCIe AIC SSD up to 480GB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|------------|------|---------------------------|
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB / 6TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA SSD | SATA 6Gb/s | - | 256GB / 512GB / 1TB / 2TB |
| PCIe AIC SSD | PCIe NVMe | - | 480GB |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 500GB / 500GB FIPS |
| 2.5" SAS HDD | SAS 12Gb/s | 10K | 300GB / 600GB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|----------------------------|------------|--------------------|
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |
| 9440-8i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5 | None |
| 9460-16i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5/6 | 4GB DDR4, SuperCap |
| NVMe Basic | Optional | PCIe NVMe | 0/1/10 | None |
| NVMe Premium | Optional | PCIe NVMe | 0/1/10/5 | None |
| NVMe for Intel SSD | Optional | PCIe NVMe | 0/1/10/5 | None |

Removable Storage

Optical Support

Up to two HH or 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- 15-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 690W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 900W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 1000W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (33L)

Dimensions (WxDxH)

165 x 460 x 440 mm (6.5 x 18.1 x 17.3 inches, with feet)

Weight

24 kg (52.91 lbs, maximum configuration)

Bays

- 2x 3.5" disk bay (standard)
- 4x 3.5" disk bay (optional):
 - 2 bays come with 3rd disk or Storage Bay Upgrade Kit
 - 2 bays via Flex bay

Flex Bays

2x flex bays. Supports the following:

- 2x half-height optical drives
- 2x 5.25" 9.0mm optical drives
- 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD
- 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure
- 1x flex module for the following options:

Tray 1: 9.0mm optical

Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt™, or 4-digit diagnostic display

Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA

- 2x M.2 SSD with 2x Front Removable Drive Enclosures

M.2 Slots

Up to 9x M.2 SSD:

- 2 via onboard slots
- 4 via Quad M.2 to PCIe adapter
- 3 via Single M.2 to PCIe adapters

Expansion Slots

- Two PCIe 3.0 x16
- One PCIe 3.0 x8
- Two PCIe 3.0 x4
- One PCI

Expansion Slots Offering

Slot 1: PCIe 3.0 x8, full height, full length, 25W, open ended, by CPU

Slot 2: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU

Slot 3: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

Slot 4: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU

Slot 5: PCI, full height, full length, 25W

Slot 6: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Dual-Band Wireless-AC 8265, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 4.2
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 3x USB 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

- 1x eSATA (with flex module)
- 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
- 1x USB-C 3.1 Gen 1 (with flex module)

Rear Ports^[2]

- 2x USB 2.0
- 4x USB 3.1 Gen 1
- 2x PS/2 ports (keyboard/mouse)
- 1x Ethernet (RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt
- 1x serial

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 1.2, TCG certified

Physical Locks

- (Optional) Access Panel Lock Kit with Common Key
- (Optional) Access Panel Lock Kit with Unique Key
- Kensington® Security Slot

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 11

Diagnostic

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic
- None

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BE00B7US)
- GREENGUARD®
- RoHS compliant

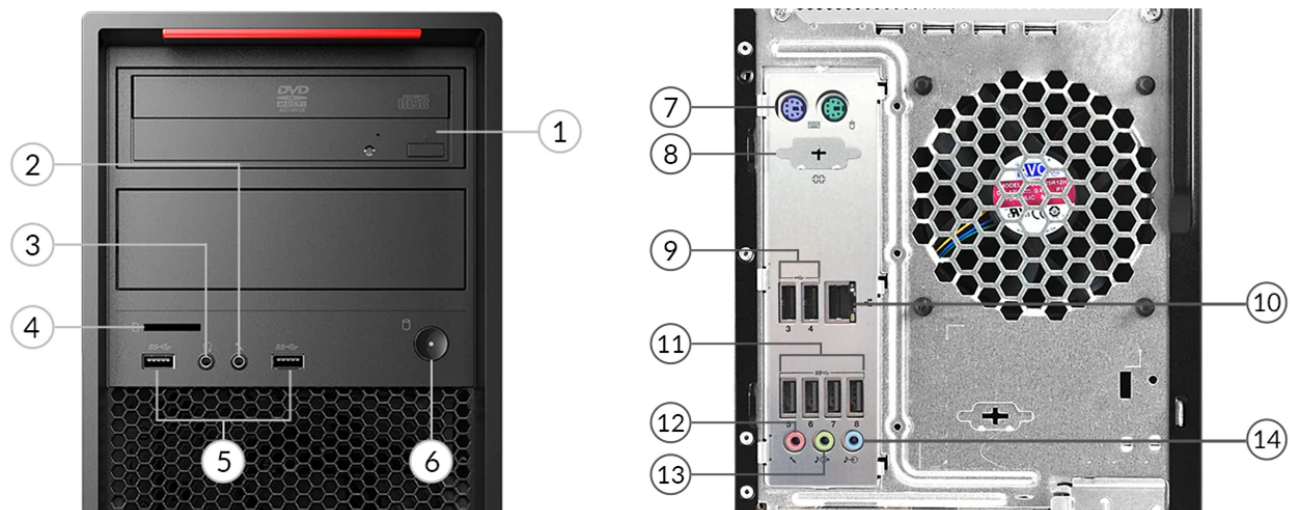
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|-------------------------------------|------------------------|
| 1. Optical drive * | 8. Serial * |
| 2. Microphone (3.5mm) | 9. 2x USB 2.0 |
| 3. Headphone (3.5mm) | 10. Ethernet (RJ-45) |
| 4. Card reader | 11. 4x USB 3.1 Gen 1 |
| 5. 2x USB 3.1 Gen 1 | 12. Microphone (3.5mm) |
| 6. Power button | 13. Line-out (3.5mm) |
| 7. 2x PS/2 ports (keyboard / mouse) | 14. Line-in (3.5mm) |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one Intel® Xeon® W-2200 / W-2100 series processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|----------------|-------|---------|----------------|---------------|---------|----------------|--------------------|
| Xeon W-2102 | 4 | 4 | 2.9GHz | - | 8.25MB | DDR4-2400 | - |
| Xeon W-2104 | 4 | 4 | 3.2GHz | - | 8.25MB | DDR4-2400 | - |
| Xeon W-2123 | 4 | 8 | 3.6GHz | 3.9GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2125 | 4 | 8 | 4.0GHz | 4.5GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2133 | 6 | 12 | 3.6GHz | 3.9GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2135 | 6 | 12 | 3.7GHz | 4.5GHz | 8.25MB | DDR4-2666 | - |
| Xeon W-2145 | 8 | 16 | 3.7GHz | 4.5GHz | 11MB | DDR4-2666 | - |
| Xeon W-2155 | 10 | 20 | 3.3GHz | 4.5GHz | 13.75MB | DDR4-2666 | - |
| Xeon W-2175 | 14 | 28 | 2.5GHz | 4.3GHz | 19MB | DDR4-2666 | - |
| Xeon W-2195 | 18 | 36 | 2.3GHz | 4.3GHz | 24.75MB | DDR4-2666 | - |
| Xeon W-2223 | 4 | 8 | 3.6GHz | 3.9GHz | 8.25MB | DDR4 2666 | - |
| Xeon W-2225 | 4 | 8 | 4.1GHz | 4.6GHz | 8.25MB | DDR4 2933 | - |
| Xeon W-2235 | 6 | 12 | 3.8GHz | 4.6GHz | 8.25MB | DDR4 2933 | - |
| Xeon W-2245 | 8 | 16 | 3.9GHz | 4.5GHz | 16.5MB | DDR4 2933 | - |

Processor Sockets

1x FCLGA2066

Operating System

Operating System

- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to one NVIDIA® Quadro® RTX 5000, or two NVIDIA Quadro P4000

Discrete Graphics Offering^[1]

| Graphics | Memory | Power | Connector | SLI / NVlink |
|-----------------|-------------|-------|-----------------------|--------------|
| NVS 810 | 4GB DDR3 | 68W | 8x miniDP | None |
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P600 | 2GB GDDR5 | 45W | 4x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2000 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P4000 | 8GB GDDR5 | 120W | 4x DP | None |
| Quadro P5000 | 16GB GDDR5X | 180W | 1x DVI-D DL, 4x DP | None |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | None |

Notes:

1. NVIDIA Quadro RTX 5000 supports manufacture configure only, none standalone option is available

Monitor Support

Monitor Support

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel C422 chipset

Memory

Max Memory^[1]

- Up to 128GB (with 4 x 32GB DDR4-2666 RDIMMs) on models with Intel Xeon W-2100 Series processor
- Up to 256GB (with 4 x 64GB DDR4-2933 RDIMMs) on models with Intel Xeon W-2200 Series processor

Memory Type

- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

Memory Slots

4 DIMM sockets with 4 channels

Memory Protection

ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 4x 3.5" SATA HDD / 2.5" SATA HDD / 2.5" SATA SSD + 5x M.2 PCIe SSD

- 3.5" HDD up to 6TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SATA SSD up to 2TB each
- M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|------------|------|---------------------------|
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB / 6TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA SSD | SATA 6Gb/s | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 500GB / 500GB FIPS |
| 2.5" SAS HDD | SAS 12Gb/s | 10K | 300GB / 600GB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|----------------------------|----------|-------|
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |
| 9440-8i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5 | None |
| NVMe Basic | Optional | PCIe NVMe | 0/1/10 | None |
| NVMe for Intel SSD | Optional | PCIe NVMe | 0/1/10/5 | None |

Removable Storage

Optical Support

Up to two HH or 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- 15-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 500W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 625W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (25L)

Dimensions (WxDxH)

175 x 426 x 376 mm (6.89 x 16.77 x 14.8 inches, with feet)

Weight

14.5 kg (31.96 lbs, maximum configuration)

Bays

- 2x 3.5" disk bay (standard)
- 2x 3.5" disk bay (optional, via Flex bay)

Flex Bays

2x flex bays. Supports the following:

- 2x half-height optical drives
- 2x 5.25" 9.0mm optical drives
- 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD
- 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure
- 1x flex module for the following options:

Tray 1: 9.0mm optical

Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt™, or 4-digit diagnostic display

Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA

- 2x M.2 SSD with 2x Front Removable Drive Enclosures

M.2 Slots

Up to 5x M.2 SSD:

- 2 via onboard slots
- 3 via Single M.2 to PCIe adapter

Expansion Slots

- Two PCIe 3.0 x16
- One PCIe 3.0 x4
- One PCIe 3.0 x8

Expansion Slots Offering

Slot 1: PCIe 3.0 x16, full height, full length, 75W, by CPU

Slot 2: PCIe 3.0 x8, full height, full length, 25W, open ended, by CPU

Slot 3: PCIe 3.0 x16, full height, full length, 75W, by CPU,

Slot 4: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Dual-Band Wireless-AC 8265, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 4.2
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 1x microphone (3.5mm)
- 1x headphone (3.5mm)

Optional Front Ports

- 1x eSATA (with flex module)
- 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
- 1x USB-C 3.1 Gen 1 (with flex module)

Rear Ports^[2]

- 2x USB 2.0
- 4x USB 3.1 Gen 1
- 2x PS/2 ports (keyboard/mouse)
- 1x Ethernet (RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt
- 1x serial

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 11

Diagnostic

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic
- None

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BX0095US)
- GREENGUARD®
- RoHS compliant

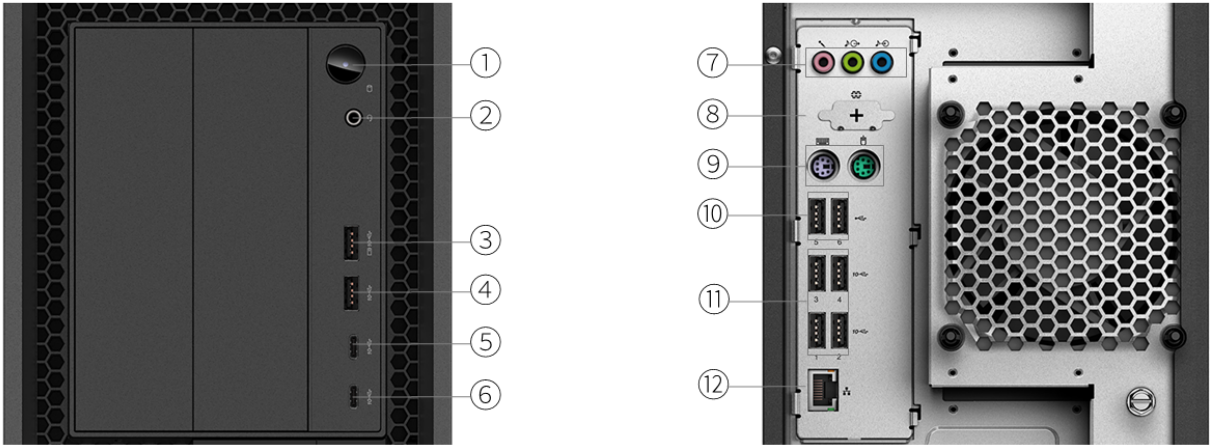
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|-------------------------------------|
| 1. Power button | 7. 3x Audio ports (3.5mm) |
| 2. Headphone / microphone combo jack (3.5mm) | 8. Serial * |
| 3. USB 3.2 Gen 2 | 9. 2x PS/2 ports (keyboard / mouse) |
| 4. USB 3.2 Gen 2 | 10. 2x USB 2.0 |
| 5. USB-C 3.2 Gen 2 | 11. 4x USB 3.2 Gen 2 |
| 6. USB-C 3.2 Gen 2 | 12. Ethernet (10GbE RJ-45) |

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one AMD Ryzen™ Threadripper PRO processor

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-----------------------------------|-------|---------|----------------|---------------|--------------------|-----------------|--------------------|
| AMD Ryzen Threadripper PRO 3945WX | 12 | 24 | 4.0GHz | 4.3GHz | 6MB L2 / 64MB L3 | DDR4-Up to 3200 | - |
| AMD Ryzen Threadripper PRO 3955WX | 16 | 32 | 3.9GHz | 4.3GHz | 8MB L2 / 64MB L3 | DDR4-Up to 3200 | - |
| AMD Ryzen Threadripper PRO 3975WX | 32 | 64 | 3.5GHz | 4.2GHz | 16MB L2 / 128MB L3 | DDR4-Up to 3200 | - |
| AMD Ryzen Threadripper PRO 3995WX | 64 | 128 | 2.7GHz | 4.2GHz | 32MB L2 / 256MB L3 | DDR4-Up to 3200 | - |

Processor Sockets

1x Socket SP3

Operating System

Operating System

- Windows® 10 Pro 64
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to two NVIDIA® Quadro® RTX 8000 with NVLink

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|------------------|---------------------|-------|-----------------------|--------------|
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 6000 | 24GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 8000 | 48GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro GV100 | 32GB HBM2 | 250W | 4x DP | NVLink |
| NVIDIA RTX A5000 | 24GB GDDR6 with ECC | 230W | 4x DP | None |
| NVIDIA RTX A6000 | 48GB GDDR6 with ECC | 300W | 4x DP | None |

Monitor Support

Monitor Support

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

AMD WRX80

Memory

Max Memory^[1]

Up to 1TB (with 8 x 128GB DDR4-3200 RDIMMs)

Memory Type

DDR4-3200 RDIMM ECC

Memory Slots

8 DIMM sockets with 8 channels

Memory Protection

ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 5x 3.5" SATA HDD + 9x M.2 SSD

- 3.5" HDD up to 4TB each
- M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|---------------|------|---------------------------|
| M.2 PCIe SSD | PCIe 3.0 NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB |
| M.2 PCIe SSD | PCIe 4.0 NVMe | - | 256GB / 512GB / 1TB / 2TB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|----------------------------|----------|--------------|----------|-------|
| Integrated NVMe controller | Standard | PCIe NVMe | 0/1/10/5 | None |
| Integrated SATA controller | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |

Removable Storage

Optical Support

Optional one 9.0mm optical drive, DVD-ROM or DVD±RW

Card Reader

- 15-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC4050H codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 1000W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (33L)

Dimensions (WxDxH)

165 x 460 x 446 mm (6.5 x 18.1 x 17.6 inches, with feet)

Weight

24 kg (52.91 lbs, maximum configuration)

Bays

- 2x 3.5" disk bay (standard)
- 3x 3.5" disk bay (optional):
 - 2 bays come with 3rd disk or Storage Bay Upgrade Kit
 - 1 bay via Flex bay

Flex Bays

1x Flex bay, supports one of the following:

- Front Access Storage Enclosure
- 5.25" Slim ODD and HDD cage

M.2 Slots

Up to 11x M.2 SSD:

- 2 via onboard slots
- 8 via Quad M.2 to PCIe adapters (only supports PCIe 3.0 SSD)
- 1 via Single M.2 to PCIe adapter (only supports PCIe 3.0 SSD)

Expansion Slots

- Four PCIe 4.0 x16
- Two PCIe 4.0 x8

Expansion Slots Offering

Slot 1: PCIe 4.0 x16, full height, full length, by CPU

Slot 2: PCIe 4.0 x8, full height, full length, by CPU

Slot 3: PCIe 4.0 x16, full height, full length, by CPU

Slot 4: PCIe 4.0 x16, full height, full length, by CPU

Slot 5: PCIe 4.0 x16, full height, full length, by CPU

Slot 6: PCIe 4.0 x8, full height, full length, by IOH

CONNECTIVITY

Network

Onboard Ethernet

10GbE Ethernet, Marvell AQtion AQN-107, 1x 10GbE RJ-45

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel® Wireless-AC 9260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.2 Gen 2
- 1x USB 3.2 Gen 2 (Always On and fast charge)
- 2x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports^[2]

- 2x USB 2.0
- 4x USB 3.2 Gen 2
- 2x PS/2 ports (keyboard/mouse)
- 1x Ethernet (10GbE RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Optional Rear Ports

- 1x Thunderbolt™ 3
- 1x serial

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) Access Panel Lock Kit with Common Key
- (Optional) Access Panel Lock Kit with Unique Key
- Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

AMD Pro Manageability

Diagnostic

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30E00006US)
- GREENGUARD®
- RoHS compliant

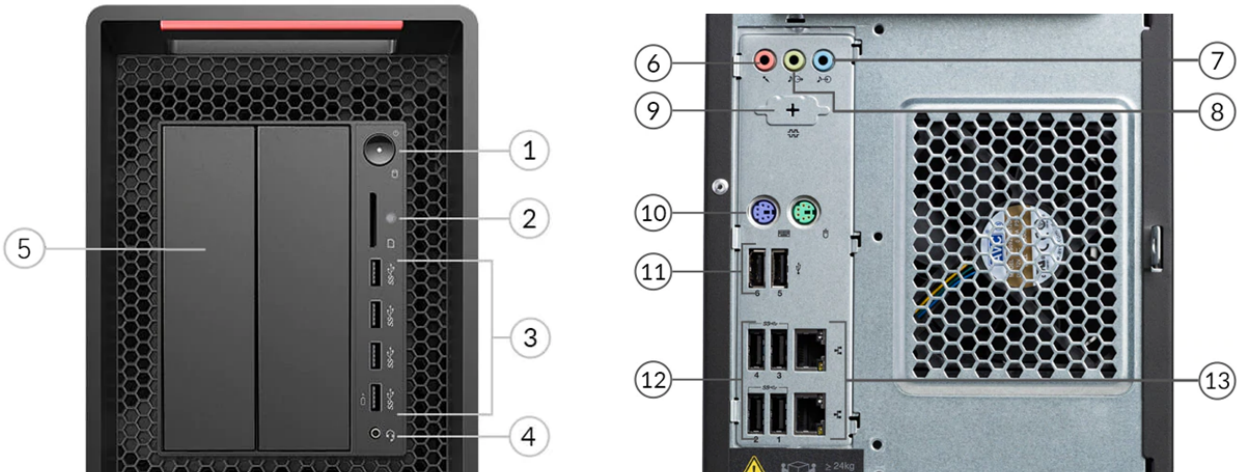
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|--------------------------------------|
| 1. Power button | 8. Line-out (3.5mm) |
| 2. Card reader | 9. Serial * |
| 3. 4x USB 3.1 Gen 1 | 10. 2x PS/2 ports (keyboard / mouse) |
| 4. Headphone / microphone combo jack (3.5mm) | 11. 2x USB 2.0 |
| 5. 2x Flex bay | 12. 4x USB 3.1 Gen 1 |
| 6. Microphone (3.5mm) | 13. 2x Ethernet (RJ-45) |
| 7. Line-in (3.5mm) | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to two 165 W Gen 1 or Gen 2 Intel® Xeon® Scalable family processors, Bronze, Silver, Gold, or Platinum

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-------------------|-------|---------|----------------|---------------|---------|----------------|--------------------|
| Xeon Bronze 3104 | 6 | 6 | 1.7GHz | - | 8.25MB | DDR4-2133 | - |
| Xeon Bronze 3106 | 8 | 8 | 1.7GHz | - | 11MB | DDR4-2133 | - |
| Xeon Bronze 3204 | 6 | 6 | 1.9GHz | 1.9GHz | 8.25MB | DDR4-2133 | - |
| Xeon Bronze 3206R | 8 | 8 | 1.9GHz | 1.9GHz | 11MB | DDR4-2133 | - |
| Xeon Silver 4108 | 8 | 16 | 1.8GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4109T | 8 | 16 | 2.0GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4110 | 8 | 16 | 2.1GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4112 | 4 | 8 | 2.6GHz | 3.0GHz | 8.25MB | DDR4-2400 | - |
| Xeon Silver 4114 | 10 | 20 | 2.2GHz | 3.0GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4114T | 10 | 20 | 2.2GHz | 3.0GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4116 | 12 | 24 | 2.1GHz | 3.0GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4208 | 8 | 16 | 2.1GHz | 3.2GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4209T | 8 | 16 | 2.2GHz | 3.2GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4210 | 10 | 20 | 2.2GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4210R | 10 | 20 | 2.4GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4214 | 12 | 24 | 2.2GHz | 3.2GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4214R | 12 | 24 | 2.4GHz | 3.5GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4215 | 8 | 16 | 2.5GHz | 3.5GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4215R | 8 | 16 | 3.2GHz | 4.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4216 | 16 | 32 | 2.1GHz | 3.2GHz | 22MB | DDR4-2400 | - |
| Xeon Gold 5115 | 10 | 20 | 2.4GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Gold 5118 | 12 | 24 | 2.3GHz | 3.2GHz | 16.5MB | DDR4-2400 | - |
| Xeon Gold 5120 | 14 | 28 | 2.2GHz | 3.2GHz | 19.25MB | DDR4-2400 | - |
| Xeon Gold 5120T | 14 | 28 | 2.2GHz | 3.2GHz | 19.25MB | DDR4-2400 | - |
| Xeon Gold 5122 | 4 | 8 | 3.6GHz | 3.7GHz | 16.5MB | DDR4-2666 | - |
| Xeon Gold 5215 | 10 | 20 | 2.5GHz | 3.4GHz | 13.75MB | DDR4-2666 | - |
| Xeon Gold 5217 | 8 | 16 | 3.0GHz | 3.7GHz | 11MB | DDR4-2666 | - |
| Xeon Gold 5218 | 16 | 32 | 2.3GHz | 3.9GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 5220 | 18 | 36 | 2.2GHz | 3.9GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 5222 | 4 | 8 | 3.8GHz | 3.9GHz | 16.5MB | DDR4-2933 | - |
| Xeon Gold 6128 | 6 | 12 | 3.4GHz | 3.7GHz | 19.25MB | DDR4-2666 | - |
| Xeon Gold 6130 | 16 | 32 | 2.1GHz | 3.7GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 6134 | 8 | 16 | 3.2GHz | 3.7GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 6136 | 12 | 24 | 3.0GHz | 3.7GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 6138 | 20 | 40 | 2.0GHz | 3.7GHz | 27.5MB | DDR4-2666 | - |
| Xeon Gold 6142 | 16 | 32 | 2.6GHz | 3.7GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 6146 | 12 | 24 | 3.2GHz | 4.2GHz | 24.75MB | DDR4-2666 | - |

| | | | | | | | |
|---------------------|----|----|--------|--------|---------|-----------|---|
| Xeon Gold 6148 | 20 | 40 | 2.4GHz | 3.7GHz | 27.5MB | DDR4-2666 | - |
| Xeon Gold 6226 | 12 | 24 | 2.7GHz | 3.7GHz | 19.25MB | DDR4-2933 | - |
| Xeon Gold 6226R | 16 | 32 | 2.9GHz | 3.9GHz | 22MB | DDR4-2933 | - |
| Xeon Gold 6230 | 20 | 40 | 2.1GHz | 3.9GHz | 27.5MB | DDR4-2933 | - |
| Xeon Gold 6234 | 8 | 16 | 3.3GHz | 4.0GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6238T | 22 | 44 | 1.9GHz | 3.7GHz | 30.25MB | DDR4-2933 | - |
| Xeon Gold 6240R | 24 | 48 | 2.4GHz | 4.0GHz | 35.75MB | DDR4-2933 | - |
| Xeon Gold 6242 | 16 | 32 | 2.8GHz | 3.9GHz | 22MB | DDR4-2933 | - |
| Xeon Gold 6244 | 8 | 16 | 3.6GHz | 4.4GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6246 | 12 | 24 | 3.3GHz | 4.2GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6248 | 20 | 40 | 2.5GHz | 3.9GHz | 27.5MB | DDR4-2933 | - |
| Xeon Platinum 8160T | 24 | 48 | 2.1GHz | 3.7GHz | 33MB | DDR4-2666 | - |
| Xeon W-3223 | 8 | 16 | 3.5GHz | 4.0GHz | 16.5MB | DDR4-2666 | - |
| Xeon W-3225 | 8 | 16 | 3.7GHz | 4.3GHz | 16.5MB | DDR4-2666 | - |

Processor Sockets

2x FCLGA3647

Operating System

Operating System

- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to two NVIDIA® Quadro® RTX 8000 with NVLink

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|------------------|---------------------|-------|-----------------------|--------------|
| NVS 810 | 4GB DDR3 | 68W | 8x miniDP | None |
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P600 | 2GB GDDR5 | 45W | 4x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2000 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P4000 | 8GB GDDR5 | 120W | 4x DP | None |
| Quadro P5000 | 16GB GDDR5X | 180W | 1x DVI-D DL, 4x DP | SLI |
| Quadro P6000 | 24GB GDDR5X | 250W | 1x DVI-D DL, 4x DP | SLI |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 6000 | 24GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 8000 | 48GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro GP100 | 16GB HBM2 | 235W | 1x DVI-D DL, 4x DP | NVLink |
| Quadro GV100 | 32GB HBM2 | 250W | 4x DP | NVLink |
| NVIDIA RTX A5000 | 24GB GDDR6 with ECC | 230W | 4x DP | NVLink |
| NVIDIA RTX A6000 | 48GB GDDR6 with ECC | 300W | 4x DP | None |

Monitor Support

Monitor Support

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel C621 chipset

Memory

Max Memory^[1]

768GB (DDR4-2933 RDIMM) or 384GB (DDR4-2666 RDIMM)

Memory Type

- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

Memory Slots

12 DIMM sockets with 12 channels. 6 DIMM sockets with 6 channels per processor

Memory Protection

ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 6x 3.5" SATA HDD / 10x 2.5" SATA HDD / 8x 2.5" SAS HDD / 10x 2.5" SATA SSD / 4x 2.5" PCIe SSD + 9x M.2 PCIe SSD + 2x PCIe AIC SSD

- 3.5" HDD up to 4TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SAS HDD up to 600GB each
- 2.5" SATA SSD up to 2TB each
- M.2 SSD up to 2TB each
- PCIe AIC SSD up to 480GB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|------------|------|---------------------------|
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB / 6TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA SSD | SATA 6Gb/s | - | 256GB / 512GB / 1TB / 2TB |
| PCIe AIC SSD | PCIe NVMe | - | 480GB |
| 2.5" PCIe SSD | PCIe NVMe | - | 1.5TB |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 500GB / 500GB FIPS |
| 2.5" SAS HDD | SAS 12Gb/s | 10K | 300GB / 600GB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|----------------------------|------------|--------------------|
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |
| 9440-8i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5 | None |
| 9460-16i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5/6 | 4GB DDR4, SuperCap |
| NVMe Basic | Optional | PCIe NVMe | 0/1/10 | None |

| | | | | |
|--------------------|----------|-----------|----------|------|
| NVMe Premium | Optional | PCIe NVMe | 0/1/10/5 | None |
| NVMe for Intel SSD | Optional | PCIe NVMe | 0/1/10/5 | None |

Removable Storage

Optical Support

Up to two HH or 9.0mm optical drive, DVD-ROM, DVD±RW, and Blu-ray

Card Reader

- SD card reader
- 15-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-----------------------------------------|
| 690W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 900W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |
| 1000W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified |

DESIGN

Mechanical

Form Factor

Tower (36L)

Dimensions (WxDxH)

175 x 485 x 446 mm (6.89 x 19.1 x 17.6 inches, with feet)

Weight

25.7 kg (56.7 lbs, maximum configuration)

Bays^[1]

- 2x 3.5" disk bay (standard)
- 4x 3.5" disk bay (optional):
2 bays come with 3rd disk or Storage Bay Upgrade Kit
2 bays via Flex bay

Flex Bays

2x flex bays. Supports the following:

- 2x half-height optical drives
- 2x 5.25" 9.0mm optical drives
- 1x 5.25" 9.0mm optical drive + 2x 3.5"/2.5" SATA SSD/HDD
- 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure
- 1x flex module for the following options:
Tray 1: 9.0mm optical
Tray 2: 15-in-1 USB 3.1 Gen 1 reader, 2x Thunderbolt™, or 4-digit diagnostic display
Port 1 and 2: Front USB 3.1 Gen 1 Type-C or eSATA
- 2x M.2 SSD with 2x Front Removable Drive Enclosures

M.2 Slots

Up to 9x M.2 SSD:

- 2 via onboard slots
- 4 via Quad M.2 to PCIe adapter
- 3 via Single M.2 to PCIe adapters

Expansion Slots

- Three PCIe 3.0 x16 (2nd CPU needed)

- One PCIe 3.0 x4
- One PCIe 3.0 x8
- One PCI

Expansion Slots Offering

Slot 1: PCIe 3.0 x16, full height, full length, 75W, by CPU2
Slot 2: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU1
Slot 3: PCIe 3.0 x8, full height, full length, 25W, open ended, by CPU1
Slot 4: PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU1
Slot 5: PCI, full height, full length, 25W
Slot 6: PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH

Notes:

1. 4x 3.5" bay can also support up to 8x 2.5" SSD / HDD with 2 disks per bay. Additional 9440-8i or 9460-16i PCIe adapter and other parts are needed.

CONNECTIVITY

Network

Onboard Ethernet

Two gigabit Ethernet, Intel Ethernet Connection I219-LM and I210-AT, 2x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Dual Band Wireless-AC 7260, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2
- Intel Dual-Band Wireless-AC 8265, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 4.2
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 3x USB 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

- 1x eSATA (with flex module)
- 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
- 1x USB-C 3.1 Gen 1 (with flex module)

Rear Ports^[2]

- 2x USB 2.0
- 4x USB 3.1 Gen 1
- 2x PS/2 ports (keyboard/mouse)
- 2x Ethernet (RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt
- 1x serial

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 1.2, TCG certified

Physical Locks

- (Optional) Access Panel Lock Kit with Common Key
- (Optional) Access Panel Lock Kit with Unique Key
- Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 11

Diagnostic

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic
- None

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BA00EQUS)
- GREENGUARD®
- RoHS compliant

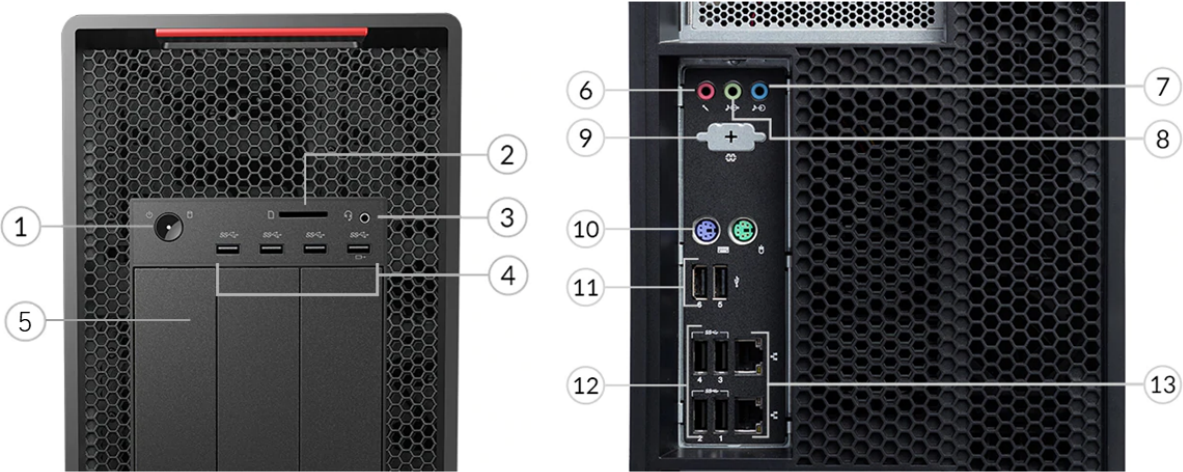
ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



OVERVIEW



| | |
|----------------------------------------------|--------------------------------------|
| 1. Power button | 8. Audio line-out (3.5mm) |
| 2. Card reader | 9. Serial * |
| 3. Headphone / microphone combo jack (3.5mm) | 10. 2x PS/2 ports (keyboard / mouse) |
| 4. 4x USB 3.2 Gen 1 | 11. 2x USB 2.0 |
| 5. 3x Flex bay | 12. 4x USB 3.2 Gen 1 |
| 6. Microphone (3.5mm) | 13. 2x Ethernet (RJ-45) |
| 7. Audio line-in (3.5mm) | |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to two 205 W Gen 1 or Gen 2 Intel® Xeon® Scalable family processors, Bronze, Silver, Gold, or Platinum

Processor

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|-------------------|-------|---------|----------------|---------------|---------|----------------|--------------------|
| Xeon Bronze 3104 | 6 | 6 | 1.7GHz | - | 8.25MB | DDR4-2133 | - |
| Xeon Bronze 3106 | 8 | 8 | 1.7GHz | - | 11MB | DDR4-2133 | - |
| Xeon Bronze 3204 | 6 | 6 | 1.9GHz | 1.9GHz | 8.25MB | DDR4-2133 | - |
| Xeon Bronze 3206R | 8 | 8 | 1.9GHz | 1.9GHz | 11MB | DDR4-2133 | - |
| Xeon Silver 4108 | 8 | 16 | 1.8GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4109T | 8 | 16 | 2.0GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4110 | 8 | 16 | 2.1GHz | 3.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4112 | 4 | 8 | 2.6GHz | 3.0GHz | 8.25MB | DDR4-2400 | - |
| Xeon Silver 4114 | 10 | 20 | 2.2GHz | 3.0GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4114T | 10 | 20 | 2.2GHz | 3.0GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4116 | 12 | 24 | 2.1GHz | 3.0GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4208 | 8 | 16 | 2.1GHz | 3.2GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4209T | 8 | 16 | 2.2GHz | 3.2GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4210 | 10 | 20 | 2.2GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4210R | 10 | 20 | 2.4GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Silver 4214 | 12 | 24 | 2.2GHz | 3.2GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4214R | 12 | 24 | 2.4GHz | 3.5GHz | 16.5MB | DDR4-2400 | - |
| Xeon Silver 4215 | 8 | 16 | 2.5GHz | 3.5GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4215R | 8 | 16 | 3.2GHz | 4.0GHz | 11MB | DDR4-2400 | - |
| Xeon Silver 4216 | 16 | 32 | 2.1GHz | 3.2GHz | 22MB | DDR4-2400 | - |
| Xeon Gold 5115 | 10 | 20 | 2.4GHz | 3.2GHz | 13.75MB | DDR4-2400 | - |
| Xeon Gold 5118 | 12 | 24 | 2.3GHz | 3.2GHz | 16.5MB | DDR4-2400 | - |
| Xeon Gold 5120 | 14 | 28 | 2.2GHz | 3.2GHz | 19.25MB | DDR4-2400 | - |
| Xeon Gold 5120T | 14 | 28 | 2.2GHz | 3.2GHz | 19.25MB | DDR4-2400 | - |
| Xeon Gold 5122 | 4 | 8 | 3.6GHz | 3.7GHz | 16.5MB | DDR4-2666 | - |
| Xeon Gold 5215 | 10 | 20 | 2.5GHz | 3.4GHz | 13.75MB | DDR4-2666 | - |
| Xeon Gold 5217 | 8 | 16 | 3.0GHz | 3.7GHz | 11MB | DDR4-2666 | - |
| Xeon Gold 5218 | 16 | 32 | 2.3GHz | 3.9GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 5220 | 18 | 36 | 2.2GHz | 3.9GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 5222 | 4 | 8 | 3.8GHz | 3.9GHz | 16.5MB | DDR4-2933 | - |
| Xeon Gold 6128 | 6 | 12 | 3.4GHz | 3.7GHz | 19.25MB | DDR4-2666 | - |
| Xeon Gold 6130 | 16 | 32 | 2.1GHz | 3.7GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 6134 | 8 | 16 | 3.2GHz | 3.7GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 6136 | 12 | 24 | 3.0GHz | 3.7GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 6138 | 20 | 40 | 2.0GHz | 3.7GHz | 27.5MB | DDR4-2666 | - |
| Xeon Gold 6142 | 16 | 32 | 2.6GHz | 3.7GHz | 22MB | DDR4-2666 | - |
| Xeon Gold 6146 | 12 | 24 | 3.2GHz | 4.2GHz | 24.75MB | DDR4-2666 | - |

| | | | | | | | |
|---------------------|----|----|--------|--------|---------|-----------|---|
| Xeon Gold 6148 | 20 | 40 | 2.4GHz | 3.7GHz | 27.5MB | DDR4-2666 | - |
| Xeon Gold 6154 | 18 | 36 | 3.0GHz | 3.7GHz | 24.75MB | DDR4-2666 | - |
| Xeon Gold 6226 | 12 | 24 | 2.7GHz | 3.7GHz | 19.25MB | DDR4-2933 | - |
| Xeon Gold 6226R | 16 | 32 | 2.9GHz | 3.9GHz | 22MB | DDR4-2933 | - |
| Xeon Gold 6230 | 20 | 40 | 2.1GHz | 3.9GHz | 27.5MB | DDR4-2933 | - |
| Xeon Gold 6234 | 8 | 16 | 3.3GHz | 4.0GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6238T | 22 | 44 | 1.9GHz | 3.7GHz | 30.25MB | DDR4-2933 | - |
| Xeon Gold 6240R | 24 | 48 | 2.4GHz | 4.0GHz | 35.75MB | DDR4-2933 | - |
| Xeon Gold 6242 | 16 | 32 | 2.8GHz | 3.9GHz | 22MB | DDR4-2933 | - |
| Xeon Gold 6244 | 8 | 16 | 3.6GHz | 4.4GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6246 | 12 | 24 | 3.3GHz | 4.2GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6248 | 20 | 40 | 2.5GHz | 3.9GHz | 27.5MB | DDR4-2933 | - |
| Xeon Gold 6254 | 18 | 36 | 3.1GHz | 4.0GHz | 24.75MB | DDR4-2933 | - |
| Xeon Gold 6258R | 28 | 56 | 2.7GHz | 4.0GHz | 38.5MB | DDR4-2933 | - |
| Xeon Platinum 8160T | 24 | 48 | 2.1GHz | 3.7GHz | 33MB | DDR4-2666 | - |
| Xeon Platinum 8180 | 28 | 56 | 2.5GHz | 3.8GHz | 38.5MB | DDR4-2666 | - |
| Xeon Platinum 8280 | 28 | 56 | 2.7GHz | 4.0GHz | 38.5MB | DDR4-2933 | - |
| Xeon W-3223 | 8 | 16 | 3.5GHz | 4.0GHz | 16.5MB | DDR4-2666 | - |
| Xeon W-3225 | 8 | 16 | 3.7GHz | 4.3GHz | 16.5MB | DDR4-2666 | - |
| Xeon W-3235 | 12 | 24 | 3.3GHz | 4.4GHz | 19.25MB | DDR4-2933 | - |
| Xeon W-3245 | 16 | 32 | 3.2GHz | 4.4GHz | 22MB | DDR4-2933 | - |
| Xeon W-3265 | 24 | 48 | 2.7GHz | 4.4GHz | 33MB | DDR4-2933 | - |
| Xeon W-3275 | 28 | 56 | 2.5GHz | 4.4GHz | 38.5MB | DDR4-2933 | - |

Processor Sockets

2x FCLGA3647

Operating System

Operating System

- Windows® 10 Pro 64 for Workstations
- Ubuntu Linux LTS
- No operating system

Graphics

Discrete Graphics Support

Supports up to two NVIDIA® Quadro® RTX 8000 with NVLink

Discrete Graphics Offering

| Graphics | Memory | Power | Connector | SLI / NVlink |
|--------------|-------------|-------|--------------------|--------------|
| NVS 810 | 4GB DDR3 | 68W | 8x miniDP | None |
| Quadro P400 | 2GB GDDR5 | 30W | 3x miniDP | None |
| Quadro P600 | 2GB GDDR5 | 45W | 4x miniDP | None |
| Quadro P620 | 2GB GDDR5 | 40W | 4x miniDP | None |
| Quadro P1000 | 4GB GDDR5 | 50W | 4x miniDP | None |
| Quadro P2000 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P2200 | 5GB GDDR5 | 75W | 4x DP | None |
| Quadro P4000 | 8GB GDDR5 | 120W | 4x DP | None |
| Quadro P5000 | 16GB GDDR5X | 180W | 1x DVI-D DL, 4x DP | SLI |

| | | | | |
|------------------|---------------------|------|-----------------------|--------|
| Quadro P6000 | 24GB GDDR5X | 250W | 1x DVI-D DL, 4x DP | SLI |
| Quadro RTX 4000 | 8GB GDDR6 | 160W | 3x DP, 1x VirtualLink | None |
| Quadro RTX 5000 | 16GB GDDR6 | 265W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 6000 | 24GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro RTX 8000 | 48GB GDDR6 | 295W | 4x DP, 1x VirtualLink | NVLink |
| Quadro GP100 | 16GB HBM2 | 235W | 1x DVI-D DL, 4x DP | NVLink |
| Quadro GV100 | 32GB HBM2 | 250W | 4x DP | NVLink |
| NVIDIA RTX A5000 | 24GB GDDR6 with ECC | 230W | 4x DP | NVLink |
| NVIDIA RTX A6000 | 48GB GDDR6 with ECC | 300W | 4x DP | None |

Monitor Support

Monitor Support

Supports multiple displays via discrete graphics, the number of maximum monitors supported depends on the graphic card in use

Chipset

Chipset

Intel C621 chipset

Memory

Max Memory^[1]

Up to 1TB (DDR4-2666 LRDIMM or DDR4-2933 RDIMM) or 512GB (DDR4-2666 RDIMM)

Memory Type

- DDR4-2666 LRDIMM ECC
- DDR4-2666 RDIMM ECC
- DDR4-2933 RDIMM ECC

Memory Slots

16 DIMM sockets with 12 channels. 8 DIMM sockets with 6 channels per processor

Memory Protection

ECC

Notes:

1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support

Up to 6x 3.5" SATA HDD / 10x 2.5" SATA HDD / 8x 2.5" SAS HDD / 10x 2.5" SATA SSD / 4x 2.5" PCIe SSD + 9x M.2 PCIe SSD + 2x PCIe AIC SSD

- 3.5" HDD up to 4TB each
- 2.5" SATA HDD up to 500GB each
- 2.5" SAS HDD up to 600GB each
- 2.5" SATA SSD up to 2TB each
- M.2 SSD up to 2TB each
- PCIe AIC SSD up to 480GB each

Storage Type

| Disk Type | Interface | RPM | Offering |
|---------------|------------|------|---------------------------|
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB / 2TB / 4TB / 6TB |
| M.2 PCIe SSD | PCIe NVMe | - | 256GB / 512GB / 1TB / 2TB |
| 2.5" SATA SSD | SATA 6Gb/s | - | 256GB / 512GB / 1TB / 2TB |
| PCIe AIC SSD | PCIe NVMe | - | 480GB |
| 2.5" PCIe SSD | PCIe NVMe | - | 1.5TB |

| | | | |
|---------------|------------|------|--------------------|
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | 500GB / 500GB FIPS |
| 2.5" SAS HDD | SAS 12Gb/s | 10K | 300GB / 600GB |

Storage Controllers

| Storage Controller | Type | Interface | RAID | Cache |
|-----------------------------|----------|----------------------------|------------|--------------------|
| Onboard Intel RST SATA RAID | Standard | SATA 6.0Gb/s | 0/1/10/5 | None |
| 9440-8i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5 | None |
| 9460-16i PCIe | Optional | SAS 12.0Gb/s, SATA 6.0Gb/s | 0/1/10/5/6 | 4GB DDR4, SuperCap |
| NVMe Basic | Optional | PCIe NVMe | 0/1/10 | None |
| NVMe Premium | Optional | PCIe NVMe | 0/1/10/5 | None |
| NVMe for Intel SSD | Optional | PCIe NVMe | 0/1/10/5 | None |

Removable Storage

Optical Support

Up to three HH or two 9.0mm optical drives, DVD-ROM, DVD±RW, or Blu-ray

Card Reader

- SD card reader
- 15-in-1 card reader
- No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Power Supply

Power Supply

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|----------------------------------------------------------------------------------------------------------------------|
| 1400W | Fixed | 92% | Autosensing, 80 PLUS Platinum qualified. Countries with input voltage under 115V, output power limited to 1125 watts |

DESIGN

Mechanical

Form Factor

Tower (55L)

Dimensions (WxDxH)

200 x 620 x 446 mm (7.87 x 24.4 x 17.56 inches, with feet)

Weight

37 kg (81.6 lbs, maximum configuration)

Bays^[1]

- 2x 3.5" disk bay (standard)
- 4x 3.5" disk bay (optional):
2 bays come with 3rd disk or Storage Bay Upgrade Kit
2 bays via Flex bay

Flex Bays

3x Flex bay, supports following:

- 3x half-height optical drives
- 2x 5.25" 9.0mm optical drives
- 1x 5.25" 9.0mm optical drive + 1x 3.5"/2.5" SATA SSD/HDD
- 1x 3.5"/2.5" SATA SSD/HDD with Front Access Storage Enclosure
- 1x flex module for the following options:

Tray 1: 9.0mm optical
Tray 2: 15-in-1 USB 3.2 Gen 1 reader or 2x Thunderbolt™
Port 1 and 2: Front USB 3.2 Gen 1 Type-C or eSATA
• 3x M.2 SSD with 3x Front Removable Drive Enclosures

M.2 Slots

Up to 9x M.2 SSD:
• 2 via onboard slots
• 4 via Quad M.2 to PCIe adapter
• 3 via Single M.2 to PCIe adapters

Expansion Slots

- Five PCIe 3.0 x16 (2nd CPU needed)
- Three PCIe 3.0 x4

Expansion Slots Offering

Slot 1 (CPU1) PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU1
Slot 2 (CPU1) PCIe 3.0 x4, full height, full length, 25W, open ended, by CPU1
Slot 3 (CPU1) PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU1
Slot 4 (CPU1) PCIe 3.0 x4, full height, full length, 25W, open ended, by CPU1
Slot 5 (PCH) PCIe 3.0 x4, full height, half length, 25W, open ended, by PCH
Slot 6 (CPU2) PCIe 3.0 x16, full height, half length, 75W, by CPU2
Slot 7 (CPU2) PCIe 3.0 x16, full height, full length, 75W, double-width, by CPU2
Slot 8 (CPU2) PCIe 3.0 x16, full height, full length, 75W, by CPU2

Notes:

1. 4x 3.5" bay can also support up to 8x 2.5" SSD / HDD with 2 disks per bay. Additional 9440-8i or 9460-16i PCIe adapter and other parts are needed

CONNECTIVITY

Network

Onboard Ethernet

Two gigabit Ethernet, Intel Ethernet Connection I219-LM and I210-AT, 2x RJ45, supports Wake-on-LAN

Optional Ethernet

Additional Ethernet options via PCIe adapter

WLAN + Bluetooth™

- Intel Dual-Band Wireless-AC 8265, 802.11ac Dual-Band 2x2 Wi-Fi + Bluetooth 4.2
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 1x USB 3.1 Gen 1 (Always On and fast charge)
- 3x USB 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

- 1x eSATA (with flex module)
- 2x Thunderbolt (with flex module, USB-C form, one supports video-out)
- 1x USB-C 3.1 Gen 1 (with flex module)

Rear Ports^[2]

- 2x USB 2.0
- 4x USB 3.1 Gen 1
- 2x PS/2 ports (keyboard/mouse)
- 2x Ethernet (RJ-45)
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)

Optional Rear Ports

- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card)
- 1x Thunderbolt

- 1x serial

Notes:

1. The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3: 40 Gbit/s;
FireWire 400: 400 Mbit/s;
FireWire 800: 800 Mbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) Access Panel Lock Kit with Common Key
- (Optional) Access Panel Lock Kit with Unique Key
- Kensington® Security Slot

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Power-on password
- Administrator password

MANAGEABILITY

System Management

System Management

Intel vPro with Intel AMT 11

Diagnostic

Diagnostic

- Photo-audio transfer with Lenovo PC Diagnostics for Android™ and iOS
- ThinkStation® Diagnostics for Windows
- Front 4-digit diagnostic

SERVICE

Warranty

Base Warranty

3-year limited onsite service with 9x5 NBD, for most models

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

CERTIFICATIONS

Green Certifications

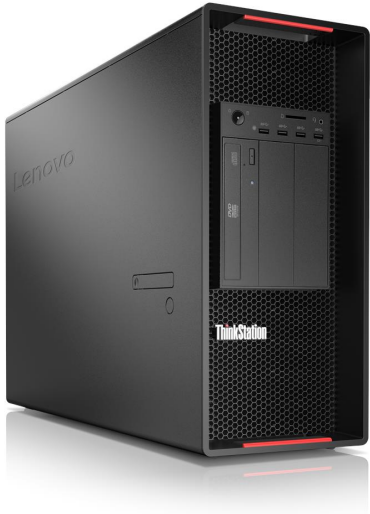
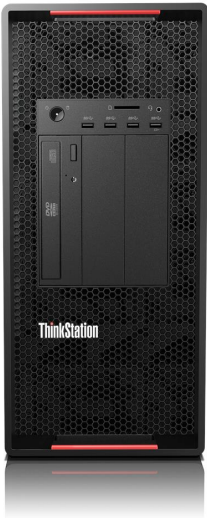
Green Certifications

- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BC003WUS)
- GREENGUARD®
- RoHS compliant

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/



ThinkStation P920 Rack Platform Specifications

Product Specifications Reference (PSREF)

| | | | | | | | | | | |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------|---------------------------------|---------------------|--------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Form factor | 2U rack | | | | | | | Diagnostic | Light Path Diagnostics | |
| Dimensions | Height: 87 mm (3.4 in). Width: 445 mm (17.5 in). Depth: 720 mm (28.3 in) | | | | | | | Base warranty | 3-year limited onsite service with 9x5/NBD | |
| Weight | Maximum configuration: 70.54 lb (32 kg) | | | | | | | Warranty upgrades | 5WS7A72784Foundation Service - 3Yr Next Business Day Response | |
| Processor Sockets | 2x FCLGA3647 | | | | | | | | 5WS7A72785Foundation Service - 4Yr Next Business Day Response | |
| Processor Support | Up to two Gen 2 Intel Xeon Scalable family processors, Bronze, Silver, or Gold | | | | | | | | 5WS7A72786Foundation Service - 5Yr Next Business Day Response | |
| Processor Offering | Processor | # of Cores | # of Threads | Base Frequency | Cache | TDP | Memory Types | | 5PS7A72787 Essential Service - 3Yr 24x7 4Hr Response + YourDrive YourData | |
| | Xeon Gold 6252 | 24 | 48 | 2.1GHz | 35.75MB | 150W | DDR4-2933 | | 5PS7A72788 Essential Service - 4Yr 24x7 4Hr Response + YourDrive YourData | |
| | Xeon Gold 6234 | 8 | 16 | 3.3GHz | 25MB | 130W | DDR4-2933 | 5PS7A72789 Essential Service - 5Yr 24x7 4Hr Response + YourDrive YourData | | |
| | Xeon Gold 6230 | 20 | 40 | 2.1GHz | 28MB | 125W | DDR4-2933 | HD Audio | | |
| | Xeon Gold 5218 | 16 | 32 | 2.3GHz | 22MB | 125W | DDR4-2666 | None | | |
| | Xeon Gold 5215 | 10 | 20 | 2.5GHz | 13.75MB | 85W | DDR4-2666 | Front ports | | |
| | Xeon Silver 4215 | 8 | 16 | 2.5GHz | 11MB | 85W | DDR4-2400 | One XClarity Controller USB connector, one USB 3.0, one optional VGA | | |
| | Xeon Silver 4214 | 12 | 24 | 2.2GHz | 17MB | 85W | DDR4-2400 | Rear ports | | |
| | Xeon Silver 4210 | 10 | 20 | 2.2GHz | 14MB | 85W | DDR4-2400 | One VGA, two USB 3.0, one XClarity Controller network connector | | |
| Xeon Silver 4208 | 8 | 16 | 2.1GHz | 11MB | 85W | DDR4-2400 | Operating system | Microsoft Windows Server 2016 and 2019. Red Hat Enterprise Linux (RHEL) 7 and 8. SUSE Linux Enterprise Server (SLES) 12 and 15. VMware vSphere (ESXi) 6.5 and 6.7. | | |
| Xeon Bronze 3204 | 6 | 6 | 1.9GHz | 8.25MB | 85W | DDR4-2133 | | Supports ASHRAE A4 with limitations. | | |
| Chipset | Intel C624 Platform Controller Hub | | | | | | | Environmental specification | Temperature - operating | |
| Memory Sockets | 24 DIMM sockets with 12 channels. 12 DIMM sockets with 6 channels per processor | | | | | | | | A4: 5°C to 45°C (41°F to 113°F) A3: 5°C to 40°C (41°F to 104°F) A2: 10°C to 35°C (50°F to 95°F) | |
| Memory Types | DDR4-2933 RDIMM, 8GB/16GB/32GB available | | | | | | | | Temperature - non operating (no package) | |
| Memory Capacity | 768GB with 24x 32GB DDR4-2933 RDIMM | | | | | | | | -10°C to 60°C (14°F to 140°F) | |
| Memory protection | ECC, memory mirroring, and memory sparing | | | | | | | | Temperature - non operating (with package) | |
| Expansion slots | Slot 1 (riser card 1) | Full height, half length, double-wide | | | | | -40°C to 70°C (-40°F to 158°F) | | | |
| | Slot 2 | Not present, for double-wide card in slot 1 | | | | | Altitude - operating | | | |
| | Slot 3 (riser card 1) | PCIe 3.0 x16 (x8 lanes). Full height, half length | | | | | (Unpressurized): 0-10000ft (0-3048m) | | | |
| | Slot 4 (onboard) | PCIe 3.0 x8, low profile | | | | | Humidity - operating, non-condensing | | | |
| | Slot 5 (riser card 2) | PCIe 3.0 x16, full height, half length, requires 2nd CPU | | | | | A4: 8%~90%. A3:8%~85%. A2:8%~80% | | | |
| | Slot 6 (riser card 2) | PCIe 3.0 x16, full height, half length, requires 2nd CPU | | | | | Humidity - storage (with package), non-condensing | | | |
| | Slot 7 (onboard) | PCIe 3.0 x8 (dedicated to an internal storage controller) | | | | | 8%~90% | | | |
| Integrated Graphics | Integrated Matrox G200 in XClarity Controller | | | | | | | | Models should meet the following requirements to support A3 and A4: • NVMe drives not installed • PCIe flash adapter not installed • Graphic processing unit (GPU) not installed • Must have redundant PSU • Processors with TDP more than or equal to 150-watt not installed | |
| Discrete Graphics Offering | Graphics | Memory | | Power | Connector | SLI / NVlink | Max Qty | Environmental Certifications | Energy Star Server 2.1 certified. More environmental information please see: www.lenovo.com/social_responsibility/us/en/environment/ | |
| | Quadro P620 | 2GB GDDR5 | | 40W | 4xminiDP | | 3 | | ISV certifications | Certifications from NVIDIA Quadro ISV Certified |
| | Quadro RTX 4000 | 8GB GDDR6 | | 160W | 3xDP, 1xVirtualLink | | 3 | 4XB7A62801 Intel S4510 3.5" 240G SSD OPT | | |
| | Quadro RTX 5000 | 16GB GDDR6 | | 265W | 4xDP, 1xVirtualLink | | 2 | 4XB7A62802 Intel S4510 3.5" 480G SSD OPT | | |
| | T4 | 16GB GDDR6 | | 70W | - | | 5 | 4XB7A62803 Intel S4510 3.5" 960G SSD OPT | | |
| | V100 | 16GB/32GB HBM2 | | 250W | - | | 2 | 4XB7A62804 Intel S4510 3.5" 1.92T SSD OPT | | |
| Storage Controller | Storage Controller | Type | Interface | RAID | | Cache | | Options | 4XB7A62805 Intel S4510 3.5" 3.84T SSD OPT | |
| Storage Support | 530-8i | Optional | 12Gbps SAS | 0/1/10/5/50 | | - | | | 4XB7A62806 4TB7.2K 6GSATA 3.5G4HS HDD OPT | |
| | Disk Type | Interface | RPM | Offering | | Max Qty | | | 4XB7A62807 6TB7.2K 6GSATA512e 3.5G4HS OPT | |
| | 3.5" SATA HDD | SATA 6Gb/s | 7.2K | 1TB/4TB/6TB/8TB/10TB/12TB/14TB | | 8 | | | 4XB7A62808 8TB7.2K 6GSATA512e 3.5G4HS OPT | |
| | 3.5" SATA SSD | SATA 6Gb/s | 7.2K | 240GB/480GB/960GB/1.92TB/3.84TB | | 8 | | | 4XB7A62809 10T7.2K 6GSATA512e 3.5G4HS OPT | |
| | M.2 SATA SSD | SATA 6Gb/s | | 480GB | | 2 | | | 4XB7A62810 3.5" 12TB 7.2K SATA 512e HDD | |
| Storage Bays | Bay Type | Maximum Drives Qty | | | | | 4XB7A62811 14T 3.5" 7.2 SATA HDD OPT | | | |
| | M.2 | 2x M.2 SATA SSD non-hot swap | | | | | 4ZC7A62797 8GB 1RX8 PC4-2933R 8Gb 1.2V | | | |
| | Disk bay | 8x 3.5" SATA/SAS hot-swap disk bays | | | | | 4ZC7A62798 16GB 1RX4 PC4-2933R 8Gb 1.2V | | | |
| Power supply | Up to two redundant hot-swap 1100W or 1600W 80 PLUS Platinum qualified AC power supplies. 100V - 240V | | | | | | | | 4ZC7A62799 16GB 2RX8 PC4-2933R 8Gb 1.2V | |
| Media reader | None | | | | | | | | 4ZC7A62800 32GB 2RX4 PC4-2933R 8Gb 1.2V | |
| Network interfaces | One dedicated management port. One LOM slot for customized LOM with up to four RJ-45 10GbE ports. Wake-on-LAN and NC-SI are available on Port 0 of LOM | | | | | | | | | |
| WLAN + Bluetooth | None | | | | | | | | | |
| Security features | Power-on and admin password. Trusted Platform Module, TCG 1.2 compliant, upgrade to 2.0 via UEFI setting. Optional lockable security bezel | | | | | | | | | |
| Systems management | XClarity Controller Standard. Energy Manager. XClarity Administrator. Lenovo Capacity Planner. Provisioning Manager. Essentials | | | | | | | | | |

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Expedited Depot: Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Onsite / In-home Service: Parts and labor repair coverage where labor is provided onsite at your place of business.

If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.

International Warranty Service (IWS): PC repair coverage for customers who require a critical warranty repair while travelling internationally. Visit www.lenovo.com/internationalwarranty for details. Visit www.lenovo.com/warranty for Lenovo Warranty Services terms and conditions for complete details and restrictions.

Included software: may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

Visit <http://psref.lenovo.com/> for the latest version of Product Specifications Reference.

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Lenovo 1009 Think Place Morrisville, NC 27560 U.S.A.

PSREF

Product Specifications Reference

ThinkVision

ThinkVision

Version 580
July 20, 2021

Lenovo™

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Summary of Changes

This section describes the technical changes made in this edition.

This edition might also include minor corrections and editorial changes which are not identified.

July 20, 2021 - Version 580

Additions in this update

► **New product(s)**

ThinkVision P40w-20

ThinkVision T24m-20

ThinkVision E29w-20

► **Spec updated**

None

Withdrawals in this update

► **Withdrawn product(s)**

None

ThinkVision E20-20

DISPLAY

Panel Size

19.5-inch

Screen Dimensions

442.20 mm × 286.60 mm

Active Area

418.61 mm × 262.35 mm

Panel Type

In-Plane Switching

Backlight

WLED

Aspect Ratio

16:10

Resolution

1440 × 900

Pixel Pitch

0.2907 × 0.2915 mm

Dot/Pixel Per Inch (DPI/PPI)

87

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)

6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-Glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4

1 x VGA

POWER

Power Consumption (typical/max)

12W / 14W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.5W

Energystar Power Consumption (Pon/E_{TEC})

11.3W / 35.96kWh

Power Supply

Internal

Voltage Required

AC 100 to 240V (50—60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Bezel Color

Raven Black

Bezel Width (side)

17.9 mm

Bezel Width (top/bottom)

18.0 / 26.0 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

124.0 x 388.0 x 513.0 mm /

4.88 x 15.28 x 20.20 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

188.3 x 372.0 x 456.0 mm /

7.41 x 14.56 x 17.95 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

188.3 x 372.0 x 456.0 mm /

7.41 x 14.56 x 17.95 inches

Size Unpacked w/o stand (Head Only) (D x H x W)(mm/inch)

44.5 x 308.0 x 456.0 mm /

1.75 x 12.13 x 17.95 inches

Weight Packed (kg/lbs.)

4.10 kg / 9.04 lbs.

Weight Unpacked (kg/lbs.)

2.95 kg / 6.50 lbs.

Weight (Monitor Head Only) (kg/lbs.)

2.61 kg / 5.75 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x HDMI cable (1.8 m)

Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

RoHS (EU 2002/95/EC)

Yes

EPEAT

Silver

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

TÜV Rheinland Low Blue Light

Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision E2054 Monitor

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|-------------------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------------------|
| Panel Size | 19.5" | Tilt Angle (Front / Back) | -5° - 22° |
| Panel Type | IPS | Swivel Angle (Left / Right) | No |
| Backlight | WLED | Lift (mm) | No |
| Viewable Area (Diagonal) | 19.5" | Pivot | No |
| Screen Dimensions (W x H) (mm) | 418.61 (H) x 262.35 (V) | VESA Mount (mm) | 100 x 100 |
| Resolution | 1440 x 900 | Kensington Lock Slot | Yes |
| Aspect Ratio | 16:10 | Cable Management | No |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Ambient Light Sensor | No |
| Maximum Brightness (Typical) | 250 cd/m ² | Control Buttons | Yes |
| Contrast Ratio (Typical) | 1000:1 | Bezel Color | Raven Black |
| Dynamic Contrast Ratio | 3M:1 | Bezel Width | |
| Pixel Pitch (W x H) (mm) | 0.0969 x 0.2915 | Sides (mm / inches) | 17.9 / 0.7" |
| Dot/Pixel Per Inch (DP/PPI) | 87.3 | Top (mm / inches) | 18 / 0.71" |
| Color Gamut (CIE 1931) | 72% | Bottom (mm / inches) | 26 / 1.02" |
| Number of Colors | 16.7 Million | | |
| Response Time | | | |
| Extreme Mode | <5 ms | | |
| Normal Mode | 7 ms | | |
| Off-Mode | 14 ms | | |
| Anti-Glare | Yes | | |
| SIGNAL INPUT | | SIGNAL INTERFACE / PERFORMANCE | |
| Video Input Signals | VGA | Horizontal Frequency | 30 kHz - 83 kHz |
| Video Cables Supplied | VGA | Vertical Frequency | 50 Hz - 75 Hz |
| Video Cable Length | 1.8 m | Native Resolution | 1440 x 900 |
| USB Hub | No | Maximum Pixel Clock Speed / Bandwidth | VGA : 205 MHz |
| USB Cable Supplied | No | Default Color Temperature | 7200K |
| | | Preset Display Modes | 18 |
| | | User-defined Display Modes | 10 |
| | | OSD Buttons | 5 |
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| POWER CONSUMPTION | | ENVIRONMENTAL | |
| Power Consumption | | Temperature | |
| Typical | 16 W | Operating | 0°C - 45°C (non-condensing) |
| Maximum | 20 W | Non-operating | -20°C - 60°C (non-condensing) |
| Sleep-Mode | 0.5 W | Humidity | |
| Off-Mode | 0.5 W | Operating | 8% - 80% (non-condensing) |
| Heat Dissipation | | Non-operating | 5% - 95% (non-condensing) |
| Typical | 54.56 Btu/h | Altitude | |
| Maximum | 68.2 Btu/h | Operating | 5,000 m |
| Power Supply | Internal | Non-operating | 40,000 ft |
| Power Voltage | 100 VAC - 240 VAC, 0.75 A - 0.3 A | | |
| Voltage Dynamic Frequency | 47 Hz - 63 Hz | | |
| DIMENSIONS (W x D x H) | | COMPLIANCE | |
| Size Packed | | Arsenic-Free Glass | Yes |
| (mm) | 513 x 388 x 124 | PVC-Free | Yes |
| (inches) | 20.2" x 15.27" x 4.88" | Mercury-Free | Yes |
| Size Unpacked with Stand | | PCC % of Plastic Resins | 85% |
| (mm) | 456 x 188.3 x 372 | EPEAT | Silver |
| (inches) | 17.95" x 7.41" x 14.65" | ENERGY STAR Rating | 8.0 |
| Size Unpacked without Stand (Monitor Head Only) | | TCO | 6.0 |
| (mm) | 456 x 44.5 x 308 | TCO Edge | No |
| (inches) | 17.95" x 1.75" x 12.13" | TUV | No |
| Distance from Table to Panel | | RoHS (EU 2002/95/EC) | Yes |
| (mm / inches) | | China Energy Efficiency Standard | Tier 1 |
| Lowest Pixel at Bottom of Screen | 90 / 3.54" | Windows Certification | Windows 7, Windows 8, Windows 8.1, Windows 10 |
| Highest Pixel at Top of Screen | 354 / 13.94" | | |
| Stand Base Footprint Area | | | |
| (mm / inches) | 162.3 x 200.8 / 6.39" x 7.91" | | |
| Weight | | | |
| Packed | Starting at 8.7 lbs (3.96 kg) | | |
| Unpacked | Starting at 6.2 lbs (2.8 kg) | | |
| Monitor Head | Starting at 5.4 lbs (2.45 kg) | | |



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Lenovo

ThinkVision E22-20

DISPLAY

Panel Size
21.5-inch

Screen Dimensions
476.06 mm x 267.79 mm

Panel Type
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2480 x 0.2480 mm

Dot/Pixel Per Inch (DPI/PPI)
102

Viewing angle (H x V @ CR 10:1)
178°/178°

Response Time
14ms

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Color Depth
8-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

MULTI-MEDIA

Integrated Speakers
Yes (2 x 1.5W)

POWER

Power Consumption (typ./max)
18W / 24W

**Power Consumption
Sleep/Off Mode**
< 0.5W

**Power Consumption
Switch Off-Mode**
0.5W

**ENERGY STAR Power Consumption
(P_{on}/E_{tec})**
11.24W / 35.64kWh

Power Supply
Internal

Voltage Required
AC 90 to 264 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 22°

Lift (max range)
155 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre Tiny Support*
Yes, by Sandwich Mounting Kit
(PN: 4XHON04098)

Kensington Lock Slot
Yes

Bezel Color
Raven Black

Bezel Width (side)
15 mm

Bezel Width (top/bottom)
17.25 / 21.15 mm

DIMENSION

**Size Packed
(D x H x W, mm/inch)**
131.0 x 405.0 x 610.0 mm
5.16 x 15.94 x 24.02 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(lowest position)**
178.6 x 301.6 x 508.0 mm
7.03 x 11.87 x 20.00 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(highest position)**
178.6 x 443.4 x 508.0 mm
7.03 x 17.46 x 20.00 inches

**Size Unpacked w/o Stand
(head only) (D x H x W,
mm/inch)**
43.4 x 307.9 x 508.0 mm
1.71 x 12.12 x 20.00 inches
Weight Packed (kg/lbs.)
5.40 kg / 11.90 lbs.

Weight Unpacked (kg/lbs.)
3.90 kg / 8.60 lbs.

**Weight (Monitor Head Only)
(kg/lbs.)**
2.20 kg / 4.85 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (2011/65/EU)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



* Optional support.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision E22-28

DISPLAY

Panel Size

21.5-inch

Screen Dimensions

483.64 mm x 278.67 mm

Panel Type

In-Plane Switching

Active Area

476.06 mm x 267.79 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.2480 mm x 0.2480 mm

Dot/Pixel Per Inch (DPI/PPI)

102

Viewing angle (H x V @ CR 10:1)

178°/178°

Response Time

4ms (Extreme Mode)

6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4

1 x DP 1.2

1 x VGA

MULTI-MEDIA

Integrated Speakers

Yes (2 x 1.5W)

POWER

Power Consumption (typ./max)

13W / 17W

Power Consumption

Sleep/Off Mode

< 0.5W

Power Consumption

Switch-off Mode

< 0.5W

ENERGY STAR Power Consumption

(P_{on}/E_{TEC})

13W / 41kWh

Power Supply

Internal

Voltage Required

AC 90 to 264 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

Swivel Angle (left/right)

-360° / 360°

Lift (max range)

155 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre Tiny Support*

Yes, by Sandwich Mounting Kit

(PN: 4XHON04098)

Kensington Lock Slot

Yes

Bezel Color

Raven Black

Bezel Width (side)

15.0 mm

Bezel Width (top/bottom)

17.6 / 20.8 mm

DIMENSION

Size Packed

(D x H x W, mm/inch)

131.0 x 405.0 x 610.0 mm

5.16 x 15.94 x 24.02 inches

Size Unpacked w/stand

(D x H x W, mm/inch)

(lowest position)

178.6 x 301.6 x 508.0 mm

7.03 x 11.87 x 20.00 inches

Size Unpacked w/stand

(D x H x W, mm/inch)

(highest position)

178.6 x 443.4 x 508.0 mm

7.03 x 17.46 x 20.00 inches

Size Unpacked w/o stand

(head only) (D x H x W, mm/inch)

43.4 x 307.9 x 508.0 mm

1.71 x 12.12 x 20.00 inches

Weight Packed (kg/lb)

5.40 kg / 11.90 lbs.

Weight Unpacked (kg/lb)

3.90 kg / 8.60 lbs.

Weight (monitor head only)

(kg/lb)

2.20 kg / 4.85 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x HDMI cable (1.8 m)

Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Silver

RoHS (2011/65/EU)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

TÜV Rheinland Flicker Free

Yes



* Optional support.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

DISPLAY

Tamanho do Painel

21,5 polegadas

Dimensão da Tela (L x A)

476,06 x 267,79 mm

Tipo de Painel

3-side NearEdgeless, VA

Luz de Fundo

WLED

Proporção da Tela

16:9

Resolução

1920 x 1080 mm

Distância entre pixels (A x V)

0.2480 x 0.2480 mm

Ponto/Pixel por polegada (DPI/PPI)

102

Ângulo de Visão (H x V)

178° / 178°

Tempo de Resposta (cinza a cinza)

4 ms (modo extremo)
6 ms (modo normal)

Taxa de Contraste (típica)

3000:1

Taxa de Contraste Dinâmico (típica)

3M:1

Cor Gamut NTSC (CIE 1931)

72% NTSC

Suporte de Cores (típico)

16.7M

Taxa de Atualização

60 Hz

Brilho (típico)

250 cd/m²

CONECTIVIDADE

Sinais de Entrada de Vídeo

1 x VGA
1 x HDMI 1.4

Saída de Áudio

Sim (3.5 mm)

MULTI-MEDIA

Suporte Opcional à Barra de Som

Sim

CARACTERÍSTICAS ESPECIAIS

Antirreflexo

Sim

Suporte ao Cliente Tiny

Sim (pelo suporte VESA PN: 4XF0N03161)

Tecnologia Sync

FreeSync™

CONSUMO DE ENERGIA

Consumo de energia (Tipo/Máx.)

18W / 22W

MECÂNICO

Ângulo de Inclinação (frente/trás)

-5° / 22°

Montagem VESA

Sim (100 x 100 mm)

Trava Kensington™

Sim

Gerenciamento de Cabos

Sim

Cor da Moldura

Raven Black

Largura da Moldura (lateral)

2.0 mm

Largura do Painel (superior/inferior)

2.0 / 21.2 mm

O QUE VEM NA CAIXA?

Monitor com Suporte

1 x Cabo HDMI

1 x Cabo de Energia

Guia de Configuração Rápida

CERTIFICAÇÕES

Classificação ENERGY STAR®

7.1

CCC

Sim

TCO

TCO 7.0/ TCO Nível 2.0

EPEAT™

Prata

ULE

Ouro

RoHS

Sim

Certificação Windows

Windows 7, Windows 10

Padrão de Eficiência Energética da China

Nível 2

Temperatura Operacional de Acordo com o Ambiente

0°C to 40°C

Baixa Luz Azul

Sim

DIMENSÕES THINKVISION® S22e-18 (LTPS)

Ângulo de inclinação (frente/trás):

-5° ~ +22°

Tamanho embalado (D x A x L):

655 x 184 x 358 mm

Ajuste de altura:

Sim, até 130 mm

Tamanho desembalado com suporte posição mais baixa (D x A x L):

244,6 x 380,3 x 489,3 mm

Tamanho desembalado com suporte posição mais alta (D x A x L):

244,6 x 510,3 x 489,3 mm

Peso embalado:

6,35 KG

Peso desembalado:

4,68 KG

DIMENSÕES THINKVISION® S22e-19 (TILT)

Ângulo de Inclinação (frente/trás):

-5° ~ +22°

Tamanho embalado (D x A x L):

555 x 134 x 348 mm

Ajuste de altura:

Não

Tamanho desembalado com suporte (D x A x L):

200 x 373.8 x 489.3 mm

Tamanho desembalado com suporte posição mais alta (D x A x L):

244,6 x 510,3 x 489,3 mm

Peso embalado:

4,07 KG

Peso desembalado:

2,75 KG



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As especificações podem variar dependendo da região.

Lenovo™

ThinkVision S22e-19

DISPLAY

Panel Size

21.5-inch

Screen Dimensions (W x H) (mm)

476.06 mm x 267.79 mm

Panel Type

3-side NearEdgeless, VA

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080 mm

Pixel Pitch (H x V) (mm)

0.2480 x 0.2480 mm

Dot/Pixel Per Inch (DPI/PPI)

102

Viewing Angle (H x V)

178°/ 178°

Response Time (gray to gray)

4 ms (extreme mode)
6 ms (normal mode)

Contrast Ratio (typical)

3000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut NTSC (CIE 1931)

72% NTSC

Color Support (typical)

16.7M

Refresh rate

60 Hz

Brightness (typical)

250 cd/m²

CONNECTIVITY

Video Input Signals

1 x VGA
1 x HDMI 1.4

Audio Out

Yes (3.5 mm)

MULTI-MEDIA

Optional Soundbar Support

Yes

SPECIAL FEATURES

Anti-Glare

Yes

Thin Client Support (Tiny)

Yes (by VESA mount PN:4XFON03161)

Sync Technology

FreeSync™

POWER

Power Consumption (Typ./Max)

18W / 22W

MECHANICAL

Tilt Angle (front / back)

-5°/ 22°

VESA Mount

Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.0 mm

Bezel Width (top / bottom)

2.0 mm / 21.2 mm

DIMENSIONS

Size Packed (D x H x W) (mm/inch)

120 x 350 x 582 mm / 4.7 x 13.7 x 22.9 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position)

200.0 x 373.8 x 489.3 mm / 7.87 x 14.71 x 19.26 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position)

200.0 x 373.8 x 489.3 mm / 7.87 x 14.71 x 19.26 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

41.5 x 296.8 x 489.3 mm / 1.63 x 11.68 x 19.26 inch

Weight Packed (kg/lbs.)

4.07kg / 8.97 lbs.

Weight Unpacked (kg/lbs.)

2.75kg / 6.06 lbs.

Weight (Monitor Head Only) (kg/lbs.)

2.46kg / 5.42 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x HDMI Cable

1 x Power Cable

Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

TCO

TCO 7.0/TCO Edge 2.0

EPEAT

Silver

ULE

Gold

RoHS

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

Ambient Operating Temperature

0°C to 40°C

Low Blue Light

Yes



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Specifications may vary depending upon region.

Lenovo

ThinkVision S22e-20

DISPLAY

Panel Size
21.5-inch

Screen Dimensions
484.50 mm x 284.40 mm

Panel Type
3-side NearEdgeless, VA

Active Area
476.06 mm x 267.79 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2480 x 0.2480 mm

Dot/Pixel Per Inch (DPI/PPI)
102

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
75 Hz¹

Brightness (Typical)
250 cd/m²

Contrast Ratio (Typical)
3000:1

Dynamic Contrast Ratio (Typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (Typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x VGA
Audio Signal
1 x Audio Out (3.5 mm)

SPECIAL FEATURE

Sync Technology
AMD FreeSync™²

MULTI-MEDIA

Optional Soundbar Support
Yes (PN number: OA36190)

POWER

Power Consumption (Typical/Max)
15W / 19W

Power Consumption Sleep/Off Mode
< 0.3W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
15W / 43 kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (47–63 Hz)

MECHANICAL

Tilt Angle (Front/Back)
-5° / 22°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre M Series Tiny Support
Yes, by Tiny VESA Mount II
(PN: 4XFON03161)

ThinkCentre M Series Nano Support
Yes, by Nano VESA Mount
(PN: 4XFOV81630)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0/21.2 mm

DIMENSIONS

Size Packed
(D x H x W, mm/inch)
140.0 x 352.0 x 587.0 mm
5.51 x 13.86 x 23.11 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch)
(Lowest position)
173.1 x 405.1 x 489.3 mm
6.81 x 15.95 x 19.26 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch)
(Highest position)
173.1 x 405.1 x 489.3 mm
6.81 x 15.95 x 19.26 inches

Size Unpacked w/o Stand (Head Only)
(D x H x W) (mm/inch)
45.5 x 296.8 x 489.3 mm
1.79 x 11.69 x 19.26 inches

Weight Packed (kg/lbs.)
4.68 kg / 10.31 lbs.

Weight Unpacked (kg/lbs.)
3.14 kg / 6.92 lbs.

Weight (Monitor Head Only) (kg/lbs.)
2.39 kg / 5.27 lbs

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI 1.4 cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

TCO
8.0

TCO Edge
2.0

RoHS (EU 2002/95/EC)
Yes

EPEAT
Gold

China Energy Efficiency Standard
Tier 2

TÜV Rheinland Low Blue Light
Yes

TÜV Rheinland Flicker Free
Yes



¹ HDMI only. ² AMD FreeSync™ is enabled for AMD Radeon™ Series graphics cards.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

ThinkVision T2054p Monitor

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|-----------------------------------------|----------------------------------|------------------------------------------|---------------------------------------------------------|
| Panel Size | 19.5" | Tilt Angle (Front / Back) | -5° - 22° |
| Panel Type | IPS | Swivel Angle (Left / Right) | -45° - 45° |
| Backlit | WLED | Lift (mm) | 110 |
| Viewable Area (Diagonal) | 19.5" | Pivot | No |
| Screen Dimensions (W x H) (mm) | 262.35 x 418.61 | VESA Mount (mm) | 100 x 100 |
| Resolution | 1440 x 900 | Kensington Lock Slot | Yes |
| Aspect Ratio | 16:10 | Cable Management | Yes |
| Viewing Angle (H/V at CR 10:1) | 178° / 178° | Ambient Light Sensor | No |
| Maximum Brightness (Typical) | 250 cd/m ² | Control Buttons | Yes |
| Contrast Ratio (Typical) | 1000:1 | Bezel Color | Raven Black |
| Pixel Pitch (W x H) (mm) | 0.0969 x 0.2915 | Bezel Width (Side) (mm / inches) | 17 / 0.67" |
| Dot/Pixel Per Inch (DP / PPI) | 87.3 | Bezel Width (Top / Bottom) (mm / inches) | 17 / 0.67" |
| Color Gamut (CIE 1931) | 72% | | |
| Number of Colors | 16.7 M | | |
| Response Time | 7 ms | | |
| Anti-Glare | Yes | | |
| SIGNAL INPUT | | SIGNAL INTERFACE / PERFORMANCE | |
| Video Input Signals | VGA, HDMI, DisplayPort | Horizontal Frequency | 30 kHz - 81 kHz |
| Video Cables Supplied | VGA | Vertical Frequency | 50 Hz - 75 Hz |
| Video Cable Length | 1.8 m | Native Resolution | 1440 x 900 |
| USB Hub | No | Maximum Pixel Clock Speed / Bandwidth | VGA : 150 MHz HDMI : 150 MHz DisplayPort: 150 MHz |
| USB Cable Supplied | No | | |
| | | Default Color Temperature | 7200K |
| | | Preset Display Modes | 22 |
| | | User-defined Display Modes | 16 |
| | | OSD Buttons | 5 |
| | | OSD Languages | 8 |
| POWER CONSUMPTION | | COMPLIANCE | |
| Power Consumption | | EPEAT | Silver |
| Typical | 14.5 W | ENERGY STAR Rating | 8.0 |
| Max. without USB Hub | 21 W | ULE | Gold |
| Max. with USB Hub | N/A | TCO | 6.0 |
| Sleep-Mode | 0.3 W | TCO Edge | 2.0 |
| Off-Mode | 0.3 W | TUV | Yes |
| Heat Dissipation | | GREENGUARD | No |
| Typical | 49.45 Btu/h | RoHS (EU 2002/95/EC) | Yes |
| Max. | 71.61 Btu/h | Windows Certification | Windows 7, Windows 8, Windows 8.1, Windows 10 |
| Power Supply | Internal | China Energy Efficiency Standard | Tier 1 |
| Power Voltage | 90 - 264 VAC, 1.5 A | | |
| Voltage Dynamic Frequency | 47 - 63 Hz | | |
| DIMENSIONS (W X D X H) | | ENVIRONMENTAL | |
| Size Packed | | Temperature | |
| (mm) | 509 x 176 x 368 | Operating | 0 °C - 45 °C |
| (inches) | 20.04" x 6.93" x 14.49" | Non-operating | -20 °C - 60 °C (non-condensing) |
| Size Unpacked with Stand | | Humidity | |
| (mm) | 454.2 x 242.6 x 345.9 - 455.9 | Operating | 10% - 80% |
| (inches) | 17.88" x 9.55" x 13.62" - 17.95" | Non-operating | 5% - 95% (non-condensing) |
| Size Unpacked without Stand (Head Only) | | Altitude | |
| (mm) | 454.2 x 53 x 297.9 | Operating | 8,000 ft |
| (inches) | 17.88" x 2.09" x 11.73" | Non-operating | 40,000 ft |
| Distance from Table to Panel | (mm / inches) | Arsenic-free Glass | Yes |
| Lowest Pixel at Bottom of Screen | 65.8 / 2.59" | PVC Free | Yes |
| Highest Pixel at Top of Screen | 328.2 / 12.92" | Mercury Free | Yes |
| Stand Base Footprint Area | | PCC % of Plastic Resins | 85% |
| (mm / inches) | Diameter 240 / 9.45" | Low Halogen | No |
| Weight | | WARRANTY AND AVAILABILITY | |
| Packed | Starting at 10.8 lbs (4.9 kg) | Warranty | 3 Years |
| Unpacked | Starting at 8.15 lbs (3.7 kg) | Geography Availability | World Wide |
| Monitor Head | Starting at 4.85 lbs (2.2 kg) | ThinkVision Logo | Yes |
| | | Global Model | Yes |



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Lenovo

ThinkVision T2224d MONITOR

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|-------------------------------------|---------------------------|--------------------------------------------|--------------------------------|
| Panel Size | 21.5" | Tilt Angle (Front / Back) | -5° / 22° |
| Panel Type | IPS | Swivel Angle (Left / Right) | No |
| Backlight | WLED | Lift Range | No |
| Screen Dimensions (W x H) (mm) | 476.064 (H) x 267.786 (V) | Pivot | No |
| Resolution | 1920 x 1080 | VESA Mount (mm) | 100 x 100 |
| Aspect Ratio | 16:9 (Wide) | Kensington Lock Slot | Yes |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Cable Management | Yes |
| Maximum Brightness (Typical) | 250 cd/m² | Ambient Light Sensor | No |
| Contrast Ratio (Typical) | 1000:1 | Control Buttons | Yes |
| Dynamic Contrast Ratio | 3000000:1 | Bezel Color | Raven Black |
| Pixel Pitch (mm) | 0.248 | Bezel Width | |
| Dot/Pixel Per Inch (DP/PPI) | 102 | Bottom (mm / inches) | 25.6 / 1.01" |
| Color Gamut (CIE 1931) NTSC | 72% | Top (mm / inches) | 17.6 / 0.69" |
| Number of Colors | 16.7 Million | Sides (mm / inches) | 17.6 / 0.69" |
| Response Time | 4 ms (extreme mode) | | |
| Anti-Glare | Yes | | |
| SIGNAL INPUT | | POWER CONSUMPTION | |
| Video Input Signals | VGA + DisplayPort | Typical | 20 W |
| Video Cables Supplied | VGA + DisplayPort | Maximum | 25 W |
| Video Cable Length | 1.8 m | Sleep-Mode | <0.5 W |
| USB Hub | No | Switch-Off Mode | <0.5 W |
| USB Cable Supplied | No | Power Supply | Internal |
| | | Power Voltage | 90 VAC - 264 VAC |
| | | Voltage Dynamic Frequency | 47 Hz - 63 Hz |
| SIGNAL INTERFACE / PERFORMANCE | | DIMENSIONS (W x D x H) | |
| Horizontal Frequency | 30 kHz ~ 83 kHz | Size Unpacked with Stand | |
| Vertical Frequency | 50 Hz ~ 75 Hz | (mm) | 512.9 x 204.9 x 381.4 |
| Native Resolution | 1920 x 1080 | (inches) | 20.19" x 8.07" x 15.01" |
| Maximum Pixel Clock Speed Bandwidth | | Size Unpacked without Stand (Head Only) | |
| VGA | 205 MHz | (mm) | 512.9 x 51 x 312.6 |
| DisplayPort | 165 MHz | (inches) | 20.19" x 2.01" x 12.31" |
| Default Color Temperature | 7200K | Distance from Table to Panel (mm / inches) | |
| Plug 'n' Play | Yes | Lowest Pixel at Bottom of Screen | 94.4 / 3.72" |
| Preset Display Modes | 22 | Highest Pixel at Top of Screen | 363.9 / 14.33" |
| User-defined Display Modes | 22 | Stand Base Footprint Area (mm / inches) | 180 x 180 / 7.09" x 7.09" |
| OSD Buttons | 5 | Weight | |
| OSD Languages | 8 | Packed | Starting at 9.19 lbs (4.17 kg) |
| Lockable Controls | No | Unpacked | Starting at 6.48 lbs (2.94 kg) |
| | | Monitor Head Only | Starting at 5.93 lbs (2.69 kg) |
| ENVIRONMENTAL | | COMPLIANCE | |
| Temperature | | EPEAT | Silver |
| Operating | 0°C - 45°C | ENERGY STAR Rating | 8.0 |
| Non-operating | -20°C - 60°C | TCO | Display 7.0 / Edge 2.0 |
| Humidity | | RoHS (EU 2002/95/EC) | Yes |
| Operating | 10% - 80% | Windows Certification | Windows 7, Windows 10 |
| Non-operating | 5% - 95% | Image Quality Capability | ISO 9241-307 |
| Altitude | | China Energy Efficiency Standard | Tier 1 |
| Operating | 5000 m | | |
| Non-operating | 0 ft - 40,000 ft | | |
| Arsenic-free Glass | Yes | | |
| PVC-free | Yes | | |
| Mercury-free | Yes | | |
| PCC % of Plastic Resins | >85% | | |
| Low Halogen | No | | |
| WARRANTY AND AVAILABILITY | | | |
| Warranty | 3 Years | | |
| Geography Availability | World Wide | | |
| Global Model | Yes | | |



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SPECIFICATIONS

| | | | |
|------------------------------------------|----------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------|
| DISPLAY | | MECHANICAL | |
| Panel Size | 22" Wide | Tilt Angle (Front / Back) | -5° to 30° |
| Panel Type | TN | Swivel Angle (left/right) | NA |
| Backlight | WLED | Lift | 110 mm |
| Viewable Area (Diagonal) | 22" (558.8 mm) | Pivot | NA |
| Screen Dimensions (W x H) | 473.76 mm x 296.1 mm | VESA® Mount | 100 x 100 mm |
| Resolution | 1680 x 1050 | Kensington® Lock Slot | Yes |
| Aspect Ratio | 16:10 | Cable Management | Yes |
| Viewing Angle (H/V at CR 10:1) | 170°/160° | Ambient Light sensor | No |
| Maximum Brightness (Typical) | 250 cd/m² | Bezel Color | Raven Black |
| Contrast Ratio (Typical) | 1000:1 | Bezel Width (Side) | 17 mm |
| Dynamic Contrast Ratio | 3M:1 | Bezel Width (Top / Bottom) | 17 mm |
| Pixel Pitch (mm) | 0.282 (H) x 0.282 (V) | | |
| Dot/Pixel Per Inch (DP/PPI) | 90 | | |
| Color Gamut (CIE 1931) | 72% | | |
| Number of Colors | 16.7 M | | |
| Response Time | 5 ms (On/Off) | | |
| Anti-Glare | Yes | | |
| SIGNAL INPUT | | POWER CONSUMPTION | |
| Video Input Signals | VGA, DVI | Power | |
| Video Cables Supplied | VGA, DVI | Typical | 16 W |
| Video Cable Length | 1.8 m | Max. | 22 W |
| USB Hub | None | Sleep Mode | 0.5 W |
| USB Cable Supplied | None | Off Mode | 0.5 W |
| | | Heat Dissipation | |
| | | Typical | 54.56 Btu/h |
| | | Max. | 75.02 Btu/h |
| | | Power Supply | Internal |
| | | Power Voltage | 90–264 VAC, 0.75–0.3 A |
| | | Voltage Dynamic Frequency | 47–63 Hz |
| SIGNAL INTERFACE / PERFORMANCE | | DIMENSIONS (W x D x H) | |
| Horizontal Frequency | 30 kHz to 83 kHz | Size Packed | 22.44" x 7.52" x 16.57" (570 mm x 191 mm x 421 mm) |
| Vertical Frequency | 50 kHz to 75 Hz | Size Unpacked with stand | 20.05" x 9.61" x 14.97" (509.3 mm x 244.2 mm x 380.2 mm) |
| Native Resolution | 1680 x 1050 | Size Unpacked without stand (Head Only) | 20.05" x 1.73" x 13.06" (509.3 mm x 44 mm x 331.7 mm) |
| Maximum Pixel Clock Speed / Bandwidth | 146.25 MHz | Min. Distance from Table to Panel (lowest pixel at bottom of screen) | 2.58" (65.5 mm) |
| Default Color Temperature | 7200 K | Max. Distance from Table to Panel (highest pixel at top of screen) | 14.30" (363.2 mm) |
| Preset Display Modes | 28 | Stand Base Footprint Area | 8.31" (211 mm) (diameter) |
| User-defined Display Modes | 20 | Weight Packed | 6.98 kg (15.38 lbs) |
| OSD Buttons | 5 | Weight Unpacked | 4.71 kg (10.38 lbs) |
| OSD Languages | 8 | Weight (Monitor Head Only) | 3.09 kg (6.81 lbs) |
| COMPLIANCE | | ENVIRONMENTAL | |
| EPEAT® | GOLD | Temperature – Operating | 0 °C to 45 °C |
| ENERGY STAR Rating | 6.0 | Temperature – Non-operating | -20 °C to 60 °C (non-condensing) |
| ULE | Gold | Humidity – Operating | 10% to 80% |
| TCO® | Display 6.0 | Humidity – Non-operating | 5% to 95% (non-condensing) |
| TCO® Edge | 2.0 | Altitude – Operating | 5,000 m |
| TUV | Yes | Altitude – Non-operating | 40,000 ft |
| GREENGUARD® | No | Arsenic-free Glass | Yes |
| RoHS (EU 2002/95/EC) | Yes | PVC free | Yes |
| Windows Certification | Windows 7, Windows 8.0, Windows 8.1 | Mercury free | Yes |
| China Energy Efficiency Standard | Tier 1 | PCC % of plastic resins | 85% |
| | | Low Halogen | No |
| WARRANTY AND AVAILABILITY | | | |
| Warranty | 3 Years | | |
| Geography Availability | EMEA, ASEAN, Japan | | |



ThinkVision T22i-10 MONITOR



SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|--------------------------------|----------------------------------------------------------------------------------|-----------------------------------|---------------------------------|
| Panel Size | 21.5" Wide | Size Packed (mm) | 577 x 378 x 191 |
| Panel Type | IPS | (inches) | 22.7" x 14.9" x 7.5" |
| Backlight | WLED | Size Unpacked with Stand (mm) | 489.7 x 251.9 x 357.6 |
| Resolution (H x V) | 1920 x 1080 | (inches) | 19.28" x 9.92" x 14.08" |
| Aspect Ratio | 16:9 | Size Monitor Head Only (mm) | 489.7 x 43.5 x 297 |
| Anti-Glare | Yes | (inches) | 19.28" x 1.71" x 11.69" |
| Borderless Screen | Yes | Stand Base Footprint Area (mm) | 240 x 240 |
| Screen Dimensions (W x H) | | (inches) | 9.45" x 9.45" |
| (mm) | 476.064 x 267.786 | Weight | |
| (inches) | 18.74" x 10.54" | Packed | Starting at 16.36 lbs (7.42 kg) |
| Maximum Brightness (Typical) | 250 cd/m ² | Unpacked | Starting at 10.85 lbs (4.92 kg) |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Monitor Head Only | Starting at 6.94 lbs (3.15 kg) |
| Contrast Ratio (Typical) | 1000:1 | | |
| Dynamic Contrast Ratio | 3M:1 | | |
| Pixel Pitch (mm) | 0.248 x 0.248 | | |
| Color Gamut NTSC (CIE 1931) | 72% | | |
| Color Support (Typical) | 16.7 Million | | |
| Response Time | 4/6/14 ms | | |
| CONNECTIVITY | | POWER CONSUMPTION | |
| Video Input Signals | VGA + HDMI 1.4 + DisplayPort 1.2 | Typical | 20 W |
| Video Cables Supplied (Length) | 1.8 m | Maximum | 55 W |
| Audio | Audio-Out | Sleep-Mode | <0.5 W |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | Switch Off-Mode | <0.5 W |
| | | Power Supply | Internal |
| | | Power Voltage | 100 VAC - 240 VAC |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5° / 30° | Arsenic-Free Glass | Yes |
| Swivel Angle (Left / Right) | +/-45° | ULE | Gold |
| Lift (mm / inches) | 110 / 4.33" | PVC-Free | Yes; Without Cable |
| Pivot | -90° / 90° | Mercury-Free | Yes |
| Cable Management | Yes | EPEAT | Silver |
| Kensington Lock | Yes | ENERGY STAR Rating | 8.0 |
| VESA Mounting | Yes (100 mm) | TCO | 7.0 |
| Bezel Color | Raven Black | TCO Edge | 2.0 |
| Bezel Width | | RoHS (EU 2002/95/EC) | Yes |
| Top (mm / inches) | 2 / 0.08" | China Energy Efficiency Standard | Tier 2 |
| Bottom (mm / inches) | 21.4 / 0.84" | Windows Certification | Windows 7 / Windows 10 |
| Sides (mm / inches) | 2 / 0.08" | | |



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ThinkVision T22i-20

DISPLAY

Panel Size
21.5-inch

Screen Dimensions
476.06 mm x 267.79 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2479 x 0.2479 mm

Dot/Pixel Per Inch (DPI/PPI)
102

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Brightness (peak)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen1

USB Downstream
4 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN: 0A36190)

POWER

Power Consumption (typ./max.)
12W / 43W

Power Consumption Sleep/Off Mode
<0.3W

Power Consumption Switch Off-Mode
<0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
10.4W / 32.97kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Tiny Bracket Support
Yes (sold separately)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
1.8 mm

Bezel Width (top/bottom)
1.8 / 22 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
390.0 x 187.0 x 577.0 mm
15.35 x 7.36 x 22.72 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205.0 x 396.0 x 489.3 mm
8.07 x 15.59 x 19.26 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205.0 x 546.0 x 489.3 mm
8.07 x 21.50 x 19.26 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
48.5 x 297.4 x 489.3 mm
1.91 x 11.71 x 19.26 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
121.6 mm

Max. Distance from Table to Panel (highest pixel at bottom of screen, mm)
539.4 mm

Weight Packed (kg/lbs.)
7.20 kg / 15.87 lbs.

Weight Unpacked (kg/lbs.)
5.47 kg / 12.06 lbs.

Weight (monitor head only) (kg/lbs.)
3.01 kg / 6.66 lbs.

Full Container Load (40' STD / 20' STD)
1188 / 550 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to B cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Yes

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

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ThinkVision T22v-10 MONITOR

SPECIFICATIONS

| DISPLAY | | ENVIRONMENTAL | |
|-------------------------------------|----------------------------------------------------------------------------------|----------------------------------|---------------------------------|
| Panel Size | 21.5" | Temperature | |
| Panel Type | In-Plane Switching | Operating | 0°C – 40°C |
| Backlight | WLED | Non-Operating | -20°C – 60°C |
| Resolution | 1920 x 1080 | Humidity | |
| Aspect Ratio | 16:9 | Operating | 10% – 80% |
| Anti-Glare | Yes | Non-Operating | 5% – 95% |
| Screen Dimensions (W x H) (mm) | 476.06 x 267.79 | Altitude | |
| Maximum Brightness (Typical) | 250 cd/m ² | Operating | 0 m – 8000 m |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Non-Operating | 0 ft – 40,000 ft |
| Contrast Ratio (Typical) | 1000:1 | Arsenic-Free Glass | Yes |
| Dynamic Contrast Ratio | 3M:1 | PVC-Free | Yes |
| Pixel Pitch (W x H) (mm) | 0.25 x 0.25 | Mercury-Free | Yes |
| Dot/Pixel Per Inch (DP/PPI) | 102 | PCC % of Plastic Resins | >85% |
| Color Gamut (CIE 1931) | 72% sRGB | | |
| Response Time (Extreme/Typical/Off) | 4/6/14 ms (G-to-G) | | |
| POWER CONSUMPTION | | DIMENSIONS (W x D x H) | |
| Typical | 18 W | Size Packed | |
| Maximum | 43 W | (mm) | 554 x 365 x 187 |
| Sleep-Mode | <0.5 W | (inches) | 21.81" x 14.37" x 7.36" |
| Switch Off-Mode | <0.3 W | Size Unpacked with Stand | |
| Power Supply | Internal | Lowest Position | |
| Power Voltage | 90 VAC – 264 VAC | (mm) | 489.7 x 251.9 x 375.8 |
| Voltage Dynamic Frequency | 47 Hz – 63 Hz | (inches) | 19.28" x 9.92" x 14.79" |
| SIGNAL INPUT | | Highest Position | |
| Video Input Signals | HDMI 1.4 + DisplayPort 1.2 + VGA | (mm) | 489.7 x 251.9 x 485.8 |
| Video Cables Supplied | HDMI (ROW) + DisplayPort + VGA + USB 3.0 ¹ | (inches) | 19.28" x 9.92" x 19.13" |
| Video Cable Length | 1.8 m | Size Unpacked without Stand | |
| USB Hub | Yes | (Monitor Head Only) | |
| USB Cable Supplied | Yes | (mm) | 489.7 x 43.5 x 315.1 |
| Audio-Out | Yes (3.5 mm) | (inches) | 19.28" x 1.71" x 12.41" |
| SIGNAL INTERFACE / PERFORMANCE | | Distance from Table to Panel | |
| Horizontal Frequency | 30 kHz – 81 kHz | Lowest Pixel at Bottom of Screen | |
| Vertical Frequency | 50 Hz – 75 Hz | (mm / inches) | 82.1 / 3.23" |
| Native Resolution | 1920 x 1080 | Highest Pixel at Top of Screen | |
| Maximum Pixel Clock Speed/ | VGA : 205 MHz | (mm / inches) | 192.1 / 7.56" |
| Bandwidth | HDMI : 165 MHz | Stand Base Footprint Area | |
| | DisplayPort : 165 MHz | (mm / inches) | 232 x 203.6 / 9.13" x 8.02" |
| Default Color Temperature | 6500K | Weight | |
| Preset/User Modes | 24/20 | Packed | Starting at 14.46 lbs (6.56 kg) |
| OSD Buttons | 5+2 Buttons | Unpacked | Starting at 10.16 lbs (4.61 kg) |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | Monitor Head Only | Starting at 6.48 lbs (2.94 kg) |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5° / 30° | EPEAT | Silver |
| Swivel Angle (Left / Right) | +/-45° | ENERGY STAR Rating | 8.0 |
| Lift (mm) | Yes (110) | ULE | Gold |
| Pivot | +/-90° | TCO | TCO Display 7.0 / TCO Edge 2.0 |
| VESA Mount (mm) | Yes (100 x 100) | RoHS (EU 2002/95/EC) | Yes |
| Kensington Lock Slot | Yes | Windows Certification | Windows 7 / Windows 10 |
| Cable Management | Yes | China Energy Efficiency Standard | Grade 2 |
| Bezel Color | Raven Black | TÜV Eye Comfort | Yes |
| Bezel Width | | WARRANTY AND AVAILABILITY | |
| Top (mm / inches) | 2 / 0.08" | Warranty | |
| Bottom (mm / inches) | 21.4 / 0.84" | ROW | 3 Years |
| Sides (mm / inches) | 2 / 0.08" | PRC | 18 Months |
| | | Geography Availability | WW |



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¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

Lenovo

ThinkVision T22v-20

DISPLAY

Panel Size
21.5-inch

Screen Dimensions
476.06 mm x 267.79 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2479 x 0.2479 mm

Dot/Pixel Per Inch (DPI/PPI)
102

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Brightness (peak)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Combo
(3.5 mm; in/out)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen1

USB Downstream
2 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Integrated Webcam
Yes (1080p)

Integrated Microphone
Yes

Integrated Speakers
Yes (2 x 3W)

SPECIAL FEATURES

Software
Lenovo ThinkColour (Lenovo
Display Control Center)¹

POWER

Power Consumption
(Typ./Max)
13W / 43W

Power Consumption
Sleep/Off Mode
< 0.5W

Power Consumption
Switch-off Mode
< 0.3W

ENERGY STAR Power
Consumption (P_{on}/E_{TEC})
10.75W / 33.81kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre M Series Tiny
support
Yes (sold separately)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
1.8 mm

Bezel Width (top/bottom)
1.8 mm / 22.0 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
390.0 x 187.0 x 577.0 mm
15.35 x 7.36 x 22.72 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch)
(lowest position)
205.0 x 413.0 x 489.3 mm
8.07 x 16.26 x 19.26 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch)
(highest position)
205.0 x 563.0 x 489.3 mm
8.07 x 22.17 x 19.26 inches

Size Unpacked w/o Stand
(head only) (D x H x W, mm/inch)
48.3 x 314.4 x 489.3 mm
1.90 x 12.38 x 19.26 inches

Min. Distance from Table to Panel
(lowest pixel at bottom of screen, mm)
121.7 mm

Max. Distance from Table to Panel
(highest pixel at top of screen, mm)
539.4 mm

Weight Packed (kg/lbs.)
7.22 kg/15.92 lbs.

Weight Unpacked (kg/lbs.)
5.49 kg/12.10 lbs.

Weight (monitor head only)
(kg/lbs.)
3.03 kg/6.68 lbs.

Full Container Load
(40' STD/20' STD)
1188/550 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to Type-B cable
(1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Yes

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



¹This software can only be used with Windows 10

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision T23d-10

DISPLAY

Panel Size

22.5 inch

Screen Dimensions (H x V) (mm)

496.2 x 313.9

Panel Type

In-Plane Switching

Backlight

WLED

Aspect Ratio

16:10

Resolution

1920 x 1200

Pixel Pitch (H x V) (mm)

0.25 x 0.25

Viewing Angle (H x V)

178°/178°

Response Time (gray to gray)

4 ms (extreme mode)

6 ms (normal mode)

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut NTSC (CIE 1931)

72%

Color Support

16.7M

CONNECTIVITY

Video Input Signals

VGA + HDMI 1.4 + DP 1.2

Video Cable Length

1.8 m

MULTI-MEDIA

Optional Soundbar Support

Yes

DIMENSIONS

Size Packed (D x H x W) (mm/inch)

655 x 422 x 160 mm / 25.78 x 16.61 x 6.30 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position)

251.9 x 381.9 x 501.2 mm / 9.9 x 15.04 x 19.73 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position)

251.9 x 491.9 x 501.2 mm / 9.9 x 19.37 x 19.73 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

43.4 x 326.5 x 501.2 mm / 1.71 x 13.54 x 19.73 inch

Weight Packed (kg/lbs.)

6.84 kg / 15.05 lbs.

Weight Unpacked (kg/lbs.)

4.85 kg / 10.67 lbs.

Weight (Monitor Head Only) (kg/lbs.)

2.87 kg / 6.31 lbs.

SPECIAL FEATURES

Anti-Glare

Yes

Thin Client Support (Tiny)

Yes (by Tiny Clamp Bracket Kit+VESA mount PN:4XFON82412+PN:4XFON03161)

MECHANICAL

Tilt Angle (front/back)

-5°/30°

Swivel Angle (left/right)

-45°/+45°

Lift (Max range)

110 mm

Pivot

-90°/+90°

VESA Mount

Yes (100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (Side)

2.3 mm

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable

1 x DP-DP cable

1 x VGA cable

Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

TCO

TCO 7.0/TCO Edge 2.0

EPEAT

Silver

ULE

Gold

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

Ambient Operating Temperature

0°C to 50°C

Eye Comfort Certification

Yes



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Specifications may vary depending upon region.

ThinkVision T23i-10 MONITOR



SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|--------------------------------|----------------------------------------------------------------------------------|----------------------------------|---------------------------------|
| Panel Size | 23 Wide | Size Packed (mm) | 590 x 187 x 422 |
| Panel Type | IPS | (inches) | 23.23" x 7.36" x 16.61" |
| Backlight | WLED | Size Unpacked with Stand (mm) | 522.2 x 264.2 x 337.7 |
| Resolution (H x V) | 1920 x 1080 | (inches) | 20.56" x 10.4" x 13.3" |
| Aspect Ratio | 16:9 | Size Monitor Head Only (mm) | 522.2 x 42.7 x 317.6 |
| Anti-Glare | Yes | (inches) | 20.56" x 1.68" x 12.5" |
| Borderless Screen | Yes | Stand Base Footprint Area (mm) | 218.7 x 218.7 |
| Screen Dimensions (W x H) (mm) | 517.2 x 302.8 | (inches) | 8.61" x 8.61" |
| (inches) | 20.36" x 11.92" | Weight Packed | Starting at 16.36 lbs (7.42 kg) |
| Maximum Brightness (Typical) | 250 cd/m ² | Unpacked | Starting at 10.85 lbs (4.92 kg) |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Monitor Head Only | Starting at 6.94 lbs (3.15 kg) |
| Contrast Ratio (Typical) | 1000:1 | | |
| Dynamic Contrast Ratio | 3M:1 | | |
| Pixel Pitch (mm) | 0.265 x 0.265 | | |
| Color Gamut NTSC (CIE 1931) | 72% | | |
| Color Support (Typical) | 16.7 Million | | |
| Response Time | 4/6/14 ms | | |
| CONNECTIVITY | | POWER CONSUMPTION | |
| Video Input Signals | VGA + HDMI 1.4 + DisplayPort 1.2 | Typical | 16 W |
| Video Cables Supplied (Length) | 1.8 m | Maximum | 45 W |
| Audio | Audio-Out | Sleep-Mode | <0.5 W |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | Switch Off-Mode | <0.5 W |
| | | Power Supply | Internal |
| | | Power Voltage | 100 VAC - 240 VAC |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5° / 30° | Arsenic-Free Glass | Yes |
| Swivel Angle (Left / Right) | +/-45° | PVC-Free | Yes; Without Cable |
| Lift (mm / inches) | 110 / 4.33" | Mercury-Free | Yes |
| Pivot | -90° / 90° | EPEAT | Silver |
| Cable Management | Yes | ENERGY STAR Rating | 8.0 |
| Kensington Lock | Yes | TCO | 7.0 |
| VESA Mounting | Yes (100 mm) | TCO Edge | 2.0 |
| Bezel Color | Raven Black | RoHS (EU 2002/95/EC) | Yes |
| Bezel Width | | China Energy Efficiency Standard | Tier 2 |
| Top (mm / inches) | 2 / 0.08" | Windows Certification | Windows 7 / Windows 10 |
| Bottom (mm / inches) | 23.7 / 0.93" | | |
| Sides (mm / inches) | 2 / 0.08" | | |



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Lenovo

ThinkVision T23i-20

DISPLAY

Panel Size
23-inch

Screen Dimensions
509.19 mm × 286.42 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2652 × 0.2652 mm

Dot/Pixel Per Inch (DPI/PPI)
95.78

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
75% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen 1
Type-B

USB Downstream
4 x USB 3.2 Gen 1
(1 x BC1.2)

POWER

Power Consumption (typ./max.)
14.5W / 52W

Power Consumption Sleep/Off Mode
< 0.5 W

Power Consumption Switch-off Mode
< 0.3 W

Energystar Power Consumption (P_{on}/E_{TEC})
10.52W / 33.73kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Tiny Bracket Support
Yes (sold separately)

Nano Bracket Support
Yes (sold separately)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 22.0 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
175 x 387 x 599 mm
6.89 x 15.24 x 23.58 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
200 x 404.34 x 521.8 mm
7.87 x 15.92 x 20.54 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
200 x 554.34 x 521.8 mm
7.87 x 21.82 x 20.54 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
44.82 x 316.31 x 521.8 mm
1.76 x 12.45 x 20.54 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
111.62 mm

Max. Distance from Table to Panel (highest pixel at bottom of screen, mm)
398.04 mm

Weight Packed (kg/lbs.)
7.5 kg / 16.53 lbs.

Weight Unpacked (kg/lbs.)
5.59 kg / 12.32 lbs.

Weight (monitor head only) (kg/lbs.)
3.32 kg / 7.32 lbs.

Full Container Load (40' STD / 20' STD)
1260 / 600 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to Type-B cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision E24-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
527.04 mm x 296.46 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
92

Viewing angle (H x V @ CR 10:1)
178° / 178°

Response Time
14ms

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Color Depth
8-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

MULTI-MEDIA

Integrated Speakers
Yes (2 x 1.5W)

POWER

Power Consumption (typ./max)
18W / 24W

**Power Consumption
Sleep/Off Mode**
< 0.5W

**Power Consumption
Switch Off-Mode**
< 0.5W

**ENERGY STAR Power Consumption
(P_{on}/E_{TEC})**
12.98W / 40.98kWh

Power Supply
Internal

Voltage Required
AC 90 to 264 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 22°

Lift (max range)
155 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre Tiny Support*
Yes, by Sandwich Mounting Kit
(PN: 4XHON04098)

Kensington Lock Slot
Yes

Bezel Color
Raven Black

Bezel Width (side)
3.1 mm

Bezel Width (top/bottom)
3.1 / 20.9 mm

DIMENSION

**Size Packed
(D x H x W, mm/inch)**
145.0 x 397.0 x 638.0 mm
5.71 x 15.63 x 25.12 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(lowest position)**
178.6 x 317.1 x 541.8 mm
7.03 x 12.48 x 21.33 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(highest position)**
178.6 x 462.5 x 541.8 mm
7.03 x 18.21 x 21.33 inches

**Size Unpacked w/o Stand
(head only)(D x H x W,
mm/inch)**
41.7 x 326.4 x 541.8 mm
1.64 x 12.85 x 21.33 inches

Weight Packed (kg/lbs.)
5.70 kg / 12.57 lbs.

Weight Unpacked (kg/lbs.)
4.80 kg / 10.58 lbs.

**Weight (Monitor Head Only)
(kg/lbs.)**
3.10 kg / 6.83 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (2011/65/EU)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



* Optional support.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision E24-28

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
534.44 mm x 303.66 mm

Panel Type
In-Plane Switching

Active Area
527.04 mm x 296.46 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 mm x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
93

Viewing angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme mode)
6ms (Normal mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

* Optional support.

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

MULTI-MEDIA

Integrated Speakers
Yes (2 x 1.5W)

POWER

Power Consumption (typ./max)
18W / 24W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch Off-Mode
< 0.5W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
13W / 41kWh

Power Supply
Internal

Voltage Required
AC 90 to 264 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 22°

Swivel Angle (left/right)
-360° / 360°

Lift (max range)
155 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre Tiny Support*
Yes, by Sandwich Mounting Kit (PN: 4XH0N04098)

Kensington Lock Slot
Yes

Bezel Color
Raven Black

Bezel Width (side)
3.1 mm

Bezel Width (top/bottom)
3.1 / 20.9 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
145.0 x 397.0 x 638.0 mm
5.71 x 15.63 x 25.12 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
178.6 x 317.1 x 541.8 mm
7.03 x 12.48 x 21.33 inches

Size Unpacked w/ Stand D x H x W, mm/inch) (highest position)
178.6 x 462.5 x 541.8 mm
7.03 x 18.21 x 21.33 inches

Size Unpacked w/o Stand (head only)(D x H x W, mm/inch)
41.7 x 326.4 x 541.8 mm
1.64 x 12.85 x 21.33 inches

Weight Packed (kg/lbs.)
5.70 kg / 12.57 lbs.

Weight Unpacked (kg/lbs.)
4.80 kg / 10.58 lbs.

Weight (Monitor Head Only) (kg/lbs.)
3.10 kg / 6.83 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (2011/65/EU)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



Windows



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision E24q-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
534.7 mm x 313.2 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
526.9 mm x 296.4 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2058 mm x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)
123

Viewing angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
75 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
16.7 Million

Color Depth
8-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5mm)

MULTI-MEDIA

Integrated Speakers
Yes (2 x 2W)

POWER

Power Consumption (typical/max)
22W / 32W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
17W / 53kWh

Power Supply
Internal

Voltage Required
AC 100 - 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 22°

Swivel Angle (left/right)
360°

Lift (Max range)
155 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre Tiny Support*
Yes, by Sandwich Mounting Kit
(PN: 4XH0N04098)

Kensington Lock Slot
Yes

Bezel Color
Raven Black

DIMENSION

Size Packed (D x H x W, mm/inch)
421.0 x 159.0 x 690.0 mm
16.57 x 6.26 x 27.17 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (Lowest Position)
180.3 x 320.6 x 539.8 mm
7.10 x 12.62 x 21.25 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (Highest Position)
180.3 x 475.6 x 539.8 mm
7.10 x 18.72 x 21.25 inches

Size Unpacked w/o Stand (D x H x W, mm/inch) (Head Only)
44.0 x 325.7 x 539.8 mm
1.73 x 12.82 x 21.25 inches

Weight Packed (kg/lb)
7.0 kg / 15.5 lbs.

Weight Unpacked (kg/lb)
5.0 kg / 11.1 lbs.

Weight (Monitor Head Only) (kg/lb)
3.3 kg / 7.3 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8m)
1 x HDMI cable (1.8m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

TÜV Rheinland Flicker Free
Yes

TÜV Low Blue Light (Hardware Solution)
Yes

Eyesafe Display Certification
Yes



* Optional support.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision P24h-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
526.85 mm x 296.35 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)
123

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB,
99% BT.709,
84% DCI-P3

Color Support (typical)
16.7 Million

Processor LUT
8-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1
(DP1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 (Out)

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

Ethernet
Yes (10M/100M/1000M)

USB Upstream
1 x USB 3.1 Gen1
(by USB Type-C Gen1)

USB Downstream
4 x USB 3.1 Gen1 (1 x BC1.2)

MULTI-MEDIA

Integrated Speakers
Yes (2 x 1W)

Optional Soundbar Support
Yes (PN OA36190)

SPECIAL FEATURES

Factory Calibration
Yes (Avg. ΔE<2)

Software
Yes (ThinkColor 2.0)¹

POWER

Power Consumption (typ./max.)
23W / 132W

Power Consumption Sleep/Off Mode
≤0.5W

Power Consumption Switch-off Mode
≤0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
18.1W / 57.4kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 75 W²

Smart Power
Yes

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2 mm

Bezel Width (top/bottom)
2 / 21.4 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
620 x 149 x 423 mm
24.4 x 5.9 x 16.7 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205 x 420 x 539.8 mm
8.07 x 16.5 x 21.3 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205 x 570 x 539.8 mm
8.07 x 22.4 x 21.3 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
44.6 x 325.7 x 539.8 mm
1.8 x 12.8 x 21.3 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
117.9 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
415 mm

Weight Packed (kg/lbs.)
8.1 kg / 17.86 lbs.

Weight Unpacked (kg/lbs.)
6.18 kg / 13.6 lbs.

Weight (monitor head only) (kg/lbs.)
3.85 kg / 7.89 lbs.

Full Container Load (40' STD/20' STD)
1395 / 645 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
Factory calibration report
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

¹This software can only be used with Windows 10
²up to 75 W power delivery to compatible devices by USB Type-C

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.



ThinkVision P24h-2L

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
535 mm x 313 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
526.85 mm x 296.35 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)
123

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB, 99% BT.709,
83% DCI-P3

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C³ Gen1
(DP1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 (Out)

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

Ethernet
Yes

USB Upstream
1 x USB 3.2 Gen1
(by USB Type-C Gen1)

USB Downstream
4 x USB 3.2 Gen1 (1 x BC1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN 0A36190)

SPECIAL FEATURES

Software
Lenovo ThinkColour (Lenovo
Display Control Center)²

POWER

Power Consumption (typ./max.)
23W / 132W

**Power Consumption
Sleep/Off Mode**
≤ 0.5W

**Power Consumption
Switch-off Mode**
≤ 0.3W

**ENERGY STAR Power
Consumption (P_{on}/E_{TEC})**
18.1W / 57.4kWh

Power Supply
Internal

**USB Type-C Power
Delivery (W)**
up to 75 W⁴

Smart Power¹
Yes

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (Max range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

**ThinkCentre M Series
Tiny Support**
Yes, by Tiny/Nano monitor
clamp II (PN: 4XH0Z42451)
and Tiny VESA mount II
(PN: 4XF0N03161)

**ThinkCentre M Series
Nano Support**
Yes, by Tiny/Nano monitor
clamp II (PN: 4XH0Z42451)
and Nano VESA mount(PN:
4XF0V81630)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 mm / 21.4 mm

DIMENSION

**Size Packed (D x H x W,
mm/inch)**
620.0 x 423.0 x 149.0 mm
24.40 x 16.70 x 5.90 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(lowest position)**
205.0 x 420.0 x 539.80 mm
8.07 x 16.53 x 21.25 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch)
(highest position)**
205.0 x 570.0 x 539.8 mm
8.07 x 22.44 x 21.25 inches

**Size Unpacked w/o Stand
(head only) (D x H x W, mm/inch)**
46.6 x 325.7 x 539.8 mm
1.83 x 12.82 x 21.25 inches

Weight Packed (kg/lbs.)
8.46 kg / 18.65 lbs.

Weight Unpacked (kg/lbs.)
6.39 kg / 14.09 lbs.

**Weight (monitor head only)
(kg/lbs.)**
4.10 kg / 9.04 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
(US & Canada only)
1 x USB Type-C to Type-C cable
(1.8 m)
1 x USB Type-C to Type-A cable
(1.8 m) (US & Canada only)
Factory calibration report
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

**TÜV Low Blue Light
(Hardware Solution)**
Yes

Eyesafe Display Certification
Yes



¹The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device.

²This software can only be used with Windows 10

³USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum.

⁴Up to 75 W power delivery to compatible devices by USB Type-C. Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision P24q-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
526.85 mm x 296.35 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)
123

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB,
99% BT.709,
84 % DCI-P3

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 (out)

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB3.1 Gen1 Type-B

USB Downstream
4 x USB3.1 Gen1 (1 x BC1.2)

SPECIAL FEATURES

Factory Calibration
Yes (Avg. Delta E<2)

Software
Lenovo ThinkColour (Lenovo
Display Control Center)¹

POWER

Power Consumption (typical/max)
20W / 61W

Power Consumption Sleep/Off Mode
≤ 0.5W

Power Consumption Switch-off Mode
≤ 0.3W

**ENERGY STAR Power Consumption
(P_{on}/E_{TEC})**
16.04W / 51.61kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (Max range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 X 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 21.4 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
620 x 149 x 423 mm /
24.4 x 5.9 x 16.7 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch) (lowest position)**
205 x 420 x 539.8 mm /
8.07 x 16.5 x 21.3 inches

**Size Unpacked w/ Stand
(D x H x W, mm/inch) (highest position)**
205 x 570 x 539.8 mm /
8.07 x 22.4 x 21.3 inches

**Size Unpacked w/o Stand
(head only) (D x H x W, mm/inch)**
44.6 x 325.7 x 539.8 mm /
1.8 x 12.8 x 21.3 inches

**Min. Distance from Table to Panel
(lowest pixel at bottom of screen, mm)**
117.9 mm

**Max. Distance from Table to Panel
(highest pixel at top of screen, mm)**
415 mm

Weight Packed (kg/lbs.)
8.1 kg / 17.86 lbs.
Weight Unpacked (kg/lbs.)
6.18 kg / 13.6 lbs.

Weight (monitor head only) (kg/lbs.)
3.85 kg / 7.89 lbs.

Full Container Load (40' STD / 20' STD)
1395 / 645 units

WHAT'S IN THE BOX

MONITOR WITH STAND
1 X POWER CABLE (1.8 M)
1 X DP CABLE (1.8 M)
1 X USB TYPE-A TO TYPE-B CABLE (1.8 M)
FACTORY CALIBRATION REPORT
QUICK SETUP GUIDE

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



¹This software can only be used with Windows 10

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB Specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision S24e-20

DISPLAY

Panel Size

23.8-inch

Screen Dimensions

531.73 mm x 340.80 mm

Panel Type

3-side NearEdgeless, VA

Active Area

527.04 mm x 296.46 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)

93

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)

6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

3000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-Glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4

1 x VGA

Audio Signal

1 x Audio Out (3.5 mm)

MULTIMEDIA

Optional Soundbar Support

Yes (PN number: OA36190)

SPECIAL FEATURES

Sync Technology

AMD FreeSync™*

POWER

Power Consumption (typical/max)

17.5W / 23.5W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.5W

Energystar Power Consumption (P_{on}/E_{TEC})

12W / 36 kWh

Power Supply

Internal

Voltage Required

AC 100 to 240V (50–60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre M Series Tiny Support

Yes, by Tiny VESA mount II

(PN: 4XFON03161)

ThinkCentre M Series Nano Support

Yes, by Nano VESA mount

(PN: 4XFOV81630)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.5 mm

Bezel Width (top/bottom)

2.5 / 22.4 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

624.0 x 124.0 x 415.0 mm

24.57 x 4.88 x 16.34 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch) (lowest position)

173.1 x 434.5 x 540.4 mm

6.81 x 17.10 x 21.28 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch) (highest position)

173.1 x 434.5 x 540.4 mm

6.81 x 17.10 x 21.28 inches

Size Unpacked w/o stand (Head Only)

(D x H x W)(mm/inch)

45.5 x 327.2 x 540.4 mm

1.79 x 12.88 x 21.28 inches

Weight Packed (kg/lbs.)

5.42 kg / 11.95 lbs.

Weight Unpacked (kg/lbs.)

3.82 kg / 8.42 lbs.

Weight (Monitor Head Only) (kg/lbs.)

3.02 kg / 6.66 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x HDMI cable (1.8 m)

Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

RoHS (EU 2002/95/EC)

Yes

EPEAT

Gold

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes



*AMD FreeSync™ is enabled for AMD Radeon™ Series graphics cards.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

ThinkVision S24e-10

DISPLAY

Panel Size

23.8-inch

Screen Dimensions (H x V)

527.04 x 296.46 mm

Panel Type

3-side NearEdgeless, VA

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch (H x V)

0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)

92

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time (gray to gray)

4 ms (Extreme Mode)

6 ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

3000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut NTSC (CIE 1931)

72% NTSC

Color Support

16.7 Million

CONNECTIVITY

Video Signal

1 x VGA

1 x HDMI 1.4

Video Cable Length

1.8 m

Audio Signal

1 x Audio Out (3.5 mm)

MULTI-MEDIA

Optional Speakers Support

Yes

SPECIAL FEATURES

Sync Technology

FreeSync™

Thin Client Support (Tiny)

Yes (by VESA mount PN:4XF0N03161)

Anti-glare

Yes

POWER

Power Consumption (Typ./Max)

24W / 31W

Power Consumption Sleep/Off Mode

< 0.3W

Power Consumption Switch-Off Mode

< 0.3W

Power Supply

Internal

Voltage Required

AC 100 to 240 V (47/63 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount

Yes (100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (Side)

2.0 mm

Bezel Width (top / bottom)

2.0 / 22 mm

DIMENSION

Size Packed (D x H x W) (mm/inch)

122 x 405 x 639 mm /

4.80 x 15.94 x 25.16 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position)

200.0 x 402.7 x 539.5 mm /

7.87 x 15.85 x 21.24 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position)

200.0 x 402.7 x 539.5 mm /

7.87 x 15.85 x 21.24 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

41.5 x 325.7 x 539.5 mm /

1.63 x 12.82 x 21.24 inch

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

99.0 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)

399.9 mm

Weight Packed (kg/lbs.)

4.84kg / 10.67 lbs.

Weight Unpacked (kg/lbs.)

3.36kg / 7.41 lbs.

Weight (Monitor Head Only) (kg/lbs.)

3.07kg / 6.77 lbs.

Full Container Load (40' STD / 20' STD)

1660 / 800 Units

WHAT'S IN THE BOX

Monitor with stand

interchange

Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

EPEAT

Silver

ULE

Gold

RoHS (EU 2002/95/EC)

Yes (2011/65/EU)

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

Low Blue Light

Yes



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Specifications may vary depending upon region.

Lenovo

ThinkVision S24e-20

DISPLAY

Panel Size

23.8-inch

Screen Dimensions

531.73 mm x 340.80 mm

Panel Type

3-side NearEdgeless, VA

Active Area

527.04 mm x 296.46 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)

93

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)

6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

3000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-Glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4

1 x VGA

Audio Signal

1 x Audio Out (3.5 mm)

MULTIMEDIA

Optional Soundbar Support

Yes (PN number: OA36190)

SPECIAL FEATURES

Sync Technology

AMD FreeSync™*

POWER

Power Consumption (typical/max)

17.5W / 23.5W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.5W

Energystar Power Consumption (P_{on}/E_{TEC})

12W / 36 kWh

Power Supply

Internal

Voltage Required

AC 100 to 240V (50–60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre M Series Tiny Support

Yes, by Tiny VESA mount II

(PN: 4XFON03161)

ThinkCentre M Series Nano Support

Yes, by Nano VESA mount

(PN: 4XFOV81630)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.5 mm

Bezel Width (top/bottom)

2.5 / 22.4 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

624.0 x 124.0 x 415.0 mm

24.57 x 4.88 x 16.34 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch) (lowest position)

173.1 x 434.5 x 540.4 mm

6.81 x 17.10 x 21.28 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch) (highest position)

173.1 x 434.5 x 540.4 mm

6.81 x 17.10 x 21.28 inches

Size Unpacked w/o stand (Head Only)

(D x H x W)(mm/inch)

45.5 x 327.2 x 540.4 mm

1.79 x 12.88 x 21.28 inches

Weight Packed (kg/lbs.)

5.42 kg / 11.95 lbs.

Weight Unpacked (kg/lbs.)

3.82 kg / 8.42 lbs.

Weight (Monitor Head Only) (kg/lbs.)

3.02 kg / 6.66 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x HDMI cable (1.8 m)

Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

RoHS (EU 2002/95/EC)

Yes

EPEAT

Gold

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes



*AMD FreeSync™ is enabled for AMD Radeon™ Series graphics cards.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

ThinkVision S24q-10

DISPLAY

Panel Size

23.8-inch

Screen Dimensions

526.85 mm x 296.35 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)

124

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (extreme mode)

Refresh Rate

60 Hz

Brightness (typical)

240 cd/m²

Brightness (peak)

300 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

> 99% sRGB

Color Support (typical)

16.7 Million

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x DP 1.2

Audio Signal

1 x Audio Out (3.5 mm)

SPECIAL FEATURES

Tiny Support

Yes

POWER

Power Consumption (typical/max)

20W / 31W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.3W

Power Supply

Internal

Energystar Power Consumption (P_{on}/E_{TEC})

16.76 W / 52.75 kWh

Voltage Required

AC 100 to 240 V (47/63 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

Kensington™ Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2 mm

Bezel Width (top/bottom)

2 / 21.4 mm

DIMENSION

Size Packed (D x H x W, mm/inch)

122 x 405 x 639 mm /
4.80 x 15.94 x 25.16 inches

Size Unpacked w/stand (D x H x W, mm/inch) (lowest position)

200 x 402.7 x 539.8 mm /
7.87 x 15.85 x 21.25 inches

Size Unpacked w/stand (D x H x W, mm/inch) (highest position)

200 x 402.7 x 539.8 mm /
7.87 x 15.85 x 21.25 inches

Size Unpacked w/o Stand (D x H x W, mm/inch) (head only)

42 x 325.7 x 539.8 mm /
1.65 x 12.82 x 21.25 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

98.4 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)

399.9 mm

Weight Packed (kg/lb)

5.10 kg / 11.24 lbs.

Weight Unpacked (kg/lb)

3.50 kg / 7.72 lbs.

Weight (monitor head only) (kg/lb)

3.21 kg / 7.08 lbs.

Full Container Load (40' STD / 20' STD)

1660 / 800 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR® Rating

8.0

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT™

Silver

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Eye Comfort

Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T24d-10 MONITOR

SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|-------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------|---------------------------------|
| Panel Size | 24" | Size Packed (mm) | 160 x 655 x 422 |
| Panel Type | In-Plane Switching | (inches) | 6.3" x 25.79" x 16.61" |
| Resolution | 1920 x 1200 | Size Unpacked with Stand (mm) | 533.2 x 260.4 x 497.4 |
| Backlight | WLED | (inches) | 20.99" x 10.25" x 19.58" |
| Aspect Ratio | 16:10 | Size Monitor Head Only (mm) | 533.2 x 42.3 x 355.1 |
| Pixel Pitch (W x H) (mm) | 0.27 x 0.27 | (inches) | 20.99" x 1.67" x 13.98" |
| Dot/Pixel Per Inch (DPI/PPI) | 94 PPI | Distance from Table to Panel | |
| Anti-Glare | Yes | Lowest Pixel at Bottom of Screen (mm / inches) | 56 / 2.2" |
| Screen Dimensions (W x H) (mm) | 518.4 x 324 | Highest Pixel at Top of Screen (mm / inches) | 490 / 19.29" |
| (inches) | 20.41" x 12.75" | Stand Base Footprint Area (mm) | 250 x 250 |
| Maximum Brightness (Typical) | 300 cd/m ² | (inches) | 9.84" x 9.84" |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Weight | |
| Contrast Ratio (Typical) | 1000:1 | Packed | Starting at 19.18 lbs (8.7 kg) |
| Dynamic Contrast Ratio | 3M:1 | Unpacked | Starting at 12.41 lbs (5.63 kg) |
| Color Gamut (CIE 1931) | 99% sRGB | Monitor Head Only | Starting at 8.77 lbs (3.98 kg) |
| Display Colors (Typical) | 16.7 Million | | |
| Response Time | | | |
| Extreme | 4 ms | | |
| Typical | 7 ms | | |
| Off | 15 ms | | |
| SIGNAL INPUT | | POWER CONSUMPTION | |
| Video Input Signals | VGA + DisplayPort 1.2 + HDMI 1.4 | Typical | 22 W |
| Video Cables Supplied | VGA + DisplayPort + HDMI | Maximum | 64 W |
| Video Cable Length | 1.8 m | Sleep-Mode | <0.3 W |
| USB Hub | USB 3.0 ¹ | Switch Off-Mode | <0.3 W |
| USB Cable Supplied | Yes | Power Supply | Internal |
| Audio-Out | Yes (3.5 mm) | Power Voltage | 100 VAC - 240 VAC |
| | | Voltage Dynamic Frequency | 50 Hz - 60 Hz |
| SIGNAL INTERFACE / PERFORMANCE | | ENVIRONMENTAL | |
| Horizontal Frequency | 30 kHz - 83 KHz | Temperature | |
| Vertical Frequency | 50 Hz - 75 Hz | Operating | 0°C - 40°C |
| Native Resolution | 1920 x 1200 | Non-Operating | -20°C - 60°C |
| Maximum Pixel Clock Speed/Bandwidth | | Humidity | |
| VGA | 205 MHz | Operating | 10% - 80% |
| HDMI™ | 165 MHz | Non-Operating | 5% - 95% |
| DisplayPort™ | 165 MHz | Altitude | |
| Default Color Temperature | 6500 K | Operating | 0 m - 5000 m |
| Preset Display Modes | 20 | Non-Operating | 0 ft - 40,000 ft |
| OSD Buttons | 5 | Arsenic-Free Glass | Yes |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | PVC-Free | Yes |
| | | Mercury-Free | Yes |
| | | PCC % of Plastic Resins | >85% |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5°/ 30° | EPEAT | Silver |
| Swivel Angle (Left / Right) | +/-45° | ENERGY STAR Rating | 8.0 |
| Lift (mm) | 110 | ULE | Gold |
| Pivot | +/-90° | TCO | TCO Display 7.0 / TCO Edge 2.0 |
| VESA® Mount (mm x mm) | 100 x 100 | RoHS (EU 2002/95/EC) | Yes |
| Cable Management | Yes | China Energy Efficiency Standard | Tier 2 |
| Kensington® Lock | Yes | Windows Certification | Windows 7 / Windows 10 |
| Bezel Color | Business Black | | |
| Bezel Width | | | |
| Top (mm / inches) | 2 / 0.08" | | |
| Bottom (mm / inches) | 22.7 / 0.89" | | |
| Sides (mm / inches) | 2 / 0.08" | | |
| WARRANTY AND AVAILABILITY | | | |
| Warranty | 3 Years | | |
| Geography Availability | WW | | |

* NA only.

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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Lenovo

ThinkVision T24h-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
526.85 mm x 296.35 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2058 x 0.2058 mm

Dot/Pixel Per Inch (DPI/PPI)
123

Viewing Angle
(H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio
(typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1
(DP 1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1
(by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN number: 0A36190)

POWER

Power Consumption (typical/max)
23W / 120W

Power Consumption Sleep/Off Mode
≤ 0.5W

Power Consumption Switch-off Mode
≤ 0.3W

Energystar Power Consumption (P_{on}/E_{TEC})
16.36W / 53.37kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 75W*

Smart Power
Yes

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 24.1 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)
620 x 149 x 423 mm
24.4 x 5.9 x 16.7 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205 x 420 x 539.8 mm
8.07 x 16.5 x 21.3 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205 x 570 x 539.8 mm
8.07 x 22.4 x 21.3 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
44.6 x 325.7 x 539.8 mm
1.8 x 12.8 x 21.3 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
117.9 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
415 mm

Weight Packed (kg/lbs.)
8.1 kg / 17.86 lbs.

Weight Unpacked (kg/lbs.)
6.18 kg / 13.6 lbs.

Weight (monitor head only) (kg/lbs.)
3.85 kg / 7.89 lbs.

Full Container Load (40' STD / 20' STD)
1395 / 645 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T24i-10 MONITOR



SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|--------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------|
| Panel Size | 23.8" Wide | Size Packed (mm) | 422 x 622 x 190 |
| Panel Type | In-Plane Switching | (inches) | 16.61" x 24.48" x 7.48" |
| Backlight | WLED | Size Unpacked with Stand | |
| Resolution (H x V) | 1920 x 1080 | Lowest Position (mm) | 540.2 x 261.75 x 373.4 |
| Aspect Ratio | 16:9 | (inches) | 21.26" x 10.3" x 14.7" |
| Anti-Glare | Yes | Highest Position (mm) | 540.2 x 261.75 x 483.4 |
| Near Edgeless Screen | Yes | (inches) | 21.26" x 10.3" x 19" |
| Screen Dimensions (W x H) (mm) | 527.04 x 296.46 | Size Unpacked without Stand (Monitor Head Only) (mm) | 540.2 x 46.45 x 325.98 |
| (inches) | 20.75" x 11.67" | (inches) | 21.26" x 1.82" x 12.83" |
| Maximum Brightness (Typical) | 250 cd/m ² | Stand Base Footprint Area (mm) | 250 x 250 |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | (inches) | 9.84" x 9.84" |
| Contrast Ratio (Typical) | 1000:1 | Weight | |
| Dynamic Contrast Ratio | 3M:1 | Packed | Starting at 16.39 lbs (7.45 kg) |
| Pixel Pitch (mm) | 0.2745 x 0.2745 | Unpacked | Starting at 11.33 lbs (5.15 kg) |
| Color Gamut (CIE 1931) | 72% NTSC | Monitor Head Only | Starting at 7.26 lbs (3.3 kg) |
| Color Support (Typical) | 16.7 Million | Full Container Load (40' STD / 20' STD) | 1140 / 540 Units |
| Response Time (gray to gray) | 4 ms (Extreme mode) 6 ms (Normal mode) | | |
| OSD Controls | | | |
| Buttons | 5 | | |
| Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | | |
| CONNECTIVITY | | POWER CONSUMPTION | |
| Video Input Signals | VGA + HDMI 1.4 + DisplayPort 1.2 | Typical | 16.5 W |
| Video Cables Supplied (Length) | 1.8 m | Maximum | 55 W |
| USB Hub | 1 x USB 3.0 ¹ (Upstream) 4 x USB 3.0 ¹ (Downstream, Incl. 1 BC) | Sleep-Mode | <0.5 W |
| Audio Out | Yes (3.5 mm) | Switch Off-Mode | <0.3 W |
| | | Power Supply | Internal |
| | | Power Voltage | 90 VAC - 264 VAC |
| MECHANICAL | | WHAT'S IN THE BOX | |
| Tilt Angle (Front / Back) | -5° / 30° | Monitor with Stand | |
| Swivel Angle (Left / Right) | +/-45° | 1 x Power Cable | |
| Lift Range (mm) | 110 | 1 x VGA Cable | |
| Pivot | +/-90° | 1 x DisplayPort - DisplayPort Cable | |
| Cable Management | Yes | 1 x HDMI Cable (NA Only) | |
| Kensington Lock | Yes | Quick Setup Guide | |
| VESA Mount (mm x mm) | Yes (100 X 100) | | |
| Bezel Color | Raven Black | | |
| Bezel Width | | | |
| Top (mm / inches) | 2 / 0.08" | | |
| Sides (mm / inches) | 2 / 0.08" | | |
| | | CERTIFICATIONS | |
| | | EPEAT | Silver |
| | | ENERGY STAR Rating | 8.0 |
| | | TCO | 7.0 |
| | | TCO Edge | 2.0 |
| | | ULE | Gold |
| | | RoHS (EU 2002/95/EC) | Yes |
| | | China Energy Efficiency Standard | Tier 2 |
| | | Windows Certification | Windows 7 / Windows 10 |
| | | TüV Eye Comfort Certification | Yes |

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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Lenovo

ThinkVision T24i-19 MONITOR



SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D) | |
|--------------------------------|----------------------------------------------------------------------------------|-------------------------------------|---------------------------------|
| Panel Size | 23.8" Wide | Size Packed | 422 x 622 x 190 |
| Panel Type | In-Plane-Switching | (mm) | |
| Backlight | WLED | (inches) | 16.61" x 24.48" x 7.48" |
| Resolution | FHD (1920 x 1080) | Size Unpacked with Stand | |
| Aspect Ratio | 16:9 | Lowest Position | |
| Anti-Glare | Yes | (mm) | 540.2 x 261.75 x 373.4 |
| Near Edgeless Screen | Yes | (inches) | 21.26" x 10.3" x 14.7" |
| Screen Dimensions (W x H) | | Highest Position | |
| (mm) | 527.04 x 296.46 | (mm) | 540.2 x 261.75 x 483.4 |
| (inches) | 20.75" x 11.67" | (inches) | 21.26" x 10.3" x 19" |
| Brightness | 250 nits | Size Unpacked without Stand | |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | (Monitor Head Only) | |
| Contrast Ratio (Typical) | 1000:1 | (mm) | 540.2 x 46.45 x 325.98 |
| Dynamic Contrast Ratio | 3M:1 | (inches) | 21.26" x 1.82" x 12.83" |
| Speakers | 2 x 2W | Stand Base Footprint Area | |
| Pixel Pitch (mm) | 0.2745 x 0.2745 | (mm) | 250 x 250 |
| Color Gamut (CIE 1931) | 72% NTSC | (inches) | 9.84" x 9.84" |
| Color Depth | 8 bit | Weight | |
| Color Support (Typical) | 16.7 Million | Packed | Starting at 16.39 lbs (7.45 kg) |
| Response Time (GtG) | | Unpacked | Starting at 11.33 lbs (5.15 kg) |
| Extreme / Normal | 4 ms / 6 ms | Monitor Head Only | Starting at 7.26 lbs (3.3 kg) |
| OSD Controls | | Full Container Load | 1140 / 540 Units |
| Buttons | 5 | | |
| Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | | |
| CONNECTIVITY | | POWER CONSUMPTION | |
| Video Input Signals | VGA + HDMI + DisplayPort | Typical | 16.5 W |
| Video Cables Supplied | VGA, DisplayPort, USB, Power, HDMI (for NA only) | Maximum | 59 W |
| USB Hub | USB 3.0 ¹ (4 x down, 1 x BC) | Sleep-Mode | <0.5 W |
| Audio Out | Yes (3.5 mm) | Switch Off-Mode | <0.3 W |
| Power | Internal | Power Supply | Internal |
| Soundbar Support* | Yes | Power Voltage | 90 VAC - 264 VAC |
| MECHANICAL | | ENERGY STAR (P _{on}) | 13.67 W |
| Tilt Angle (Front / Back) | -5°/ 30° | ENERGY STAR (E _{TEC}) | 43.51 kWh |
| Swivel Angle (Left / Right) | +/-45° | WHAT'S IN THE BOX | |
| Lift Range (mm) | 110 | Monitor with Stand | |
| Pivot | +/-90° | 1 x Power Cable | |
| Stand | LTPS | 1 x VGA Cable | |
| Cable Management | Yes | 1 x DisplayPort - DisplayPort Cable | |
| Kensington Lock | Yes | 1 x HDMI Cable (NA Only) | |
| VESA Mount (mm x mm) | Yes (100 X 100) | Quick Setup Guide | |
| Bezel Color | Raven Black | CERTIFICATIONS | |
| Bezel Width | | EPEAT | Silver |
| Top (mm / inches) | 2 / 0.08" | ENERGY STAR Rating | 8.0 |
| Sides (mm / inches) | 2 / 0.08" | TCO | 7.0 |
| | | TCO Edge | 2.0 |
| | | ULE | Gold |
| | | RoHS (EU 2002/95/EC) | Yes |
| | | China Energy Efficiency Standard | Tier 2 |
| | | Windows Certification | Windows 7 / Windows 10 |
| | | TÜV Eye Comfort Certification | Yes |
| | | TINY Support | Yes |

* Optional.

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: ~ 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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Lenovo

ThinkVision T24i-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
527.04 mm x 296.46 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
93

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Brightness (peak)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen1

USB Downstream
4 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN 0A36190)

POWER

Power Consumption (typ./max.)
14W / 55W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
12.35W / 38.83kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Tiny Bracket Support
Yes (sold separately)

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 mm / 22.2 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
422.0 x 187.0 x 622.0 mm
16.61 x 7.36 x 24.49 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205.0 x 409.3 x 539.8 mm
8.07 x 16.11 x 21.25 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205.0 x 559.3 x 539.8 mm
8.07 x 22.02 x 21.25 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
46.8 x 326.5 x 539.8 mm
1.84 x 12.85 x 21.25 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
106.62 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
557.0 mm

Weight Packed (kg/lbs.)
8.17 kg/18.01 lbs

Weight Unpacked (kg/lbs.)
5.90 kg/13.01 lbs.

Weight (monitor head only) (kg/lbs.)
3.30 kg/7.28 lbs.

Full Container Load (40' STD/20' STD)
1140/540 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to B cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T24i-2L

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
535.0 mm x 313.0 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
527.04 mm x 296.46 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
93

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen1

USB Downstream
4 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN: 0A36190)

POWER

Power Consumption (typ./max.)
16W / 55W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
13W / 46kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

ThinkCentre M Series Tiny Support
Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) and Tiny VESA mount II (PN: 4XF0N03161)

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 mm / 22.2 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
422.0 x 160.0 x 618.0mm
16.61 x 6.30 x 24.33 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205.0 x 409.3 x 539.8mm
8.07 x 16.11 x 21.25 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205.0 x 559.3 x 539.8mm
8.07 x 22.02 x 21.25 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
44.1 x 326.5 x 539.8mm
1.74 x 12.85 x 21.25 inches

Weight Packed (kg/lbs.)
8.40kg / 18.52 lbs.

Weight Unpacked (kg/lbs.)
5.90 kg / 13.01 lbs.

Weight (monitor head only) (kg/lbs.)
3.65kg / 8.05 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to B cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

Eyesafe Display Certification
Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision T24m-10 MONITOR

SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|----------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------|
| Panel Size | 23.8" | Size Packed (mm) | 422 x 622 x 190 |
| Panel Type | In-Plane Switching | (inches) | 16.61" x 24.48" x 7.48" |
| Backlight | WLED | Size Unpacked with Stand | |
| Resolution | 1920 x 1080 | Lowest Position (mm) | 540.2 x 261.75 x 373.4 |
| Aspect Ratio | 16:9 | (inches) | 21.26" x 10.3" x 14.7" |
| Anti-Glare | Yes | Highest Position (mm) | 540.2 x 261.75 x 483.4 |
| Screen Dimensions (W x H) (mm) | 527.04 (H) x 296.46 (V) | (inches) | 21.26" x 10.3" x 19" |
| Maximum Brightness (Typical) | 250 cd/m ² | Size Unpacked without Stand (Monitor Head Only) (mm) | 540.2 x 46.45 x 325.98 |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | (inches) | 21.26" x 1.82" x 12.83" |
| Contrast Ratio (Typical) | 1000:1 | Distance from Table to Panel | |
| Dynamic Contrast Ratio (Typical) | 3M:1 | Lowest Pixel at Bottom of Screen (mm / inches) | 70.37 / 2.77" |
| Pixel Pitch (mm) | 0.2745 (H) x 0.2745 (V) | Highest Pixel at Top of Screen (mm / inches) | 476.8 / 18.77" |
| Dot/Pixel Per Inch (DPI/PPI) | 92 | Stand Base Footprint Area (mm / inches) | 250 x 250 / 9.84" x 9.84" |
| Color Gamut (CIE 1931) | 72% NTSC | Weight | |
| Response Time (gray to gray) | 4 ms (Extreme mode) 6 ms (Normal mode) | Packed | Starting at 16.39 lbs (7.45 kg) |
| | | Unpacked | Starting at 11.33 lbs (5.15 kg) |
| | | Monitor Head Only | Starting at 7.26 lbs (3.3 kg) |
| | | Full Container Load (40' STD / 20' STD) | 1140 / 540 Units |
| POWER CONSUMPTION | | SPECIAL FEATURES | |
| Typical | 19 W | Thin Client Support (Tiny) | Yes |
| Maximum | 116 W | | (by Tiny Clamp Bracket Kit + VESA Mount) |
| Sleep-Mode | <0.5 W | | |
| Switch Off-Mode | <0.5 W | | |
| Power Supply | Internal | | |
| Power Voltage | 90 VAC - 264 VAC | | |
| Voltage Dynamic Frequency | 47 Hz - 63 Hz | | |
| CONNECTIVITY | | WHAT'S IN THE BOX | |
| Video Input Signals | HDMI 1.4 + DisplayPort 1.2a + USB Type-C | Monitor with Stand | |
| Video Cables Supplied | USB Type-C to Type-C Cable | 1 x Power Cable | |
| Video Cable Length | 1.8 m | 1 x USB Type-C™ to Type-C™ Cable | |
| USB Hub | Yes 1 x USB 3.0 ¹ (Upstream, by USB Type-C) 4 x USB 3.0 ¹ (Downstream, incl. 1BC) | Quick Setup Guide | |
| Audio-Out | Yes (3.5 mm) | | |
| MECHANICAL | | CERTIFICATIONS | |
| Tilt Angle (Front / Back) | -5° / 30° | EPEAT | Silver |
| Swivel Angle (Left / Right) | +/-45° | ENERGY STAR Rating | 8.0 |
| Lift Range (mm) | 110 | ULE | Gold |
| Pivot | +/-90° | TCO | TCO 7.0 / TCO Edge 2.0 |
| VESA Mount (mm x mm) | Yes (100 x 100) | RoHS (EU 2002/95/EC) | Yes |
| Kensington Lock Slot | Yes | Windows Certification | Windows 7 / Windows 10 |
| Cable Management | Yes | China Energy Efficiency Standard | Tier 2 |
| Bezel Color | Raven Black | TÜV Eye Comfort Certification | Yes |
| Bezel Width | | | |
| Top (mm / inches) | 2 / 0.08" | | |
| Sides (mm / inches) | 2 / 0.08" | | |

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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ThinkVision T24m-20

DISPLAY

Panel Size

23.8-inch

Screen Dimensions

535.1 mm x 313.1 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Active Area

527.0 mm x 296.5 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.2745 mm x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)

93

Viewing angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Color Depth

8-bit (6+FRC)

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x USB Type-C¹ Gen1
(DP1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2
1 x DP Out

Audio Signal

1 x Audio Out (3.5mm)

USB Hub

Yes

Ethernet

Yes (10M/100M/1000M)

USB Upstream

1 x USB3.2 Gen1
(1 by USB Type-C¹)

USB Downstream

4 x USB3.2 Gen1
(1 x BC1.2)

SPECIAL FEATURES

Software

Lenovo ThinkColour³ (Lenovo
Display Control Center)

POWER

Power Consumption (Typ./Max)

22W / 140W

Power Consumption

Sleep/Off Mode

< 0.5W⁴

Power Consumption

Switch-Off Mode

< 0.3W

Energystar Power Consumption (Pon/E_{TEC})

15W / 49kWh

Power Supply

Internal

USB Type-C¹ (DP Alt Mode) power delivery

Up to 90W⁵

Smart Power²

Yes

Voltage Required

AC 90 to 264 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 35°

Swivel Angle (left/right)

-45° / 45°

Lift (Max range)

150 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre M Series Tiny support

Yes, by Tiny monitor clamp II
(PN: 4XH0Z42451)
& Tiny VESA mount II
(PN: 4XF0N03161)

ThinkCentre M Series Nano support

Yes, by Nano monitor clamp II
(PN: 4XH0Z42451)
& Nano VESA mount
(PN: 4XF0V81630)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width(side)

2.0 mm

Bezel Width(top/bottom)

2.0 / 22.0 mm

DIMENSION

Size Packed

(D x H x W, mm/inch)

161.0 x 480.0 x 604.0 mm
6.34 X 18.89 X 23.78 inches

Size Unpacked w/stand

(D x H x W)(mm/inch)

(Lowest position)
204.9 x 417.1 x 539.8 mm
8.09 x 16.42 x 21.25 inches

Size Unpacked w/stand

(D x H x W)(mm/inch)

(Highest position)
204.9 x 567.1 x 539.8 mm
8.09 x 22.33 x 21.25 inches

Size Unpacked w/o stand

(Head Only) (D x H x W)

(mm/inch)
44.4 x 325.9 x 539.8 mm
1.75 x 12.83 x 21.25 inches

Weight Packed (kg/lb)

8.9 kg / 19.7 lbs.

Weight Unpacked (kg/lb)

6.1 kg / 13.5 lbs.

Weight (Monitor Head Only) (kg/lb)

3.6 kg / 8.0 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8m)

1 x DP cable (1.8m) for US, Canada

1 x USB Type-C to Type-A cable (1.8m)

for US, Canada

1 x USB Type-C to Type-C cable (1.8m)

Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

EU(2011/65/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

TÜV Rheinland Flicker Free

Yes

TÜV Low Blue Light (Hardware Solution)

Yes

Eyesafe Display Certification

Yes



¹ USB Type-C[®] and USB-C[®] are registered trademarks of USB Implementers Forum. ² The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device. Up to 90W power delivery to compatible devices by USB Type-C, typical power delivery is 65W. ³ This software can only be used with Windows 10. ⁴ For DP/HDMI mode. ⁵ Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

ThinkVision T24t-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
535.12 mm x 313.12 mm

Panel Type
3-side NearEdgeless

Active Area
527.04 mm x 296.46 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 mm x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
93

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
16.7 Million

Touch
Yes (10-point Projected Capacitive Touch)

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen 1 (DP 1.2 Alt Mode)
4 x USB Gen 1 (1 x BC1.2)
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.2 Gen 1 (1 by USB Type-C)

USB Downstream
4 x USB 3.2 Gen1 (1 x BC1.2)

SPECIAL FEATURE

Software
Lenovo ThinkColour
(Lenovo Display Control Center)⁴

POWER

Power Consumption (typical/max)
25W/150W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

Energystar Power Consumption (P_{on}/E_{TEC})
17W / 56 kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 90W³

Smart Power
Yes

Voltage Required
AC 100 to 240 V (50—60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 70°

Lift (Max range)
90 mm

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 22.2 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)
622.0 x 172.0 x 421.0 mm
24.49 x 6.77 x 16.57 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
244.1 x 340.5 x 539.8 mm
9.61 x 13.41 x 21.25 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
244.1 x 430.5 x 539.8 mm
9.61 x 16.95 x 21.25 inches

Size Unpacked w/o stand (Head Only) (D x H x W)(mm/inch)
44.1 x 326.5 x 539.8 mm
1.74 x 12.85 x 21.25 inches

Weight Packed (kg/lbs.)
8.31 kg/18.32 lbs.

Weight Unpacked (kg/lbs.)
5.85 kg/12.90 lbs.

Weight (Monitor Head Only) (kg/lbs.)
3.79 kg/8.36 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) for US, Canada
1 x USB Type-C to A cable (1.8 m) for US, Canada
1 x USB Type-C to C cable
Quick setup guide

CERTIFICATION

ENERGY STAR Certification
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

TÜV Low Blue Light (Hardware Solution)
Yes

Eyesafe Display Certification
Yes



¹ Capable to work with selected compatible Android and Chrome system. ²USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum. ³Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration and may decline with downstream USB ports connected or higher brightness setting. ⁴This software can only be used with Windows 10. Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

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ThinkVision T24v-10 MONITOR

SPECIFICATIONS

| DISPLAY | | ENVIRONMENTAL | |
|--------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|
| Panel Size | 23.8" | Temperature | |
| Panel Type | In-Plane Switching | Operating | 0°C – 40°C |
| Backlight | WLED | Non-Operating | -20°C – 60°C |
| Resolution | 1920 x 1080 | Humidity | |
| Aspect Ratio | 16:9 | Operating | 10% – 80% |
| Anti-Glare | Yes | Non-Operating | 5% – 95% |
| Screen Dimensions (W x H) (mm) | 527.04 x 296.46 | Altitude | |
| Maximum Brightness (Typical) | 250 cd/m ² | Operating | 0 m – 8000 m |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Non-Operating | 0 ft – 40,000 ft |
| Contrast Ratio (Typical) | 1000:1 | Arsenic-Free Glass | Yes |
| Dynamic Contrast Ratio | 3M:1 | PVC-Free | Yes |
| Pixel Pitch (W x H) (mm) | 0.25 x 0.25 | Mercury-Free | Yes |
| Dot/Pixel Per Inch (DP/PPI) | 102 | PCC % of Plastic Resins | >85% |
| Color Gamut (CIE 1931) | 72% sRGB | | |
| Response Time (Extreme/Typical/Off) | 4/6/14 ms (G-to-G) | | |
| POWER CONSUMPTION | | DIMENSIONS (W x D x H) | |
| Typical | 20 W | Size Packed | |
| Maximum | 45 W | (mm) | 608 x 395 x 187 |
| Sleep-Mode | <0.5 W | (inches) | 23.94" x 15.55" x 7.36" |
| Switch Off-Mode | <0.3 W | Size Unpacked with Stand | |
| Power Supply | Internal | Lowest Position | |
| Power Voltage | 90 VAC – 264 VAC | (mm) | 540.2 x 261.9 x 390.5 |
| Voltage Dynamic Frequency | 47 Hz – 63 Hz | (inches) | 21.28" x 10.32" x 15.39" |
| | | Highest Position | |
| SIGNAL INPUT | | (mm) | 540.2 x 261.9 x 500.5 |
| Video Input Signals | HDMI 1.4 + DisplayPort 1.2 + VGA | (inches) | 21.28" x 10.32" x 19.72" |
| Video Cables Supplied | HDMI (ROW) + DisplayPort + VGA + USB 3.0 ¹ | Size Unpacked without Stand (Monitor Head Only) | |
| Video Cable Length | 1.8 m | (mm) | 540.2 x 43.8 x 343.7 |
| USB Hub | Yes | (inches) | 21.27" x 1.72" x 13.53" |
| USB Cable Supplied | Yes | Distance from Table to Panel | |
| Audio-Out | Yes (3.5 mm) | Lowest Pixel at Bottom of Screen | |
| SIGNAL INTERFACE / PERFORMANCE | | (mm / inches) | 69.6 / 2.74" |
| Horizontal Frequency | 30 kHz – 81 kHz | Highest Pixel at Top of Screen | |
| Vertical Frequency | 50 Hz – 75 Hz | (mm / inches) | 69.6 / 2.74" |
| Native Resolution | 1920 x 1080 | Stand Base Footprint Area | |
| Maximum Pixel Clock Speed/ Bandwidth | VGA : 205 MHz HDMI : 165 MHz DisplayPort : 165 MHz | (mm / inches) | 242.5 x 212.8 / 9.55" x 8.38" |
| Default Color Temperature | 6500K | Weight | |
| Preset/User Modes | 27/21 | Packed | Starting at 15.78 lbs (7.16 kg) |
| OSD Buttons | 5+2 Buttons | Unpacked | Starting at 11.18 lbs (5.07 kg) |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | Monitor Head Only | Starting at 7.3 lbs (3.31 kg) |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5° / 30° | EPEAT | Silver |
| Swivel Angle (Left / Right) | +/-45° | ENERGY STAR Rating | 8.0 |
| Lift (mm) | Yes (110) | ULE | Gold |
| Pivot | +/-90° | TCO | TCO Display 7.0 / TCO Edge 2.0 |
| VESA Mount (mm) | Yes (100 x 100) | RoHS (EU 2002/95/EC) | Yes |
| Kensington Lock Slot | Yes | Windows Certification | Windows 7 / Windows 10 |
| Cable Management | Yes | China Energy Efficiency Standard | Grade 2 |
| Bezel Color | Raven Black | TÜV Eye Comfort | Yes |
| Bezel Width | | WARRANTY AND AVAILABILITY | |
| Top (mm / inches) | 2 / 0.08" | Warranty | |
| Bottom (mm / inches) | 22 / 0.87" | ROW | 3 Years |
| Sides (mm / inches) | 2 / 0.08" | PRC | 18 Months |
| | | Geography Availability | WW |



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Lenovo

ThinkVision T24v-20

DISPLAY

Panel Size
23.8-inch

Screen Dimensions
527.04 mm x 296.46 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.2745 x 0.2745 mm

Dot/Pixel Per Inch (DPI/PPI)
93

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
250 cd/m²

Brightness (peak)
250 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x HDMI 1.4
1 x DP 1.2
1 x VGA

Audio Signal
1 x Audio Combo (3.5 mm; in/out)

USB Hub
Yes

USB Upstream
1 X USB 3.2 Gen1

USB Downstream
2 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Integrated Webcam
Yes (1080p)

Integrated Microphone
Yes

Integrated Speakers
Yes (2 x 3W)

SPECIAL FEATURES

Software
Lenovo ThinkColour (Lenovo
Display Control Center)¹

POWER

Power Consumption (Typ./Max)
13W / 44W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
11.36W / 35.68kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
150 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre M Series Tiny support
Yes (sold separately)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
1.8 mm

Bezel Width (top/bottom)
1.8 mm / 22.0 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
418.0 x 187.0 x 644.0 mm
16.46 x 7.36 x 25.35 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
205.0 x 434.0 x 539.8 mm
8.07 x 17.0 x 21.2 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
205.0 x 584.0 x 539.8 mm
8.07 x 23.0 x 21.2 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
48.35 x 344.3 x 539.8 mm
1.9 x 13.55 x 21.25 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
114.1 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
560.56 mm

Weight Packed (kg/lbs.)
7.86 kg/17.33 lbs.

Weight Unpacked (kg/lbs.)
5.94 kg/13.10 lbs.

Weight (monitor head only) (kg/lbs.)
3.48 kg/7.67 lbs.

Full Container Load (40' STD / 20' STD)
1012/440 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-A to Type-B cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



¹This software can only be used with Windows 10

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision T25d-10

DISPLAY

Panel Size
25.0 inches

Screen Dimensions (H x V)
533.45 x 338.76mm

Panel Type
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:10

Resolution
1920 x 1200 pixels

Refresh Rate
60Hz

Pixel Pitch (H x V)
0.2789 x 0.2823mm

Viewing Angle (H x V)
178°/178°

Response Time (gray to gray)
4ms (extreme mode)
6ms (normal mode)

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Brightness (typical)
300 cd/m²

Color Gamut sRGB (CIE 1931)
99%

Color Support
16.7M

CONNECTIVITY

Video Input Signals
HDMI 1.4 + DP 1.2 + VGA

Video Cables Supplied
DP + HDMI*

Video Cable Length
1.8m

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1

USB Downstream
4 x USB 3.1 Gen1 (with 1 BC)

Audio Out
Yes (3.5mm)

POWER

Power Consumption (Typical/Max)
25W/66W

Power Consumption Sleep/Off Mode
<0.5W

Power Consumption Switch Off-Mode
<0.3W

Power Supply
Internal

ENERGY STAR (P_{on})
16.54W

ENERGY STAR (E_{tec})
52.06kWh

Voltage Required
100-240VAC (50/60Hz)

DIMENSIONS

Size Packed (D x H x W)
706 x 450 x 160mm/
27.79 x 17.72 x 6.30 inches

Size Unpacked w/stand (D x H x W)(mm/inch) (Lowest position)
260.4 x 399.5 x 548.7mm/
10.25 x 15.73 x 21.60 inches

Size Unpacked w/stand (D x H x W)(mm/inch) (Highest position)
260.4 x 509.5 x 548.7mm/
10.25 x 20.06 x 21.60 inches

Size Unpacked w/o stand (D x H x W)(mm/inch) (Head Only)
43.0 x 369.1 x 548.7mm/
1.69 x 14.53 x 21.60 inches

Weight Packed
7.8kg/17.20lbs.

Weight Unpacked
5.5kg/12.13lbs.

Weight (Monitor Head Only)
3.58kg/7.89lbs.

SPECIAL FEATURES

Anti-glare
Yes

Optional Soundbar Support
Yes

ThinkCentre Tiny Support
Yes

MECHANICAL

Tilt Angle (front/back)
-5°/30°

Swivel Angle (left/right)
+/-45°

Lift
Yes (110mm)

Pivot
+/-90°

VESA Mount Capability
Yes (100 x 100mm)

Kensington Lock Slot
Yes

Bezel Width (Side)
2.0mm

Bezel Width (top/bottom)
2.0/22.2mm

WHAT'S IN THE BOX

Monitor with stand
1 x Power Cable
1 x USB 3.1 Gen1 Cable
1 x HDMI Cable*
1 x DP Cable
Quick Setup Guide

CERTIFICATIONS

ENERGY STAR Rating
8.0

EU RoHS
Yes

CCC
Yes

TCO
TCO 8.0/TCO Edge 2.0

EPEAT
Silver

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 2

TÜV Eye Comfort
Yes



*For NA and LA only

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T25m-10

DISPLAY

Panel Size

25.0 inches

Screen Dimensions (H x V)

535.45 x 338.76mm

Panel Type

In-Plane Switching

Backlight

WLED

Aspect Ratio

16:10

Resolution

1920 x 1200 pixels

Pixel Pitch (H x V)

0.2789 x 0.2823mm

Viewing Angle (H x V)

178°/178°

Response Time (gray to gray)

4ms (extreme mode)

6ms (normal mode)

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Brightness (typical)

300 cd/m²

Color Gamut sRGB (CIE 1931)

99%

Color Support

16.7M

CONNECTIVITY

Video Input Signals

HDMI 1.4 + DP 1.2 + USB 3.1 Type-C
(DP 1.2 Alt Mode)

Video Cables Supplied

USB 3.1 Type-C

Video Cable Length

1.8m

USB Hub

Yes

USB Upstream

1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream

4 x USB 3.1 Gen1 (with 1 BC)

Audio Out

Yes (3.5mm)

POWER

Power Consumption (Typical/Max)

30W/150W

Power Consumption Sleep/Off Mode

<0.5W

Power Consumption Switch Off-Mode

<0.3W

Power Supply

Internal

ENERGY STAR (P_{on})

17.05W

ENERGY STAR (E_{TEC})

63.12kWh

Power Voltage

100-240VAC (50/60Hz)

DIMENSIONS

Size Packed (D x H x W)

706 x 450 x 160mm/
27.79 x 17.72 x 6.30 inches

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest position)

260.4 x 399.5 x 548.7mm/
10.25 x 15.73 x 21.60 inches

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest position)

260.4 x 509.5 x 548.7mm/
10.25 x 20.06 x 21.60 inches

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

43.0 x 369.1 x 548.7mm/
1.69 x 14.53 x 21.60 inches

Weight Packed

7.8kg/17.20lbs.

Weight Unpacked

5.5kg/12.13lbs.

Weight (Monitor Head Only)

3.58kg/7.89lbs.

SPECIAL FEATURES

Anti-glare

Yes

Smart Power*

Yes

ThinkCentre Tiny Support

Yes

Optional Soundbar Support

Yes

Internal Speakers

Yes (3W x 2)

MECHANICAL

Tilt Angle (front/back)

-5°/30°

Swivel Angle (left/right)

+/-45°

Lift

Yes (110mm)

Pivot

+/-90°

VESA Mount Capability

Yes (100 x 100mm)

Kensington™ Lock Slot

Yes

Bezel Width (Side)

2.0mm

Bezel Width (top/bottom)

2.0/22.2mm

WHAT'S IN THE BOX

Monitor with stand

1 x Power Cable

1 x USB Type-C to Type-C cable

Quick Setup Guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

EU RoHS

Yes

CCC

Yes

TCO

TCO 8.0/TCO Edge 2.0

EPEAT

Silver

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

TÜV Eye Comfort

Yes



*The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to other devices. 75W power delivery by USB Type-C can be achieved when downstream USB ports are not connected and OSD brightness setting is <31.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

Specifications

DISPLAY

Panel Size
27-inch

Screen Dimensions
608.80 mm x 354.10 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
596.74 mm x 335.66 mm

Backlight
Mini-LED
(with 1152 zones local dimming)

Aspect Ratio
16:9

Resolution
3840 x 2160

Pixel Pitch
0.1554 mm x 0.1554 mm

Dot/Pixel Per Inch(DPI/PPI)
163

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
620 cd/m²

Brightness (peak)
1200 cd/m²

Contrast Ratio (typical)
1100:1
1M:1(HDR)

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99.5% DCI-P3,
100% sRGB,
100% BT.709,
73% BT.2020

Color Depth
10-bit (8+FRC)

Processor LUT
14-bit

Color Support (typical)
1.07 Billion

HDR Compliance
Dolby Vision® Approved
DisplayHDR™ 1000
HDR10
HLG

Local Dimming
1152 zones

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen2
(DP1.4 Alt Mode)
3 x HDMI 2.0
1 x DP 1.4
1 x DP 1.4 (Out)³

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
2 x USB3.2 Gen1 (1 by USB
Type-C, 1 by USB Type-B)
USB Downstream
4 x USB3.2 Gen1 (1x BC1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN 0A36190)

SPECIAL FEATURES

Factory Calibration
Yes (avg. ΔE<1)

PIP/PBP
Yes

KVM Switch
Yes

Software
Lenovo ThinkColour²
(Lenovo Display Control Center)

POWER

Power Consumption (Typ./Max)
70W / 270W

Power Consumption Sleep/Off
Mode
< 0.5W

Power Consumption Switch-Off
Mode
< 0.3W

Power Supply
Internal

USB Type-C Power Delivery(W)
Up to 100W¹

Smart Power
Yes

Voltage Required
AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)
-5°/ 35°

Swivel Angle (left/right)
+45°/ -45°

Lift (max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre M Series Tiny
support
Yes, by Tiny/Nano monitor clamp
II (PN: 4XH0Z42451) & Tiny VESA
mount II (PN: 4XFON03161)

ThinkCentre M Series Nano
support
Yes, by Tiny/Nano monitor clamp
II (PN: 4XH0Z42451) & Tiny VESA
mount II (PN: 4XFON03161)

Kensington Lock Slot
Yes

Headphone Hook
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width(side)
2.0 mm

Bezel Width(top/bottom)
2.0 / 16.0 mm

WHAT' IN THE BOX

Monitor with stand
1 x Power cable (1.8m)
1 x DP cable (1.8m)
1 x HDMI cable (1.8m)
1 x USB Type-C to Type-C cable
(1.5m)
1 x USB Type-A to Type-B cable
(1.8m)
Shading Hood
Factory Calibration Report
Quick Setup Guide

DIMENSION

Size Packed (D x H x W, mm/
inch)
758 x 493 x 200 mm
29.84 x 19.41 x 7.87 inches

Size Unpacked w/stand (D x H x
W)(mm/inch) (Lowest position)
234.1 x 458.8 x 613.1 mm
9.22 x 18.06 x 24.14 inches

Size Unpacked w/stand (D x H x
W)(mm/inch) (Highest position)
234.1 x 593.8 x 613.1 mm
9.22 x 23.38 x 24.14 inches

Size Unpacked w/o stand (Head
Only) (D x H x W)(mm/inch)
53.7 x 359.7 x 613.1 mm
2.11 x 14.16 x 24.14 inches

Weight Packed (kg/lb)
13.5kg / 29.76 lbs.

Weight Unpacked (kg/lb)
10.8kg / 23.81 lbs.

Weight (Monitor Head Only) (kg/
lb)
6.55kg / 14.44 lbs.

CERTIFICATION

CCC
Yes

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1 (professional monitor)

TÜV Rheinland Low Blue Light
Yes



¹ Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.
² Compatible with Windows 10 only
³ For USB Type-C input only
⁴ USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.

ThinkVision E27q-20

DISPLAY

Panel Size

27-inch

Screen Dimensions

608.8 mm x 355.3 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Active Area

596.7 mm x 335.7 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2331 mm x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)

108

Viewing angle (H x V @ CR 10:1)

178°/ 178°

Response Time

4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate

75 Hz

Brightness (typical)

350 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

99% sRGB

Color Support (typical)

16.7 Million

Color Depth

8-bit

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x DP 1.2

Audio Signal

1 x Audio Out (3.5mm)

MULTI-MEDIA

Integrated Speakers

Yes (2 x 2W)

POWER

Power Consumption

(typical/max)
30W / 40W

Power Consumption

Sleep/Off Mode
< 0.5W

Power Consumption

Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption

(P_{on}/E_{TEC})
21W / 65kWh

Power Supply

Internal

Voltage Required

AC 100 to 240 V (47-63 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

Swivel Angle (left/right)

360°

Lift (max range)

155 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre Tiny Support*

Yes, by Sandwich Mounting Kit
(PN: 4XH0N04098)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

DIMENSION

Size Packed

(D x H x W, mm/inch)
186.0 x 460.0 x 730.0mm
7.32 x 18.11 x 28.74 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch)
(Lowest position)
220.0 x 419.0 x 613.6mm
8.66 x 16.50 x 24.16 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch)
(Highest position)
220.0 x 574.0 x 613.6mm
8.66 x 22.60 x 24.16 inches

Size Unpacked w/o stand (Head Only)

(D x H x W)(mm/inch)
46.2 x 367.6 x 613.6mm
1.82 x 14.47 x 24.16 inches

Weight Packed (kg/lb)

9.0 kg / 19.9 lbs.

Weight Unpacked (kg/lb)

6.6 kg / 14.6 lbs.

Weight

(Monitor Head Only) (kg/lb)
4.5 kg / 9.8 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x HDMI cable (1.8m)
1 x Power cable (1.8m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Silver

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

TÜV Low Blue Light (Hardware Solution)

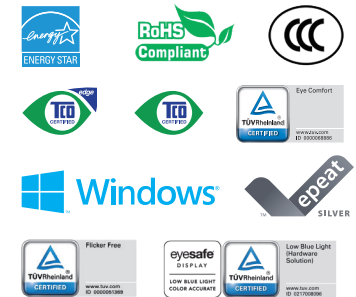
Yes

TÜV Rheinland Flicker Free

Yes

Eyesafe Certification

Yes



* Optional support.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision P27h-10 MONITOR



SPECIFICATIONS

| DISPLAY | | DIMENSIONS (W x D x H) | |
|--------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------|
| Panel Size | 27" Wide | Size Packed (mm) | 453 x 732 x 210 |
| Panel Type | IPS | (inches) | 17.83" x 28.82" x 8.27" |
| Backlight | WLED | Size Unpacked with Stand (mm) | 611.6 x 269.8 x 513 |
| Resolution | 2560 x 1440 | (inches) | 24.08" x 10.62" x 20.2" |
| Aspect Ratio | 16:9 | Size Unpacked without Stand (Monitor Head Only) (mm) | 611.6 x 45.5 x 368.4 |
| Anti-Glare | Yes | (inches) | 24.08" x 1.79" x 14.5" |
| Borderless Screen | Yes | Stand Base Footprint Area (mm / inches) | 260 x 260 / 10.24" x 10.24" |
| Screen Dimensions (W x H) (mm) | 596.74 (H) x 335.66 (V) | Weight | |
| Maximum Brightness (Typical) | 350 cd/m ² | Packed | Starting at 24.25 lbs (11 kg) |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Unpacked | Starting at 15.43 lbs (7 kg) |
| Contrast Ratio (Typical) | 1000:1 | Monitor Head Only | Starting at 11.02 lbs (5 kg) |
| Dynamic Contrast Ratio | 3M:1 | | |
| Pixel Pitch (mm) | 0.233 | | |
| Color Gamut (CIE 1931) | 99% sRGB | | |
| Display Colors (Typical) | 16.7 Million | | |
| Response Time | 4/6/15 ms (G-to-G) | | |
| SIGNAL INPUT | | MECHANICAL | |
| Video Input Signals | 2 x HDMI 1.4 + USB-C + DisplayPort 1.2 + DisplayPort-Out | Tilt Angle (Front / Back) | -5° / 30° |
| Video Cables Supplied (Length) | USB-C - USB-C Cable (NA only: HDMI, DisplayPort - DisplayPort, USB-C - USB-C) (1.8 m) | Cable Management | Yes |
| | | Kensington Lock | Yes |
| | | VESA Mounting | Yes (100 mm) |
| | | Bezel Color | Raven Black |
| | | Bezel Width | |
| | | Top (mm / inches) | 2 / 0.08" |
| | | Bottom (mm / inches) | 22.9 / 0.9" |
| | | Sides (mm / inches) | 2 / 0.08" |
| SIGNAL INTERFACE / PERFORMANCE | | | |
| Audio | Audio-Out | | |
| OSD Languages | English, French, Italian, German, Spanish, Japanese, Chinese, Russian | | |
| POWER CONSUMPTION | | COMPLIANCE | |
| Typical | 38 W | Arsenic-Free Glass | Yes |
| Maximum | 140 W | PVC-Free | Yes |
| Sleep-Mode | <0.5 W | Mercury-Free | Yes |
| Off-Mode | <0.5 W | EPEAT | Silver |
| Power Supply | Internal | ENERGY STAR Rating | 8.0 |
| Power Voltage | 100 VAC - 240 VAC | TCO | 7.0 |
| | | TCO Edge | 2.0 |
| | | TÜV Eye Comfort Certification | Yes |
| | | RoHS (EU 2002/95/EC) | Yes |
| | | China Energy Efficiency Standard | Tier 1 |
| | | Windows Certification | Windows 7 / Windows 10 |

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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Lenovo

ThinkVision P27h-20 Monitor

Specifications

DISPLAY

Panel Size
27-inch

Screen Dimensions
596.74 mm x 335.66 mm

Panel Type
4-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)
109

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB,
99% BT.709,
85% DCI-P3

Color Support (typical)
16.7 Million

Processor LUT
8-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C² Gen1 (DP1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 (Out)

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

Ethernet
Yes (10M/100M/1000M)

USB Upstream
1 x USB 3.1 Gen1 (by USB Type-C Gen1)

USB Downstream
4 x USB 3.1 Gen1 (1 x BC1.2)

MULTI-MEDIA

Integrated Speakers
Yes (2 x 1W)

Optional Soundbar Support
Yes (PN 0A36190)

SPECIAL FEATURES

Factory Calibration
Yes (Avg. Delta E<2)

Software
Lenovo ThinkColour (Lenovo Display Control Center)⁴

POWER

Power Consumption (typ./max.)
27W / 150W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption
(P_{on}/E_{TEC})
19W / 61kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 90 W³

Smart Power¹
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 2.0 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
182 x 463 x 722 mm
7.17 x 18.23 x 28.43 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch) (lowest position)
208 x 441.5 x 613.8 mm
8.19 x 17.38 x 27.17 inches

Size Unpacked w/ Stand
(D x H x W, mm/inch) (highest position)
208 x 576.5 x 613.8 mm
8.19 x 22.70 x 27.17 inches

Size Unpacked w/o Stand (head only)
(D x H x W, mm/inch)
46.9 x 353.8 x 613.8 mm
1.85 x 13.92 x 27.17 inches

Min. Distance from Table to Panel
(lowest pixel at bottom of screen, mm)
97.3 mm

Max. Distance from Table to Panel
(highest pixel at top of screen, mm)
567.9 mm

Weight Packed (kg/lbs.)
9.55 kg / 21.01 lbs.

Weight Unpacked (kg/lbs.)
7.35 kg / 16.17 lbs.

Weight (monitor head only) (kg/lbs.)
4.87 kg / 10.71 lbs.

Full Container Load (40' STD / 20' STD)
792 / 352 units

WHAT’S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
Factory calibration report
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



¹The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device.
²USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum.
³Listed as maximum capacity of power delivery. Actual capacity may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.
⁴This software can only be used with Windows 10

ThinkVision P27q-20

DISPLAY

Panel Size

27-inch

Screen Dimensions

596.74 mm x 335.66 mm

Panel Type

4-side NearEdgeless
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)

109

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (extreme mode)
6ms (normal mode)

Refresh Rate

60 Hz

Brightness (typical)

350 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

99% sRGB

Color Support (typical)

16.7 Million

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 (out)

Audio Signal

1 x Audio Out (3.5 mm)

USB Hub

Yes

USB Upstream

1 x USB3.1 Gen1 (by USB Type-B)

USB Downstream

4 x USB3.1 Gen1 (1 BC)

SPECIAL FEATURES

Software

Lenovo ThinkColour (Lenovo
Display Control Center)¹

POWER

Power Consumption (typical/max)

22W / 57W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.3W

ENERGY STAR Power Consumption

(P_{on}/E_{TEC})
18W / 57kWh

Power Supply

Internal

Voltage Required

AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 35°

Swivel Angle (left/right)

+45° / -45°

Lift (Max range)

135 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 X 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.0 mm

Bezel Width (top/bottom)

2.0 / 2.0 mm

DIMENSION

Size Packed (D x H x W, mm/inch)

182.0 x 463.0 x 722.0 mm /
7.17 x 18.23 x 28.43 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

208.0 x 441.5 x 613.8 mm /
8.19 x 17.38 x 27.17 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

208.0 x 576.5 x 613.8 mm /
8.19 x 22.70 x 27.17 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)

46.9 x 353.8 x 613.8 mm /
1.85 x 13.92 x 27.17 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

97.3 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)

567.9 mm

Weight Packed (kg/lbs.)

9.26 kg / 20.37 lbs.

Weight Unpacked (kg/lbs.)

7.12 kg / 15.7 lbs.

Weight (monitor head only) (kg/lbs.)

4.64 kg / 10.23 lbs.

Full Container Load (40' STD / 20' STD)

792 / 352 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-B to Type-A cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating

8.0

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes



¹This software can only be used with Windows 10

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: ~ 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

ThinkVision P27u-10 MONITOR

SPECIFICATIONS

| DISPLAY | | ENVIRONMENTAL | |
|-------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------|
| Panel Size | 27" | Temperature | |
| Panel Type | In-Panel Switching | Operating | 0°C – 45°C |
| Backlight | WLED | Non-Operating | -20°C – 60°C |
| Resolution | 3840 x 2160 | Humidity | |
| Aspect Ratio | 16:9 | Operating | 10% – 80% |
| Anti-Glare | Yes | Non-Operating | 5% – 95% |
| Screen Dimensions (W x H) (mm) | 596.74 (H) x 335.66 (V) | Altitude | |
| Maximum Brightness (Typical) | 350 cd/m ² | Operating | 0 ft – 5000 ft |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Non-Operating | 0 ft – 40,000 ft |
| Contrast Ratio (Typical) | 1000:1 | Arsenic-Free Glass | Yes |
| Dynamic Contrast Ratio | 3M:1 | PVC-Free | Yes (without Cable) |
| Pixel Pitch (mm) | 0.1554 (H) x 0.1554 (V) | Mercury-Free | Yes |
| Dot/Pixel Per Inch (DP/PPI) | 163 | PCC % of Plastic Resins | 0.85 |
| Color Gamut (CIE 1931) | 99.5% Adobe RGB | | |
| Color Support (Typical) | 1.07 Billion | | |
| Color Depth | 10-bit (8+ FRC) | | |
| Response Time | 4/6/14 ms (G-to-G) | | |
| POWER CONSUMPTION | | DIMENSIONS (W x D x H) | |
| Typical | 50 W | Size Packed | |
| Maximum | 160 W | (mm) | 453 x 732 x 210 |
| Sleep-Mode | <0.5 W | (inches) | 17.83" x 28.82" x 8.27" |
| Switch Off-Mode | <0.3 W | Size Unpacked with Stand | |
| Power Supply | Internal | Lowest Position | |
| Power Voltage | 100 VAC – 240 VAC | (mm) | 611.6 x 269.8 x 403.3 |
| Voltage Dynamic Frequency | 50 Hz – 60 Hz | (inches) | 24.08" x 10.62" x 15.88" |
| SIGNAL INPUT | | Highest Position | |
| Video Input Signals | 2 HDMI + DisplayPort + USB Type-C | (mm) | 611.6 x 269.8 x 513.3 |
| Video Cables Supplied | HDMI*, DisplayPort, USB Type-C | (inches) | 24.08" x 10.62" x 20.21" |
| Video Cable Length | 1.8 m | Size Unpacked without Stand (Monitor Head Only) | |
| USB Hub | Yes | (mm) | 611.6 x 45.5 x 368.4 |
| USB Cable Supplied | Yes (USB Type-C to Type-A Cable) | (inches) | 24.08" x 1.79" x 14.5" |
| Audio-Out | Yes | Distance from Table to Panel | |
| SIGNAL INTERFACE / PERFORMANCE | | Lowest Pixel at Bottom of Screen | |
| Horizontal Frequency | 30 kHz – 160 kHz | (mm / inches) | 60.2 / 2.37" |
| Vertical Frequency | 23 Hz – 80 Hz | Highest Pixel at Top of Screen | |
| Native Resolution | 3840 (H) x 2160 (V) | (mm / inches) | 505.8 / 19.91" |
| Maximum Pixel Clock Speed/Bandwidth | HDMI : 600 MHz DisplayPort : 5.4 Gbps USB Type-C : 5.4 Gbps/Lane | Stand Base Footprint Area | |
| Default Color Temperature | 6500K | (mm / inches) | 260 x 260 / 10.24" x 10.24" |
| Preset/User Modes | 27/20 | Weight | |
| OSD Buttons | 5 Buttons | Packed | Starting at 24.25 lbs (11 kg) |
| OSD Languages | English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian | Unpacked | Starting at 15.32 lbs (6.95 kg) |
| | | Monitor Head Only | Starting at 11.02 lbs (5 kg) |
| MECHANICAL | | COMPLIANCE | |
| Tilt Angle (Front / Back) | -5° / 30° | TCO | TCO Edge 2.0 |
| Swivel Angle (Left / Right) | +/-45° | RoHS (EU 2002/95/EC) | Yes |
| Lift (mm) | Yes (110) | Windows Certification | Windows 7 / Windows 10 |
| Pivot | +/-90° | China Energy Efficiency Standard | Tier 2 |
| VESA Mount (mm x mm) | Yes (100 x 100) | | |
| Kensington Lock Slot | Yes | | |
| Cable Management | Yes | | |
| Bezel Color | Raven Black | | |
| Bezel Width | | | |
| Top (mm / inches) | 2 / 0.08" | | |
| Bottom (mm / inches) | 24.5 / 0.96" | | |
| Sides (mm / inches) | 2 / 0.08" | | |
| | | WARRANTY AND AVAILABILITY | |
| | | Warranty | 3 Years |
| | | Geography Availability | WW |

Lenovo



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* NA only.

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

ThinkVision S27e-20

DISPLAY

Panel Size

27-inch

Screen Dimensions

612.49 mm x 367.69 mm

Panel Type

In-Plane Switching
3-side NearEdgeless

Active Area

597.89 mm x 336.31 mm

Backlight

LED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.3114 x 0.3114 mm

Dot/Pixel Per Inch (DPI/PPI)

82

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

72% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-Glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x VGA

Audio Signal

1 x Audio Out (3.5 mm)

MULTIMEDIA

Optional Soundbar Support

Yes (PN number: OA36190)

SPECIAL FEATURES

Sync Technology

AMD FreeSync™*

POWER

Power Consumption (typical/max)

18W / 24W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{tec})

48W / 115kWh

Power Supply

Internal

Voltage Required

AC 100 to 240 V (50—60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5°/22°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre M Series Tiny Support

Yes, by Tiny VESA mount II
(PN: 4XF0N03161)

ThinkCentre M Series Nano Support

Yes, by Nano VESA mount
(PN: 4XF0V81630)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.5 mm

Bezel Width (top/bottom)

2.5 / 22.4 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

126.0 x 455.0 x 710.0 mm
4.96 x 17.91 x 27.95 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

182.5 x 475.8 x 612.5 mm
7.18 x 18.73 x 24.11 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

182.5 x 475.8 x 612.5 mm
7.18 x 18.73 x 24.11 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)

43.2 x 367.7 x 612.5 mm
1.70 x 14.48 x 24.11 inches

Weight Packed (kg/lbs.)

6.42 kg / 14.15 lbs.

Weight Unpacked (kg/lbs.)

4.6kg / 10.14 lbs.

Weight (monitor head only) (kg/lbs.)

3.6kg / 7.94 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Silver

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

TÜV Rheinland Low Blue Light

Yes



*AMD FreeSync™ is enabled for AMD Radeon™ Series graphics cards.

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Specifications may vary depending upon region.

Lenovo

ThinkVision S27i-10

DISPLAY

Panel Size

27-inch

Screen Dimensions (W x H mm)

597.89 mm x 336.31 mm

Panel Type

3-side NearEdgeless,
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch (H x V) (mm)

0.3110 x 0.3110

Dot/Pixel Per Inch(DPI/PPI)

81

Viewing angle (H x V)

178°/ 178°

Response Time (gray to gray)

4 ms (extreme mode)

6 ms (normal mode)

Refresh rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut NTSC (CIE 1931)

72% NTSC

Color Support

16.7M

CONNECTIVITY

Video Input Signals

1 x VGA

1 x HDMI 1.4

Audio Out

1 x Audio Out (3.5 mm)

Optional Speaker Support

Yes

MULTI-MEDIA

Optional Soundbar Support

Yes

SPECIAL FEATURES

Sync technology

FreeSync

Thin Client Support (Tiny)

Yes

(by Tiny Clamp Bracket Kit+VESA
mount PN:4XFON82412+PN:4XFON03161)

Anti-glare

Yes

POWER

Power Consumption (Typ. / Max)

24W / 28W

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount

Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (Side)

2.0 mm

Bezel Width(top/bottom)

2.0 / 21.7 mm

DIMENSIONS

Size Packed (D x H x W) (mm/inch)

132 x 455 x 715 mm 5.20 x 17.91 x 28.15
inch

Size Unpacked w/stand (D x H x W) (mm/inch)

(Lowest Position)

220.0 x 443.5 x 611.9 mm 8.66 x 17.46 x
24.10 inch

Size Unpacked w/stand (D x H x W) (mm/inch)

(Highest Position)

269.8 x 513.3 x 611.9 mm / 10.62 x 20.21 x
24.09 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

46.2 x 366.5 x 611.9 mm 1.82 x 14.43 x
24.10 inch

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

98.7 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)

440.7 mm

Weight Packed (kg/lbs.)

6.80kg / 14.99 lbs.

Weight Unpacked (kg/lbs.)

4.76kg / 10.49 lbs.

Weight (Monitor Head Only) (kg/lbs.)

4.22kg / 9.30 lbs.

Full Container Load (40' STD / 20'STD)

1088 / 544 Units

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x HDMI cable (1.8 m)

Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

TCO

7.0

TCO Edge

2.0

EPEAT

Silver

ULE

Gold

RoHS (EU 2002/95/EC)

Yes(2011/65/EU)

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

TÜV Eye Comfort

Yes



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Specifications may vary depending upon region.

Lenovo

ThinkVision S27q-10

DISPLAY

Panel Size

27-inch

Screen Dimensions

596.74 mm x 335.66 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)

109

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (extreme mode)

Refresh Rate

60 Hz

Brightness (typical)

280 cd/m²

Brightness (peak)

350 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

> 99% sRGB

Color Support (typical)

1.07 Billion

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x DP 1.2

Audio Signal

1 x Audio Port (3.5 mm)

SPECIAL FEATURES

Tiny Support

Yes

POWER

Power Consumption (typical/max)

35W / 45W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.3W

Power Supply

Internal

Energystar Power Consumption (P_{on}/E_{TEC})

19 W / 59.6 kWh

Voltage Required

AC 100 to 240 VAC (50/60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

Kensington™ Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2 mm

Bezel Width (top/bottom)

2 / 22 mm

DIMENSION

Size Packed (D x H x W, mm/inch)

132 x 455 x 715 mm /
5.20 x 17.91 x 28.15 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

220 x 444.6 x 613.6 mm /
8.66 x 17.50 x 24.15 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

220 x 444.6 x 613.6 mm /
8.66 x 17.50 x 24.15 inches

Size Unpacked w/o Stand (D x H x W, mm/inch) (head only)

42 x 367.6 x 613.6 mm /
1.65 x 14.47 x 24.15 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

99 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)

442.2 mm

Weight Packed (kg/lb)

6.36 kg / 14.02 lbs.

Weight Unpacked (kg/lb)

4.65 kg / 10.25 lbs.

Weight (monitor head only) (kg/lb)

4.10 kg / 9.04 lbs.

Full Container Load (40' STD / 20' STD)

1088 / 544 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR® Rating

8.0

CCC

Yes

TCO

8.0

EPEAT™

Silver

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Window 7, Window 10

China Energy Efficiency Standard

Tier 1

TÜV Eye Comfort

Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision S28u-10

DISPLAY

Panel Size

28-inch

Screen Dimensions

631.928 mm x 359.78 mm

Panel Type

3-side NearEdgeless,
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

3840 x 2160

Refresh Rate

60 Hz

Pixel Pitch (H x V)

0.16 x 0.16

Dot/Pixel Per Inch (DPI/PPI)

157.35

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode)
6ms (Normal Mode)

Brightness (typical)

300 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

99% sRGB,
90% DCI-P3

Color Support (typical)

1.07 Billion

CONNECTIVITY

Video Input Signals

HDMI 2.0 + DP 1.2

Audio Signal

1 x Audio Out (3.5mm)

POWER

Power Consumption (Typical/Max)

31W / 48W

Power Consumption Sleep/Off Mode

<0.3W

Power Consumption Switch Off-Mode

<0.3W

Power Supply

Internal

Energystar Power Consumption (P_{on}/E_{TEC})

24.28W / 75.41kWh

Voltage Required

AC 90 to 264 V (50/60 Hz)

DIMENSIONS

Size Packed (D x H x W) (mm/inch)

127 x 723 x 452 mm /
5 x 28.46 x 17.80 inches

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest position)

229.99 x 450.82 x 636.94 mm /
9.05 x 17.72 x 25.08 inches

Size Unpacked w/o stand (D x H x W) (mm/inch) (Highest position)

229.99 x 450.82 x 636.94 mm /
9.05 x 17.72 x 25.08 inches

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

49.2 x 373.68 x 636.94 mm /
1.94 x 14.71 x 25.08 inches

Weight Packed

7.0 kg / 15.43 lbs.

Weight Unpacked

5.24 kg / 11.55 lbs.

Weight (Monitor Head Only)

4.58 kg / 10.10 lbs.

SPECIAL FEATURES

Anti-glare

Yes

ThinkCentre Tiny Support

Yes

MECHANICAL

Tilt Angle (front/back)

-5° / 22°

VESA Mount Capability

Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.0 mm

Bezel Width (top/bottom)

2.0 / 22.8 mm

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x HDMI cable (1.8 m)
Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

Eyesafe Display Certification

Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T27h-20

DISPLAY

Panel Size
27-inch

Screen Dimensions
596.74 mm x 335.66 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)
109

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1
(DP 1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1
(by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

POWER

Power Consumption (typ./max.)
23W / 122W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
18.1W / 57.6kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 75W*

Smart Power
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2 mm

Bezel Width (top/bottom)
2 / 23.87 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
694.0 x 163.0 x 480.0 mm
27.32 x 6.42 x 18.90 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
614.0 x 429.4 x 208.0 mm
24.17 x 16.9 x 8.19 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
614.0 x 564.4 x 208.0 mm
24.17 x 22.22 x 8.19 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
614.0 x 369.1 x 46.7 mm
24.17 x 14.53 x 1.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
85.2 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
564.4 mm

Weight Packed (kg/lbs.)
9.75 kg / 21.50 lbs.

Weight Unpacked (kg/lbs.)
7.6 kg / 16.76 lbs.

Weight (monitor head only) (kg/lbs.)
5.09 kg / 11.22 lbs.

Full Container Load (40' STD / 20' STD)
952 / 448 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T27h-2L

DISPLAY

Panel Size
27-inch

Screen Dimensions
596.74 mm x 335.66 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
596.74 mm x 335.66 mm

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)
109

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C¹ Gen1
(DP 1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1
(1 by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 x BC1.2)

SPECIAL FEATURES

Software
Lenovo ThinkColour (Lenovo
Display Control Center)³

POWER

Power Consumption (typ./max.)
23W / 122W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
18.1W / 57.6kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 75 W⁵

Smart Power²
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (Max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 23.87 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
694.0 x 163.0 x 480.0 mm
27.32 x 6.42 x 18.90 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
614.0 x 429.4 x 208.0 mm
24.17 x 16.9 x 8.19 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
614.0 x 564.4 x 208.0 mm
24.17 x 22.22 x 8.19 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
614.0 x 369.1 x 46.7 mm
24.17 x 14.53 x 1.84 inches

Weight Packed (kg/lbs.)
9.75 kg / 21.50 lbs.

Weight Unpacked (kg/lbs.)
7.6 kg / 16.76 lbs.

Weight (monitor head only) (kg/lbs.)
5.09 kg / 11.22 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (US & Canada only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-C to Type-A cable (1.8 m) (US & Canada only)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0
CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes

TÜV Rheinland Low Blue Light (Hardware Solution)
Yes

Eyesafe Display Certification
Yes



¹USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum.

²The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device.

³This software can only be used with Windows 10

⁴Compatible ThinkCentre Nano PCs include ThinkCentre M90n, ThinkCentre M90n IoT, ThinkCentre M75n, and ThinkCentre M75n IoT.

⁵Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T27hv-20

DISPLAY

Panel Size

27-inch

Screen Dimensions

608.78 mm x 355.13 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Active Area

596.74 mm x 335.67 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)

109

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (extreme mode)
6ms (normal mode)

Refresh Rate

60 Hz

Brightness (typical)

350 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

99% sRGB

Color Support (typical)

16.7 Million

Color Depth

8-bit

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x USB Type-C² Gen1
(DP1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2
1 x DP 1.2 out

Audio Signal

1 x Audio combo (3.5 mm; in/out)

USB Hub

Yes

Ethernet

Yes(10M/100M/1000M)

USB Upstream

1 x USB 3.2 Gen1
(1 by USB Type-C Gen1)

USB Downstream

4 x USB 3.2 Gen1 (1 x BC 1.2)

MULTI-MEDIA

Integrated Webcam

Yes (1080p)

Integrated Microphone

Yes

Integrated Speakers

Yes (2 x 3W)

SPECIAL FEATURES

Software

Lenovo ThinkColour (Lenovo
Display Control Center)¹
Yes (Glance by Mirametrix)¹

Smart Sensor

Yes

POWER

Power Consumption (typical/max)

25w/148w

Power Consumption Sleep/Off Mode

0.5W

Power Consumption Switch-off Mode

0.3W

ENERGY STAR Power Consumption (P_{on}/E_{SEC})

20.59w / 66.47 kWh

Power Supply

Internal

USB Type-C power delivery (W)

up to 90W³

Smart Power

Yes

Voltage Required

AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 35°

Swivel Angle (left/right)

+45° / -45°

Lift (max range)

135 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 x 100 mm)

ThinkCentre M Series Tiny support

Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) & Tiny VESA mount II (PN: 4XF0N03161)

ThinkCentre M Series Nano support

Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) & Nano VESA mount (PN: 4XF0V81630)

Kensington Lock Slot

Yes

Headphone Hook

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2.0 mm

Bezel Width (top/bottom)

2.0 / 50.07 mm

DIMENSION

Size Packed (D x H x W, mm/inch)

159.00 x 515.00 x 860.00mm
6.26 x 20.28 x 33.86 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

208.00 x 473.60 x 613.60mm
8.19 x 18.65 x 24.16 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

208.00 x 608.60 x 613.60mm
8.19 x 23.96 x 24.16 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)

45.50 x 412.60 x 613.60mm
1.79 x 16.24 x 24.16 inches

Weight Packed (kg/lbs.)

10.55kg / 23.26 lbs

Weight Unpacked (kg/lbs.)

7.35 kg / 16.20 lbs.

Weight (monitor head only) (kg/lbs.)

4.85kg / 10.69lbs

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x USB Type-C to Type-C cable (1.8 m)
1 x DP cable (1.8m) (NA only)
1 x HDMI cable (1.8m) (PRC only)
1 x USB Type-C to Type-A cable (1.8m) (NA only)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating

8.0

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 1

TÜV Rheinland Eye Comfort

Yes

TÜV Rheinland Low Blue Light

Yes

Eyesafe Display Certification

Yes



¹This software can only be used with Windows 10

²USB Type-C[®] and USB-C[®] are registered trademarks of USB Implementers Forum.

³Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

ThinkVision T27i-10

DISPLAY

Panel Size

27 inch

Screen Dimensions (H x V) (mm)

597.89 (H) × 336.31 (V)

Panel Type

In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch (H x V) (mm)

0.3110 × 0.3110

Viewing angle (H x V)

178° / 178°

Response Time (gray to gray)

4 ms (extreme mode)

6 ms (normal mode)

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut NTSC (CIE 1931)

72%

Color Support

16.7M

CONNECTIVITY

Video Input Signals

VGA + HDMI 1.4 + DP 1.2

USB Hub

Yes

1 x USB 3.0 (Upstream)

4 x USB 3.0 (Downstream, incl. 1BC)

Cable Length

1.8 m

Audio Out

Yes (3.5 mm)

Power Consumption

22W (Typical) / 58W (max) at On mode;

<0.5W at Sleep mode; <0.3W at Switch off mode

MULTI-MEDIA

Optional Soundbar Support

Yes

DIMENSIONS

Size Packed (D x H x W) (mm/inch)

187 x 455 x 715 mm / 7.362 x 17.913 x 28.15 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Lowest Position)

269.8 x 403.3 x 611.9 mm / 10.62 x 15.88 x 24.09 inch

Size Unpacked w/stand (D x H x W) (mm/inch) (Highest Position)

269.8 x 513.3 x 611.9 mm / 10.62 x 20.21 x 24.09 inch

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)

49.9 x 366.5 x 611.9 mm / 1.96 x 14.43 x 24.09 inch

Weight Packed (kg/lbs.)

9.32kg / 20.55 lbs.

Weight Unpacked (kg/lbs.)

6.55kg / 14.44 lbs.

Weight (Monitor Head Only) (kg/lbs.)

4.60kg / 10.14 lbs.

SPECIAL FEATURES

Anti-Glare

Yes

Thin Client Support (Tiny)

Yes

(by Tiny Clamp Bracket Kit+VESA

mount PN:4XFON82412+

PN:4XFON03161)

MECHANICAL

Tilt Angle (front/back)

-5°/30°

Swivel Angle (left/right)

-45°/+45°

Lift (Max range)

110 mm

Pivot

-90°/90°

VESA Mount

Yes (100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (Side)

2.0 mm

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable

1 x VGA cable

1 x DP-DP cable

1 x HDMI cable (NA only)

1 x USB 3.0 cable

Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating

8.0

CCC

Yes

TCO

8.0

EPEAT

Silver

ULE

Gold

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

Ambient Operating Temperature

0°C to 40°C

Eye Comfort Certification

Yes



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Specifications may vary depending upon region.

Lenovo

ThinkVision T27p-10

DISPLAY

Panel Size
27.0 inches

Screen Dimensions (H x V)
596.74 x 335.66mm

Panel Type
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
3840 x 2160 pixels

Pixel Pitch (H x V)
0.1554 x 0.1554mm

Viewing Angle (H x V)
178°/178°

Response Time (gray to gray)
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60Hz

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Brightness (typical)
350 cd/m²

Color Gamut sRGB (CIE 1931)
99%

Color Support
1.07 Billion

POWER

Power Consumption (Typical/Max)
50W/140W

Power Consumption Sleep/Off Mode
<0.5W

Power Consumption Switch Off-Mode
<0.3W

Power Supply
Internal

ENERGY STAR (P_{on})
23.40W

ENERGY STAR (E_{tec})
101.94kWh

Voltage Required
100-240VAC (50/60Hz)

CONNECTIVITY

Video Input Signals
HDMI 2.0 + DP 1.2 + USB 3.1 Type-C (DP 1.2 Alt Mode)

Video Cables Supplied
USB 3.1 Type-C + HDMI

Video Cable Length
1.8m

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (with 1 BC)

Audio Out

Yes (3.5mm)

DIMENSIONS

Size Packed (D x H x W)
732 x 210 x 453mm/
28.82 x 8.27 x 17.83 inches

Size Unpacked w/stand (D x H x W) (mm/inch)
269.8 x 403.3 x 611.6mm/
10.62 x 15.88 x 24.08 inches

Size Unpacked w/o stand (D x H x W) (mm/inch) (Head Only)
45.5 x 368.4 x 611.6mm/
1.79 x 14.5 x 24.08 inches

Weight Packed
11.00kg/24.25lbs.

Weight Unpacked
6.95kg/15.32lbs.

Weight (Monitor Head Only)
5.0kg/11.02lbs.

SPECIAL FEATURES

Smart Power*
Yes

Anti-glare
Yes

ThinkCentre Tiny Support
Yes

Optional Soundbar Support
Yes

MECHANICAL

Tilt Angle (front/back)
-5°/30°

Swivel Angle (left/right)
+/-45°

Lift
Yes (110mm)

Pivot
+/-90°

VESA Mount Capability
Yes (100 x 100mm)

Kensington Lock Slot
Yes

Bezel Width (Side)
2.0mm

Bezel Width (top/bottom)
2.0/24.5mm

WHAT'S IN THE BOX

Monitor with stand
1 x Power Cable
1 x HDMI Cable
1 x USB Type-C to Type-C cable
Quick Setup Guide

CERTIFICATIONS

ENERGY STAR Rating
8.0

EU RoHS
Yes

CCC
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 2

TÜV Eye Comfort
Yes

TCO
TCO 8.0/TCO Edge 2.0

EPEAT
Silver



*The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device. 75W power delivery can be achieved when downstream USB ports are not connected and OSD brightness setting is <61.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T27q-20

DISPLAY

Panel Size

27-inch

Screen Dimensions

596.74 mm x 335.66 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Backlight

WLED

Aspect Ratio

16:9

Resolution

2560 x 1440

Pixel Pitch

0.2331 x 0.2331 mm

Dot/Pixel Per Inch (DPI/PPI)

109

Viewing angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (extreme mode)
6ms (normal mode)

Refresh Rate

60 Hz

Brightness (typical)

350 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

99% sRGB

Color Support (typical)

16.7 Million

Anti-glare

Yes

CONNECTIVITY

Video Signal

1 x HDMI 1.4
1 x DP 1.2

Audio Signal

1 x Audio Out (3.5 mm)

USB Hub

Yes

USB Upstream

1 x USB 3.1 Gen1
(by USB Type-B)

USB Downstream

4 x USB 3.1 Gen1 (1 BC)

POWER

Power Consumption (typ./max.)

23W / 65W

Power Consumption Sleep/Off Mode

< 0.5W

Power Consumption Switch-off Mode

< 0.3W

ENERGY STAR Power Consumption(P_{on}/E_{TEC})

17.4W / 54.4kWh

Power Supply

Internal

Voltage Required

AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)

-5° / 35°

Swivel Angle (left/right)

+45° / -45°

Lift (max range)

135 mm

Pivot

-90° / 90°

VESA Mount Capability

Yes (100 x 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

2 mm

Bezel Width (top/bottom)

2 / 23.87 mm

DIMENSION

Size Packed (D x H x W, mm/inch)

694 x 163 x 480 mm
27.32 x 6.42 x 18.9 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

614 x 429.4 x 208 mm
24.17 x 16.9 x 8.19 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

614 x 564.4 x 208 mm
24.17 x 22.22 x 8.19 inches

Size Unpacked w/o Stand (head only)(D x H x W, mm/inch)

614 x 369.1 x 46.7 mm
24.17 x 14.53 x 1.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)

85.2 mm

Max. Distance from Table to Panel (highest pixel at bottom of screen, mm)

564.4 mm

Weight Packed (kg/lbs.)

9.59 kg / 21.14 lbs.

Weight Unpacked (kg/lbs.)

7.44 kg / 16.4 lbs.

Weight (Monitor Head Only) (kg/lbs.)

4.93 kg / 10.87 lbs.

Full Container Load (40' STD / 20' STD)

952 / 448 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power Cable (1.8 m)
1 x DP cable (1.8 m)
1 x USB Type-B to
Type-A cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating

8.0

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard Tier 1

TÜV Rheinland Eye Comfort Yes



Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision X1 (2nd GEN) MONITOR



SPECIFICATIONS

| DISPLAY | | ENVIRONMENTAL | |
|-------------------------------------|-----------------------------------------------------------------------|------------------------------------------------|---------------------------------|
| Panel Size | 27" | Temperature Operating | 0°C - 45°C |
| Panel Type | IPS | Non-Operating | -20°C - 60°C |
| Backlight | WLED | Humidity Operating | 8% - 80% |
| Resolution | 3840 (H) x 2160 (V) | Non-Operating | 5% - 95% |
| Aspect Ratio | 16:9 | Altitude Operating | 16,000 ft |
| Anti-Glare | Yes | Non-Operating | 40,000 ft |
| Screen Dimensions (W x H) (mm) | 596.7 (H) x 335.7 (V) | Arsenic-Free Glass | Yes |
| Maximum Brightness (Typical) | 350 cd/m ² | PVC-Free | Yes (W/O cable) |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Mercury-Free | Yes |
| Contrast Ratio (Typical) | 1000:1 | PCC % of Plastic Resins | 25% |
| Dynamic Contrast Ratio | 3M:1 | | |
| Pixel Pitch (W x H) (mm) | 0.1554 x 0.1554 | | |
| Dot/Pixel Per Inch (DP/PPI) | 163 | | |
| Color Gamut (CIE 1931) | 99% sRGB | | |
| Response Time (Extreme/Typical/Off) | 4/6/14 ms (G-to-G) | | |
| POWER CONSUMPTION | | DIMENSIONS (W x D x H) | |
| Typical | 40 W | Size Packed (mm) | 718 x 140 x 470 |
| Maximum | 150 W | (inches) | 28.27" x 5.51" x 18.5" |
| Sleep-Mode | 0.5 W | Size Unpacked with Stand (mm) | 609.74 x 234.81 x 474.76 |
| Switch Off-Mode | 0.5 W | (inches) | 24" x 9.24" x 18.69" |
| Power Supply | External | Size Unpacked without Stand | |
| Power Voltage | 10 VAC - 240 VAC | Monitor Head Only (mm) | 609.74 x 32.7 x 351.71 |
| Voltage Dynamic Frequency | 50 Hz - 60 Hz | (inches) | 24" x 1.29" x 13.85" |
| SIGNAL INPUT | | Distance from Table to Panel | |
| Video Input Signals | DisplayPort 1.2 + HDMI 2.0 + Thunderbolt™ 3 | Lowest Pixel at Bottom of Screen (mm / inches) | 134 / 5.276" |
| Video Cables Supplied | HDMI + Thunderbolt™ 3 | Highest Pixel at Top of Screen (mm / inches) | 450 / 17.717" |
| Video Cable Length | 1.8 m | Stand Base Footprint Area (mm) | 234.81 x 234.81 |
| USB Hub | Yes (4 x USB 3.0 ¹) | (inches) | 9.24" x 9.24" |
| USB Cable Supplied | N/A | Weight | |
| Audio-Jack | Yes | Packed | Starting at 18.45 lbs (8.37 kg) |
| SIGNAL INTERFACE / PERFORMANCE | | Unpacked | Starting at 12.21 lbs (5.54 kg) |
| Horizontal Frequency | 30 KHz - 136 KHz | Monitor Head Only | Starting at 9.46 lbs (4.29 kg) |
| Vertical Frequency | 30 Hz - 60 Hz | COMPLIANCE | |
| Native Resolution | 3840 x 2160 | ULE | Gold |
| Maximum Pixel Clock Speed/Bandwidth | 20 Gbps | TCO | 7.0 |
| Default Color Temperature | 6500K | RoHS | Yes |
| Preset Modes | 24 | Windows Certification | Windows 10 |
| OSD Buttons | 2 Buttons + Tracking Point | China Energy Label | Grade 2 |
| OSD Languages | English, French, Italian, German, Spanish, Japanese, Chinese, Russian | WARRANTY AND AVAILABILITY | |
| MECHANICAL | | Warranty | 3 Years |
| Tilt Angle (Front / Back) | -5° / 30° | Geography Availability | WW |
| Swivel Angle (Left / Right) | N/A | | |
| Lift (mm) | N/A | | |
| Pivot | N/A | | |
| VESA Mount (mm) | N/A | | |
| Kensington Lock Slot | Yes | | |
| Cable Management | Yes | | |
| Bezel Color | N/A | | |
| Bezel Width | | | |
| Top (mm / inches) | 1.2 / 0.04" | | |
| Bottom (mm / inches) | 1.2 / 0.04" | | |
| Sides (mm / inches) | 1.2 / 0.04" | | |

¹ Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.



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Lenovo

ThinkVision P32p-20

DISPLAY

Panel Size
31.5-inch

Screen Dimensions
697.31 mm x 392.23 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
3840 x 2160

Pixel Pitch
0.1816 x 0.1816 mm

Dot/Pixel Per Inch (DPI/PPI)
140

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB
99% BT.709
90% DCI-P3

Color Support (typical)
1.07 Billion

Color Depth
10-bit

Processor LUT
14-bit

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C¹ Gen1
(DP1.2 Alt Mode)
1 x HDMI 2.0
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

Ethernet
Yes (10M/100M/1000M)

USB Upstream
2 x USB 3.2 Gen1 (1 by USB
Type-C, 1 by USB Type-B)

USB Downstream
3 x USB 3.2 Gen1 (1 x BC1.2)

MULTI-MEDIA

Optional Soundbar Support
Yes (PN:OA36190)

SPECIAL FEATURES

Factory Calibration
Yes (Avg. Delta E<2)

Software
Lenovo ThinkColour (Lenovo
Display Control Center)²

KVM Switch
Yes

POWER

Power Consumption (typ./max.)
36W / 186W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
27W / 84kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 90 W³

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max. range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

ThinkCentre M Series Tiny support
Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) & Tiny VESA mount II (PN: 4XF0N03161)⁴

ThinkCentre M Series Nano support

Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) & Nano VESA mount (PN: 4XFOV81630)⁴

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 24.1 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
528 x 190 x 845 mm
20.79 x 7.48 x 32.27 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
235.0 x 469.4 x 714.6 mm
9.25 x 18.48 x 28.13 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
235.0 x 604.4 x 714.6 mm
9.25 x 23.79 x 28.13 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
714.6 x 426.0 x 51.0 mm
28.13 x 16.77 x 2.01 inches

Weight Packed (kg/lbs.)
13.30 kg/29.32 lbs.

Weight Unpacked (kg/lbs.)
10.21 kg/22.51 lbs.

Weight (monitor head only) (kg/lbs.)
6.96 kg/15.34 lbs.

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (for US and Canada only)
1 x USB Type-C to Type-C cable (1.8 m)
1 x USB Type-A to Type-B cable (1.8 m)
Factory calibration report
Quick setup guide

CERTIFICATION

ENERGY STAR
Yes

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



¹USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum.

²This software can only be used with Windows 10

³Up to 90W power delivery to compatible devices by USB Type-C. Listed as maximum capacity of power delivery. Actual capacity may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

⁴Accessories sold separately

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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ThinkVision P32u-10

SPECIFICATIONS

DISPLAY

| | |
|-----------------------------------------|----------------------------------------------------------------------------|
| Panel Size | 32 inches |
| Screen Dimensions (H x V) | 708.48 x 398.52mm |
| Panel Type | In-Plane Switching |
| Backlight | WLED |
| Aspect Ratio | 16:9 |
| Resolution | 3840 x 2160 pixels |
| Pixel Pitch (H x V) | 0.1845 x 0.1845mm |
| Viewing Angle (H x V) | 178°/178° |
| Response Time (gray to gray) | 4ms (extreme mode) 6ms (normal mode) |
| Contrast Ratio (typical) | 1000:1 |
| Dynamic Contrast Ratio (typical) | 3M:1 |
| Color Gamut | 99.5% Adobe RGB, 100% sRGB, 100% BT.709, 98.2% DCI-P3, 79.3% BT.2020 |
| Color Support | 1.07 Billion |

CONNECTIVITY

| | |
|----------------------------|-------------------------------------------------------------------------------------------------|
| Video Input Signals | 2 HDMI 2.0 + DP 1.2 + Thunderbolt™ 3 In + Thunderbolt™ 3 Out |
| Video Cable Length | 2m for Thunderbolt™ 1.8m for HDMI & DP |
| Audio Out | Yes (3.5mm) |
| USB Hub | Yes 2 x USB 3.0 (Upstream, 1 by Thunderbolt™ 3) 4 x USB 3.0 (Downstream, incl. 1BC) |
| Power Consumption | <57W (Typical) / <190W (Max) at On mode <0.5W at Sleep mode <0.3W at Switch off mode |

DIMENSIONS

| | |
|-----------------------------------------------------------------|----------------------------------------------------------|
| Size Packed (D x H x W) | 844 x 228 x 528mm / 33.23 x 8.98 x 20.79 inches |
| Size Unpacked w/stand (D x H x W) (Lowest Position) | 350.0 x 497.85 x 726.7mm/13.78 x 19.6 x 28.61 inches |
| Size Unpacked w/stand (D x H x W) (Highest Position) | 350.0 x 607.85 x 726.7mm/13.78 x 23.93 x 28.61 inches |
| Size Unpacked w/o stand (D x H x W) (Head Only) | 58.95 x 431.5 x 726.7mm/2.32 x 16.99 x 28.61 inches |

WEIGHT

| | |
|-----------------------------------|-------------------|
| Weight Packed | 14.30kg/31.32lbs. |
| Weight Unpacked | 10.97kg/24.18lbs. |
| Weight (Monitor Head Only) | 6.97kg/15.37lbs. |

SPECIAL FEATURES

| | |
|----------------------------|------------------|
| Factory Calibration | Yes |
| Anti-Glare | Yes |
| PIP/PBP | Yes |
| KVM switch | Yes |
| Software | Yes (ThinkColor) |

MECHANICAL

| | |
|----------------------------------|-------------------|
| Tilt Angle (front/back) | -5°/22° |
| Swivel Angle (left/right) | -45°/+45° |
| Lift (Max range) | 110mm |
| Pivot | -90°/90° |
| VESA Mount Capability | Yes (100 x 100mm) |

| | |
|---------------------------------|-------------|
| Kensington Lock Slot | Yes |
| Cable Management | Yes |
| Bezel Color | Raven Black |
| Bezel Width (side) | 2mm |
| Bezel Width (top/bottom) | 2.0/23.8mm |

WHAT'S IN THE BOX

| | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitor with stand | 1 x Power cable 1 x DP-DP cable 1 x HDMI cable 1 x USB 3.0 cable 1 x Thunderbolt™ 3 cable (20Gbps) 1 x CD (ThinkColor) Factory calibration report Quick setup guide |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

CERTIFICATIONS

| | |
|-----------------------------------------|-----------------------|
| CCC | Yes |
| RoHS | Yes |
| TCO | 7.0 |
| Windows Certification | Windows 7, Windows 10 |
| China Energy Efficiency Standard | Tier 2 |
| TÜV Eye Comfort | Yes |



ThinkVision P40w-20

DISPLAY

Panel Size

39.7-inch

Screen Dimensions

942.6 mm x 414.6 mm

Panel Type

3-side NearEdgeless
In-Plane Switching

Active Area

929.3 mm x 392 mm

Curvature

2500R

Backlight

WLED

Aspect Ratio

21:9

Resolution

5120 x 2160

Pixel Pitch

0.1815 x 0.1815 mm

Dot/Pixel Per Inch (DPI/PPI)

140

Viewing Angle (H x V @ CR 10:1)

178° / 178°

Response Time

4ms (Extreme Mode),
6ms (Normal Mode)

Refresh Rate

75 Hz⁶

Brightness (Typical)

300 cd/m²

Contrast Ratio (Typical)

1000:1

Dynamic Contrast Ratio (Typical)

3M:1

Color Gamut

99% sRGB, 98% DCI-P3

Color Support (Typical)

1.07 Billion

Color Depth

10-bit

HDR Compliance

Yes⁴

Anti-glare

Yes

SPECIAL FEATURES

Factory Calibration

Yes (Avg. Delta E<2)

Software

Lenovo ThinkColour (Lenovo
Display Control Center)¹

PIP/PBP

Yes

KVM Switch

Yes

CONNECTIVITY

Video Signal

2 x Thunderbolt™ 4

1 x HDMI 2.0

1 x DP 1.4

Audio Signal

1 x Audio Out (3.5 mm)

Ethernet

Yes (10M/100M/1000M)

USB Hub

Yes

USB Upstream

1 x USB 3.2 Gen 1⁸

(1 by USB Type-B)

1 x Thunderbolt™ 4

USB Downstream

4 x USB 3.2 Gen 1 Type-A⁸

1 x USB 3.2 Gen 1 Type-C⁸

1 x Thunderbolt™ 4

POWER

Power Consumption

(Typical / Max.)

66W / 250W

Power Consumption

Sleep/Off Mode

<0.5W

Power Consumption

Switch-Off Mode

<0.3W

ENERGY STAR Power

Consumption (P_{on}/E_{TEC})

53W/168kWh

Power Supply

Internal

USB Type-C Power Delivery(W)

up to 27W³

TBT Power Delivery (W)

Yes (Up to 100W³)

Smart Power

Yes

Voltage Required

AC 100 to 240 V

(50–60 Hz)

MECHANICAL

Tilt Angle (Front / Back)

-5° / 22°

Swivel Angle (Left / Right)

-45° / 45°

Lift (Max. Range)

130 mm

VESA Mount Capability

Yes (100 x 100 mm &

200 x 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (Side)

2.0 mm

Bezel Width (Top / Bottom)

2.0 / 23.0 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

275.0 x 526.0 x 1085.0 mm

10.82 x 20.70 x 42.71 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch)

(Lowest Position)

279.4 x 511.2 x 947.6 mm

11.00 x 20.12 x 37.30 inches

Size Unpacked w/ Stand

(D x H x W, mm/inch)

(Highest Position)

279.4 x 641.2 x 947.6 mm

11.00 x 25.24 x 37.30 inches

Size Unpacked w/o Stand

(Head Only) (D x H x W, mm/inch)

100.8 x 428.7 x 947.6 mm

3.96 x 16.88 x 37.30 inches

Weight Packed (kg / lbs.)

20.0 kg / 44.1 lbs.

Weight Unpacked (kg / lbs.)

14.6 kg / 32.2 lbs.

Weight (Monitor Head Only)

(kg / lbs.)

9.9 kg / 21.9 lbs.

WHAT'S IN THE BOX

Monitor with stand

1 x Power cable (1.8 m)

1 x Thunderbolt™ 4 cable (40 Gbps)

Quick setup guide

Factory calibration report

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

TCO

8.0

TCO Edge

2.0

EPEAT

Gold

RoHS (EU 2011/65/EC)

Yes

Windows Certification

Windows 10

China Energy Efficiency Standard

Tier 2

TÜV Rheinland Eye Comfort

Yes

TÜV Rheinland Low Blue Light

Yes

TÜV Rheinland Flicker Free

Yes

TÜV Low Blue Light

(Hardware Solution)

Yes

Eyesafe Display Certification

Yes



¹This software can only be used with Windows 10. ²USB Type-C and USB-C are registered trademarks of USB Implementers Forum. ³Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting. ⁴HDR10 only. ⁵True Split is available with Thunderbolt™ or DisplayPort™ connection in Windows only. ⁶Thunderbolt™ and DisplayPort™ only. ⁷eKVM functionality may vary if using a different brand of mouse. ⁸Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

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Specifications may vary depending upon region.

Specifications

DISPLAY

Panel Size
43.4 inches

Screen Dimensions (H x V)
1052.3 x 328.8mm
41.4 x 12.9 inches

Panel Type
VA NearEdgeless,
anti-glare

Curvature
1800R

Backlight
WLED

Aspect Ratio
32:10

Resolution
3840 x 1200

HDR
VESA Certified DisplayHDR™ 400

Pixel Pitch (H x V)
0.2740 x 0.2740mm

Viewing Angle (H x V)
178°/178°

Response Time (gray to gray)
4/6ms (extreme/typical)

Refresh Rate
Max. 144Hz

Contrast Ratio (typical)
3000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Support (typical)
16.7M

Color Gamut
sRGB: 99.5%
BT.709: 99.5%
DCI-P3: 90%

Brightness
300nits (typical)
450nits (peak)

CONNECTIVITY

Video Input Signals
2 x HDMI 2.0
1 x DP1.4
1 x USB Type-C Gen1 (DP1.2 Alt Mode)
1 x USB Type-C Gen2 (DP1.4 Alt Mode)

Video Cable Length
1.5m for USB Type-C Gen2
1.8m for others

Audio Out
Yes (3.5mm)

USB Hub
Yes

USB Upstream
2 x USB 3.1 (1 x USB Type-C Gen1,
1 x USB Type-C Gen2)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

Power
Internal

Power Consumption
Typical/Max: 70W/250W
Switch-off Mode: <0.5W
Sleep/Off Mode: <0.5W
Energy Star (P_{on}) - 42.18W
Energy Star (E_{TEC}) - 138.17kWh

DIMENSIONS

Size Packed (D x H x W)
1219 x 500 x 376mm
47.99 x 19.68 x 14.80 inches

Size Unpacked w/stand
(D x H x W) (Lowest Position)
269.8 x 461.1 x 1058.3mm
10.62 x 18.15 x 41.67 inches

Size Unpacked w/stand
(D x H x W) (Highest
Position)
269.8 x 591.1 x 1058.3mm
10.62 x 23.27 x 41.67 inches

Size Unpacked w/o stand
(D x H x W) (Head Only)
137.2 x 366.1 x 1058.3mm
5.40 x 14.21 x 41.67 inches

Weight Packed
18.59kg/40.98lbs.

Weight Unpacked
13.45kg/29.65lbs.

Weight (Monitor Head Only)
9.35kg/20.61lbs.

SPECIAL FEATURES

Anti-Glare
Yes

PIP/PBP
Yes

Software
Yes (ThinkColor)

Sync Technology
AMD FreeSync™ Premium Pro¹

Speaker
Supports optional Harman
Kardon certified speaker

MECHANICAL

Tilt Angle (front/back)
-5°/22°

Swivel Angle (left/right)
±30°

Lift (Max. range)
Yes (130mm)

VESA Mount Capability
Yes (100 x 100mm)

Kensington Lock Slot
Yes
Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.4mm

Bezel Width (top/bottom)
2.4/25.6mm

WHAT’S IN THE BOX

Monitor with stand
1 x Power cable
1 x HDMI cable
1 x DP cable
1 x USB Type-C Gen2 cable
1 x USB Type-C to Type-A cable
Quick setup guide

CERTIFICATIONS

ENERGY STAR Rating
8.0

CCC
Yes

RoHS
Yes

TCO
8.0

EPEAT
Silver

Windows Certification
Windows 7, Windows 10

China Energy Efficiency
Standard
Tier 2

TÜV Eye Comfort
Yes



¹AMD Freesync™ is enabled for AMD Radeon™ Series graphics cards

ThinkVision T32h-20 Monitor

DISPLAY

Panel Size
31.5-inch

Screen Dimensions
698.11 mm x 392.69 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
2560 x 1440

Pixel Pitch
0.2727 x 0.2727 mm

Dot/Pixel Per Inch (DPI/PPI)
94

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
99% sRGB

Color Support (typical)
1.07 Billion

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1
(DP 1.2 Alt Mode)
1 x HDMI 1.4
1 x DP 1.2

Audio Signal
1 x Audio out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1
(by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

POWER

Power Consumption (typ./max.)
28W / 138W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
21.6W / 69.2kWh

Power Supply
Internal

USB Type-C Power Delivery (W)
up to 75 W*

Smart Power
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
-45° / 45°

Lift (max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 24.12 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
528.0 x 190.0 x 845.0 mm /
20.79 x 7.48 x 32.27 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
235.0 x 469.4 x 714.6 mm /
9.25 x 18.48 x 28.13 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
235.0 x 604.4 x 714.6 mm /
9.25 x 23.79 x 28.13 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
714.6 x 426.0 x 51.0 mm /
28.13 x 16.77 x 2.01 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
69.2 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
461.8 mm

Weight Packed (kg/lbs.)
12.96 kg / 28.57 lbs.

Weight Unpacked (kg/lbs.)
9.85 kg / 21.72 lbs.

Weight (monitor head only) (kg/lbs.)
6.78 kg / 14.95 lbs.

Full Container Load (40' STD / 20' STD)
672 / 320 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 1

TÜV Rheinland Eye Comfort
Yes



*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T32p-20

DISPLAY

Panel Size
31.5-inch

Screen Dimensions
697.31 mm x 392.23 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
3840 x 2160

Pixel Pitch
0.1816 x 0.1816 mm

Dot/Pixel Per Inch (DPI/PPI)
140

**Viewing Angle
(H x V @ CR 10:1)**
178° / 178°

Response Time
6ms (normal mode)
4ms (extreme mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
1000:1

**Dynamic Contrast Ratio
(typical)**
3M:1

Color Gamut
99% sRGB

Color Support (typical)
1.07 Billion

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1 (DP1.2 Alt Mode)**
1 x HDMI 2.0
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Hub
Yes

USB Upstream
1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

POWER

Power Consumption (typ./max.)
39W / 135W

**Power Consumption
Sleep/Off Mode**
< 0.5W

**Power Consumption
Switch-off Mode**
< 0.3W

**ENERGY STAR Power Consumption
(P_{on}/E_{TEC})**
26.9W / 84.9kWh

Power Supply
Internal

**USB Type-C
power delivery (W)**
up to 75W*

Smart Power
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 35°

Swivel Angle (left/right)
+45° / -45°

Lift (max range)
135 mm

Pivot
-90° / 90°

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.0 mm

Bezel Width (top/bottom)
2.0 / 24.12 mm

DIMENSION

**Size Packed
(D x H x W, mm/inch)**
190 x 528 x 845 mm
7.48 x 20.79 x 32.27 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
235.0 x 469.4 x 714.6 mm
9.25 x 18.48 x 28.13 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
235.0 x 604.4 x 714.6 mm
9.25 x 23.79 x 28.13 inches

**Size Unpacked w/o Stand
(head only) (D x H x W, mm/inch)**
51.0 x 426.0 x 714.6 mm
2.01 x 16.77 x 28.13 inches

**Min. Distance from Table to Panel
(lowest pixel at bottom
of screen, mm)**
69.2 mm

**Max. Distance from Table to Panel
(highest pixel at top
of screen, mm)**
461.8 mm

Weight Packed (kg/lbs.)
12.96 kg / 28.57 lbs.

Weight Unpacked (kg/lbs.)
9.85 kg / 21.72 lbs.

**Weight (monitor head only)
(kg/lbs.)**
6.78 kg / 14.95 lbs.

**Full Container Load (40' STD /
20' STD)**
672 / 320 units

WHAT'S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m)
(NA only)
1 x USB Type-C to Type-C
cable (1.8 m)
1 x USB Type-C to Type-A
cable (1.8 m) (NA only)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Gold

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

**China Energy Efficiency
Standard**
Tier 1

TÜV Rheinland Eye Comfort
Yes



*Listed as the maximum capacity of power delivery. The actual capacity of power delivery may vary depending upon devices connected or monitor configuration and may decline with downstream USB ports connected or higher brightness settings.

**When connecting one cable USB Type-C at 4K 60Hz, the USB downstream will be USB2.0 by default due to technical limitations. Users can still use USB 3.0 by selecting in OSD and as a result, the display will be adjusted to 4K 30Hz.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

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Lenovo

Specifications

DISPLAY

Panel Size
34-inch

Screen Dimensions
797.20 mm x 333.70 mm

Panel Type
3-side NearEdgeless
VA

Curvature
1500R

Backlight
WLED

Aspect Ratio
21:9

Resolution
3440 x 1440

Pixel Pitch
0.2317 x 0.2317 mm

Dot/Pixel Per Inch (DPI/PPI)
109

Viewing Angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (extreme mode)
6ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
350 cd/m²

Contrast Ratio (typical)
3000:1

Dynamic Contrast Ratio (typical)
3M:1

Colour Gamut
99% sRGB

Color Support (typical)
16.7 Million

Anti-glare
Yes

CONNECTIVITY

Video Signal
1 x USB Type-C Gen1 (DP1.2 Alt Mode)
1 x HDMI 2.0
1 x DP 1.2

Audio Signal
1 x Audio Out (3.5 mm)

USB Upstream
1 x USB 3.1 Gen1 (by USB Type-C)

USB Downstream
4 x USB 3.1 Gen1 (1 BC)

POWER

Power Consumption (typ./max.)
46W / 140W

Power Consumption Sleep/Off Mode
< 0.5W

Power Consumption Switch-off Mode
< 0.5W

ENERGY STAR Power Consumption (P_{on}/E_{TEC})
34W / 107kWh

USB Type-C Power Delivery (W)
Up to 75W*

Smart Power
Yes

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5°/ 35°

Swivel Angle (left/right)
+45°/ -45°

Lift (max range)
135 mm

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
2.2 mm

Bezel Width (top/bottom)
2.2 / 27.8 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
523.0 x 250.0 x 980.0 mm /
20.59 x 9.84 x 38.58 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)
245.0 x 462.4 x 808.6 mm /
9.65 x 18.21 x 31.84 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)
245.0 x 597.4 x 808.6 mm /
9.65 x 23.52 x 31.84 inches

Size Unpacked w/o Stand (head only) (D x H x W, mm/inch)
106.1 x 372.6 x 808.6 mm /
4.18 x 14.67 x 31.84 inches

Min. Distance from Table to Panel (lowest pixel at bottom of screen, mm)
119.1 mm

Max. Distance from Table to Panel (highest pixel at top of screen, mm)
587.9 mm

Weight Packed (kg/lbs.)
13.85 kg / 30.53 lbs.

Weight Unpacked (kg/lbs.)
9.91 kg / 21.85 lbs.

Weight (monitor head only) (kg/lbs.)
6.91 kg / 15.23 lbs.

Full Container Load (40’ STD / 20’ STD)
432 / 216 units

WHAT’S IN THE BOX

Monitor with stand
1 x Power cable (1.8 m)
1 x DP cable (1.8 m) (NA only)
1 x USB Type-C to Type-A cable (1.8 m) (NA only)
1 x USB Type-C to Type-C cable (1.8 m)
Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

TCO
8.0

TCO Edge
2.0

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 2

TÜV Rheinland Eye Comfort
Yes



*Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration, and may decline with downstream USB ports connected or higher brightness setting.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: - 5 Gbit/s for USB 3.1 Gen1; 10 Gbit/s for USB 3.1 Gen2 & 20 Gbit/s for USB 3.2.

Lenovo ThinkVision LT1913p Monitor

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|--------------------------------|---------------------------------|-----------------------------|--------------------------------------------------|
| Panel Size | 19" | Tilt Angle (Front / Back) | -5° - 30° |
| Panel Type | In Plane Switching | Swivel Angle (Left / Right) | 45° / 45° |
| Aspect Ratio | 5:4 | Lift (mm) | 110 |
| Resolution | 1280 x 1024 | Pivot | 0° - 90° (Clockwise) |
| Viewable Area (mm) | 479.958 | VESA® Mount | Yes |
| Screen Dimensions (W x H) (mm) | 374.7 x 299.8 | Kensington® Lock Slot | Yes |
| Pixel Pitch (W x H) (mm) | 0.0976 x 0.2928 | USB Hub | No |
| Dot/Pixel Per Inch (DP / PPI) | 86.78 | Multimedia | Optional USB Sound Bar |
| Brightness (Typical) | 250 nits | Bezel Color | Black |
| Contrast Ratio (Typical) | 1000:1 | Bezel Width | |
| Viewing Angle (H/V at CR 10:1) | 178°/178° | Sides (mm / inches) | 17.4 / 0.68" |
| Response Time (Typical) | 7 ms | Top (mm / inches) | 17.4 / 0.68" |
| Color Gamut | 72% | Bottom (mm / inches) | 17.4 / 0.68" |
| Number of Colors | 16.7 Million | | |
| SIGNAL INPUT | | POWER CONSUMPTION | |
| Video Input Signals | VGA, DVI | Power Consumption | |
| Cables Supplied | VGA, DVI | Typical | 24 W |
| Sync on Green | No | Maximum | 27 W |
| Plug 'n' Play | DDC/CI | Sleep-Mode | <0.5 W |
| Preset Display Modes | 20 | Off-Mode | <0.5 W |
| User-defined Display Modes | 20 | Heat Dissipation | |
| OSD Buttons | Yes | Typical | 81.84 Btu/h |
| OSD Languages | 8 | Maximum | 92.07 Btu/h |
| Lockable Controls | Yes | Power Supply | Internal |
| DIMENSIONS (W x D x H) | | COMPLIANCE | |
| Size Unpacked | | TCO | Display 7.0 |
| (mm) | 411 x 264.2 x 371.5 | TCO Edge | 1.1 |
| (inches) | 16.18" x 10.4" x 14.63" | EPEAT | Silver |
| Weight Unpacked | Starting at 10.69 lbs (4.85 kg) | ENERGY STAR Rating | 8.0 |
| | | TÜV Green Mark | Yes |
| | | Windows Certification | Windows 10 / Windows 8.1 / Windows 8 / Windows 7 |
| | | | Tier 1 (New Standard Tier 2) |
| WARRANTY | | China Energy Label | 85% |
| Warranty | 3 Years | PCC | |



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Lenovo

TECH SPECS

LCD PANEL

Panel Size
14-inch

Screen Dimensions (W x H, mm)
309.31 x 173.99 mm

Panel Type
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch (H x V, mm)
0.1611 x 0.1611 mm

Dot/Pixel Per Inch (DPI/PPI)
157

Viewing angle (H x V @ CR 10:1)
178° / 178°

Response Time (typical)
6ms with OD

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
700:1

Dynamic Contrast Ratio (typical)
3M:1

Colour Gamut NTSC (CIE 1931)
72%

Color Support (typical)
16.7 Million

Color Depth
8bit (6bit + FRC)

Anti-Glare
Yes

CONNECTIVITY

Video Input Signals
2 x USB 3.1 Type-C (DP1.2 Alt Mode)

POWER

Power Consumption (Typ./Max)
6 W / 7.5 W (Without USB Type-C output)

ENERGY STAR Power Consumption (P_{on})
4.88 W

ENERGY STAR Power Consumption (E_{TEC})
15.53 kWh

Power Consumption Sleep/Off Mode
< 0.3 W

Power Consumption Switch-Off Mode
< 0.3 W

USB Type-C/Power Delivery
Up to 65 W

Power Supply
External (no adapter bundle)

Voltage Required
DC 5 V to 20 V

MECHANICAL

Tilt Angle (front/back)
-5° / 90°

Mounting Support
Yes (100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (Side)
5.48mm

Bezel Width (top / bottom)
5.47 mm / 23.87 mm

DIMENSIONS

Size Packed (D x H x W) (mm / inch)
276 x 61 x 402 mm /
10.87 x 2.40 x 15.83 inches

Size Unpacked w/stand (D x H x W) (mm / inch) (Lowest position)
96.54 x 209.03 x 323.37 mm /
3.8 x 8.23 x 12.73 inches

Size Unpacked w/stand (D x H x W) (mm / inch) (Highest position)
96.54 x 220.03 x 323.37 mm /
3.8 x 8.66 x 12.73 inches

Stand base footprint area (mm²)
260.87 x 69.55 mm /
10.27 x 2.74 inches

Weight Packed (kg / lbs.)
1.67 kg / 3.67 lbs.

Weight Unpacked (kg / lbs.)
0.598 kg / 1.31 lbs.*

WHATS IN THE BOX

1 x Monitor with stand
1 x ThinkVision M14 sleeve
1 x USB Type-C cable (1 m)
1 x QSG
1 x Pair of clips

ENVIRONMENTAL

Temperature - Operating
0° to 40°C

Temperature - Non-operating
-20° to 60°C

Humidity - Operating
30 to 80%

Humidity - Non-operating
30 to 90%

Altitude - Operating
0 to 5000 m

Altitude - Non-operating
0 to 40,000 ft

Arsenic-free Glass
Yes

PVC free
Yes

Mercury free
Yes

PCC % of plastic resins
85%

WARRANTY

Geography Availability
WW

Warranty
3 Years

CERTIFICATIONS

ENERGY STAR Rating
8.0

CCC
Yes

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes (Arsenic free / Pb free / Mercury free)

Windows Certification
Windows 7 / 10

Image Quality Capability
ISO 9241-307

China Energy Efficiency Standard
Tier 2

Low Blue Light / Eye Comfort
Yes (Low Bluelight)



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Specifications

DISPLAY

Panel Size
14-inch

Screen Dimensions
309.31 mm x 173.09 mm

Panel Type
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch
0.1611 x 0.1611 mm

Dot/Pixel Per Inch (DPI/PPI)
157

Viewing Angle (H x V @ CR 10:1)
178 °/ 178°

Response Time
6ms (extreme mode)
8ms (normal mode)

Refresh Rate
60 Hz

Brightness (typical)
300 cd/m²

Contrast Ratio (typical)
700:1

Dynamic Contrast Ratio (typical)
3M:1

Color Gamut
72% NTSC (CIE 1931)

Color Support (typical)
16.7 Million

Color Depth
8-bit (6-bit + FRC)

Touch
Yes (10-point touch)

CONNECTIVITY

Video Signal
2 x USB 3.2 Type-C (DP1.2 Alt Mode)

USB Upstream
2 x USB 3.2 Type-C

USB Downstream
2 x USB 3.2 Type-C

SPECIAL FEATURES

Pen/Digitizer
Yes

POWER

Power Consumption (typ./max)
8W / 9.5W

Power Consumption Sleep/Off Mode
< 0.3W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption
(P_{on}/E_{TEC})
7.22W / 25.5kWH

Power Supply
External**

USB Type-C Power Delivery (W)
Up to 65 W

Voltage Required
DC 5 / 9 / 15 / 20 V

MECHANICAL

Tilt Angle (front/back)
-5° / 90°

Lift (max range)
11 mm

Pivot
-90° / 90°

Mounting Support
Yes (2 screws holes, 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
5.43 mm

Bezel Width (top/bottom)
5.42 / 30.38 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)
377.0 x 68.0 x 267.0 mm
148.43 x 26.77 x 105.12 inches

Size Unpacked w/ Stand (D x H x W, mm/
inch) (lowest position)
14.0 x 214.3 x 323.4 mm
0.55 x 8.44 x 12.73 inches

Size Unpacked w/ Stand (D x H x W, mm/
inch) (highest position)
14.0 x 226.5 x 323.4 mm
0.55 x 8.92 x 12.73 inches

Weight Packed (kg/lbs.)
1.87 kg / 4.12 lbs.

Weight Unpacked* (kg/lbs.)
0.698 kg* / 1.54 lbs.

WHAT’S IN THE BOX

- 1 x M14t Monitor
- 1 x USB Type-C to Type-C cable (1.0m)
- 1 x Active Pen with battery***
- 1 x Sleeve
- 1 x L-shaped dongle
- 1 x Pair of clips
- Quick setup guide

CERTIFICATION

ENERGY STAR Rating
8.0

CCC
Yes

EPEAT
Silver

RoHS (EU 2002/95/EC)
Yes

Windows Certification
Windows 7, Windows 10

China Energy Efficiency Standard
Tier 2

TÜV Rheinland Low Blue Light
Yes



**not bundled
***For selected regions and countries only.

ThinkVision M15

DISPLAY

Panel Size

15.6-inch

Screen Dimensions

360.0 mm x 234.0 mm

Panel Type

In-Plane Switching

Active Area

344.16 mm x 193.59 mm

Backlight

WLED

Aspect Ratio

16:9

Resolution

1920 x 1080

Pixel Pitch

0.1793 mm x 0.1793 mm

Dot/Pixel Per Inch (DPI/PPI)

141

Viewing Angle (H x V@CR 10:1)

178° / 178°

Response Time

6ms (Extreme Mode)
14ms (Normal Mode)

Refresh Rate

60 Hz

Brightness (typical)

250 cd/m²

Contrast Ratio (typical)

1000:1

Dynamic Contrast Ratio (typical)

3M:1

Color Gamut

45% NTSC (CIE 1931)

Color Support (typical)

16.7 Million

Anti-glare

Yes

CONNECTIVITY

Video Signal

2 x USB Type-C 3.2 Gen1 (DP1.2 Alt Mode)

USB Hub

Yes

USB Upstream

1 x USB 2.0 (1 by USB Type-C)

USB Downstream

1 x USB 2.0 (1 by USB Type-C)

SPECIAL FEATURE

Software

Lenovo ThinkColour
(Lenovo Display Control Center)⁴

Others

Height Adjustment

POWER

Power Consumption (typical/max)

8W / 9.5W

Power Consumption Sleep/Off Mode

< 0.3W

Power Consumption Switch-off Mode

< 0.3W

Energystar Power Consumption (P_{on}/E_{TEC})

5W / 19kWh

Power Supply

External

USB Type-C Power Delivery (W)

up to 65 W³

Voltage Required

DC 5/9/15/20 V

MECHANICAL

Tilt Angle (front/back)

0° / 90°

Lift (Max range)

10 mm

VESA Mount Capability

Yes (2 screws holes, 100 mm)

Kensington Lock Slot

Yes

Cable Management

Yes

Bezel Color

Raven Black

Bezel Width (side)

7.3 mm

Bezel Width (top/bottom)

7.3 / 31.9 mm

DIMENSIONS

Size Packed (D x H x W, mm/inch)

407.9 x 75.9 x 279.9 mm
16.06 x 2.99 x 11.02 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (lowest position)

235.5 x 360.0 x 108.4 mm
9.27 x 14.17 x 42.67 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (highest position)

245.5 x 360.0 x 108.4 mm
9.66 x 14.17 x 42.67 inches

Weight Packed (kg/lbs.)

1.69 kg / 3.73 lbs.

Weight Unpacked (kg/lbs.)

0.86 kg / 1.90 lbs.¹

WHAT'S IN THE BOX

1 x M15 Monitor
1 x Pair of Clips
1 x Sleeve
1 x USB Type-C to Type-C cable (1 m)
Quick Setup Guide

CERTIFICATION

ENERGY STAR Certification

Yes

CCC

Yes

EPEAT

Silver

RoHS (EU 2002/95/EC)

Yes

Windows Certification

Windows 7, Windows 10

China Energy Efficiency Standard

Tier 2

TÜV Rheinland Low Blue Light

Yes

TÜV Rheinland Flicker Free

Yes



¹Actual weight may vary due to components, manufacturing process and options. ²USB Type-C* and USB-C* are registered trademarks of USB Implementers Forum. ³Listed as maximum capacity of power delivery. Actual capacity of power delivery may vary depending upon devices connected or monitor configuration and may decline with downstream USB ports connected or higher brightness setting. ⁴This software can only be used with Windows 10.

Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.1 Gen 1; 10 Gbit/s for USB 3.1 Gen 2 & 20 Gbit/s for USB 3.2.

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Specifications may vary depending upon region.

Lenovo

ThinkVision T1714 Essential Monitor

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|----------------------------------|-------------------------------|----------------------------------|--------------------------------|
| Panel Size | 17" | Tilt Angle (Front / Back) | -5° - 22° |
| Panel Type | TN | Swivel Angle (Left / Right) | No |
| Backlight | WLED | Lift | No |
| Viewable Area (Diagonal) | 17" | Pivot | No |
| Screen Dimensions (W x H) (mm) | 270.34 x 337.92 | VESA Mount (mm) | 100 x 100 |
| Resolution | 1280 x 1024 | Kensington Lock Slot | Yes |
| Aspect Ratio | 5:4 | Cable Management | Yes |
| Viewing Angle (H/V at CR 10:1) | 170°/160° | Ambient Light Sensor | No |
| Maximum Brightness (Typical) | 250 cd/m² | Control Buttons | Yes |
| Contrast Ratio (Typical) | 1000:1 | Bezel Color | Raven Black |
| Dynamic Contrast Ratio | NA | Bezel Width | |
| Pixel Pitch (W x H) (mm) | 0.26 x 0.26 | Sides (mm / inches) | 17.5 / 0.69" |
| Dot/Pixel Per Inch (DPI / PPI) | 96.21 | Top (mm / inches) | 17.5 / 0.69" |
| Color Gamut (CIE 1931) | 72% | Bottom (mm / inches) | 17.5 / 0.69" |
| Number of Colors | 16.7 Million | | |
| Response Time | 5 ms (On / Off) | | |
| Anti-Glare | Yes | | |
| POWER CONSUMPTION | | SIGNAL INPUT | |
| Power Consumption | | Video Input Signals | VGA, DVI |
| Typical | 14 W | Video Cables Supplied | VGA, DVI |
| Maximum | 18 W | Video Cable Length | 1.8 m |
| Sleep-Mode | 0.5 W | USB Hub | No |
| Off-Mode | 0.3 W | USB Cable Supplied | No |
| Heat Dissipation | | | |
| Typical | 47.74 Btu/h | | |
| Maximum | 61.38 Btu/h | | |
| Power Supply | Internal | | |
| Power Voltage | 90 VAC - 264 VAC, 1.5 A | | |
| Voltage Dynamic Frequency | 50 Hz - 60 Hz | | |
| COMPLIANCE | | SIGNAL INTERFACE / PERFORMANCE | |
| EPEAT | Silver | Horizontal Frequency | 30 kHz - 83 kHz |
| ENERGY STAR Rating | 8.0 | Vertical Frequency | 50 Hz - 75 Hz |
| ULE | Gold | Native Resolution | 1280 x 1024 |
| TCO | 7.0 | Maximum Pixel Clock Speed / | VGA : 205 MHz |
| TCO Edge | 2.0 | Bandwidth | DVI : 165 MHz |
| TUV | Yes | Default Color Temperature | 7200K |
| RoHS (EU 2002/95/EC) | Yes | Preset Display Modes | 17 |
| Windows Certification | Windows 10 / Windows 8.1 / | User-defined Display Modes | 17 |
| | Windows 8 / Windows 7 | OSD Buttons | 5 |
| China Energy Efficiency Standard | Tier 1 (New Standard Tier 2) | OSD Languages | 8 |
| ENVIRONMENTAL | | DIMENSIONS (W x D x H) | |
| Temperature | | Size Packed | |
| Operating | 0°C - 45°C | (mm) | 432 x 428 x 140 |
| Non-operating | -20°C - 60°C (non-condensing) | (inches) | 17.01" x 16.85" x 5.51" |
| Humidity | | Size Unpacked with Stand | |
| Operating | 10% - 80% | (mm) | 374.5 x 200 x 373.9 |
| Non-operating | 5% - 95% (non-condensing) | (inches) | 14.74" x 7.87" x 14.72" |
| Altitude | | Size Unpacked without Stand | |
| Operating | 8,000 ft | (Monitor Head Only) | |
| Non-operating | 40,000 ft | (mm) | 374.5 x 53 x 306.9 |
| Arsenic-Free Glass | Yes | (inches) | 14.74" x 2.09" x 12.08" |
| PVC-Free | Yes | Distance from Table to Panel | |
| Mercury-Free | Yes | (mm / inches) | |
| PCC % of Plastic Resins | 85% | Lowest Pixel at Bottom of Screen | 84.5 / 3.33" |
| Low Halogen | No | Highest Pixel at Top of Screen | 356.4 / 14.03" |
| WARRANTY AND AVAILABILITY | | Stand Base Footprint Area | |
| Warranty | 3 Years | (mm / inches) | 200 x 200 / 7.87" x 7.87" |
| Geography Availability | PRC + AP | Weight | |
| ThinkVision Logo | Yes | Packed (EPS) | Starting at 8.6 lbs (3.9 kg) |
| Global Model | No | Unpacked | Starting at 5.75 lbs (2.61 kg) |
| | | Monitor Head Only | Starting at 5.11 lbs (2.32 kg) |



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Lenovo ThinkVision T1714p Essential Monitor

SPECIFICATIONS

| DISPLAY | | MECHANICAL | |
|----------------------------------|--------------------------------|----------------------------------|--------------------------------------------------|
| Panel Size | 17" | Tilt Angle (Front / Back) | -5° ~ 22° |
| Panel Type | TN | Swivel Angle (Left / Right) | No |
| Backlight | WLED | Lift | 110 |
| Viewable Area (Diagonal) | 17" | Pivot | No |
| Screen Dimensions (W x H) (mm) | 270.34 x 337.92 | VESA Mount (mm) | 100 x 100 |
| Resolution | 1280 x 1024 | Kensington Lock Slot | Yes |
| Aspect Ratio | 5:4 | Cable Management | Yes |
| Viewing Angle (H/V at CR 10:1) | 170°/160° | Ambient Light Sensor | No |
| Maximum Brightness (Typical) | 250 cd/m² | Control Buttons | Yes |
| Contrast Ratio (Typical) | 1000:1 | Bezel Color | Raven Black |
| Dynamic Contrast Ratio | NA | Bezel Width | |
| Pixel Pitch (W x H) (mm) | 0.26 x 0.26 | Sides (mm / inches) | 17.5 / 0.69" |
| Dot/Pixel Per Inch (DPI / PPI) | 96.21 | Top (mm / inches) | 17.5 / 0.69" |
| Color Gamut (CIE 1931) | 72% | Bottom (mm / inches) | 17.5 / 0.69" |
| Number of Colors | 16.7 Million | | |
| Response Time | 5 ms (On / Off) | | |
| Anti-Glare | Yes | | |
| SIGNAL INPUT | | SIGNAL INTERFACE / PERFORMANCE | |
| Video Input Signals | VGA, DVI, DisplayPort | Horizontal Frequency | 30 kHz ~ 83 kHz |
| Video Cables Supplied | VGA, DVI | Vertical Frequency | 50 Hz ~ 75 Hz |
| Video Cable Length | 1.8 m | Native Resolution | 1280 x 1024 |
| USB Hub | No | Maximum Pixel Clock Speed / | VGA : 205 MHz |
| USB Cable Supplied | No | Bandwidth | DVI : 165 MHz |
| | | | DisplayPort : 165 MHz |
| | | Default Color Temperature | 7200K |
| | | Preset Display Modes | 22 |
| | | User-defined Display Modes | 22 |
| | | OSD Buttons | 5 |
| | | OSD Languages | 8 |
| POWER CONSUMPTION | | COMPLIANCE | |
| Power Consumption | | EPEAT | Silver |
| Typical | 14 W | ENERGY STAR Rating | 8.0 |
| Maximum | 18 W | ULE | Gold |
| Sleep-Mode | 0.5 W | TCO | 7.0 |
| Off-Mode | 0.3 W | TCO Edge | 2.0 |
| Heat Dissipation | | TUV | Yes |
| Typical | 47.74 Btu/h | RoHS (EU 2002/95/EC) | Yes |
| Maximum | 61.38 Btu/h | Windows Certification | Windows 10 / Windows 8.1 / Windows 8 / Windows 7 |
| Power Supply | Internal | China Energy Efficiency Standard | Tier 1 (New Standard Tier 2) |
| Power Voltage | 90 VAC ~ 264 VAC, 1.5 A | | |
| Voltage Dynamic Frequency | 50 Hz ~ 60 Hz | | |
| DIMENSIONS (W x D x H) | | ENVIRONMENTAL | |
| Size Packed | | Temperature | |
| (mm) | 454 x 406 x 191 | Operating | 0°C ~ 45°C |
| (inches) | 17.87" x 15.98" x 7.52" | Non-operating | -20°C ~ 60°C (non-condensing) |
| Size Unpacked with Stand | | Humidity | |
| (mm) | 374.5 x 244.2 x 337.9-447.9 | Operating | 10% ~ 80% |
| (inches) | 14.74" x 9.61" x 13.3"-17.63" | Non-operating | 5% ~ 95% (non-condensing) |
| Size Unpacked without Stand | | Altitude | |
| (Head Only) | | Operating | 8,000 ft |
| (mm) | 374.5 x 53 x 306.9 | Non-operating | 40,000 ft |
| (inches) | 14.74" x 2.09" x 12.08" | Arsenic-Free Glass | Yes |
| Distance from Table to Panel | | PVC-Free | Yes |
| (mm / inches) | | Mercury-Free | Yes |
| Lowest Pixel at Bottom of Screen | 66 / 2.6" | PCC % of Plastic Resins | 85% |
| Highest Pixel at Top of Screen | 337.9 / 13.3" | Low Halogen | No |
| Stand Base Footprint Area | | | |
| (mm / inches) | | | |
| With Cable Cover | 244.2 x 240 / 9.61" x 9.45" | | |
| Without Cable Cover | 240 x 240 / 9.45" x 9.45" | | |
| Weight | | | |
| Packed (EPS) | Starting at 12.57 lbs (5.7 kg) | | |
| Unpacked | Starting at 8.71 lbs (3.95 kg) | | |
| Monitor Head Only | Starting at 5.14 lbs (2.33 kg) | | |
| WARRANTY AND AVAILABILITY | | | |
| Warranty | 3 Years | | |
| Geography Availability | World Wide | | |
| ThinkVision Logo | Yes | | |
| Global Model | Yes | | |



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Expedited Depot: Parts and labor coverage with expedited turnaround. Shipping (including packaging) or delivery to the repair center is paid for by Lenovo.

Onsite / In-home Service: Parts and labor repair coverage where labor is provided onsite at your place of business.

If Lenovo determines your product problem is covered by the product warranty and cannot be resolved over the telephone, a technician will be dispatched to arrive onsite, typically the next day.

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Included software: may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Battery life: Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

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