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Specifications
Reference



Version 580
July 21, 2021

Lenovo

PSREF

Product Specifications Reference

ThinkPad Laptops



Version 580
July 20, 2021

Lenovo

Contents

Cover **1**
Contents **2**
Summary Of Change **4**
11e Series **5**
ThinkPad 11e (5th Gen) 5
ThinkPad 11e Yoga Gen 6 12
ThinkPad Yoga 11e (5th Gen) 19
C Series **26**
ThinkPad C13 Yoga Gen 1 Chromebook 26
E Series **33**
ThinkPad E14 33
ThinkPad E14 Gen 2 (AMD) 40
ThinkPad E14 Gen 2 (Intel) 47
ThinkPad E14 Gen 3 (AMD) 54
ThinkPad E15 61
ThinkPad E15 Gen 2 (AMD) 68
ThinkPad E15 Gen 2 (Intel) 75
ThinkPad E15 Gen 3 (AMD) 82
L Series **89**
ThinkPad L13 89
ThinkPad L13 Gen 2 (AMD) 97
ThinkPad L13 Gen 2 (Intel) 104
ThinkPad L13 Yoga 112
ThinkPad L13 Yoga Gen 2 (AMD) 120
ThinkPad L13 Yoga Gen 2 (Intel) 128
ThinkPad L14 Gen 1 (AMD) 136
ThinkPad L14 Gen 1 (Intel) 144
ThinkPad L14 Gen 2 (AMD) 152
ThinkPad L14 Gen 2 (Intel) 159
ThinkPad L15 Gen 1 (AMD) 167
ThinkPad L15 Gen 1 (Intel) 175
ThinkPad L15 Gen 2 (AMD) 183
ThinkPad L15 Gen 2 (Intel) 190
P Series **198**
ThinkPad P1 Gen 3 198
ThinkPad P1 Gen 4 206
ThinkPad P14s Gen 1 (AMD) 214
ThinkPad P14s Gen 1 (Intel) 221
ThinkPad P14s Gen 2 (AMD) 229
ThinkPad P14s Gen 2 (Intel) 236
ThinkPad P15 Gen 1 244
ThinkPad P15 Gen 2 252
ThinkPad P15s Gen 1 260
ThinkPad P15s Gen 2 268
ThinkPad P15v Gen 1 276
ThinkPad P17 Gen 1 284
ThinkPad P17 Gen 2 292
T Series **299**
ThinkPad T14 Gen 1 (AMD) 299
ThinkPad T14 Gen 1 (Intel) 307
ThinkPad T14 Gen 2 (AMD) 315

Contents

ThinkPad T14 Gen 2 (Intel) 323
ThinkPad T14 Secure Access / Healthcare Edition Gen 1 331
ThinkPad T14s Gen 1 (AMD) 338
ThinkPad T14s Gen 1 (Intel) 346
ThinkPad T14s Gen 2 (Intel) 354
ThinkPad T15 Gen 1 362
ThinkPad T15 Gen 2 370
ThinkPad T15g Gen 1 378
ThinkPad T15g Gen 2 386
ThinkPad T15p Gen 1 394
X Series **401**
ThinkPad X13 Gen 1 (AMD) 401
ThinkPad X13 Gen 1 (Intel) 409
ThinkPad X13 Gen 2 (Intel) 417
ThinkPad X13 Yoga Gen 1 425
ThinkPad X13 Yoga Gen 2 (Intel) 433
X1 Series **441**
ThinkPad X1 Carbon Gen 8 441
ThinkPad X1 Carbon Gen 9 449
ThinkPad X1 Extreme Gen 3 457
ThinkPad X1 Extreme Gen 4 465
ThinkPad X1 Fold Gen 1 473
ThinkPad X1 Nano Gen 1 480
ThinkPad X1 Titanium Yoga Gen 1 487
ThinkPad X1 Yoga Gen 5 494
ThinkPad X1 Yoga Gen 6 502
Legal Information **510**

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)**
ThinkPad L13 Gen 2 (AMD)
ThinkPad L13 Yoga Gen 2 (AMD)
ThinkPad X1 Extreme Gen 4

►**Spec updated**
ThinkPad L14 Gen 2 (AMD)
ThinkPad L14 Gen 2 (Intel)
ThinkPad L15 Gen 2 (AMD)
ThinkPad L15 Gen 2 (Intel)
ThinkPad T14 Gen 1 (AMD)
ThinkPad T14 Gen 2 (AMD)
ThinkPad T14 Gen 2 (Intel)
ThinkPad T14s Gen 1 (AMD)
ThinkPad T15 Gen 2
ThinkPad X1 Carbon Gen 9
ThinkPad X1 Nano Gen 1
ThinkPad X1 Titanium Yoga Gen 1
ThinkPad X13 Gen 1 (AMD)
ThinkPad X13 Gen 2 (Intel)
ThinkPad X13 Yoga Gen 2 (Intel)

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
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
Flash Memory	eMMC	-	-

Notes:

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

Display[2]

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

Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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; and 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

Display[1]

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
- Not support

Keyboard

6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight

Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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


Roman Mythology











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
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
Flash Memory	eMMC	-	-

Notes:

1. System has one M.2 2242 SSD or one eMMC on systemboard 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; and rear 5.0-megapixel, auto focus

Battery

Battery

Integrated Li-Polymer 42Wh battery

Max Battery Life[1]

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

Display[1]

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)
- Not support

Keyboard

6-row, multimedia Fn keys

Keyboard Backlight

Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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 1.4
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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





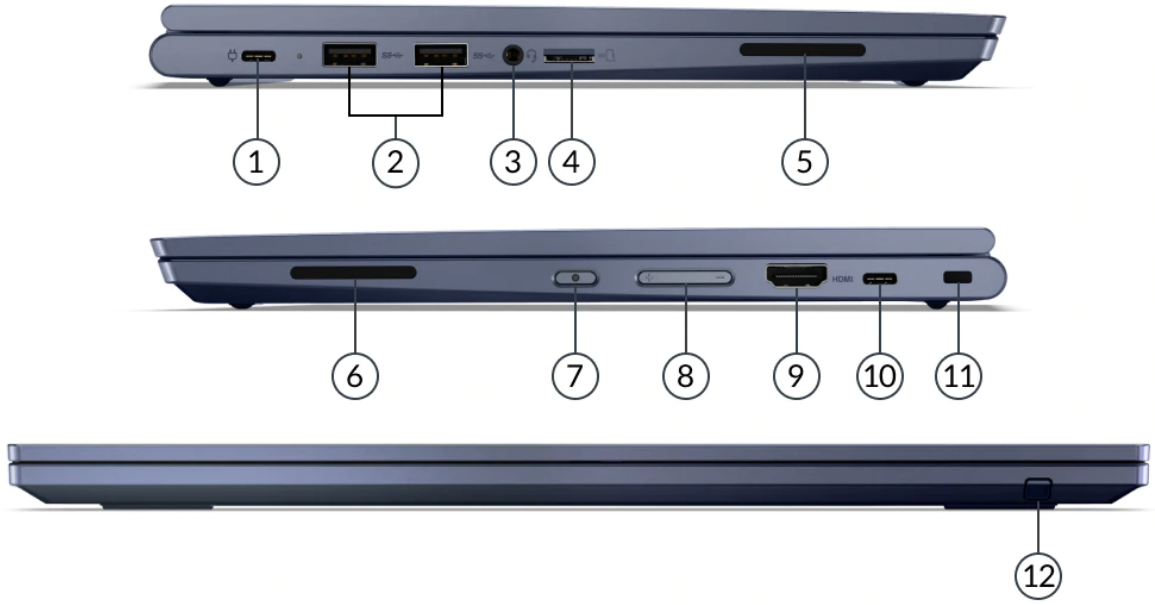







2:30
Friday, July 29

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

Storage Slot

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

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	-	-
Flash Memory	eMMC	-	-

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; and 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

Not support

Other Security

ThinkShutter camera cover

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





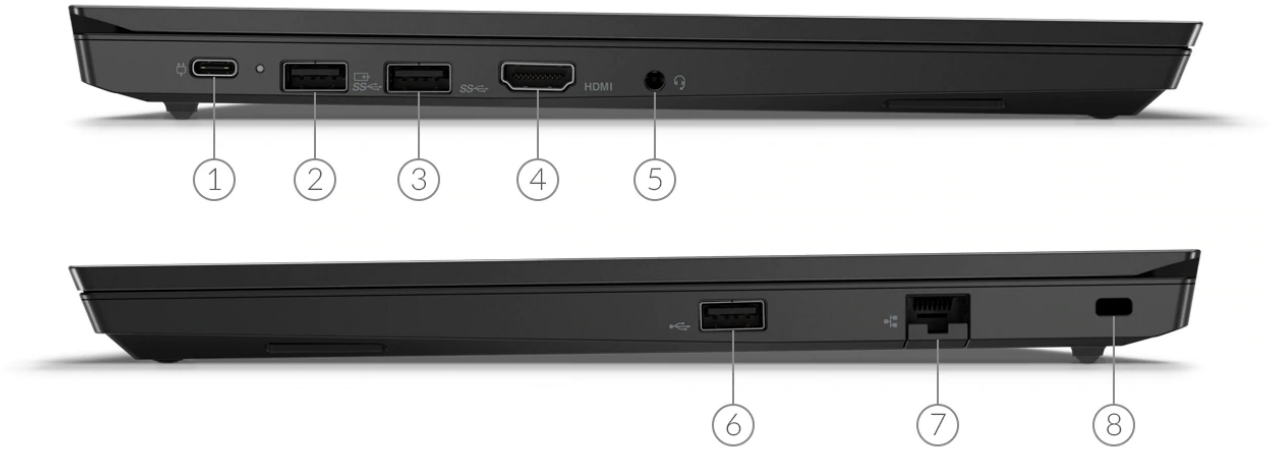








OVERVIEW



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 with Solid State Storage, M.2 2280	PCIe NVMe, PCIe 3.0 x4	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

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

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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

DESIGN

Display

Display[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
14.0"	FHD	None	TN	220 nits	Anti-	16:9	400:1	-	90°	-

	(1920x1080)				glare					
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
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions
PC + ABS (top), PC + ABS (bottom) models	324 x 220 x 20.5 mm (12.76 x 8.66 x 0.81 inches)
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)

Weight[1]

Models	Weight
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)
Aluminium (Top), Aluminium (Bottom) models	1.64 kg (3.62 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]

- 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

Not Support

SIM Card

No SIM card

NFC

Not 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 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





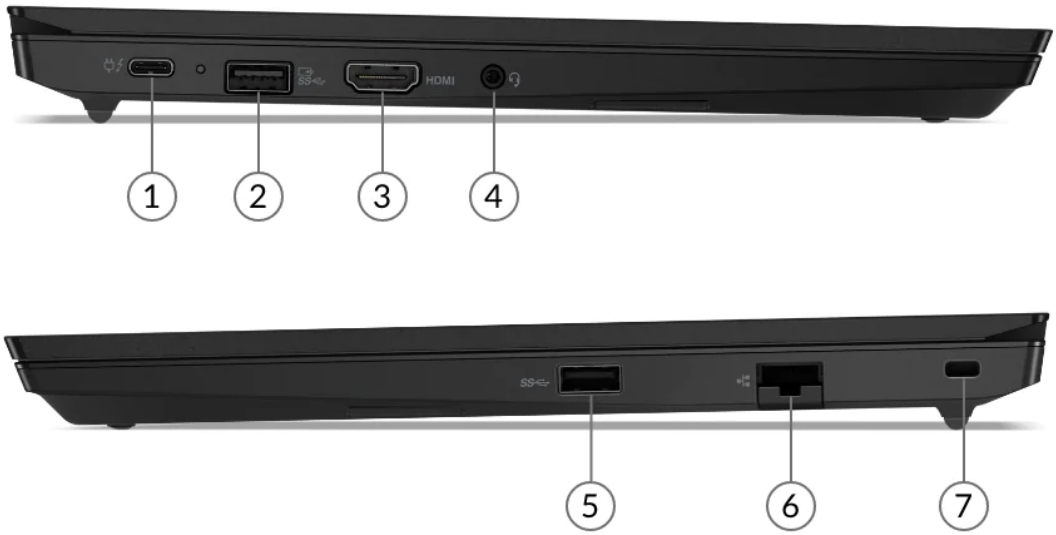








OVERVIEW



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:

1. 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:

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[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, 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

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	300 nits	Anti-glare	16:9	800:1	45% NTSC	170°	-

14.0"	FHD (1920x1080)	None	IPS	250 nits	Anti-glare	16:9	800:1	45% NTSC	170°	-
14.0"	FHD (1920x1080)	None	TN	220 nits	Anti-glare	16:9	500:1	45% NTSC	90°	-
14.0"	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	1200:1	100% sRGB	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
- Not 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), PC + ABS (Bottom) models	1.59 kg (3.51 lbs)
PC + ABS (Top), PC + ABS (Bottom) models	1.69 kg (3.73 lbs)
Aluminium (Top), Aluminium (Bottom) models	1.64 kg (3.62 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

Not Support

SIM Card

No SIM card

NFC

Not 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 (Always On)
- 1x USB 2.0
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

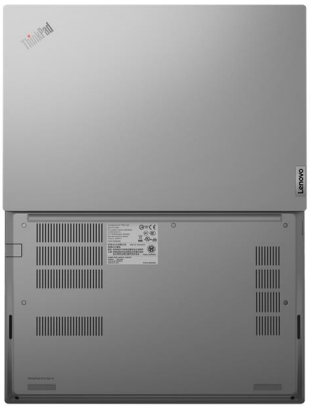
Other Certifications

TUV Low Blue Light certified





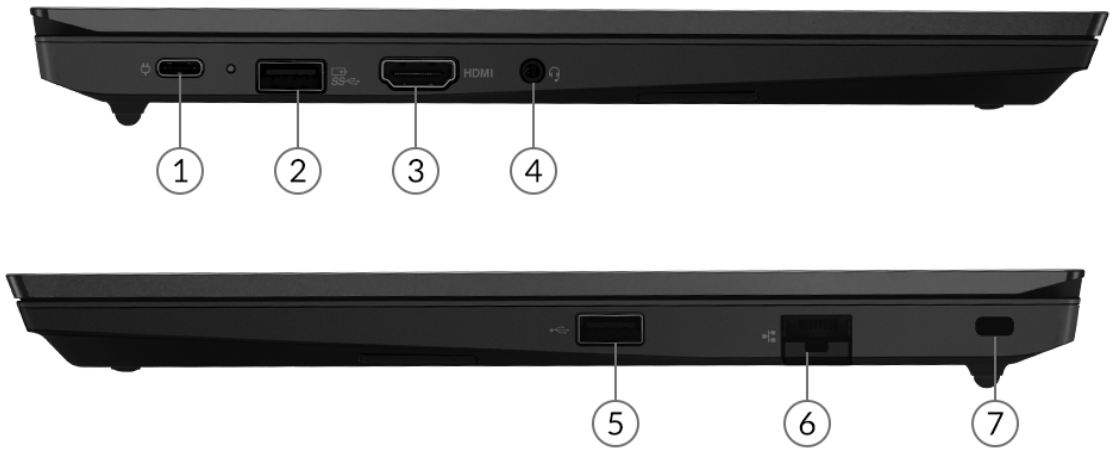








OVERVIEW



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, 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: 12.8 hr (45Wh)
- MobileMark 2018: 15.8 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

DESIGN

Display

Display[2]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect	Contrast	Color	Viewing	Key

						Ratio	Ratio	Gamut	Angle	Features
14.0"	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	1200:1	100% sRGB	170°	-
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°	-

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

Keyboard Backlight

- LED backlight
- Not 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
PC + ABS (Top), PC + ABS (Bottom) models	1.69 kg (3.73 lbs)
Aluminium (Top), Aluminium (Bottom) models	1.64 kg (3.62 lbs)

Case Color[2]

- Black
- Mineral metallic

Case Material

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

Notes:

1. The system weight varies depending on configurations.
2. Color mineral metallic is NOT available in EMEA

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

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 (Always On)
- 1x USB 2.0
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service

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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

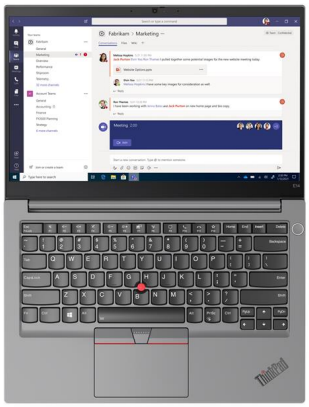
- EPEAT™ Gold
- ENERGY STAR® 8.0
- ErP Lot 3
- GREENGUARD®
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed





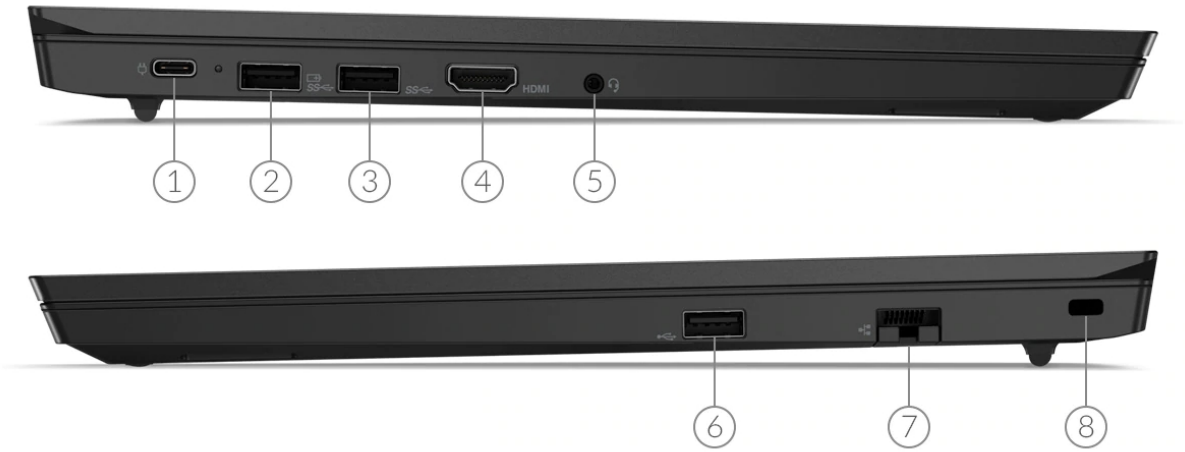








OVERVIEW



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 with Solid State Storage, M.2 2280	PCIe NVMe, PCIe 3.0 x4	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

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

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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





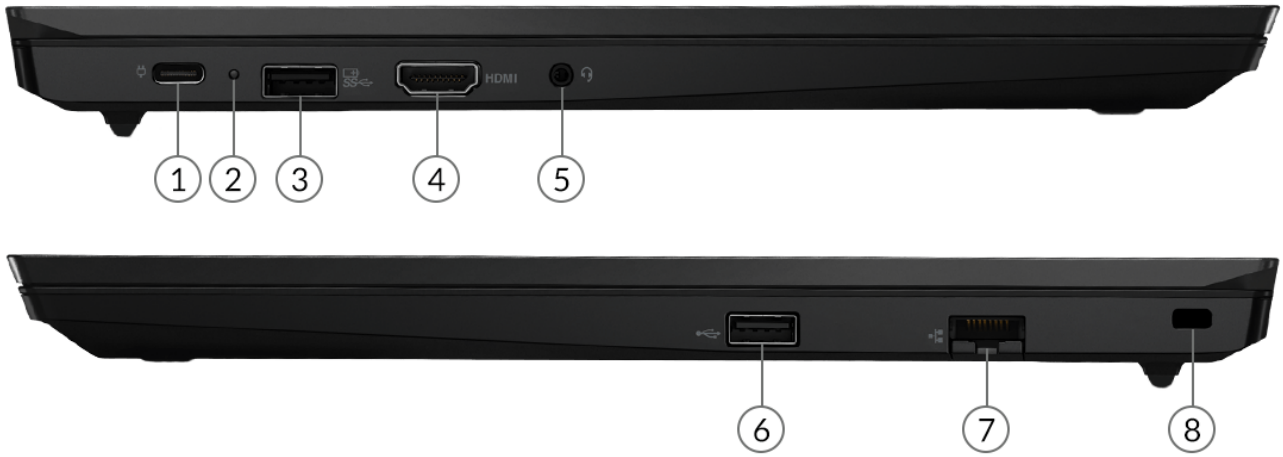








OVERVIEW



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, 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

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	700:1	-	170°	-

	(1920x1080)				glare					
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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





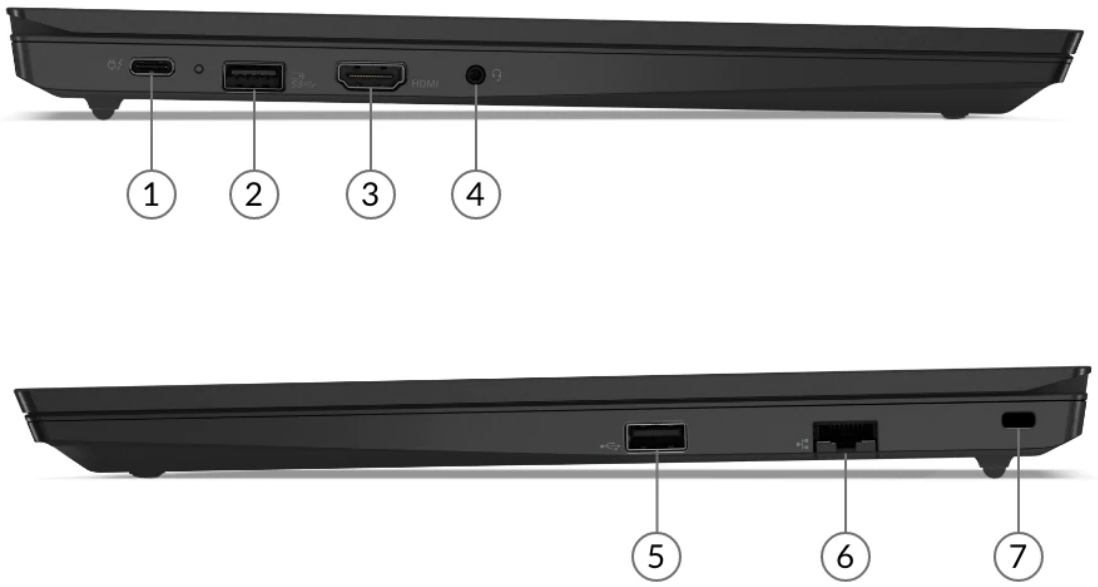








OVERVIEW



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:

1. 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:

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[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, 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

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	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)	None	TN	220 nits	Anti-glare	16:9	500:1	45% NTSC	90°	-
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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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 (Always On)
- 1x USB 2.0
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

TUV Low Blue Light certified





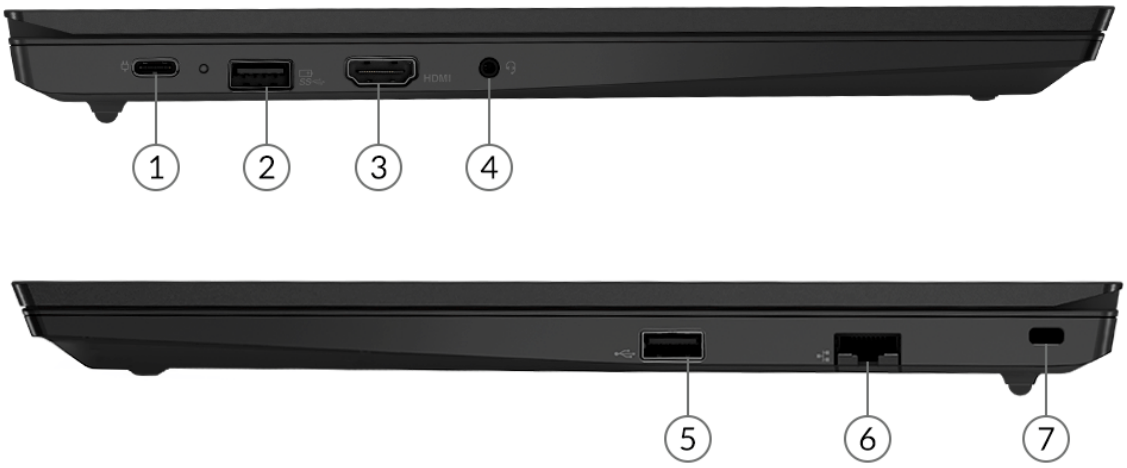








OVERVIEW



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, 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

DESIGN

Display

Display[2]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect	Contrast	Color	Viewing	Key

						Ratio	Ratio	Gamut	Angle	Features
15.6″	FHD (1920x1080)	None	TN	250 nits	Anti-glare	16:9	500:1	45% NTSC	90°	-
15.6″	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	1200:1	100% sRGB	170°	-
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°	-

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
- Not 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

WWAN

Not Support

SIM Card

No SIM card

NFC

Not 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 (Always On)
- 1x USB 2.0
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite service
- 1-year depot with 2-year system board service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[1]

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













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, 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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

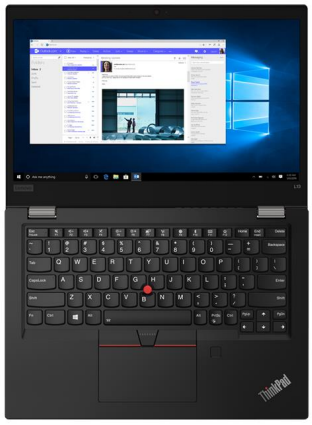
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed


Jack Purton



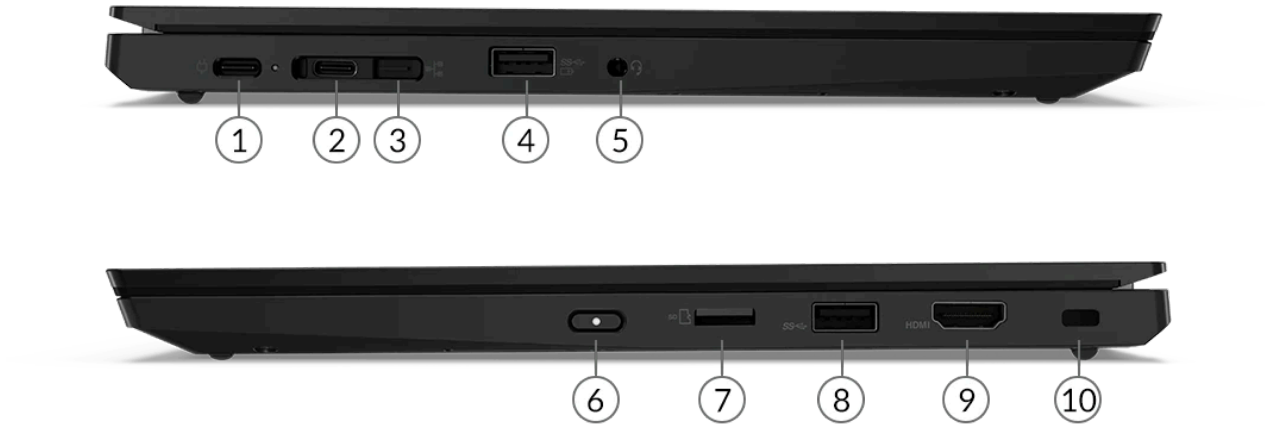








OVERVIEW



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:

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

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

- 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	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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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 3.0 and DisplayPort™ 1.4)
- 1x 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 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

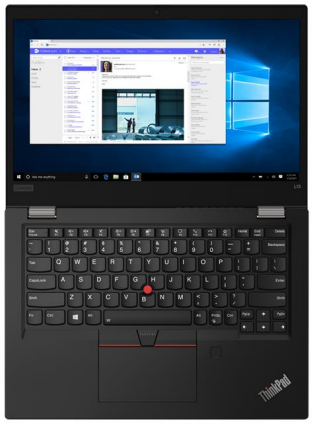
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed


Jack Purton



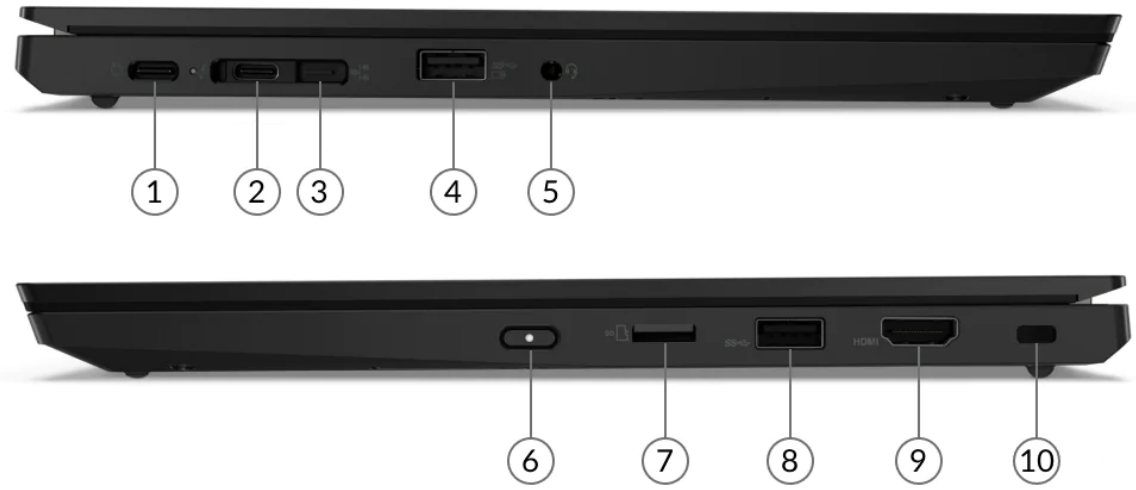








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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, 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

- 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	45% NTSC	90°	-
13.3"	FHD (1920x1080)	None	IPS	250 nits	Anti-glare	16:9	800:1	45% NTSC	170°	-
13.3"	FHD	Multi-	IPS	300 nits	Anti-	16:9	700:1	72%	170°	-

	(1920x1080)	touch			glare			NTSC		

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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

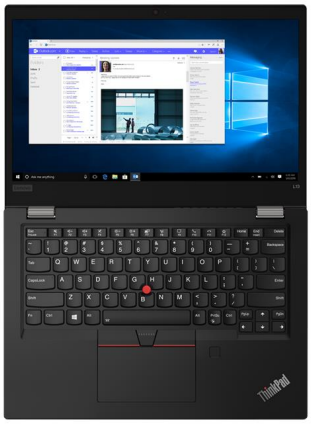
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed


Jack Purton











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 IR & 720p, with ThinkShutter, fixed focus
- Front 720p, with ThinkShutter, fixed focus; and rear 5.0-megapixel, auto focus
- Front IR & 720p, with ThinkShutter, fixed focus; and 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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





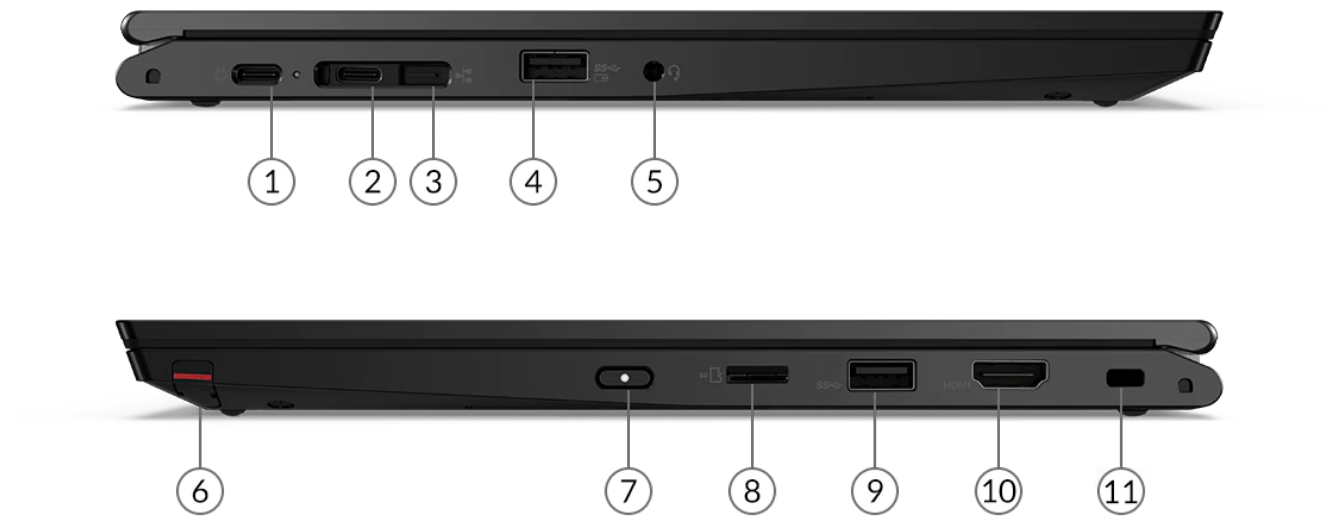








OVERVIEW



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; and rear 5.0-megapixel, auto focus
- Front IR & 720p, with privacy shutter, fixed focus
- Front IR & 720p, with privacy shutter, fixed focus; and 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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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 3.0 and DisplayPort™ 1.4)
- 1x 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 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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


A new way of banking
2019 Strategy



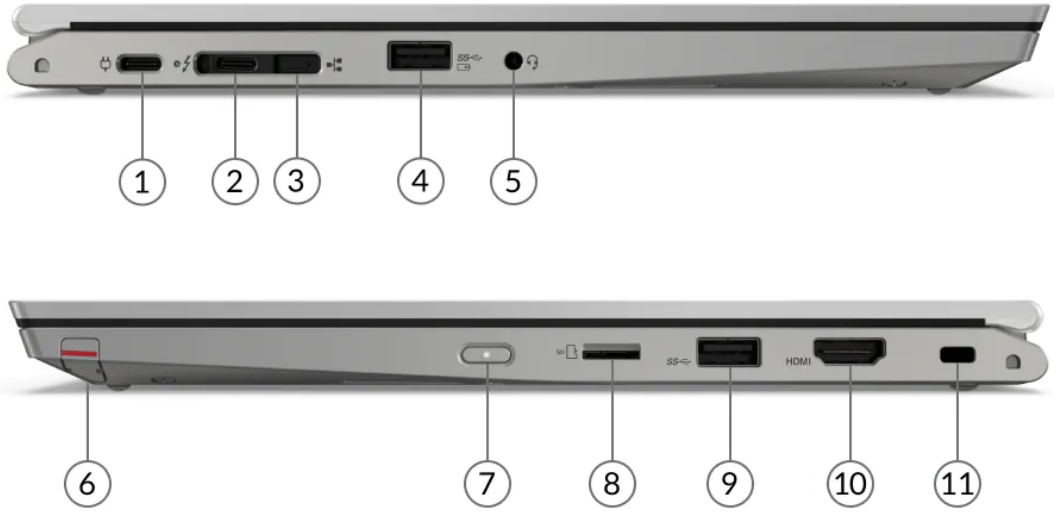








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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; and rear 5.0-megapixel, auto focus
- Front IR & 720p, with privacy shutter, fixed focus
- Front IR & 720p, with privacy shutter, fixed focus; and 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
- Not 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

Not Support

SIM Card

No SIM card

NFC

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password

- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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


A new way of banking
2019 Strategy



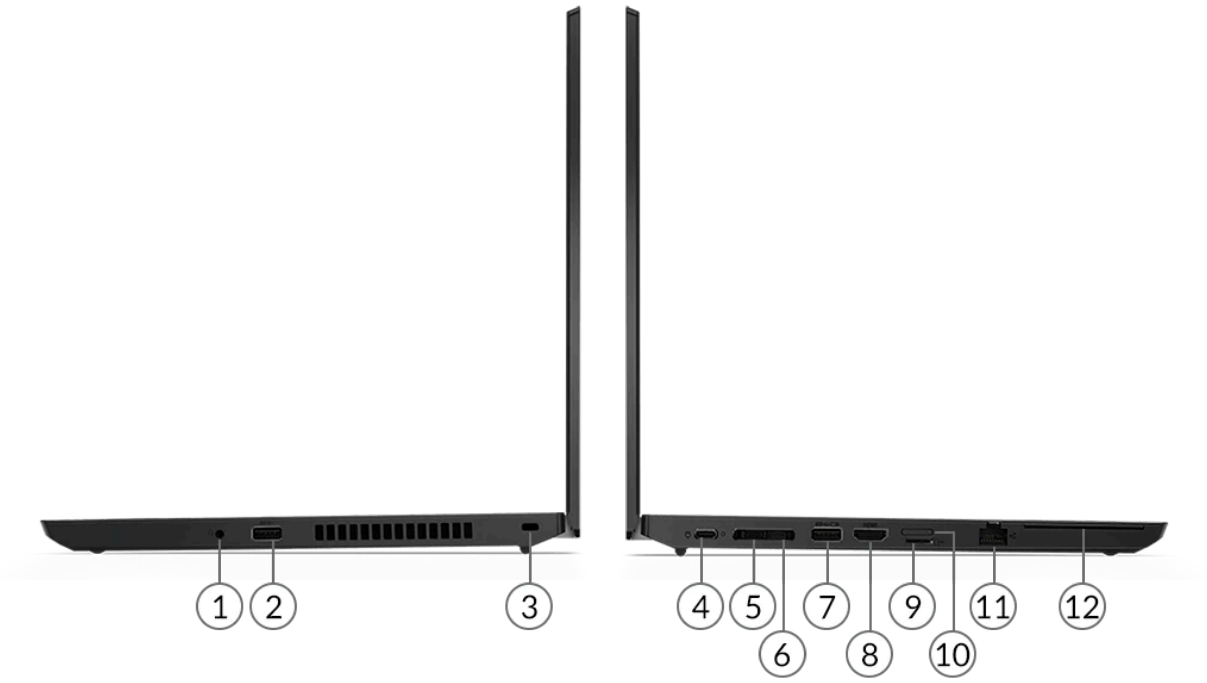








OVERVIEW



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:

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, with ThinkShutter, fixed focus
- No camera

Notes:

1. Microphone not configured is for speical bid only
2. Camera not configured 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

- 45W USB-C 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"	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
- Not 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]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

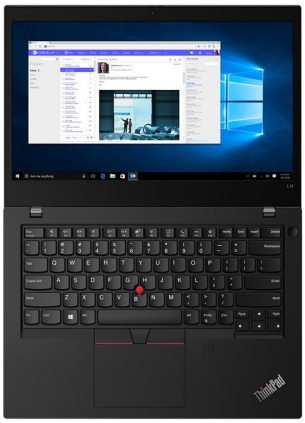
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed


SPEEDY - 6200 X
ThinkPad



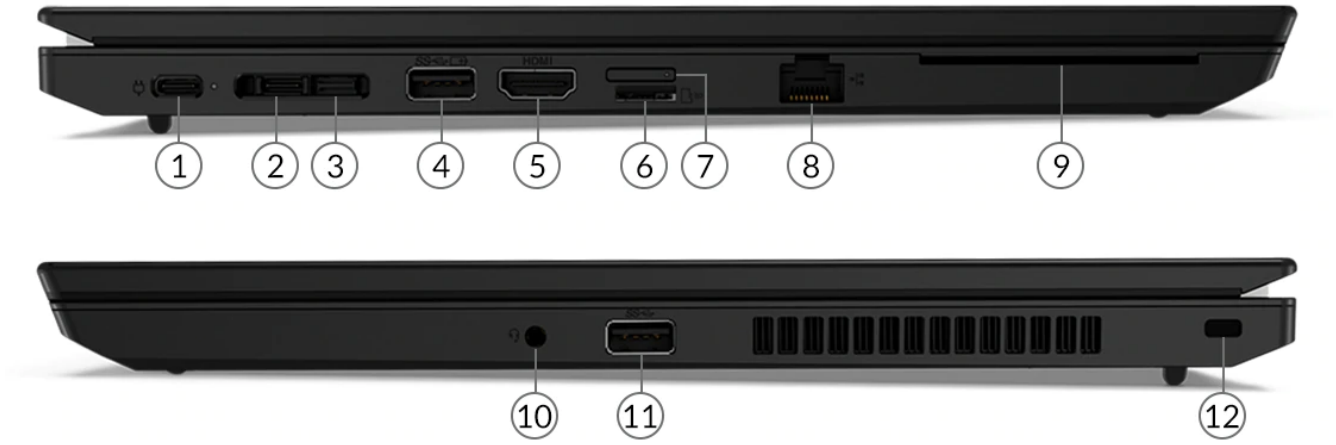

ThinkPad


ThinkPad





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), 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

- 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[1]

- One SSD mode: one M.2 slot
  - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD
- 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

Storage Type[2]

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. System has one HDD slot or one M.2 2280 slot exclusively for storage
2. HDD is NOT available in EMEA

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, with ThinkShutter, fixed focus
- No camera

Notes:

1. Microphone not configured is for speical bid only
2. Camera not configured 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"	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
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

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

Weight[1]

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

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

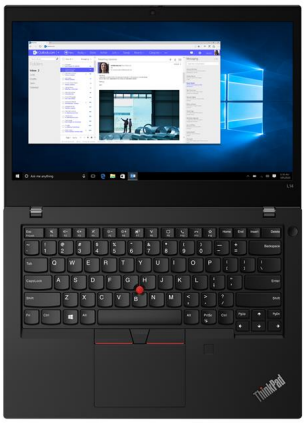
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed


Jack Purton



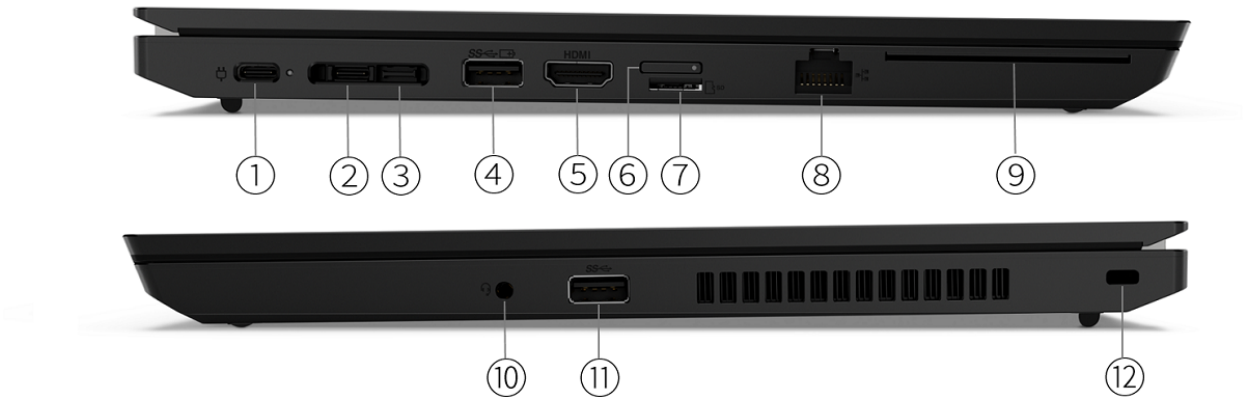








OVERVIEW



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:

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, 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

Notes:

1. 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)	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

Input Device

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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™

- 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

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not support

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

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

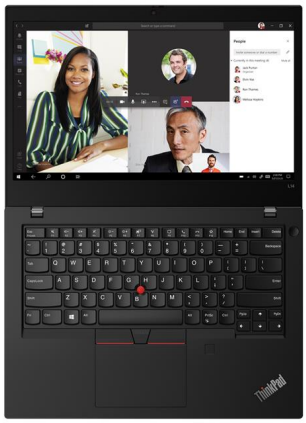
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

Work in progress





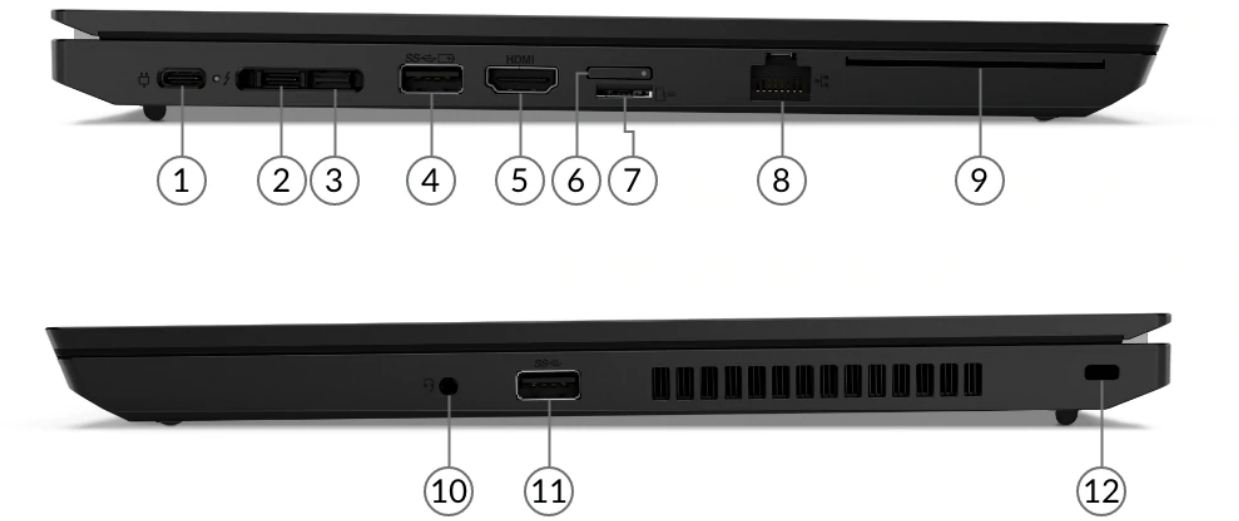








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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[1]

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise LTSC
- 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

- 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[1]

- One SSD mode: one M.2 slot
  - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD
- 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

Storage Type[2]

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. System has one HDD slot or one M.2 2280 slot exclusively for storage
2. HDD, 256GB and 512GB M.2 2242 SSD are NOT available in EMEA

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, 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

Notes:

1. 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)	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

Input Device

Keyboard

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

Keyboard Backlight

- LED backlight
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions

PC + ABS models	331 x 235 x 20.4 mm (13.03 x 9.25 x 0.80 inches)
Aluminium models	331 x 235 x 19.1 mm (13.03 x 9.25 x 0.75 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:

1. The system weight varies depending on configurations.
2. 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

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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)
- 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 Smart card reader

- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

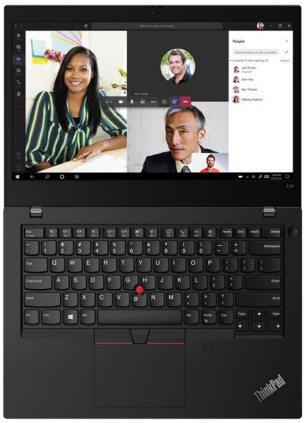
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed


Jack Purton



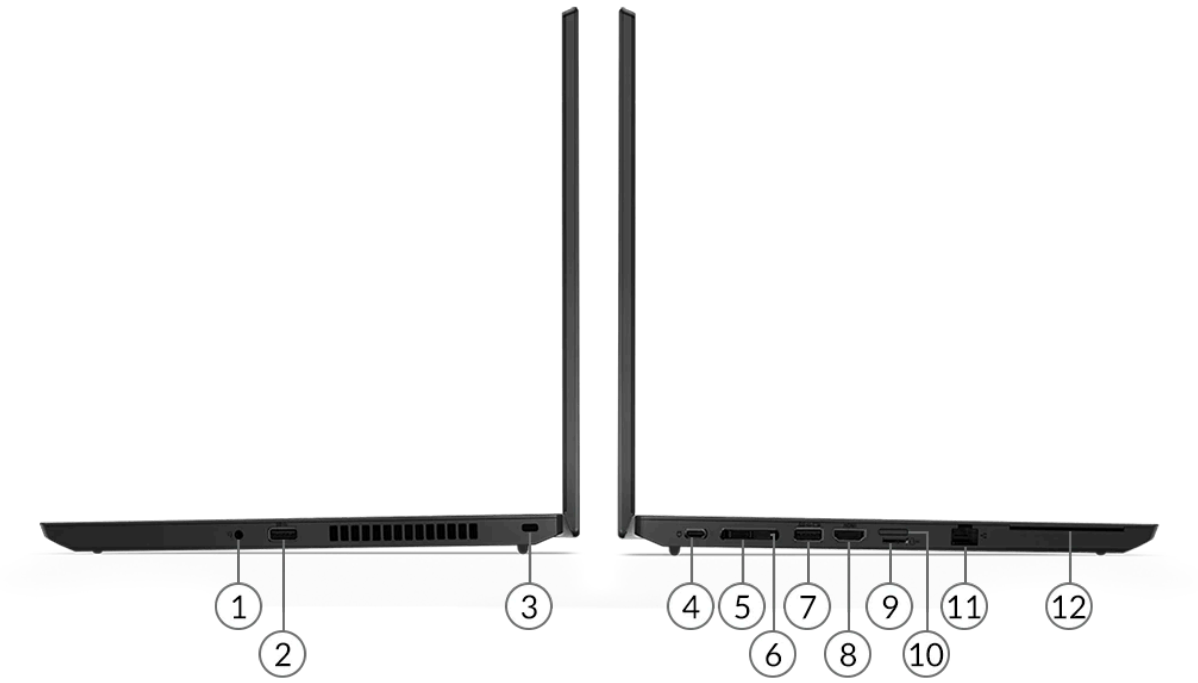








OVERVIEW



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, with ThinkShutter, fixed focus
- No camera

Notes:

1. Microphone not configured is for speical bid only
2. Camera not configured 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

- 45W USB-C 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″	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
- Not 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, 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]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





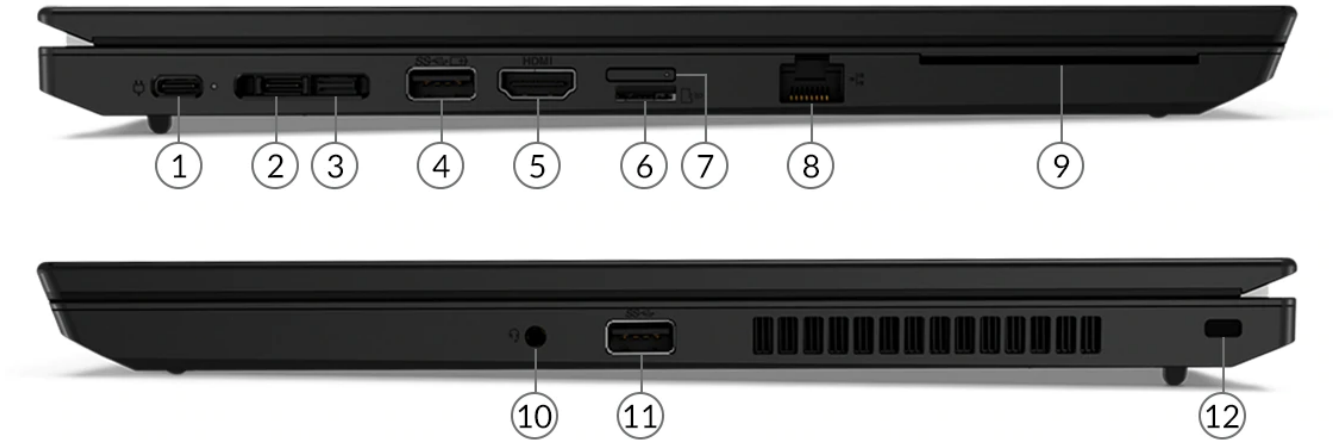








OVERVIEW



1. USB-C 3.2 Gen 1	7. 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), 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

- 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[1]

- One SSD mode: one M.2 slot
  - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD
- 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

Storage Type[2]

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. System has one HDD slot or one M.2 2280 slot exclusively for storage
2. HDD is NOT available in EMEA

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, with ThinkShutter, fixed focus
- No camera

Notes:

1. Microphone not configured is for speical bid only
2. Camera not configured 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″	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
- Not 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]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





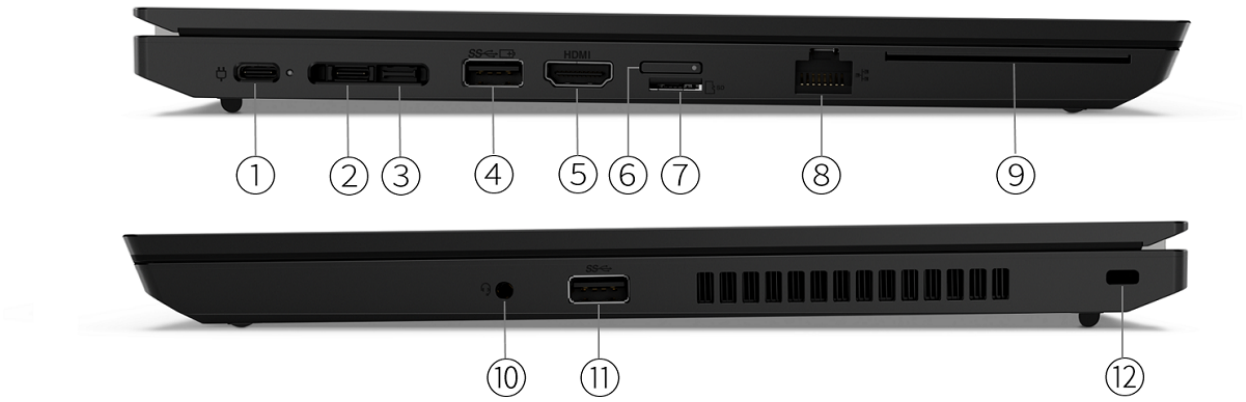








OVERVIEW



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, 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

Notes:

1. 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
- Not 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™

- 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

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not support

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

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

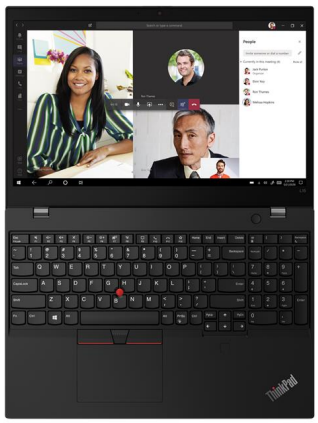
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

Work in progress





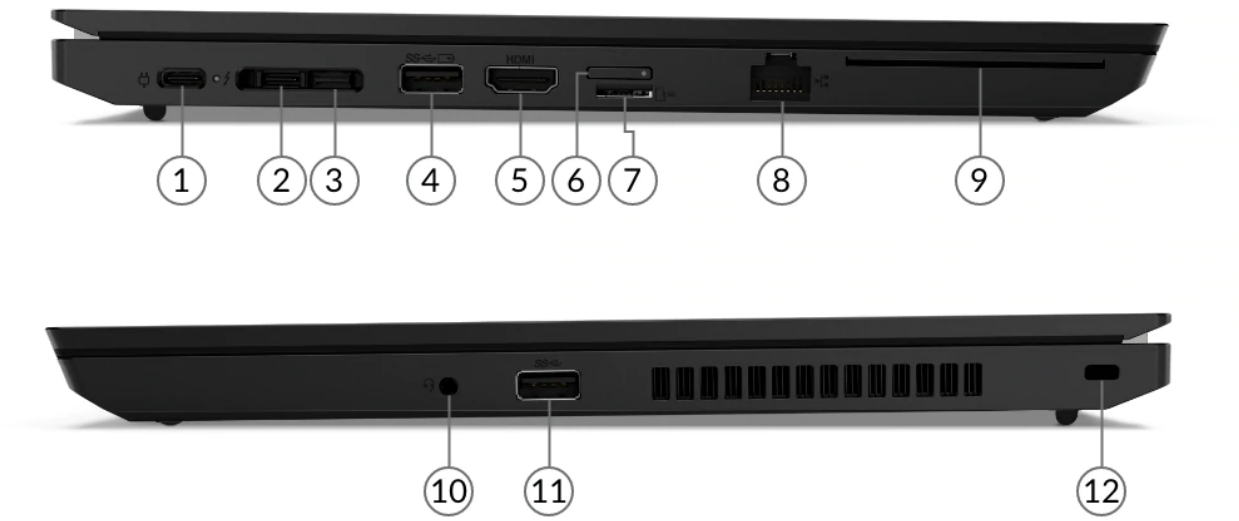








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	DDR4-3200	Intel Iris Xe Graphics
Core i7-1165G7	4	8	2.8GHz	4.7GHz	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

- 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[1]

- One SSD mode: one M.2 slot
  - One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD
- 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

Storage Type[2]

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. System has one HDD slot or one M.2 2280 slot exclusively for storage
2. HDD is NOT available in EMEA

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, with privacy shutter, fixed focus
- No camera

Notes:

1. Microphone not configured is for speical bid only

2. Camera not configured 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

Notes:

1. 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
- Not 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

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

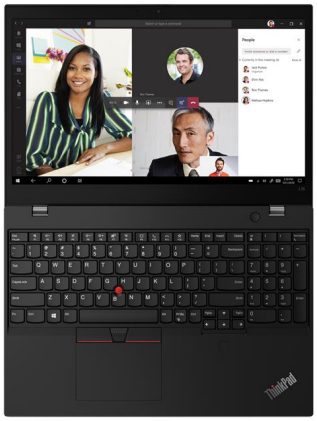
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed













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:

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	-	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, 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
- Not Support

SIM Card

No SIM card

NFC

Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

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

Other Certifications

Mil-Spec Test

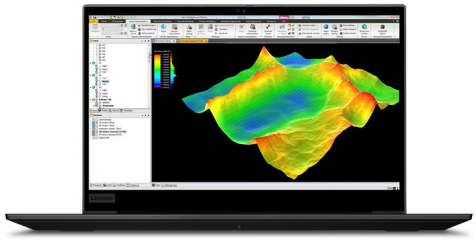
MIL-STD-810G military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/





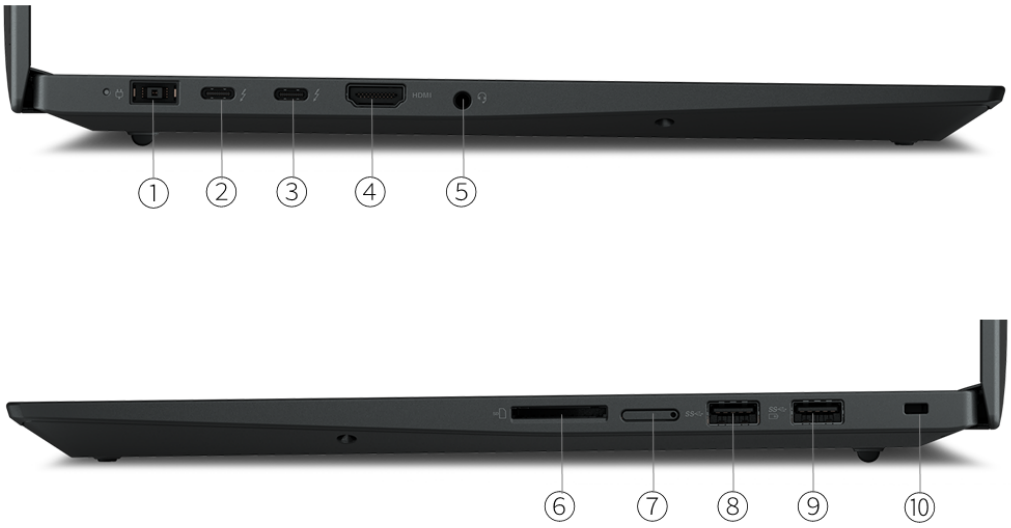








OVERVIEW



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, 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 dimmimg
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 dimmimg
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 dimmimg

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
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- Not Support

SIM Card

- Nano SIM card, Lenovo Connect 24 months, 4G LTE
- No SIM card

NFC

Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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



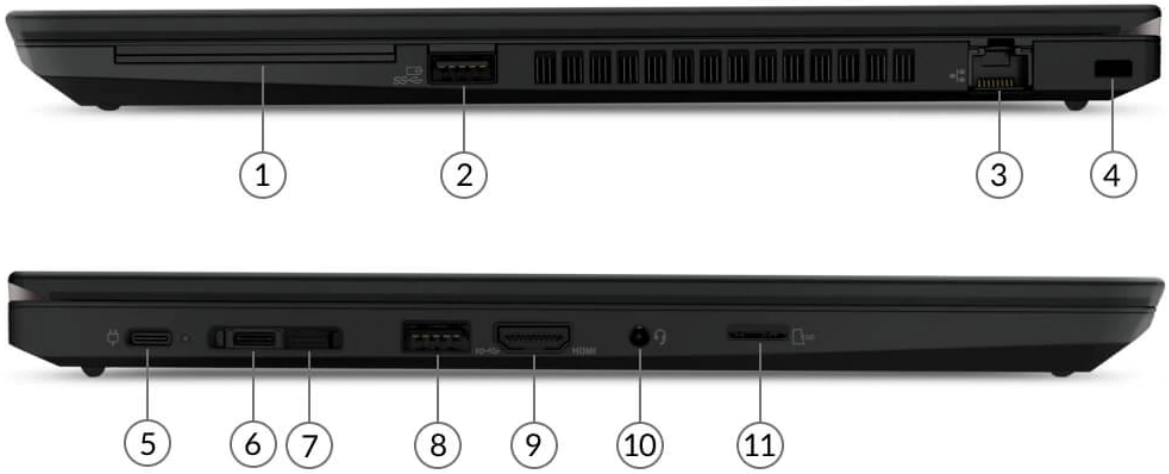








OVERVIEW



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

Ryzen™ 7 PRO 4750U 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 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)
- 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

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, 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)	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

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

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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)

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

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

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

CERTIFICATIONS

Green Certifications

Green Certifications

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

Other Certifications

Mil-Spec Test

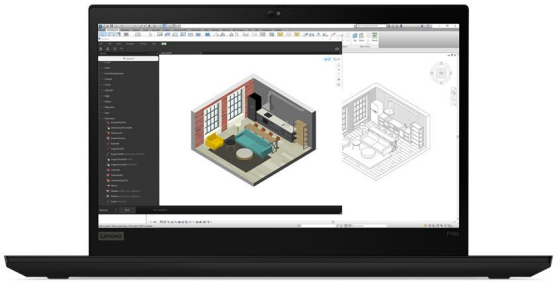
MIL-STD-810G military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/





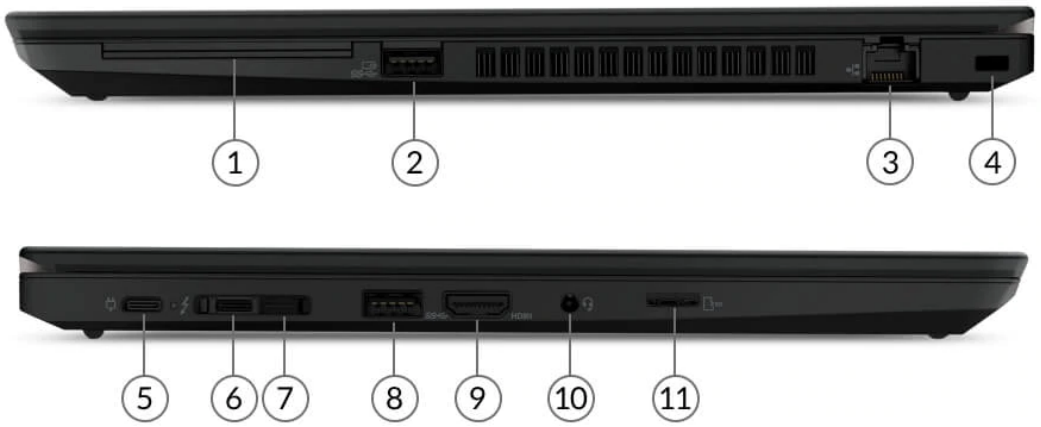








OVERVIEW



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 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:
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, 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

Display[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect	Contrast	Color	Viewing	Key Features

						Ratio	Ratio	Gamut	Angle	
14.0"	UHD (3840x2160)	None	IPS	500 nits	Glossy	16:9	1500:1	100% Adobe®	170°	Dolby Vision™, HDR 400
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

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

Not support

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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 models	1.55 kg (3.43 lbs)
UHD models	1.49 kg (3.28 lbs)
FHD Privacy Guard models	1.61 kg (3.56 lbs)
FHD Low Power models	1.49 kg (3.28 lbs)
FHD 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, 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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

ACCESSORIES

Bundled Accessories

Bundled Accessories

None

CERTIFICATIONS

Green Certifications

Green Certifications

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

Other Certifications

Mil-Spec Test

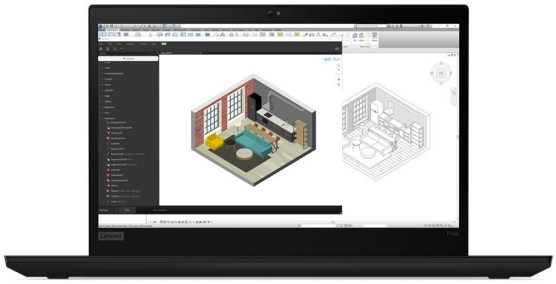
MIL-STD-810G military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/





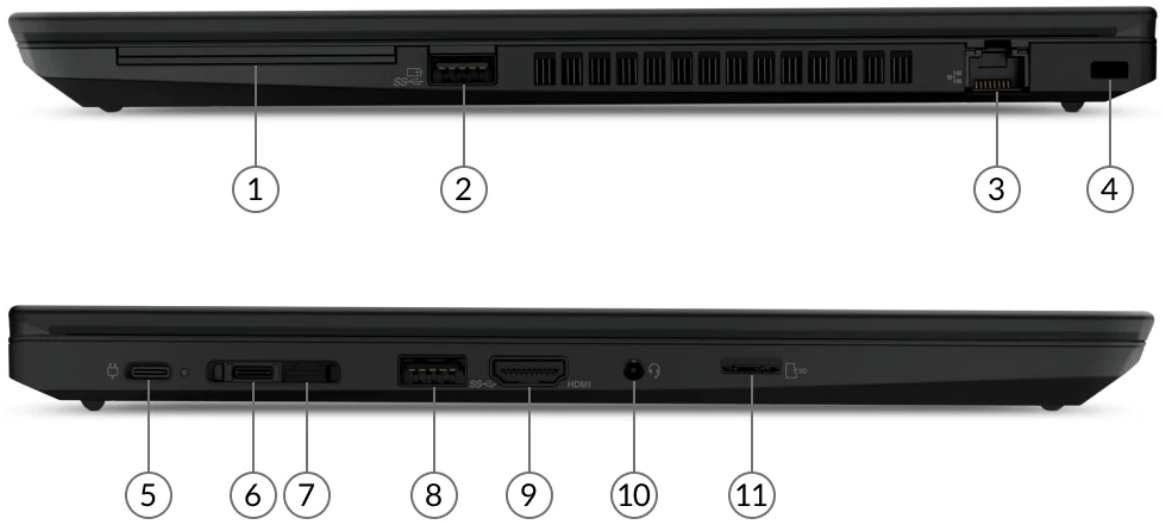








OVERVIEW



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, 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
- Not 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
- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality

- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor password

- NVMe password
- Self-healing BIOS

MANAGEABILITY

System Management

System Management

AMD Pro Manageability

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

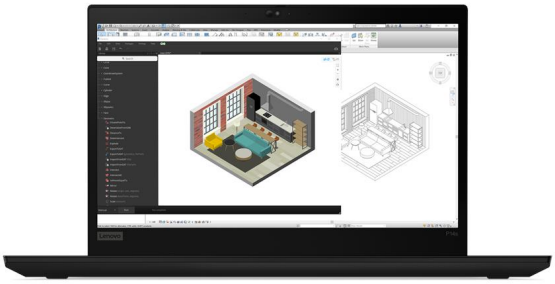
Mil-Spec Test

MIL-STD-810H military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/

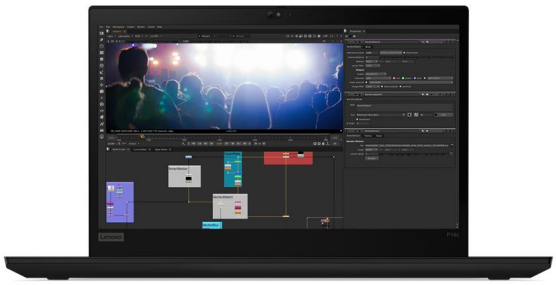




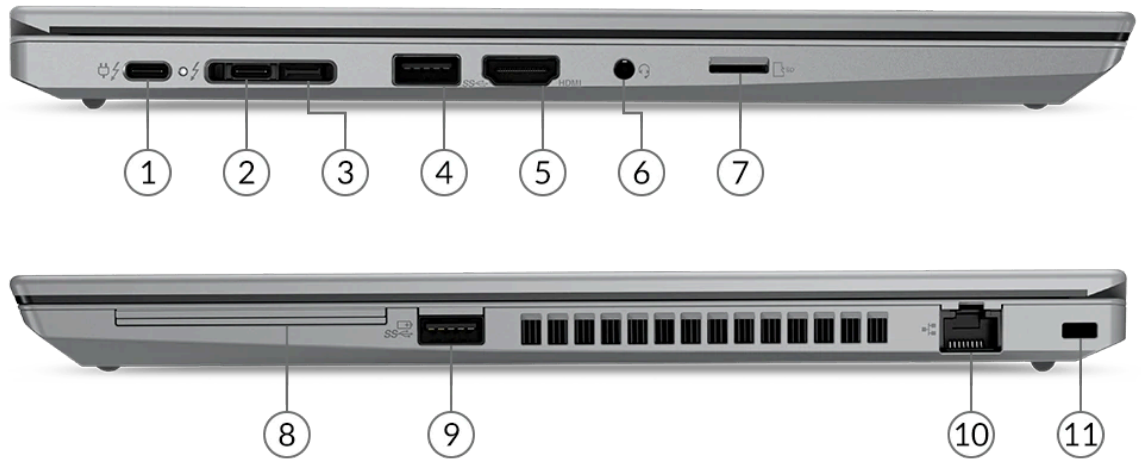








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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 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

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 4.0	-	2TB	Opal2
M.2 2280 SSD	PCIe NVMe, PCIe 3.0	-	256GB / 512GB / 1TB	Opal2

RAID

Not 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, 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)	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

Pen

Not support

Keyboard

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

Keyboard Backlight

- LED backlight
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions
PC + ABS models	329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)
Aluminium models	329.4 x 227.5 x 17.9 mm (12.97 x 8.96 x 0.70 inches)

Weight[1]

Models	Weight
PC + ABS models	1.469 kg (3.24 lbs)
Aluminium models	1.502 kg (3.31 lbs)

Case Color

- Black
- Storm grey

Case Material

- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

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

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
- None

WWAN

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without packaging: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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

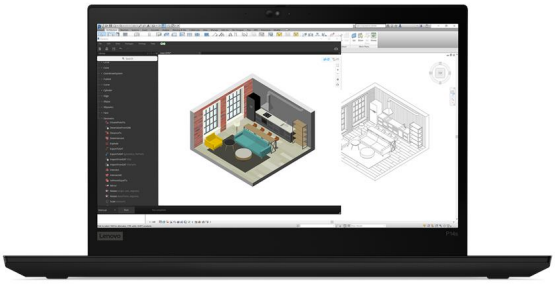
Mil-Spec Test

MIL-STD-810H military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/





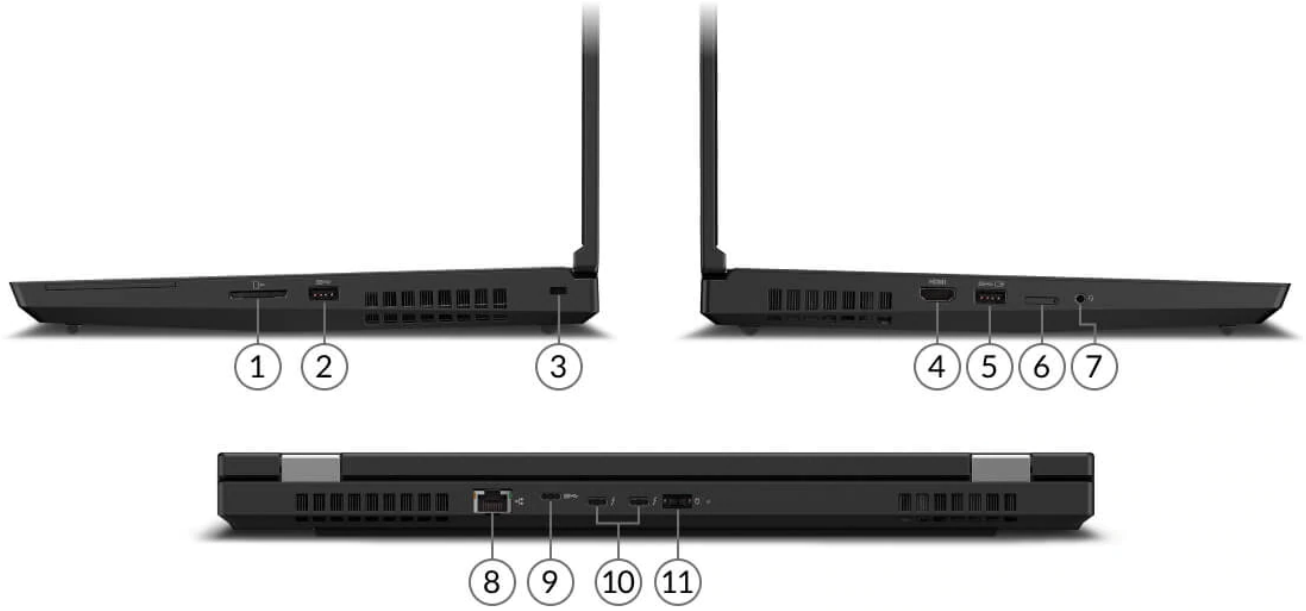








OVERVIEW



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 Processor or Intel Xeon® W 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	DDR4-2933	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	DDR4-2933	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® Speaker System certified

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p, 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	500 nits	Anti-glare	16:9	1200:1	72% NTSC	160°	Dolby Vision™, HDR
15.6"	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	700:1	72% NTSC	160°	-
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
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, 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]

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)
- 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

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not 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 USB-C 3.2 Gen 1 (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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

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/





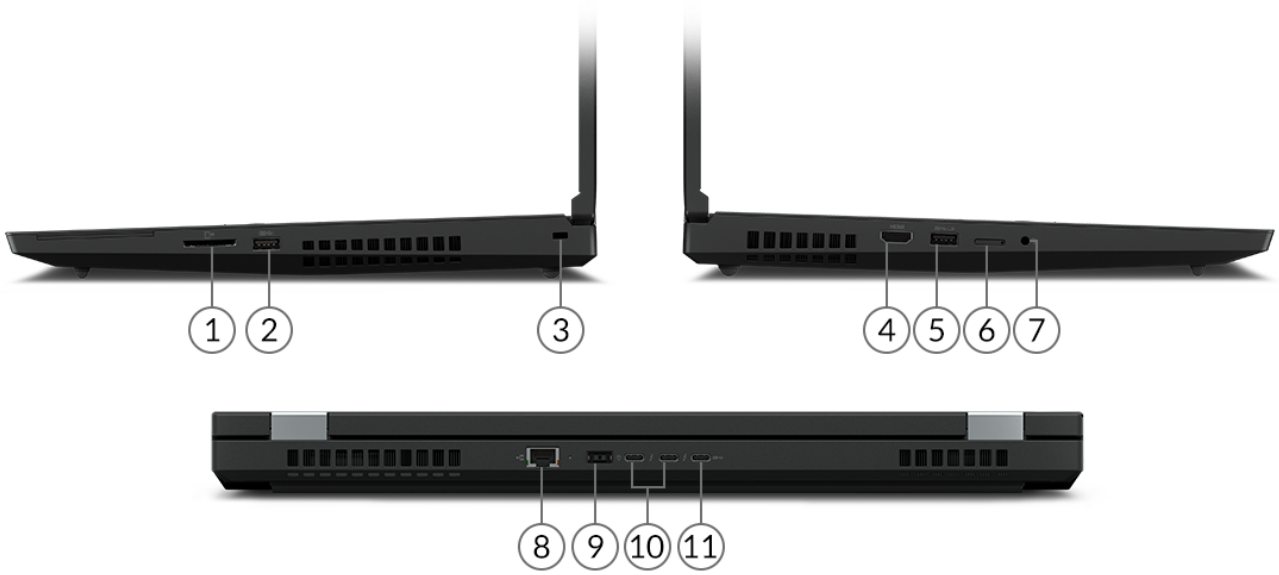








OVERVIEW



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

- 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 supported 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, 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:

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)

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

- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

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

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





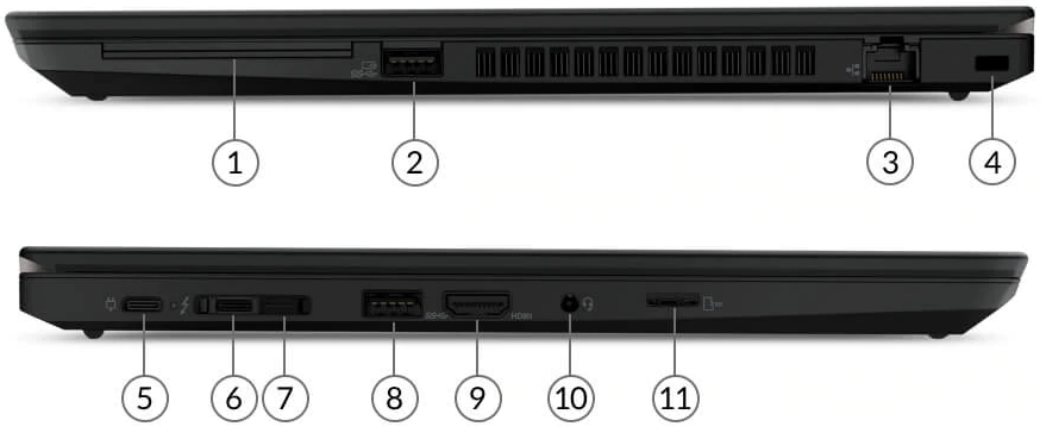








OVERVIEW



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:
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, 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:
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)
- 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

Not support

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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/





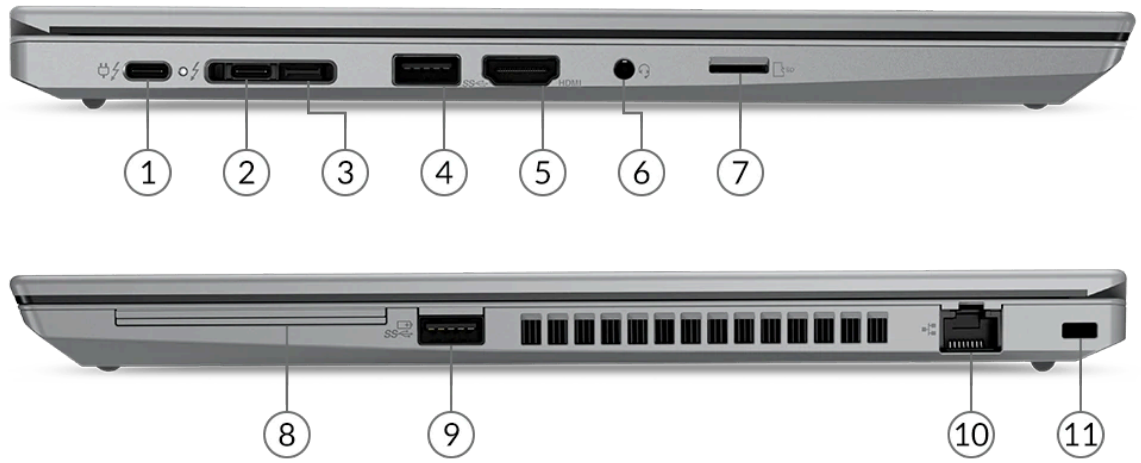








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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 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

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 4.0	-	2TB	Opal2
M.2 2280 SSD	PCIe NVMe, PCIe 3.0	-	256GB / 512GB / 1TB	Opal2

RAID

Not 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, 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

Not support

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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

- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- Aluminium (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)
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)

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
- None

WWAN

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 Processor or Intel Xeon® W 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	DDR4-2933	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
- 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:

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® ALC3287 codec

Speakers

Stereo speakers, Dolby® Audio™

Microphone

- Dual array microphone, near-field
- No microphone

Camera

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

Not support

Keyboard

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

Keyboard Backlight

- LED backlight
- Not 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)
- 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

- Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, MIMO 2x2, M.2 card
- Wireless WAN upgradable to 4G

- Not Support

SIM Card

No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

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/





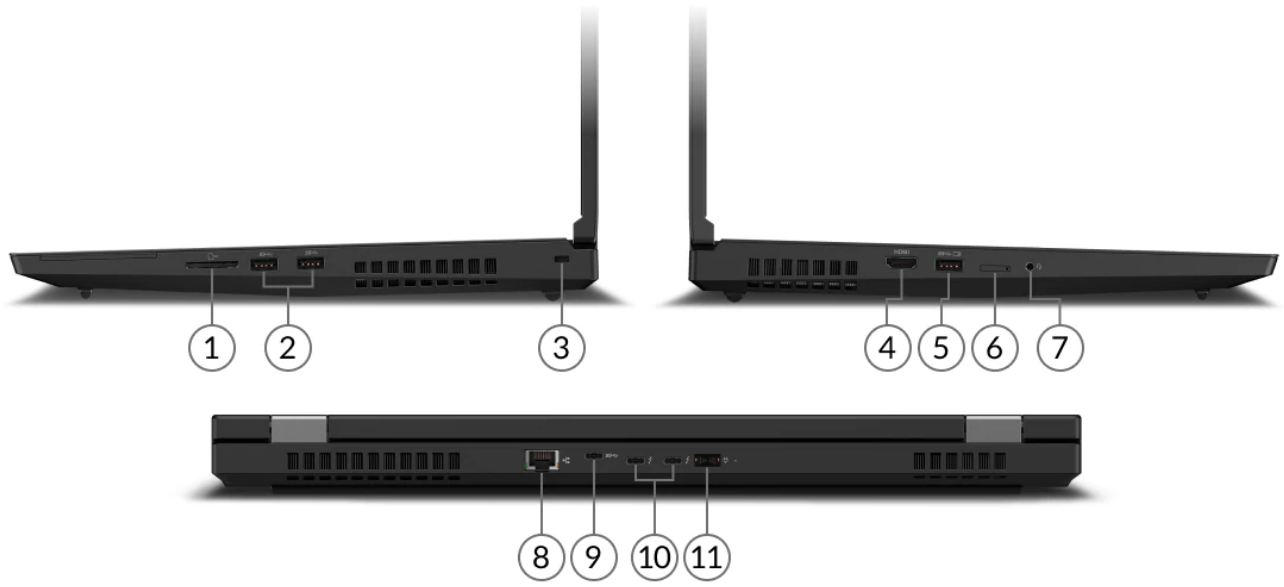








OVERVIEW



1. SD card reader	7. Headphone / microphone combo jack (3.5mm)
2. 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 Processor or Intel Xeon® W 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	DDR4-2933	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	DDR4-2933	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® Speaker System certified

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- IR & 720p, 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

Not 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)
- 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

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

Ports[1]

Standard Ports[2]

- 3x 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 USB-C 3.2 Gen 1 (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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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 (50)

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/





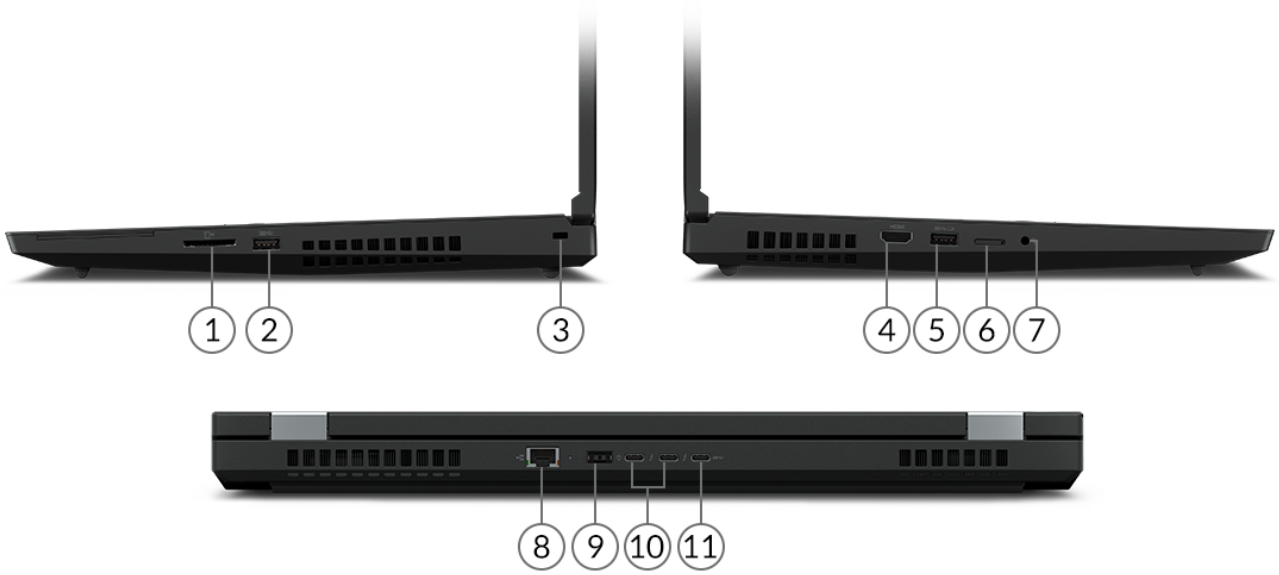








OVERVIEW



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

- 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 supported 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

Camera

- IR & 720p, 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:

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

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:

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

- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 without packaging: 5°C (41°F) to 43°C (109°F)
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°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/





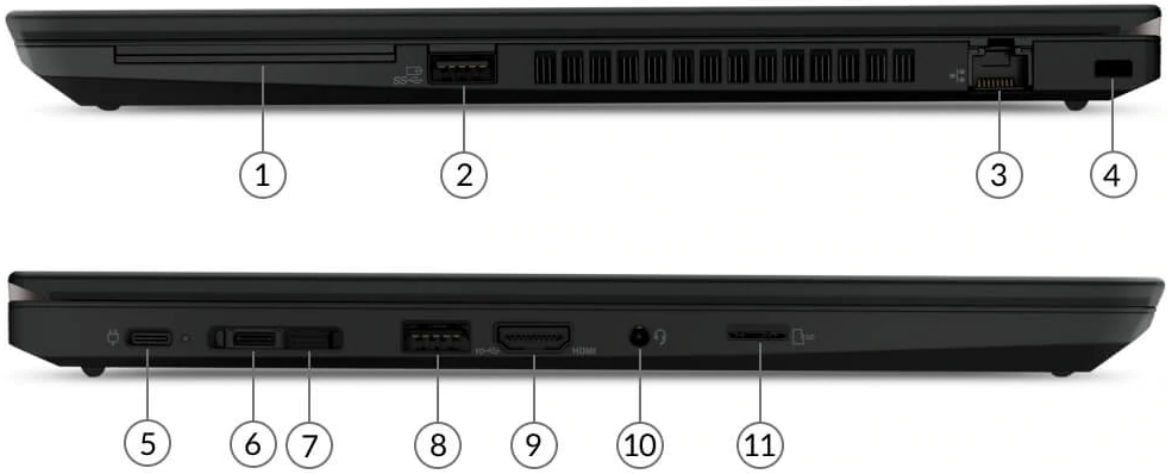





ThinkPad



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 32GB (16GB 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

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, 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

- 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)	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

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
- Not 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:

1. 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
- 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[2]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

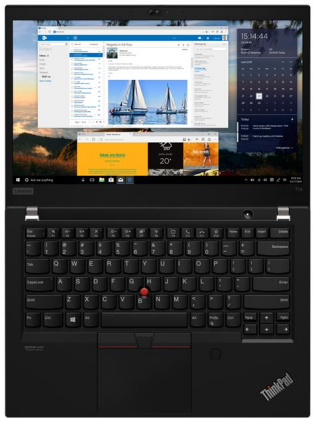
- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed





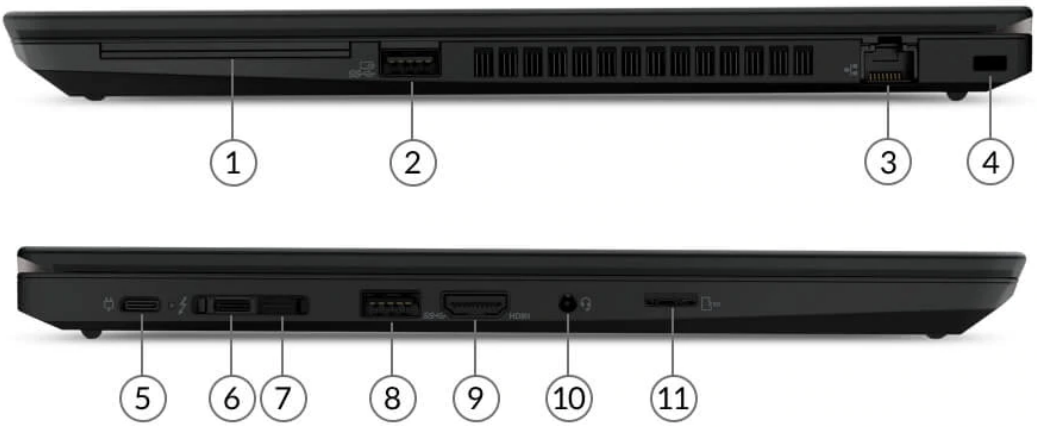








OVERVIEW



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 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, 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)	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	178°	ThinkPad® Privacy Guard
14.0"	UHD (3840x2160)	None	IPS	500 nits	Glossy	16:9	1500:1	100%	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
- Not 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
UHD models	1.49 kg (3.28 lbs)
FHD Privacy Guard models	1.61 kg (3.56 lbs)
FHD non-touch models	1.55 kg (3.41 lbs)
FHD Low Power models	1.49 kg (3.28 lbs)
FHD touch models	1.55 kg (3.41 lbs)
HD models	1.53 kg (3.37 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:

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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

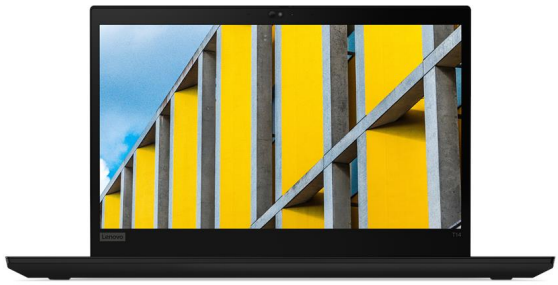
- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

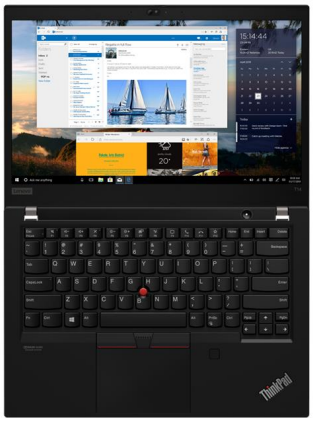
Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed





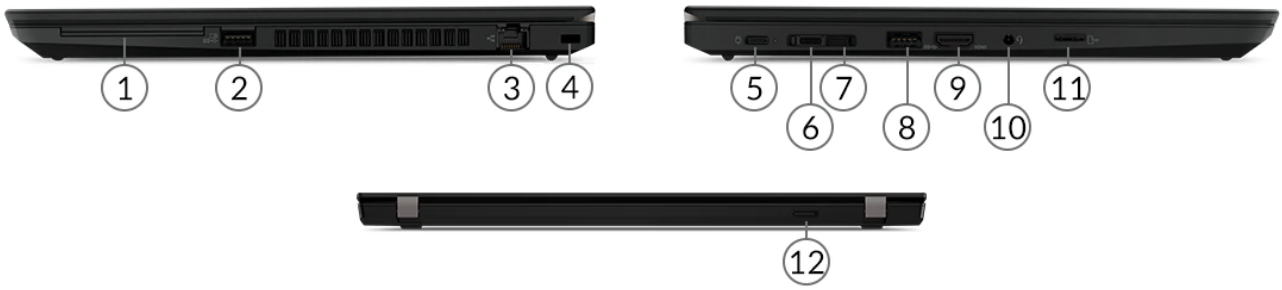








OVERVIEW



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, with privacy shutter, fixed focus
- No camera

Notes:
1. Microphone not configured 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

- 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	300 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	1200:1	72% NTSC	170°	Low power
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
- Not 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
- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel® Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN[2]

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

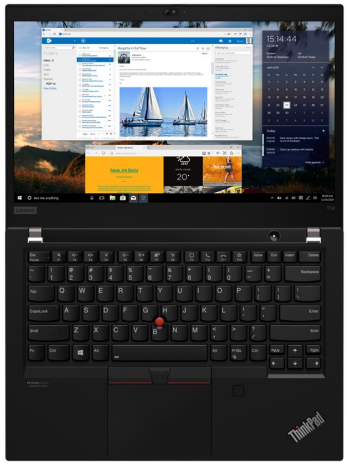
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed





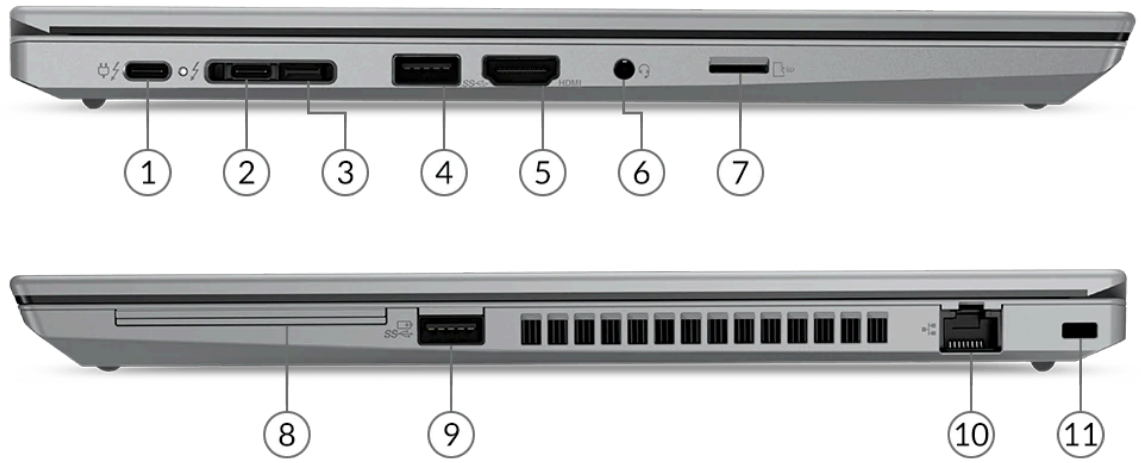








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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, 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 gaphics
   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)	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	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
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions
PPS models	329 x 227 x 17.9 mm (12.95 x 8.94 x 0.70 inches)
Aluminium models	329.4 x 227.5 x 17.9 mm (12.97 x 8.96 x 0.70 inches)

Weight[1]

Models	Weight
FHD non-touch model with PPS top cover	1.53 kg (3.37 lb)

FHD non-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)
FHD touch model with aluminium top cover	1.502 kg (3.31 lb)
FHD low power model with PPS top cover	1.47 kg (3.23 lbs)
FHD Privacy Guard model with PPS top cover	1.58 kg (3.49 lbs)
FHD Privacy Guard model with aluminium top cover	1.55 kg (3.42 lbs)
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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC[3]

- Near Field Communication
- Not 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

- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports[3]

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

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

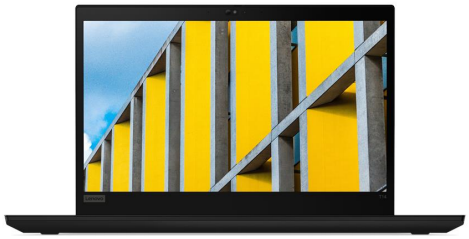
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

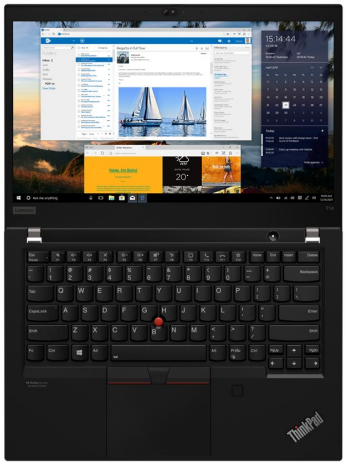
Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed





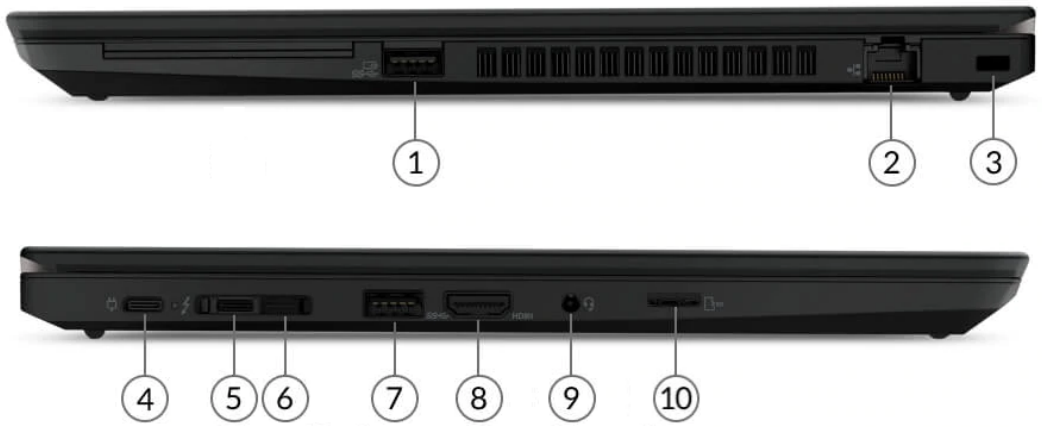








OVERVIEW



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, 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]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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


Why Contoso
Performance
38.21
15.6%
ThinkPad


ThinkPad

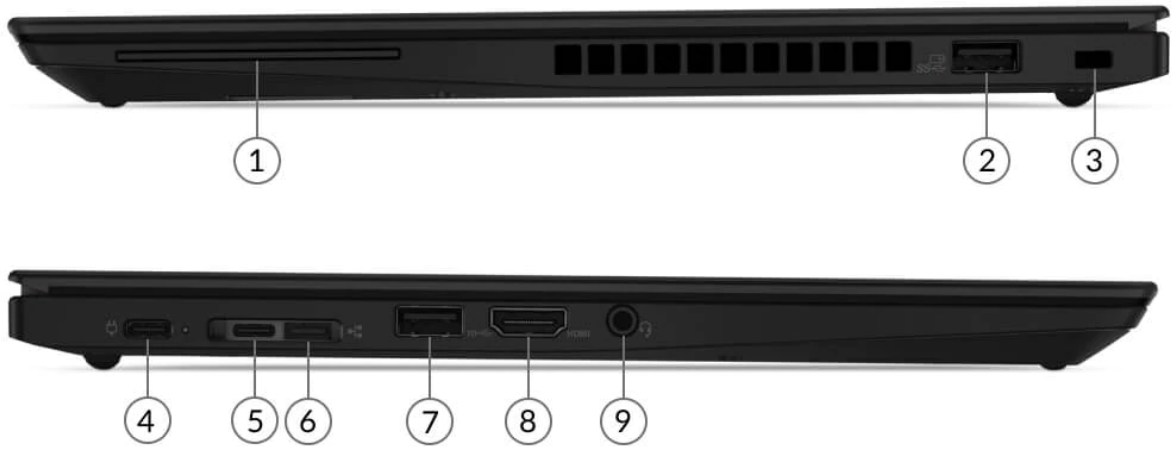








OVERVIEW



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:

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, 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

- 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

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
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions
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)
FHD Low Power models	328.8 x 225.8 x 16.1 mm (12.94 x 8.89 x 0.63 inches)

Weight[1]

Models	Weight
FHD touch / FHD non-touch models	1.35 kg (2.98 lbs)
FHD Low Power / FHD Privacy Guard models	1.27 kg (2.81 lbs)

Case Color

Black

Case Material

Carbon fiber hybrid (top), magnesium (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
- 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[2]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM

- No SIM card

NFC

Not 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 Smart card reader
- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password

- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





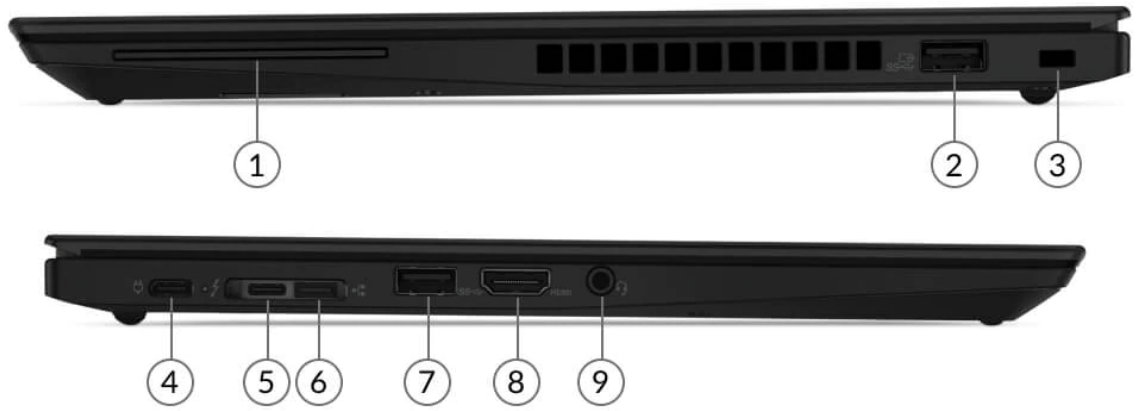








OVERVIEW



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, 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:

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
- Not 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:

1. The system weight varies depending on configurations.
2. 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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





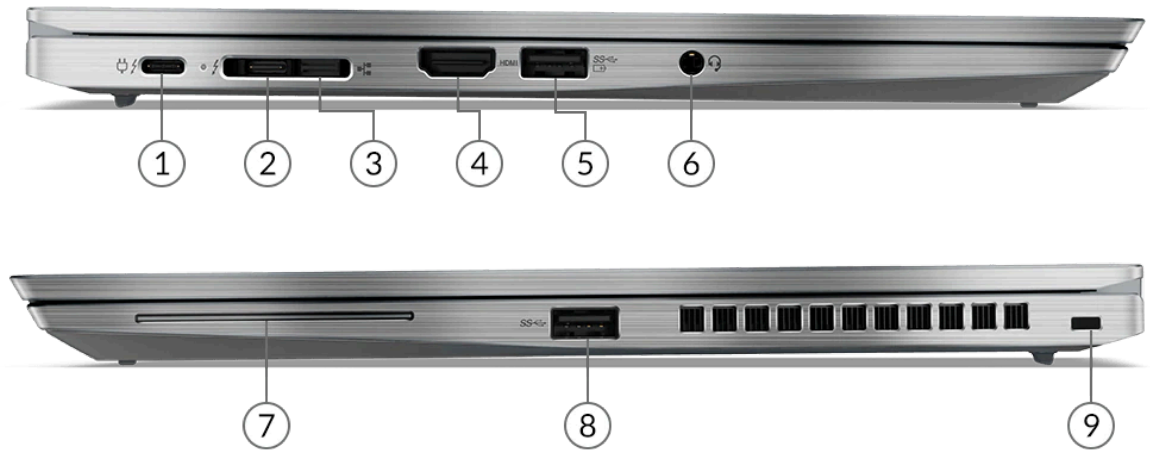








OVERVIEW



1. 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, with privacy shutter, fixed focus
- IR & 1080p, 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

- 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	300 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	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:

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
- Not support

UltraNav™

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

Mechanical

Dimensions (WxDxH)

Models	Dimensions
Storm grey models	327.5 x 225.3 x 16.81 mm (12.89 x 8.87 x 0.66 inches)
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)

Weight[1]

Models	Weight
Black with FHD Low Power / UHD models	1.28 kg (2.83 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)
Black with FHD touch / FHD non-touch / FHD Privacy Guard models	1.36 kg (2.99 lbs)

Case Color

- Storm grey
- Villi black

Case Material

- Storm grey models: aluminium (top), aluminium (keyboard cover & bottom)
- Villi black models: carbon fiber hybrid (top), magnesium (keyboard cover), aluminium (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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

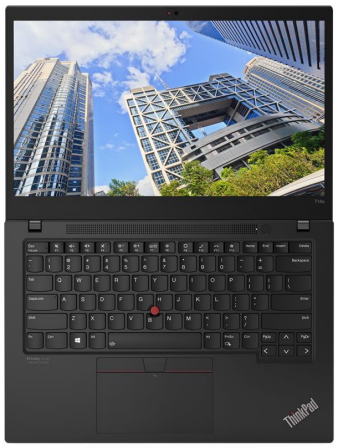
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Other Certifications[1]

(Optional) Intel Evo™ Platform

Notes:
1. Intel Evo is only available for the models with FHD Low Power, FHD Privacy Guard, or UHD display





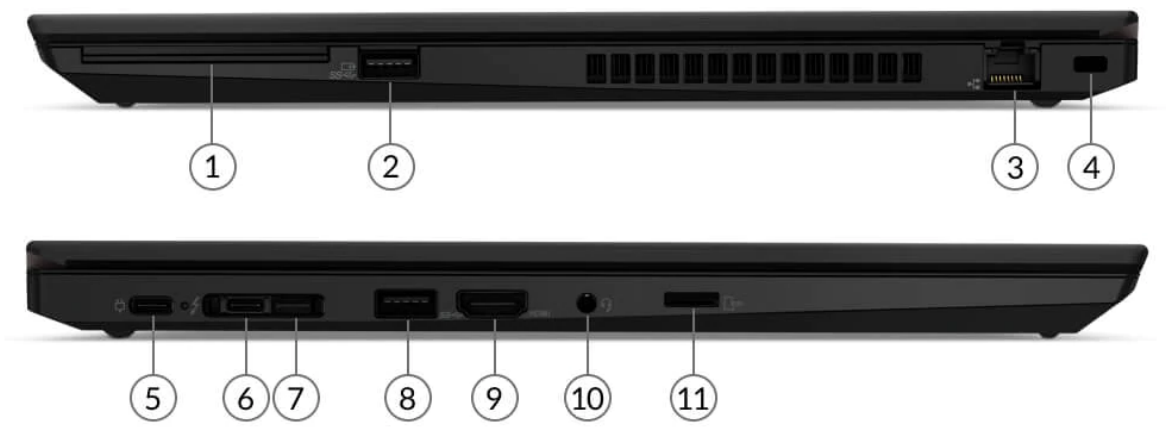








OVERVIEW



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, 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:

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
- Not 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:

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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

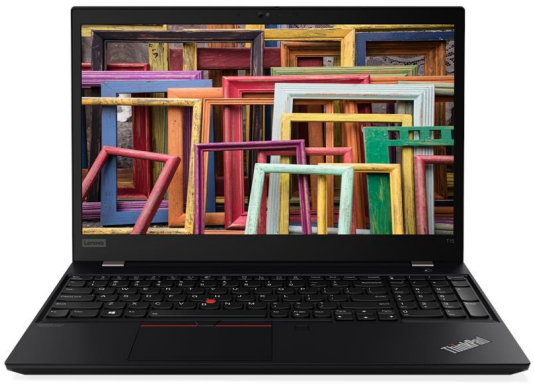
- EPEAT™ Gold
- ENERGY STAR® 8.0

- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed





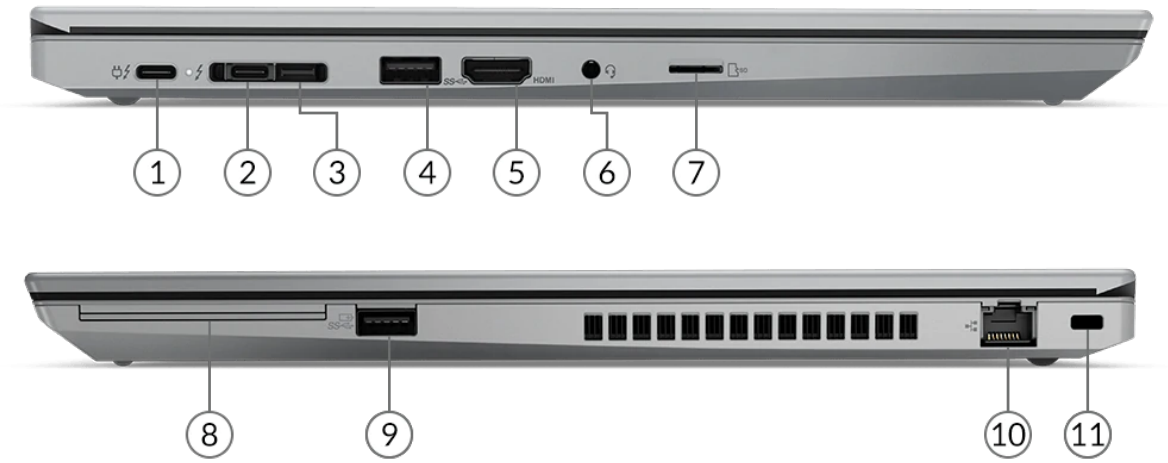








OVERVIEW



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 i7-1185G7	4	8	3.0GHz	4.8GHz	12MB	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
- 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, 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
- Not 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 PPS top cover	1.82 kg (4.02 lb)
FHD non-touch model with aluminium top cover	1.79 kg (3.96 lb)
FHD touch model with PPS top cover	1.84 kg (4.07 lb)
FHD touch model with aluminium top cover	1.81 kg (3.999 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:

1. The system weight varies depending on configurations.
2. 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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector

Optional Ports

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

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

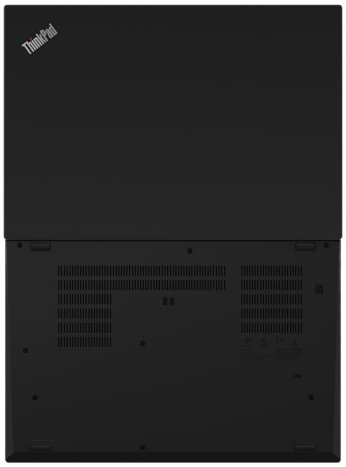
Mil-Spec Test

MIL-STD-810H military test passed





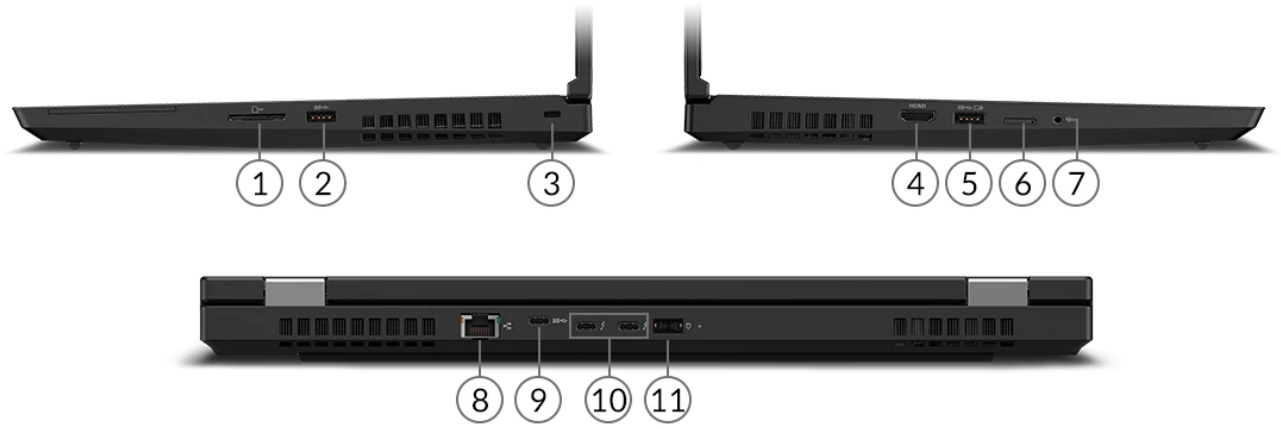








OVERVIEW



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 Processor or Intel Xeon® W 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	DDR4-2933	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	DDR4-2933	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® Speaker System certified

Microphone

- Dual array microphone, far-field
- No microphone

Camera

- 720p, with ThinkShutter, fixed focus
- IR & 720p, 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	500 nits	Anti-glare	16:9	1200:1	72% NTSC	160°	Dolby Vision™, HDR
15.6″	FHD (1920x1080)	None	IPS	300 nits	Anti-glare	16:9	700:1	72% NTSC	160°	-
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
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)

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
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]

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)
- 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

- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 4x4, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

NFC

Not 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 USB-C 3.2 Gen 1 (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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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 depot service
- 3-year limited onsite service
- No base warranty

ENVIRONMENTAL

Operating Environment

Temperature[2]

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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 (50)

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/





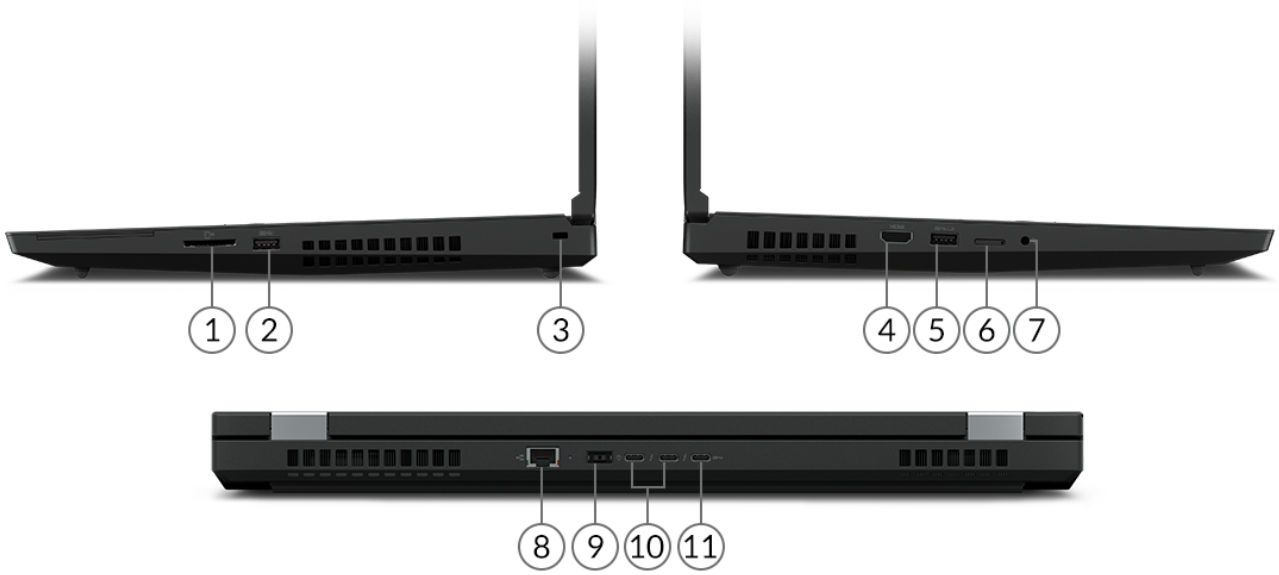








OVERVIEW



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 supported 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, 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

- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

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

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE

Warranty

Base Warranty

- 1-year depot service
- 1-year limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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, 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
- Not 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]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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



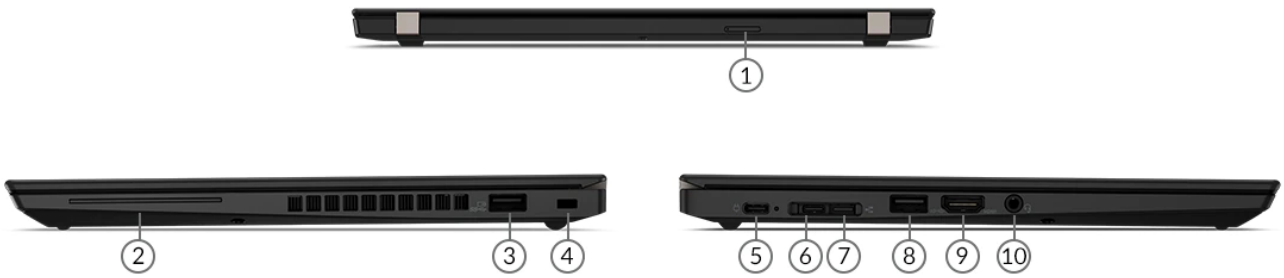








OVERVIEW



1. 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, 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

- 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	90°	-
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
- Not 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
- 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[2]

- Integrated Mobile Broadband 4G LTE-A, CAT9, Fibocom L850-GL, M.2 card
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 Smart card reader
- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

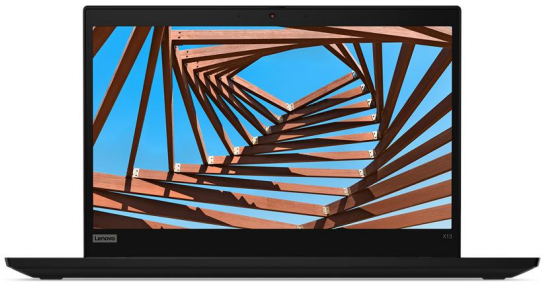
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed





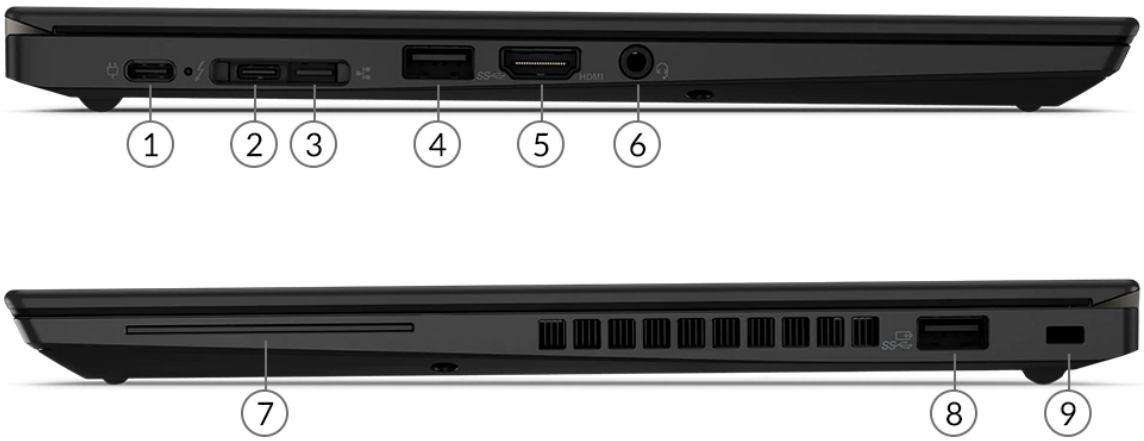








OVERVIEW



1. 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, 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:

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
- Not 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:

1. The system weight varies depending on configurations.
2. 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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x microSD card slot (WLAN model)
- 1x Nano-SIM + microSD 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

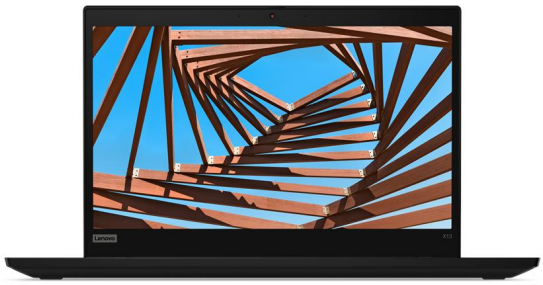
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810G military test passed





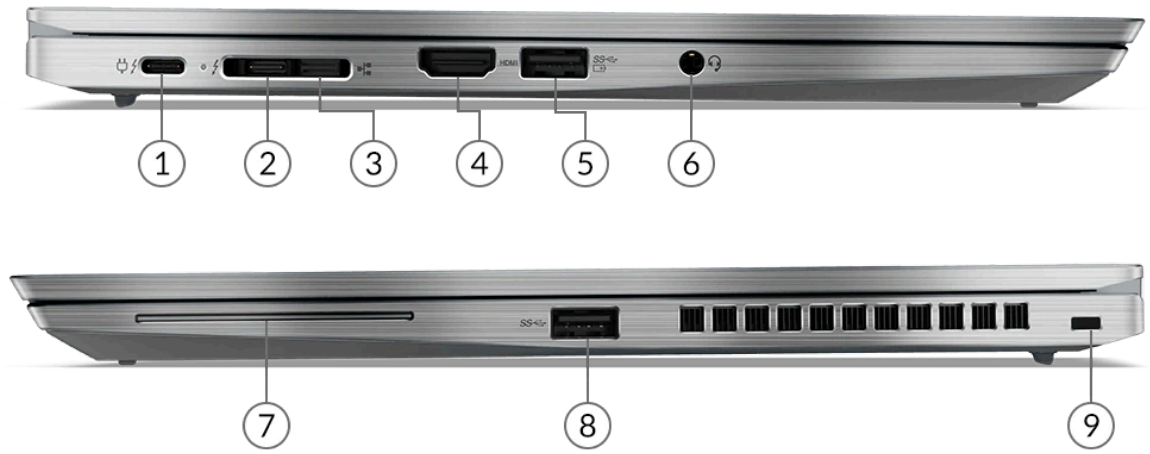








OVERVIEW



1. 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, 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)	Multi-touch	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″	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

- LED backlight
- Not 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 PPS top cover	1.25 kg (2.77 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 storm grey top cover	1.33 kg (2.93 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 black carbon fiber top cover	1.26 kg (2.77 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

- Storm grey & WWAN models: aluminium (top), magnesium (keyboard cover), aluminium (bottom)
- Storm grey & non-WWAN models: aluminium (top), aluminium (keyboard cover & bottom)
- Villi black models: carbon fiber or PPS (top), magnesium (keyboard cover), aluminium (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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





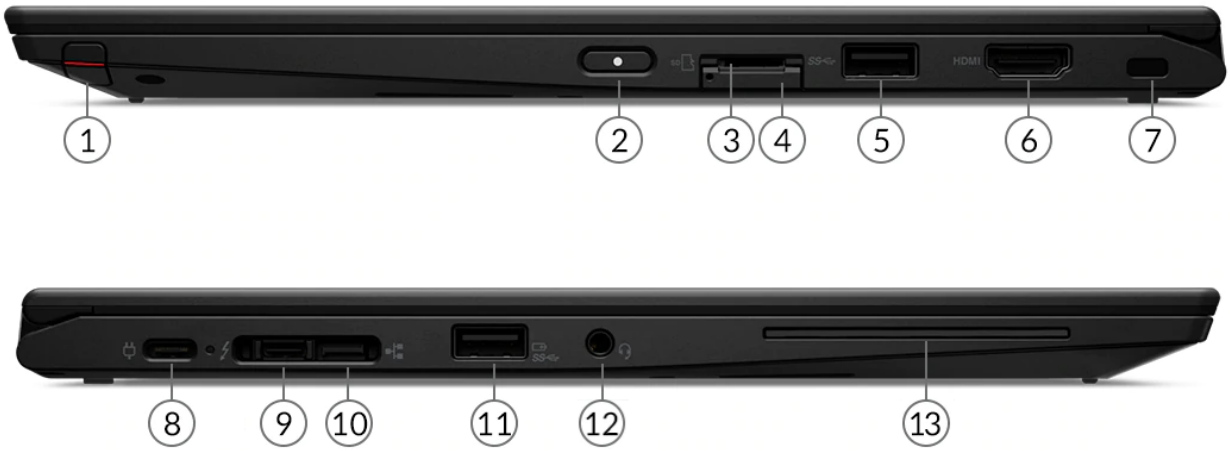








OVERVIEW



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, with ThinkShutter, fixed focus

Sensor

Sensors

- Gyroscope sensor
- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)

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	300 nits	Anti-reflection, Anti-smudge	16:9	800:1	72% NTSC	170°	-
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	500 nits	Anti-reflection, Anti-smudge	16:9	1000:1	72% NTSC	170°	ThinkPad® Privacy Guard
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, 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
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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, with privacy shutter, fixed focus

Sensor

Sensors

- Gyroscope sensor
- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)

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

- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 Smart card reader
- 1x Nano-SIM card slot (WWAN models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





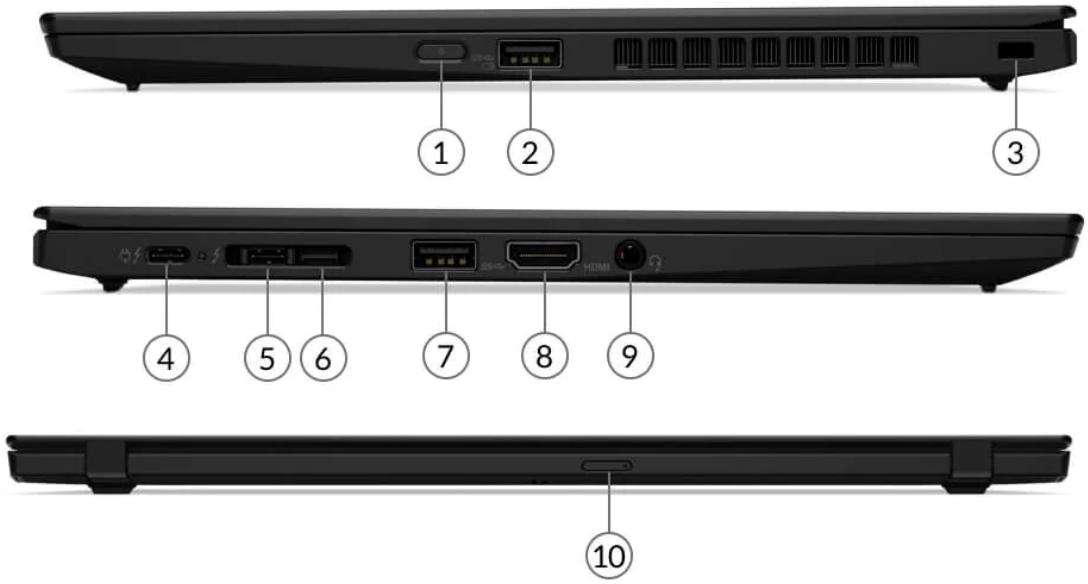








OVERVIEW



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, 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]

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

- Gemalto eSIM
- Nano SIM card, Lenovo Connect 4 months, 4G LTE
- No SIM card

NFC

- Near Field Communication
- Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





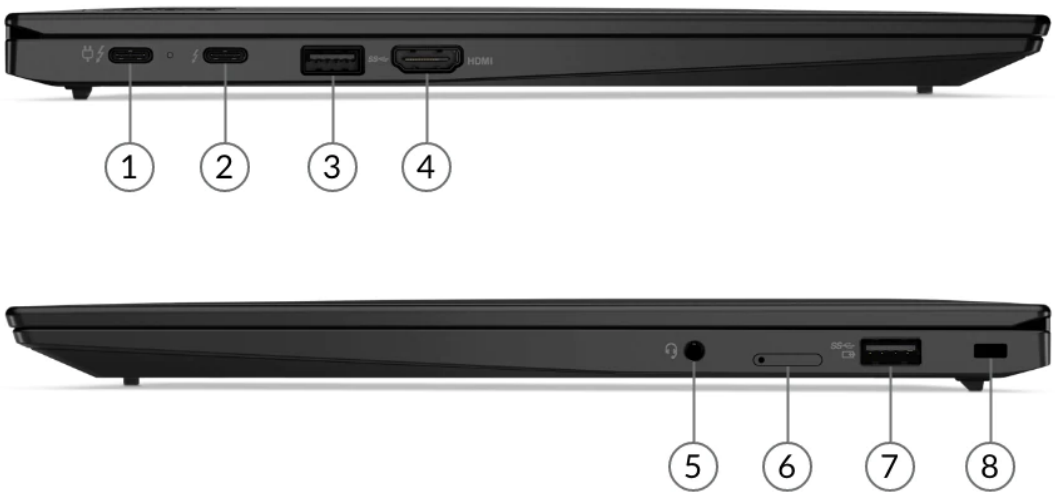








OVERVIEW



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, 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

- 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
- Wireless WAN upgradable to 4G
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

- TÜV Rheinland Dynamic Privacy Filter (DPF) Certification
- (Optional) Intel Evo™ Platform
- (Optional) TÜV Low Blue Light certified





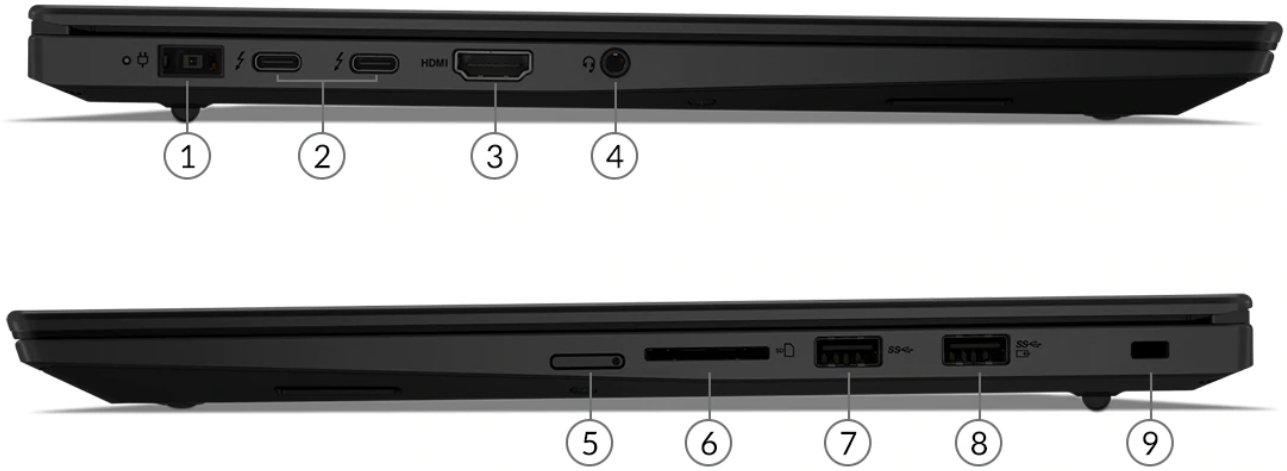








OVERVIEW



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 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 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, 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 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:

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

Notes:

1. 170W for i9-10885H models only

DESIGN

Display

Display[2]

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)	Multi-touch	OLED	SDR 400nit, HDR 500nit (peak)	Anti-reflection Anti-smudge	16:9	100000:1	100% DCI-P3	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

- 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)
- Not 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
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	1.81 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
- Not Support

SIM Card

No SIM card

NFC

Not 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™ 1.4 for discrete graphics / DisplayPort 1.2 for integrated graphics)
- 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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, 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)	Multi-touch	IPS	600 nits	Anti-reflection, Anti-smudge	16:10	1500:1	100% Adobe®	170°	Low blue light, Dolby Vision™, HDR 400
16.0"	WQUXGA (3840x2400)	None	IPS	600 nits	Anti-glare	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)
- Not 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
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, 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
- Not Support

SIM Card

No SIM card

NFC

Not 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 models)
- 1x HDMI 2.0 (models with integrated graphics)
- 1x HDMI 2.1 (models 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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












WELCOME TO
ISLE OF SKYE

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, fixed focus

Sensor

Sensors

- Gyroscope sensor
- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)

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 (AF)	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

Not 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
- Not Support

SIM Card

No SIM card

NFC

Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

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

Humidity

- Storage and transportation: 10% to 90% at wet-bulb temperature 27°C (81°F)
- Operating: 10% to 90% at wet-bulb temperature 23°C (73°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

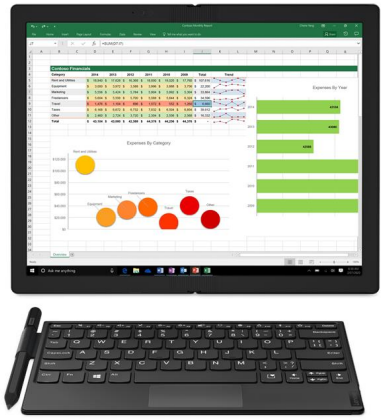
Athena certified













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, 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

Display[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
13.0"	2K (2160x1350)	Multi-touch	IPS	450 nits	Anti-reflection, Anti-smudge	16:10	1000:1	100% sRGB	170°	Low power
13.0"	2K (2160x1350)	None	IPS	450 nits	Anti-glare	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
Touch models	292.9x 207.8 x 14.27-17.2 mm (11.53 x 8.18 x 0.56-0.68 inches)
Non-touch models	292.8x 207.7 x 13.87-16.7 mm (11.53 x 8.18 x 0.55-0.66 inches)

Weight[1]

Models	Weight
Touch with Wi-Fi models	969 g (2.14 lbs)
Non-touch with WWAN models	939 g (2.07lbs)
Non-touch with Wi-Fi models	907 g (1.99 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]

- 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
- Wireless WAN upgradable to 4G or 5G
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

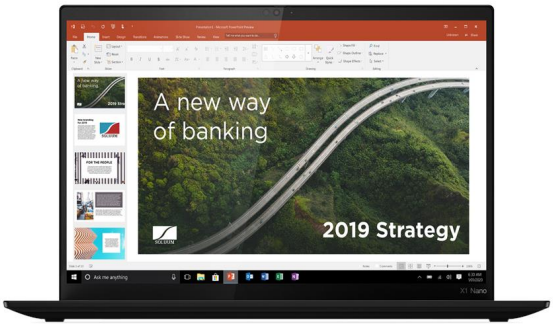
Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

(Optional) Intel Evo™ Platform




A new way
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2019 Strategy









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, with privacy shutter, fixed focus

Sensor

Sensors

- Gyroscope sensor
- Accelerometer (G) sensor
- Proximity (P) sensor (WWAN model)
- 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

Display[1]

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

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 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
- Not Support

SIM Card

- Gemalto eSIM
- No SIM card

NFC

Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

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





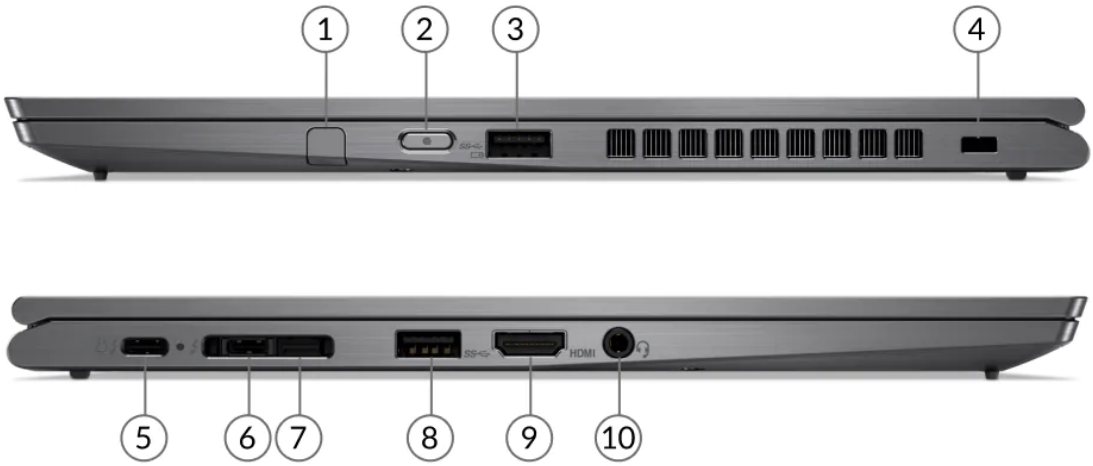








OVERVIEW



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, with ThinkShutter, fixed focus

Sensor

Sensors

- Ambient light sensor (ALS)
- e-Compass
- Gyroscope sensor
- Accelerometer (G) sensor
- Proximity (P) 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:

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)	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
Privacy Guard models	323 x 218 x 15.95 mm (12.71 x 8.58 x 0.63 inches)
Non-Privacy Guard models	323 x 218 x 15.5 mm (12.71 x 8.58 x 0.61 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
- Not Support

SIM Card

- Gemalto eSIM
- Nano SIM card, Lenovo Connect 4 months, 4G LTE
- No SIM card

NFC

- Near Field Communication
- Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

ENVIRONMENTAL

Operating Environment

Temperature[1]

- Storage without package: 5°C (41°F) to 43°C (109°F)
- Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°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, 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-reflection, Anti-smudge	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)	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
- Not Support

SIM Card

No SIM card

NFC

- Near Field Communication
- Not 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 models)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- Power-on password
- Supervisor 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 limited onsite 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

Notes:

1. No base warranty is for speical bid only

ENVIRONMENTAL

Operating Environment

Temperature[1]

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

- TÜV Rheinland Dynamic Privacy Filter (DPF) Certification
- (Optional) Intel Evo™ Platform
- (Optional) TÜV Low Blue Light certified













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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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PSREF

Product Specifications Reference

ThinkPad Tablets



Version 573
February 24, 2021

Contents

Cover **1**
Contents **2**
Summary Of Change **3**
ThinkPad Tablets **4**
ThinkPad X1 Tablet (3rd Gen) 4
ThinkPad X12 Detachable 9
Legal Information **15**

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

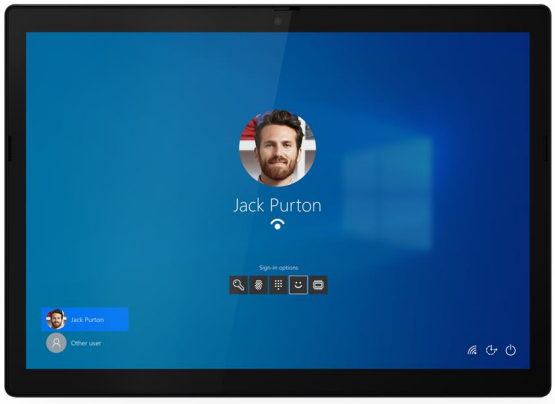











Jack Purton

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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.
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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.

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PSREF

Product Specifications Reference

ThinkCentre



Version 576
April 28, 2021

Lenovo

Contents

Cover **1**
Contents **2**
Summary Of Change **4**
All-In-One **5**
ThinkCentre M70a 5
ThinkCentre M820z AIO 13
ThinkCentre M90a 21
ThinkCentre M920z AIO 30
Nano Desktops **38**
ThinkCentre M75n 38
ThinkCentre M75n IoT 45
ThinkCentre M75n Thin Client 52
ThinkCentre M90n-1 Nano 59
ThinkCentre M90n-1 Nano IoT 66
SFF Desktops **73**
ThinkCentre M70c 73
ThinkCentre M70s 81
ThinkCentre M720 SFF 89
ThinkCentre M720e SFF 97
ThinkCentre M75s 104
ThinkCentre M75s Gen 2 112
ThinkCentre M80s 120
ThinkCentre M90s 128
ThinkCentre M920 SFF 136
Tiny Desktops **144**
ThinkCentre M60e 144
ThinkCentre M625 Tiny Thin Client 150
ThinkCentre M630e Tiny 157
ThinkCentre M70q 164
ThinkCentre M70q Gen 2 172
ThinkCentre M720 Tiny 180
ThinkCentre M75q Gen 2 188
ThinkCentre M75q Tiny 195
ThinkCentre M80q 203
ThinkCentre M90q 211
ThinkCentre M920 Tiny 219
ThinkSmart Edition Tiny M80q 227
ThinkSmart Edition Tiny M920q for Logitech 233
ThinkSmart Edition Tiny M920q for Poly 239
ThinkSmart Edition Tiny M920q for Zoom Rooms 245
Tiny-In-One **252**
ThinkCentre Tiny-In-One 22 Gen 3 252
ThinkCentre Tiny-In-One 22 Gen 4 256
ThinkCentre Tiny-In-One 24 Gen 3 260
ThinkCentre Tiny-In-One 24 Gen 4 264
ThinkCentre Tiny-In-One 27 268
Tower Desktops **272**
ThinkCentre M70t 272
ThinkCentre M720 Tower 280
ThinkCentre M75t Gen 2 288
ThinkCentre M80t 296

Contents

ThinkCentre M90t 304
ThinkCentre M920 Tower 312
Legal Information **320**

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.

April 2021 - Version 576

Additions in this update

►**New product(s)**
None

►**New model(s)**
None

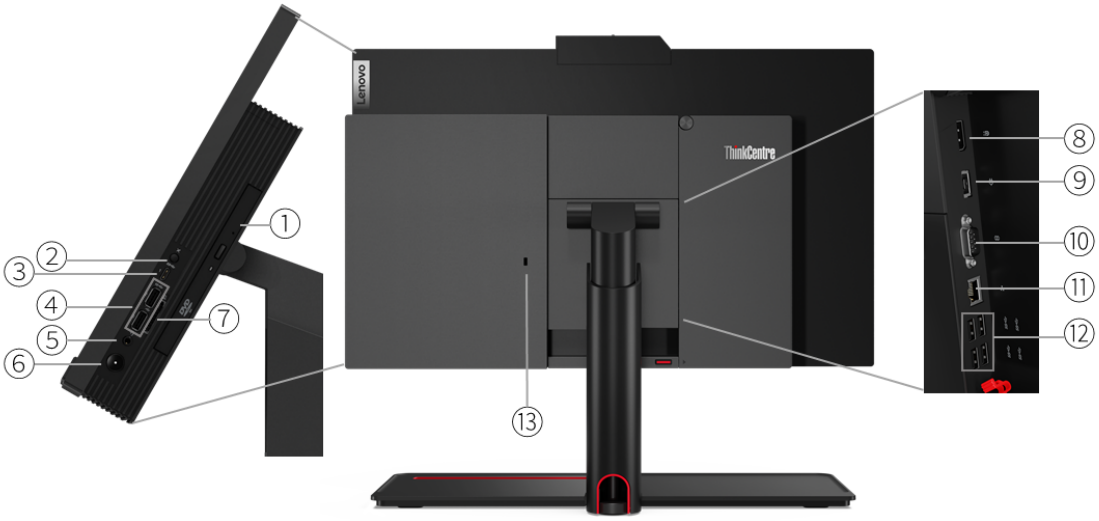
►**Others**
Add overview information for ThinkCentre products

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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
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 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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)	Multi-touch	IPS	250 nits	Anti-glare	16:9	1000:1	-	horizontal: +/- 89°, vertical: +/- 89°	borderless design (88% Screen to Body Ratio)
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)

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. 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 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

Buttons

- Power button
- Microphone mute button

Form Factor

AIO (21.5 inches)

Dimensions (WxDxH)

Models	Dimensions
Models (without stand, without ODD, with camera)	490.14 x 46 x 297.75 mm (19.3 x 1.8 x 11.7 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 (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)

Weight

Models	Weight
Models (without stand, with ODD)	Non-touch: 5.12 kg (11.3 lbs) Touch: 4.88 kg (10.8 lbs)
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 UltraFlex IV stand, without ODD)	Non-touch: 7.62 kg (16.8 lbs) Touch: 7.38 kg (16.3 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 (without stand, without ODD)	Non-touch: 4.86 kg (10.7 lbs) Touch: 4.62 kg (10.2 lbs)

Case Color

Black

Bays

- 1x slim ODD bay
- 1x 2.5" disk 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 Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 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

- 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
- Self-healing BIOS

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

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -20°C (-4°F) to 60°C (140°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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)







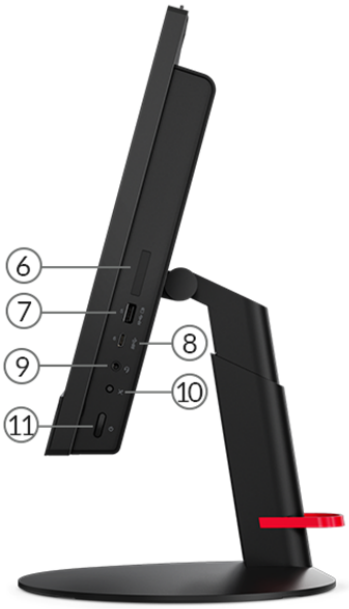






OVERVIEW





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 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 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 SSD	SATA 6Gb/s	-	Opal
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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
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:

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 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

Buttons

- Power button
- Microphone mute button

Form Factor

AIO (21.5 inches)

Dimensions (WxDxH)[1]

Models	Dimensions

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 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 without stand and camera	491 x 49 x 321 mm (19.3 x 1.9 x 12.6 inches)

Weight

Models	Weight
Models without stand and camera	Non-touch: 5.05 kg (11.1 lbs) Touch: 5.25 kg (11.6 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 with full function monitor stand and no camera	Non-touch: 7.18 kg (15.8 lbs) Touch: 7.38 kg (16.3 lbs)

Case Color

Black

Bays

- 1x slim ODD bay
- 1x 2.5" disk 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 Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 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

- 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

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)
- Storage: -20°C (-4°F) to 60°C (140°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

- TUV Low Blue Light certified
- TÜV Eye comfort certified
- (Optional) TÜV Ultra Low Noise certified

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)





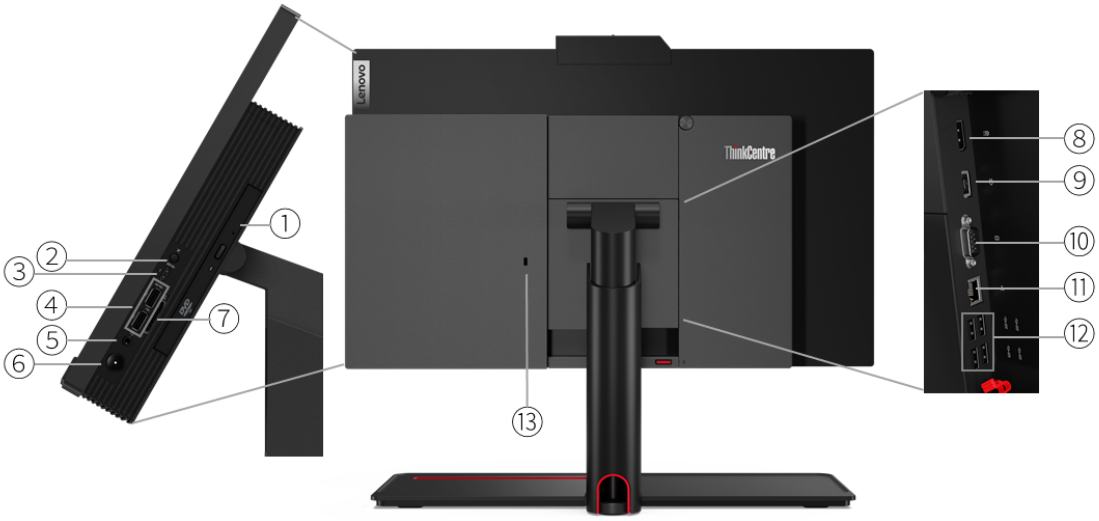

Lenovo






Lenovo

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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
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	-	-
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	350 nits	Anti-glare	16:9	1000:1	-	horizontal: +/- 89°, vertical: +/- 89°	Borderless design, support Low Blue Light Mode, PrivacyGaurd
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
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 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

Buttons

- Power button
- PrivacyGaurd on/off botton (only for the models with PrivacyGaurd)
- Microphone mute button

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)

Models	Dimensions
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 (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, without PrivacyGuard, with camera)	541 x 46 x 340.5 mm (21.3 x 1.8 x 13.4 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 (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 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, 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 (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 (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)

Weight

Models	Weight
Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera)	7.51 kg (16.6 lbs)
Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera)	8.26 kg (18.2 lbs)
Models (without stand, with ODD, without PrivacyGuard, with camera)	5.57 kg (12.3 lbs)
Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera)	8.39 kg (18.5 lbs)
Models (without stand, with ODD, with PrivacyGuard, with camera)	6.45 kg (14.2 lbs)
Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera)	7.84 kg (17.3 lbs)
Models (without stand, without ODD, without PrivacyGuard, with camera)	5.25 kg (11.6 lbs)
Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera)	8.71 kg (19.2 lbs)
Models (without stand, without ODD, with PrivacyGuard, with camera)	6.13 kg (13.5 lbs)
Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera)	8.58 kg (18.9 lbs)

Case Color

Black

Bays

- 1x slim ODD bay
- 2x 2.5" disk bay (2nd 2.5" HDD occupies 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

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]

Rear Ports[2]

- 4x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 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

- 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
- Self-healing BIOS

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

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -20°C (-4°F) to 60°C (140°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 PrivacyGaurd.

Other Certifications

Other Certifications

- TUV Low Blue Light certified
- TÜV Eye comfort certified
- (Optional) TÜV Ultra Low Noise certified

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)






Lenovo
ThinkCentre







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 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 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
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 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

Buttons

- Power button
- Microphone mute button

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)[1]

Models	Dimensions
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 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 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

- 1x slim ODD bay
- 2x 2.5" disk bay (2nd 2.5" HDD occupies 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 Ethernet (RJ-45)

- 1x DisplayPort (DP in/out combo port)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 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

- 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[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)
- Storage: -20°C (-4°F) to 60°C (140°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

- TUV Low Blue Light certified
- TÜV Eye comfort certified
- (Optional) TÜV Ultra Low Noise certified

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)





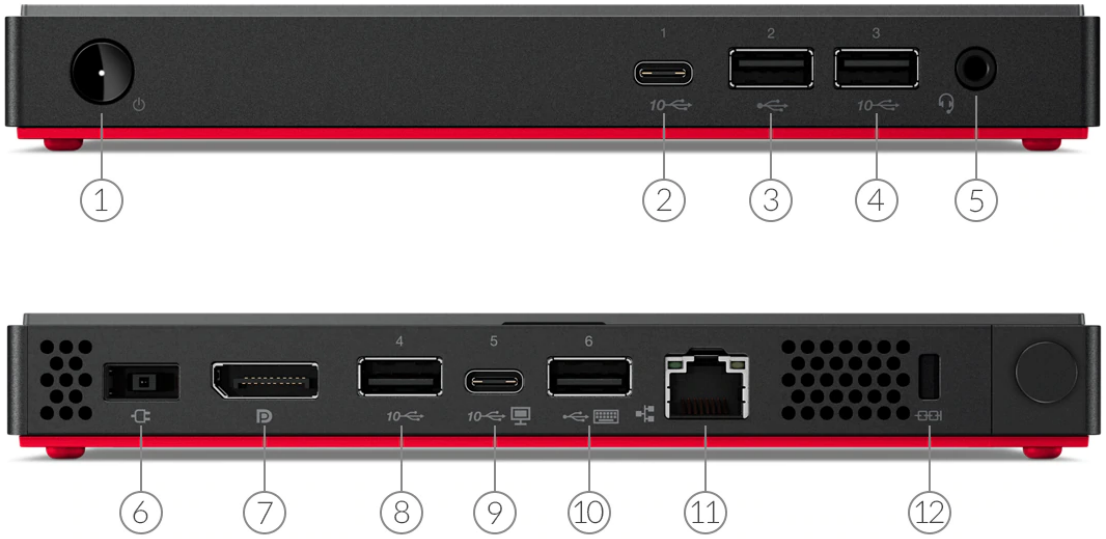

Lenovo






Lenovo

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:

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 + 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 up to PCIe 3.0 x2)
• M.2 SSD up to 1TB each

Storage Type

Disk Type	Interface	RPM	Security
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	-	-

RAID

Not 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 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

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 Gray 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 adaper holder, supports VESA 75mm and 100mm
- VESA mount bracket kit, supports VESA 75mm and 100mm
- DIN rail mount bracket kit
- Not configured

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, power-in [20V and >45W])
- 1x Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to HDMI 1.4 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

- 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

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
- WEEE
- REACH

Other Certifications

Other Certifications

TÜV Ultra Low Noise certified

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)





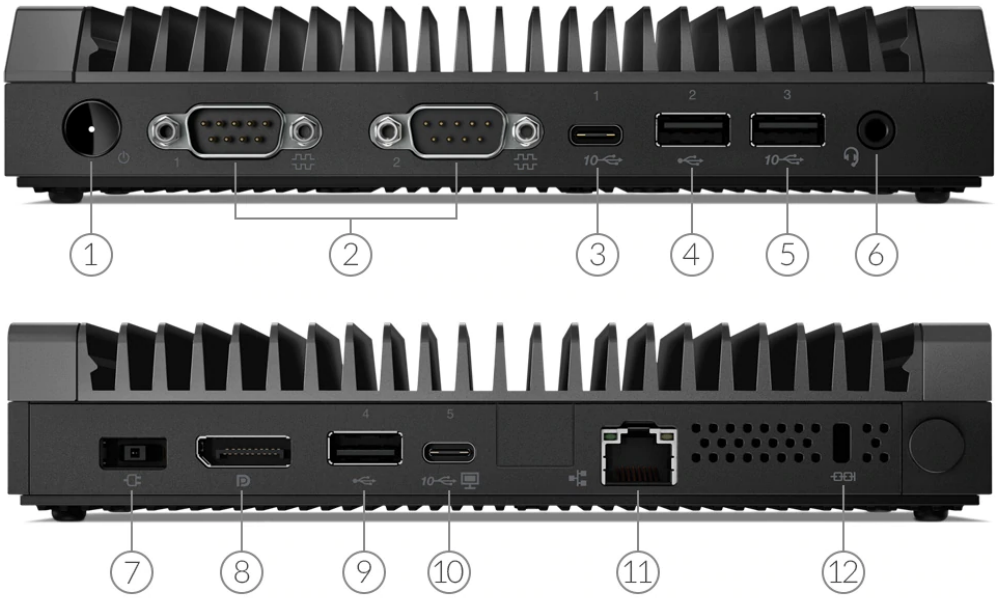








OVERVIEW



1. Power button	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 + 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 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2280 SSD	SATA 6Gb/s	-	Opal
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-

RAID

Not 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
65W	Adapter	88%	Autosensing, Wide Temperature
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

Nano (0.55L)

Dimensions (WxDxH)

Models	Dimensions
Nano with IO box	179 x 88 x 61.3 mm (7.05 x 3.46 x 2.41 inches)
Nano only	179 x 88 x 34.5 mm (7.05 x 3.46 x 1.36 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 Gray 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 adaper holder, supports VESA 75mm and 100mm
- VESA mount bracket kit, supports VESA 75mm and 100mm
- DIN rail mount bracket kit
- Not configured

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, power-in [20V and >45W])
- 1x Ethernet (RJ-45)
- 1x DisplayPort

Optional Rear Ports

- 1x DIO (4DI / 4DO) on SE30 IO box
- 1x DC-in 3pin Phoenix connector 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to HDMI 1.4 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

- 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

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

- 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
- Storage: -40°C (-40°F) to 60°C (140°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]

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- WEEE
- REACH

Notes:

1. ENERGY STAR 8.0 and EPEAT are not available for the models with I/O box

Other Certifications

Other Certifications

TÜV Ultra Low Noise certified

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





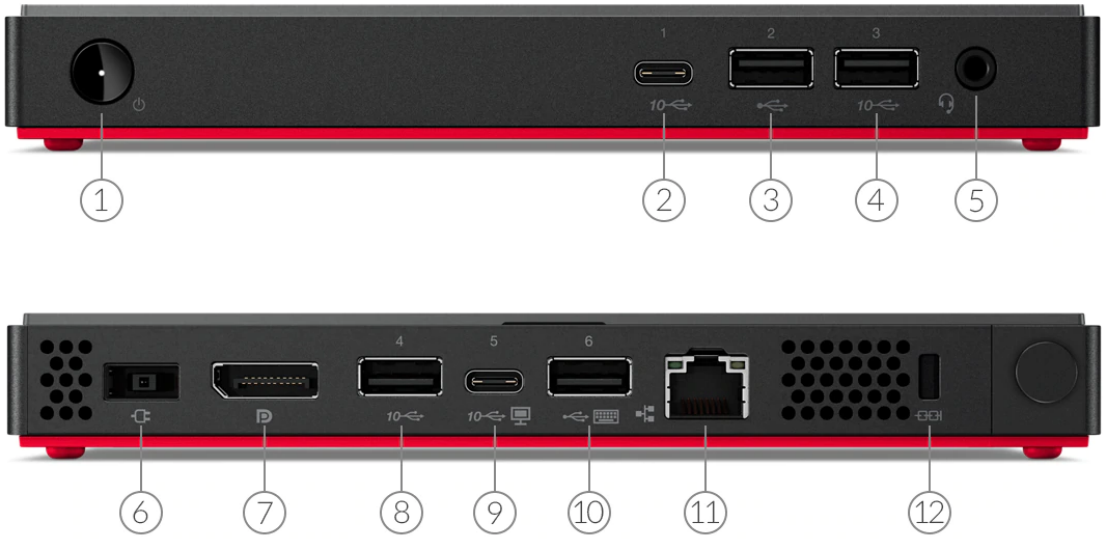








OVERVIEW



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 + 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

Disk Type	Interface	RPM	Security
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2280 SSD	SATA 6Gb/s	-	Opal
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-

RAID

Not 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 Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), 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 Gray 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 adaper holder, supports VESA 75mm and 100mm
- VESA mount bracket kit, supports VESA 75mm and 100mm
- DIN rail mount bracket kit
- Not configured

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, power-in [20V and >45W])
- 1x Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to HDMI 1.4 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

- 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

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

- WEEE
- REACH

Other Certifications

Other Certifications

TÜV Ultra Low Noise certified

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)





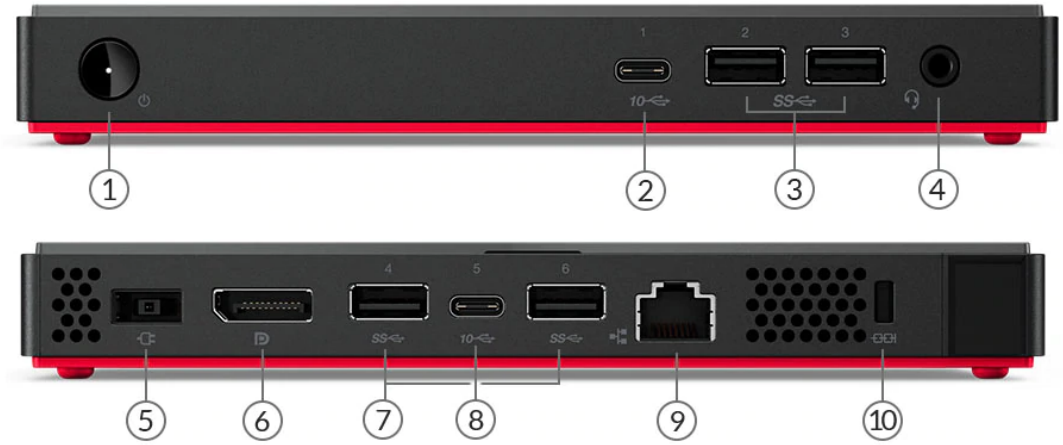








OVERVIEW



1. Power button	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™ + 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 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 Gray 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 adaper holder, supports VESA 75mm and 100mm
- VESA mount bracket kit, supports VESA 75mm and 100mm
- DIN rail mount bracket kit
- Not configured

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, 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 3.2 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, power-in [20V and >45W])
- 1x Ethernet (RJ-45)
- 1x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to HDMI 1.4 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

- 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 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
- WEEE
- REACH

Other Certifications

Other Certifications

- (Optional) TÜV Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)




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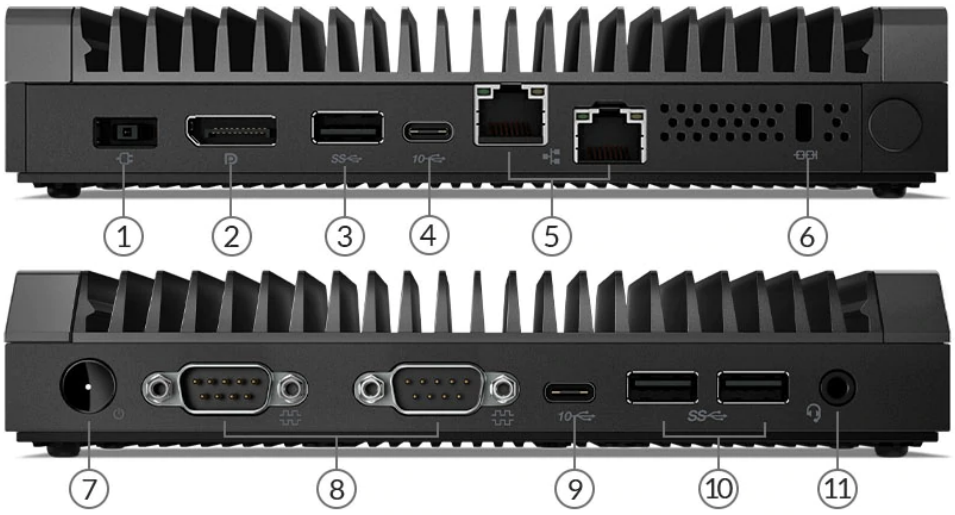








OVERVIEW



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 610	Integrated	Shared	1x DP, 1x USB-C	4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C)	DirectX® 12
Intel UHD graphics 630	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™ + USB-C), (HDMI® + USB-C) for 8145UE models only

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 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

Nano (0.55L)

Dimensions (WxDxH)

Models	Dimensions
Nano with IO box	179 x 88 x 61.3 mm (7.05 x 3.46 x 2.41 inches)
Nano only	179 x 88 x 34.5 mm (7.05 x 3.46 x 1.36 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 Gray 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 adaper holder, supports VESA 75mm and 100mm
- VESA mount bracket kit, supports VESA 75mm and 100mm
- DIN rail mount bracket kit
- Not configured

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, 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 3.2 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)
- 1x USB-C 3.2 Gen 2 (support display function, power-in [20V and >45W])
- 1x Ethernet (RJ-45) for Celeron models
- 2x Ethernet (RJ-45) for i3 / i5 models
- 1x HDMI (for 8145UE models)
- 1x DisplayPort (for 4205U / 8145U / 8365U models)

Optional Rear Ports

- 1x DIO (4DI / 4DO) on SE30 IO box
- 1x DC-in 3pin Phoenix connector 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to HDMI 1.4 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

- 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

- 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

- 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
- Storage: -40°C (-40°F) to 60°C (140°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]

- EPEAT™ Silver
- ENERGY STAR® 8.0
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant
- WEEE
- REACH

Notes:

1. Energy Star 8.0 and EPEAT not for the models with I/O box

Other Certifications

Other Certifications

- (Optional) TÜV Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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


Lenovo


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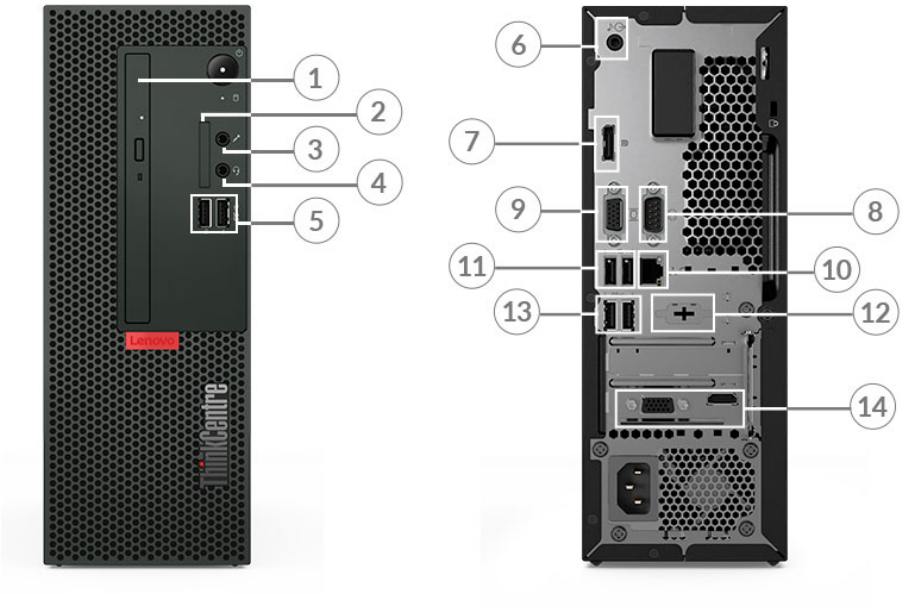







Lenovo

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 (1x VGA + 1x 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
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 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 slim ODD bay
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 152mm, height < 64mm)
- One PCIe 3.0 x1, low-profie (length < 152mm, height < 64mm)
- Two M.2 slots (one for WLAN, one for SSD)

Stand

- Vertical stand
- No stand

Notes:

1. Dimensins 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x DisplayPort
- 1x VGA
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch

- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- None





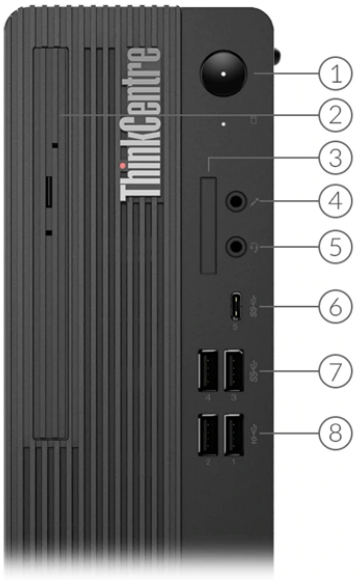


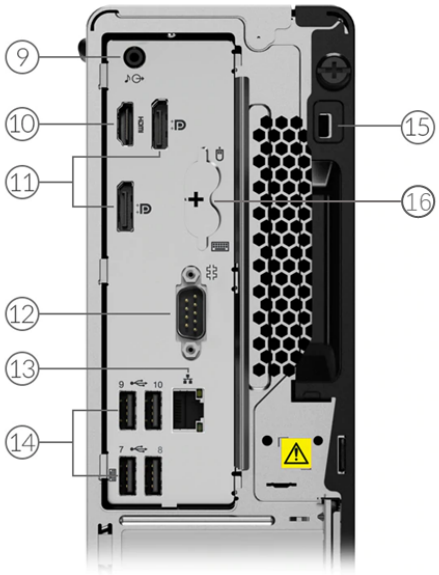






OVERVIEW





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** (2x DisplayPort™ + 1x HDMI), 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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

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 slim ODD bay
- 1x 2.5″ disk bay (optional bay, or bay comes with disk)
- 1x 3.5″ disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 155mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (length < 155mm, height < 68mm)
- Two dummy slots, only bracket 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable

- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)





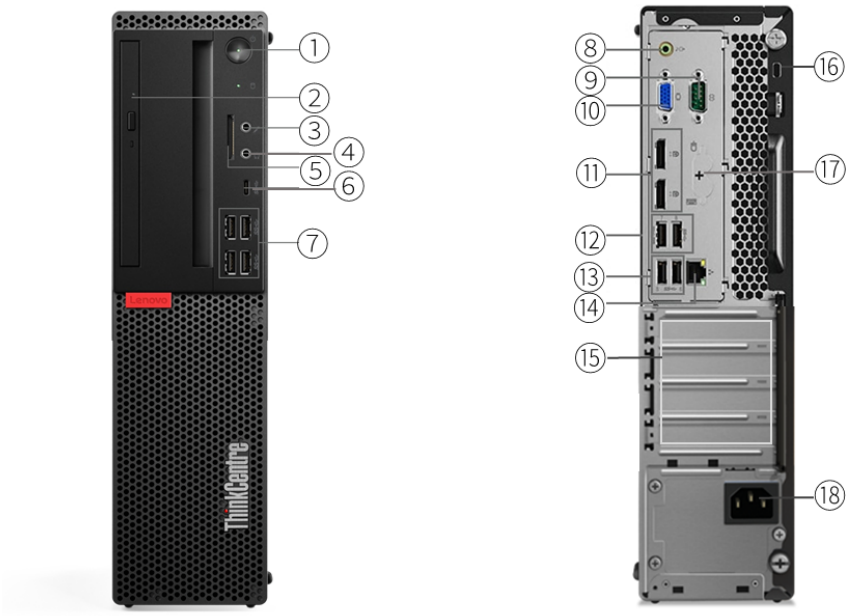








OVERVIEW



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 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 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 (1x VGA +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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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
- Lenovo Mouse (PS/2 connector), black (only available via special bid)

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 147mm, height < 68.9mm)
- Two PCIe 3.0 x1, low-profie (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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x VGA
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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 Low Noise certified
- None





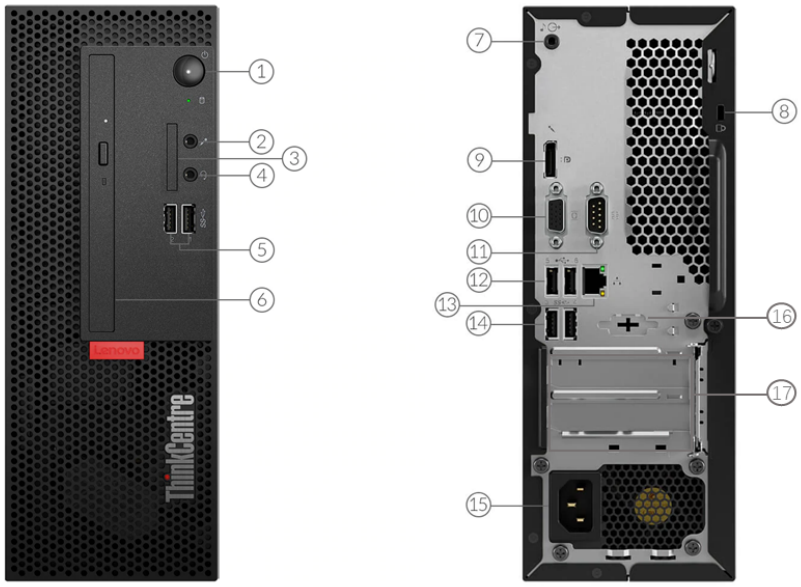





Lenovo



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 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 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 (1x VGA + 1x 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 slim ODD bay
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 152mm, height < 64mm)
- One PCIe 3.0 x1, low-profie (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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x DisplayPort
- 1x VGA
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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





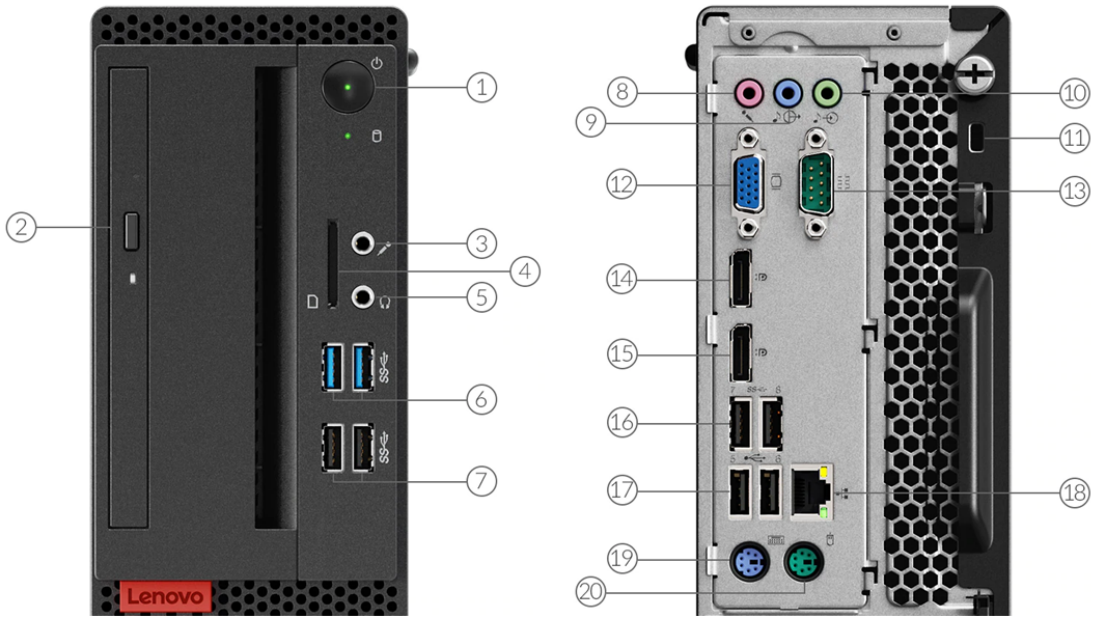







Lenovo

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 (1x VGA +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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-

M.2 2242 SSD	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® ALC662 codec

Speakers

- Single speaker, 1W x1
- No speakers

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 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
- Lenovo Mouse (PS/2 connector), black (only available via special bid)

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 slim ODD bay

- 1x 2.5″ disk bay (bay comes with disk)
- 1x 3.5″ disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 150mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (length < 150mm, height < 68mm)
- Two dummy slots, 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, 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 microphone (3.5mm)
- 1x headphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports[2]

- 2x USB 2.0
- 2x USB 3.1 Gen 1
- 1x serial (9-pin)
- 2x PS/2 ports (keyboard/mouse)
- 1x Ethernet (RJ-45)
- 1x VGA
- 1x microphone (3.5mm)
- 1x line-in (3.5mm)
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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

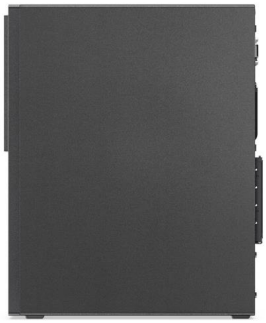




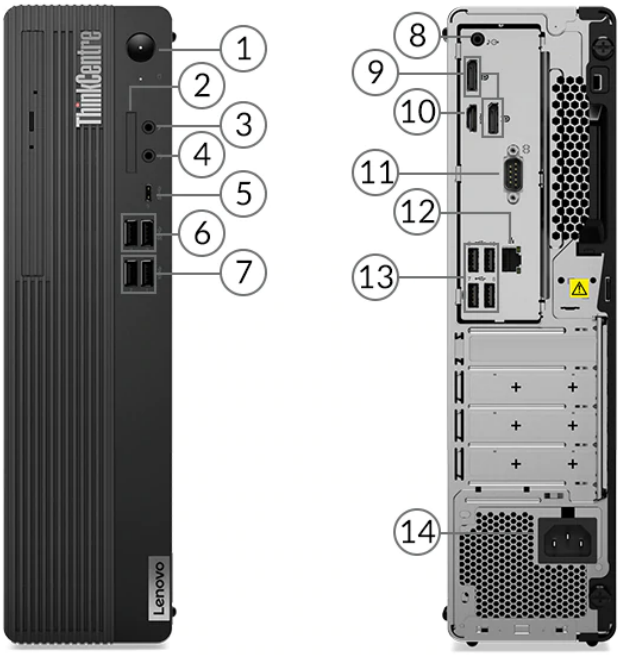








OVERVIEW



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 5 5600G	6	12	3.9GHz	4.4GHz	3MB L2 / 16MB 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 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	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 (1x HDMI + 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 155mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (length < 155mm, height < 68mm)
- Two dummy slots, only bracket 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

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ45, supports Wake-on-LAN

Optional Ethernet[1]

- 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. 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)

- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified

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)





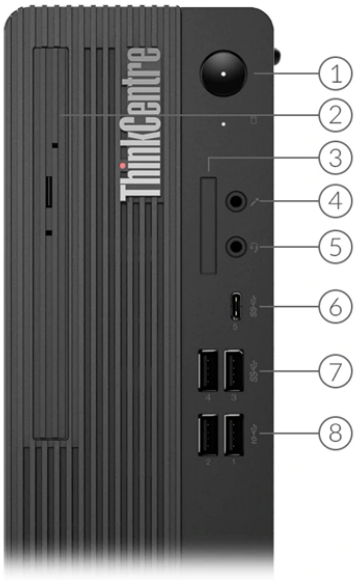


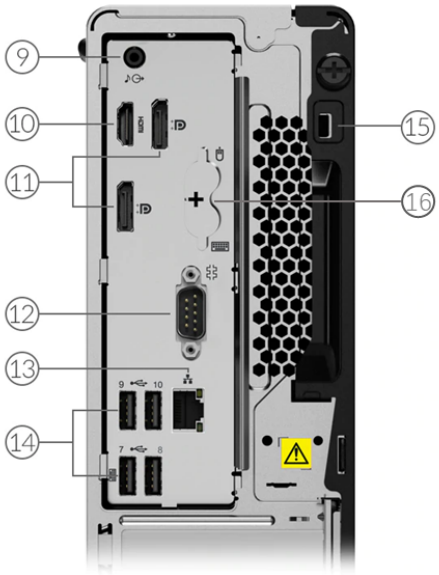






OVERVIEW





1. Power button	9. 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** (2x DisplayPort™ + 1x HDMI), 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 155mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (length < 155mm, height < 68mm)
- Two dummy slots, only bracket 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)





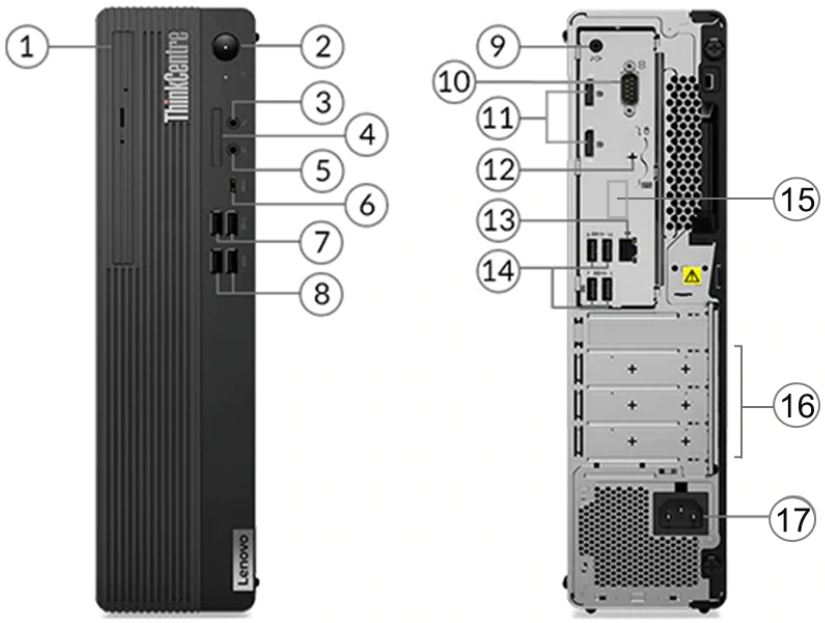








OVERVIEW



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™ + 1x optional port [3rd DP / HDMI / 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
2.5″ SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, low-profie (length < 155mm, height < 68mm)
- One PCIe 3.0 x4, low-profie (length < 155mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (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
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort

Optional Rear Ports

- Optional Video Port (One of HDMI / DisplayPort / USB-C 3.2 Gen 1 with DisplayPort function)
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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
- Self-healing BIOS

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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)





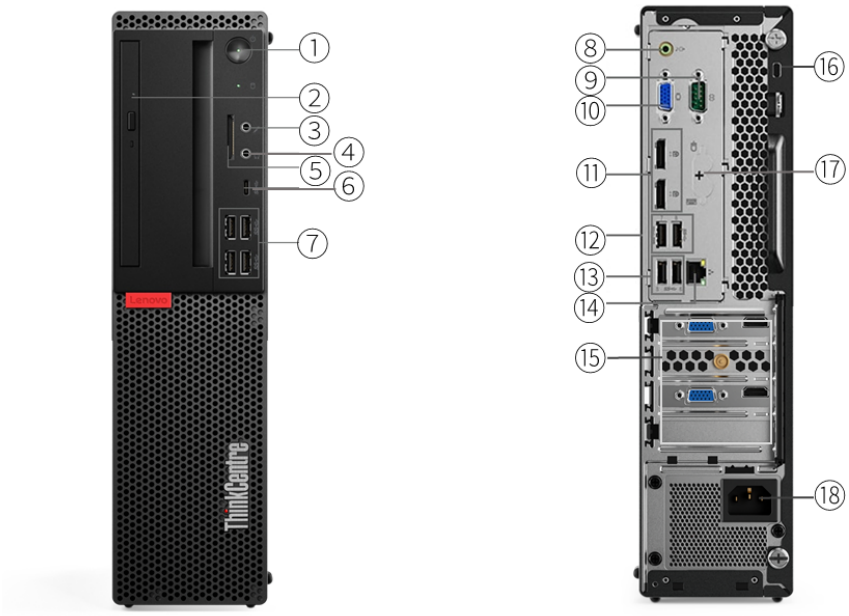








OVERVIEW



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 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 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 (1x VGA +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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
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 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
- Lenovo Mouse (PS/2 connector), black (only available via special bid)

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16 (x4 signal), low-profie (length < 150mm, height < 68mm)
- One PCIe 3.0 x16, low-profie (length < 150mm, height < 68mm)
- One PCIe 3.0 x1, low-profie (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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x VGA
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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 Low Noise certified
- None





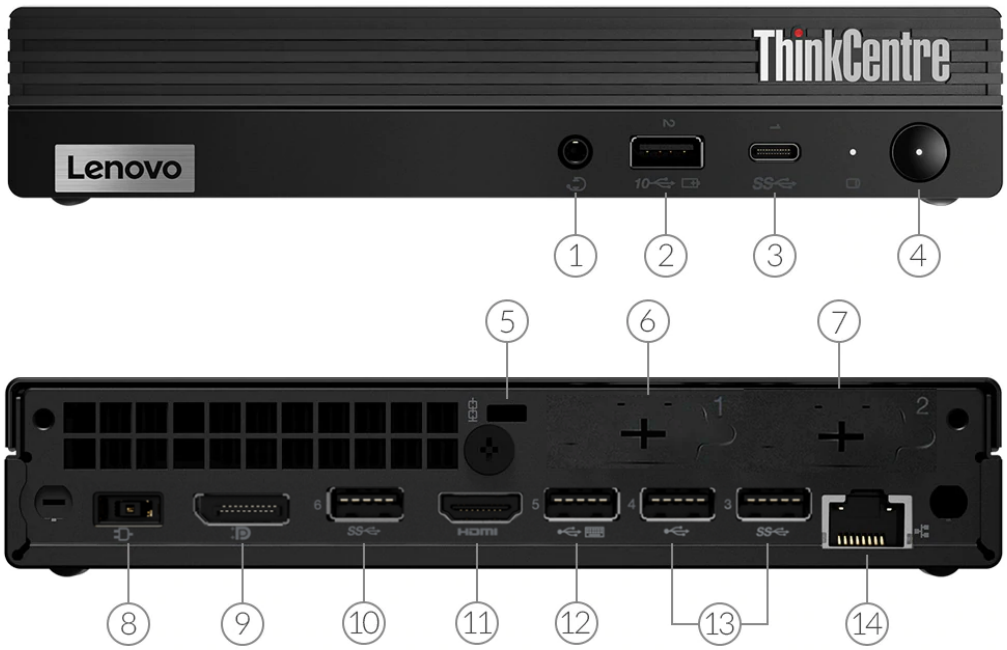








OVERVIEW



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
- Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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


ThinkCentre
Lenovo


ThinkCentre
Lenovo

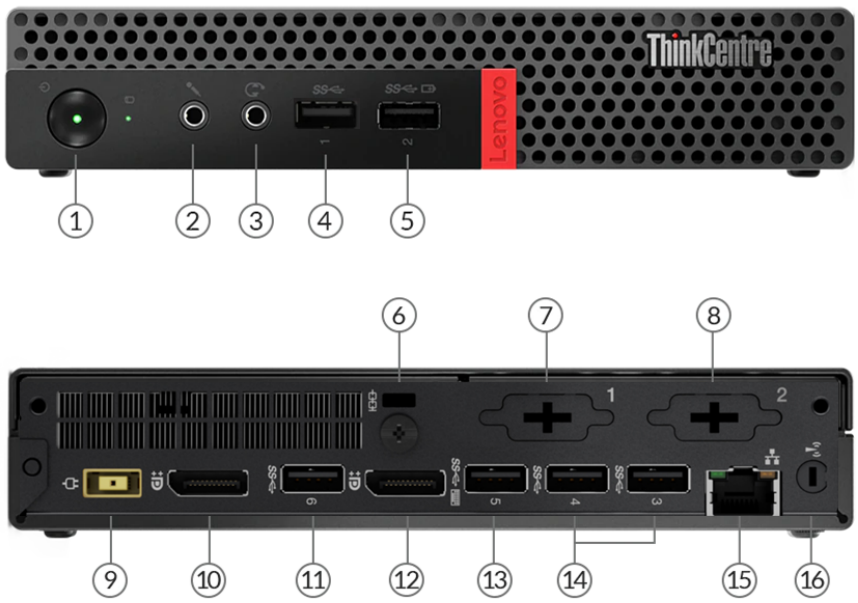

ThinkCentre
Lenovo


ThinkCentre
Lenovo


Lenovo
ThinkCentre


ThinkCentre
Lenovo

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:

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 + 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:

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 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to DVI-D dongle
- DP to HDMI® 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

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

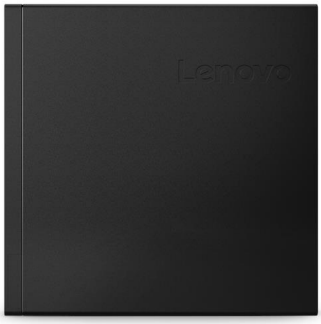
Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)





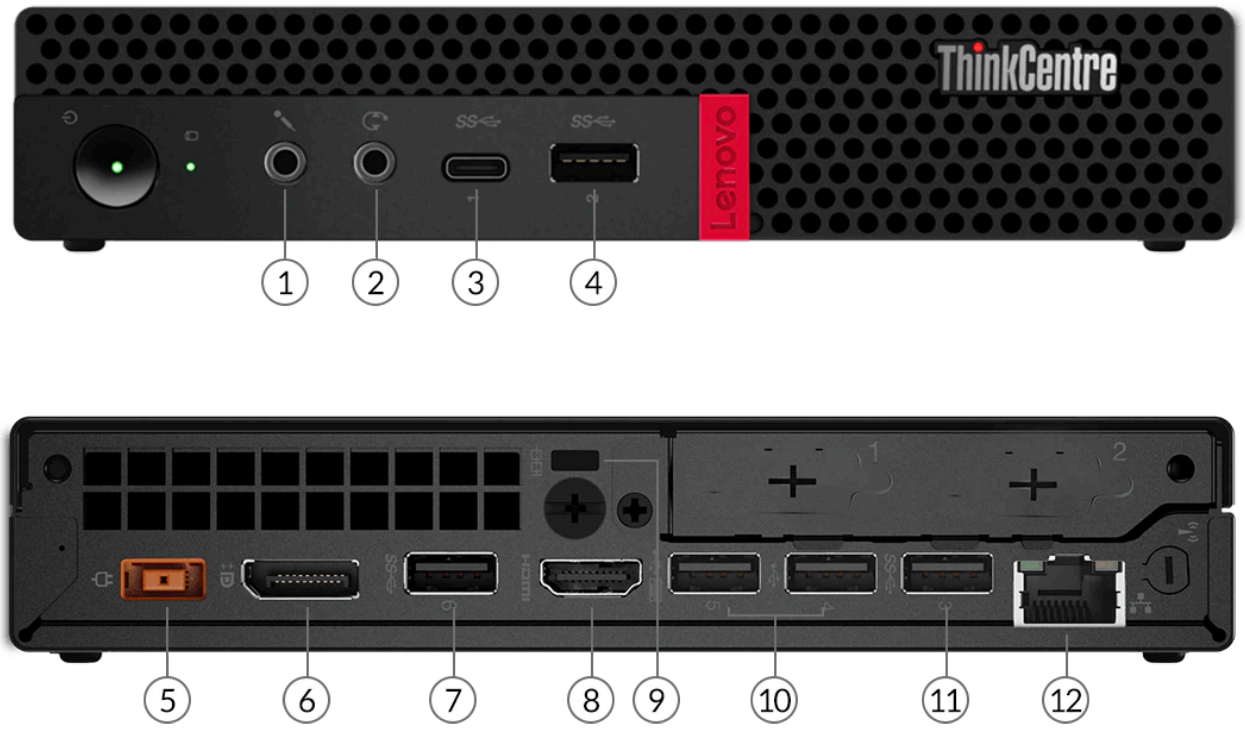








OVERVIEW



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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
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	-	-

RAID

Not 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

Not 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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

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
- WEEE
- REACH

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)





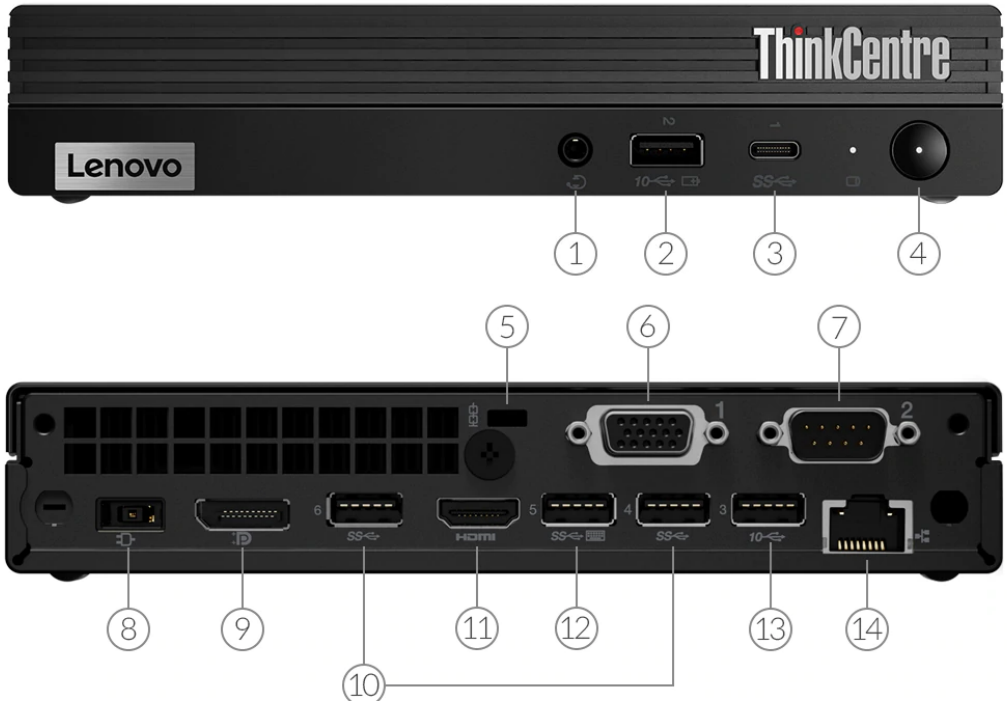








OVERVIEW



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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle

- DP to VGA Cable (1.5M)
- 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

- 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

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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)





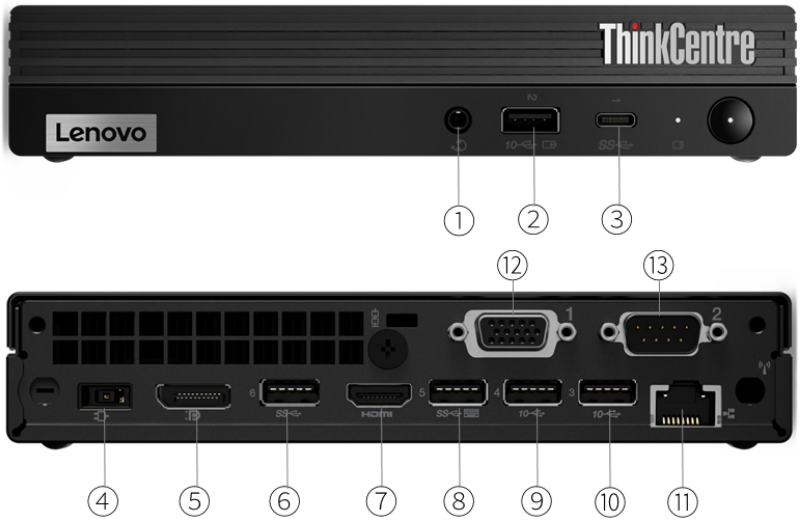








OVERVIEW



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® Pentium® Gold, Celeron®, 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
- 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
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 750	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 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
M.2 2280 SSD	PCIe NVMe	-	Opal
M.2 2242 SSD	PCIe NVMe	-	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-

RAID

Not 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 Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Fingerprint Mouse (USB connector), black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)

Models	Dimensions
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)
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)

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 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 Ethernet (RJ-45)
- 1x HDMI 2.0 (HDMI 1.4 supported on Pentium Gold, Celeron, 10th Generation Intel Core i3 models)
- 1x DisplayPort™

Optional Rear Ports

- Optional Port 2 (serial)
- Dual DisplayPort ports (occupy Optional Port 1 and 2)
- Dual USB 2.0 ports (share one USB 2.0 bandwidth, occupy optional port 1 and 2)
- Optional Port 1 (One of VGA / 2nd DisplayPort / 2nd HDMI / serial / USB-C 2.0 with DisplayPort function)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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

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 Ultra Low Noise certified
- None

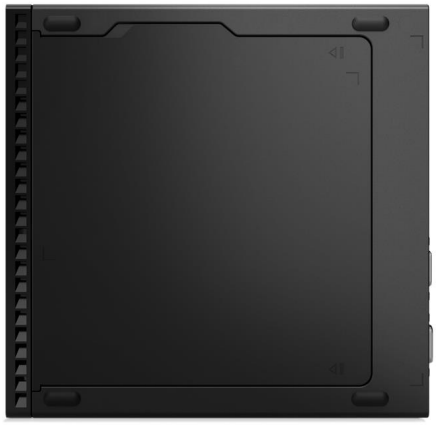
Mil-Spec Test

Work in progress




ThinkCentre
Lenovo

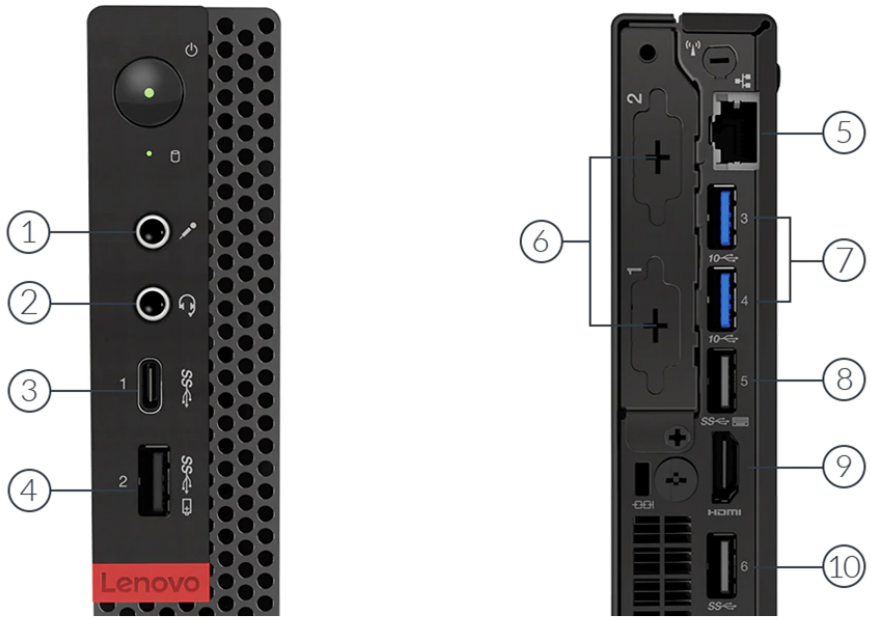







ThinkCentre
Lenovo

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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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)

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[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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to dual DP dongle
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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

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 Ultra Low Noise certified
- 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)





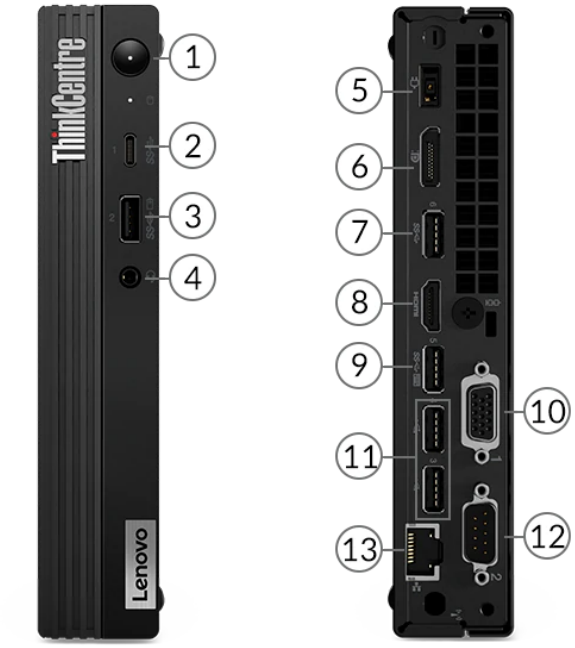





Lenovo



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, or Ryzen 3 / 5 / 7 PRO series 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	Radeon Graphics
AMD Athlon Gold PRO 3150GE	4	4	3.3GHz	3.8GHz	2MB L2 / 4MB L3	DDR4-2933	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	Radeon Graphics
AMD Ryzen 5 5600GE	6	12	3.4GHz	4.4GHz	3MB L2 / 16MB L3	DDR4-3200	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	Radeon Graphics
AMD Ryzen 5 4600GE	6	12	3.3GHz	4.2GHz	3MB L2 / 8MB 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	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	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	Radeon Graphics

Operating System

Operating System

- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 IoT Enterprise
- 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
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	-	-

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 Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Calliope Mouse (USB connector), 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 75mm and 100mm
- Not configured

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 Ethernet (RJ-45)
- 1x HDMI
- 1x DisplayPort

Optional Rear Ports

- 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)
- Quad USB 3.2 Gen 1 ports (share one USB 3.2 Gen 1 bandwidth, occupy optional port 1 and 2)
- 2x USB 3.2 Gen 1 (occupies 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

- 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

- 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 low noise / ultra low noise verified (on some models)
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed




ThinkCentre
Lenovo

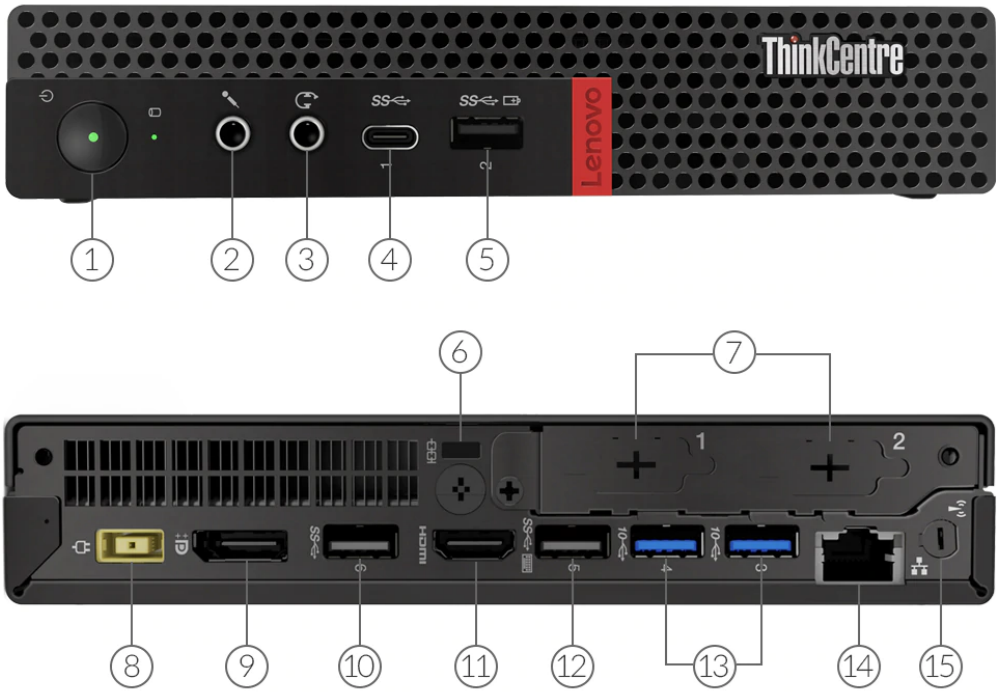







ThinkCentre
Lenovo

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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
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	-	-

RAID

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to dual DP dongle
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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

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 Low Noise certified
- 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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[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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- None

Mil-Spec Test

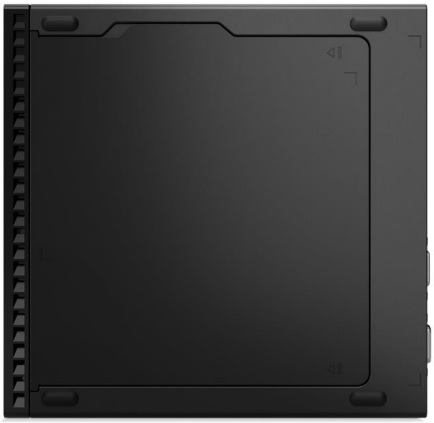
MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)


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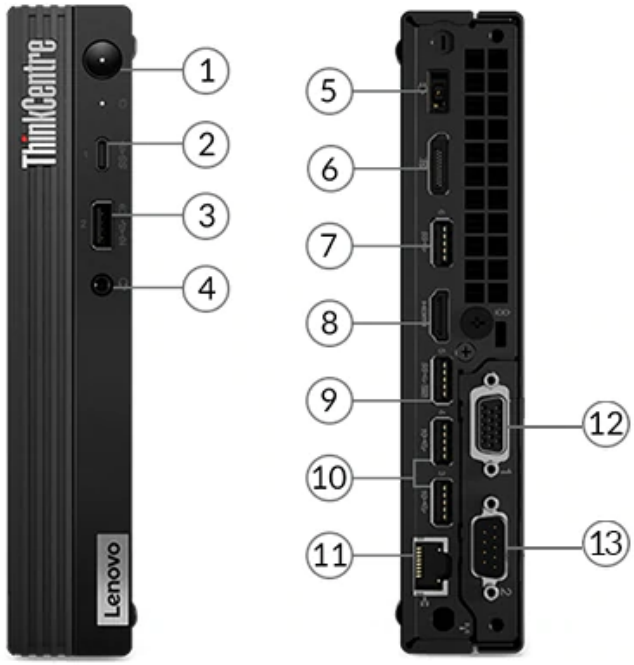







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OVERVIEW



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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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
- Self-healing BIOS

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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- 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)


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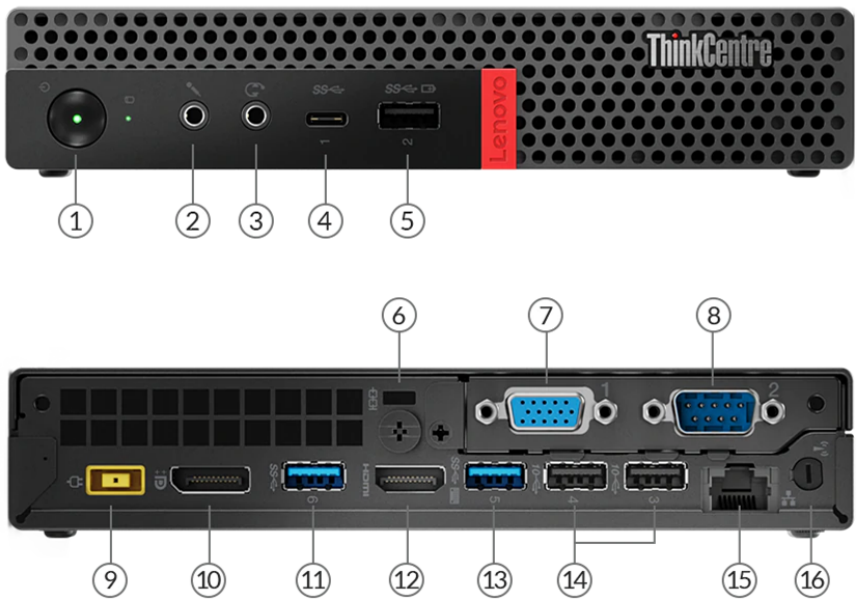







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OVERVIEW



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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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)

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 VGA dongle
- DP to dual DP dongle
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- 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

- 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[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 Low Noise certified
- 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 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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 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)


ThinkCentre
Lenovo


ThinkCentre
Lenovo

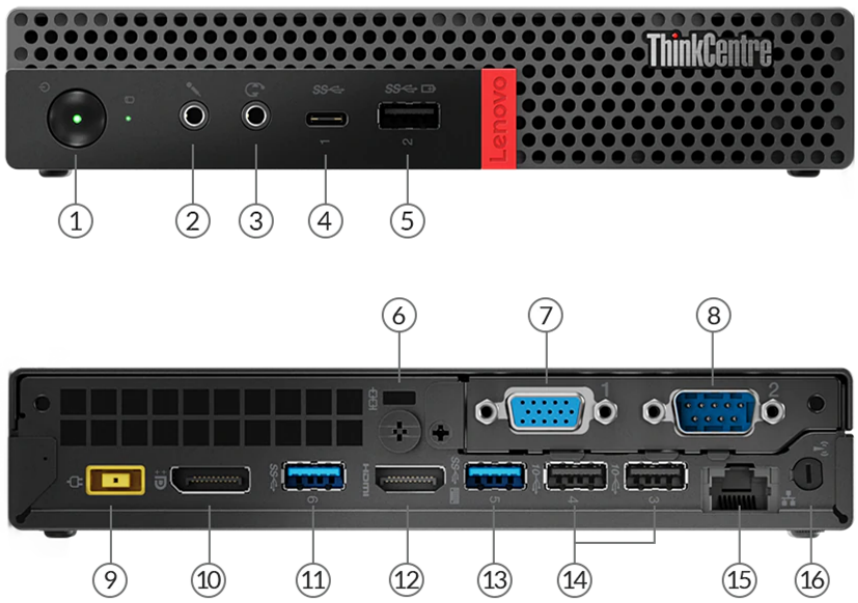







ThinkCentre
Lenovo

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

Not 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

3-year Premier Support service

CERTIFICATIONS

Green Certifications

Green Certifications

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

Other Certifications

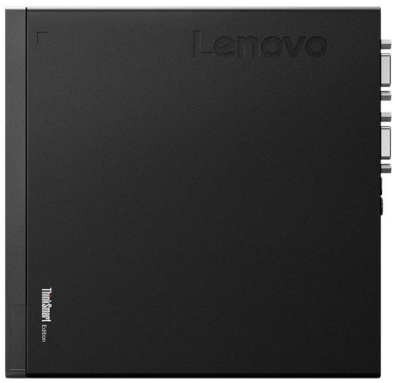
Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)





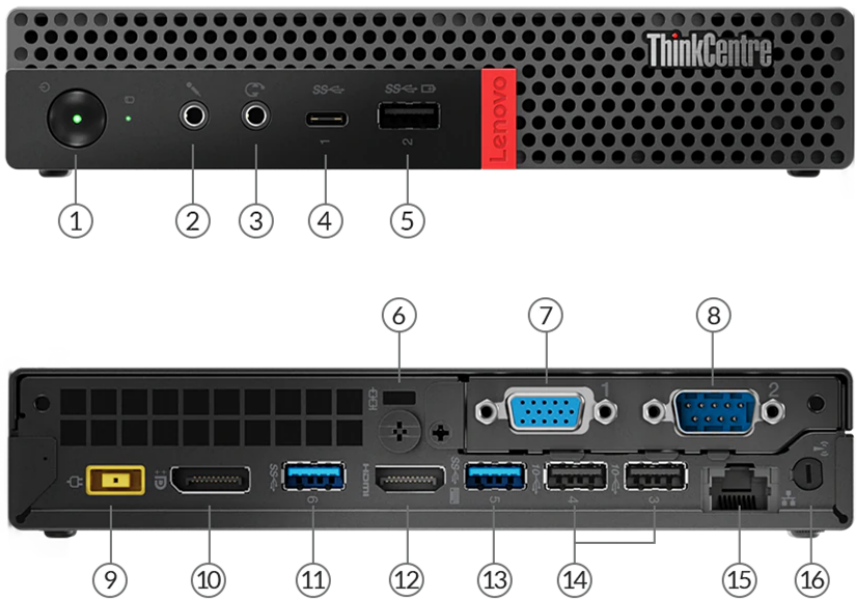








OVERVIEW



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

Not 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

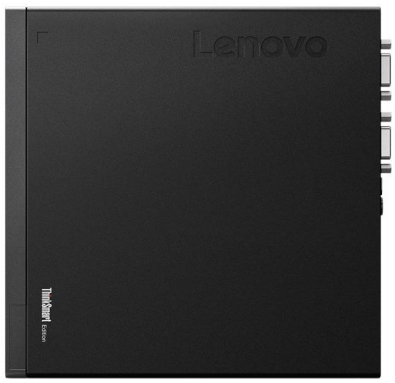
Mil-Spec Test

MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)





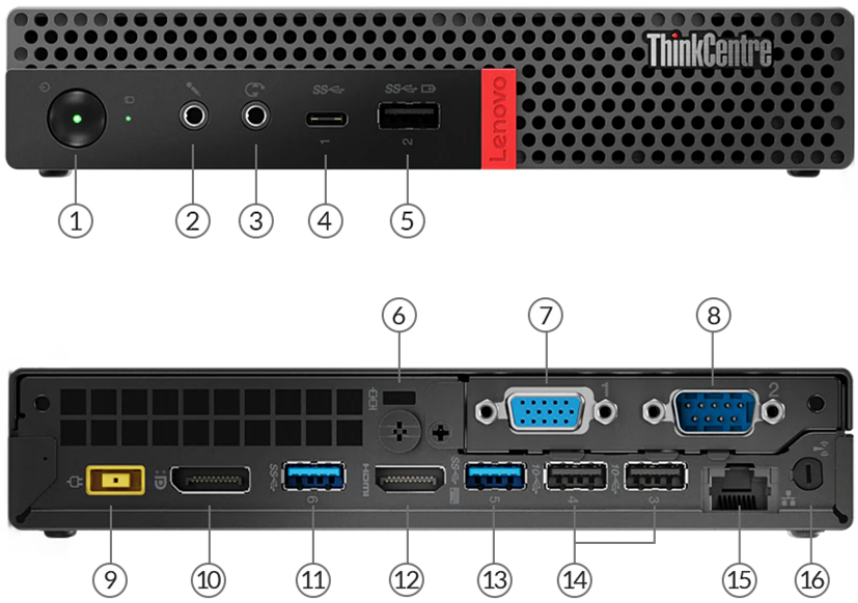








OVERVIEW



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

Not 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

Not 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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[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

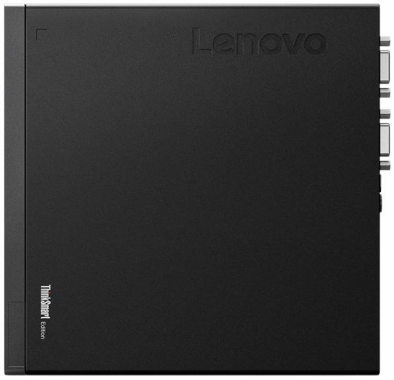
MIL-STD-810G military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)













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

Anti Reflective

Anti-glare

Viewing Angle

horizontal: +/- 89°, vertical: +/- 89°

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 Setting

- 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 connecter, USB [supports USB 3.1 Gen1 / 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
- 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
- ULE Gold
- TCO Certified 7.0
- TCO edge 2.0
- TUV
- VOC
- RoHS compliant
- WEEE

Other Certifications

Other Certifications

- FCC Class B
- ISO 9241-307
- TÜV Eye comfort certified






Lenovo






Lenovo

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

Anti Reflective

Anti-glare

Viewing Angle

horizontal: +/- 89°, vertical: +/- 89°

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 Setting

- 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 connecter, USB [supports USB 3.1 Gen1 / 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 Type A (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 Eye comfort certified













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

Anti Reflective

Anti-glare

Viewing Angle

horizontal: +/- 89°, vertical: +/- 89°

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 Setting

- 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 10QXPAR1.

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 connecter, USB [supports USB 3.1 Gen1 / 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
- ULE Gold
- TCO Certified 7.0
- TCO edge 2.0
- TUV
- VOC
- RoHS compliant
- WEEE

Other Certifications

Other Certifications

- FCC Class B
- ISO 9241-307
- TÜV Eye comfort certified






Lenovo






Lenovo

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

Anti Reflective

Anti-glare

Viewing Angle

horizontal: +/- 89°, vertical: +/- 89°

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 Setting

- 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 connecter, USB [supports USB 3.1 Gen1 / 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 Type A (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 Eye comfort certified













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

Anti Reflective

Anti-glare

Viewing Angle

horizontal: +/- 89°, vertical: +/- 89°

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 Setting

- Presets: 25

- 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 connecter, USB [supports USB 3.1 Gen1 / 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
- ULE Gold
- TCO edge 2.0
- TUV
- VOC
- RoHS compliant
- WEEE

Other Certifications

Other Certifications

- ISO 9241-307
- TÜV Eye comfort certified





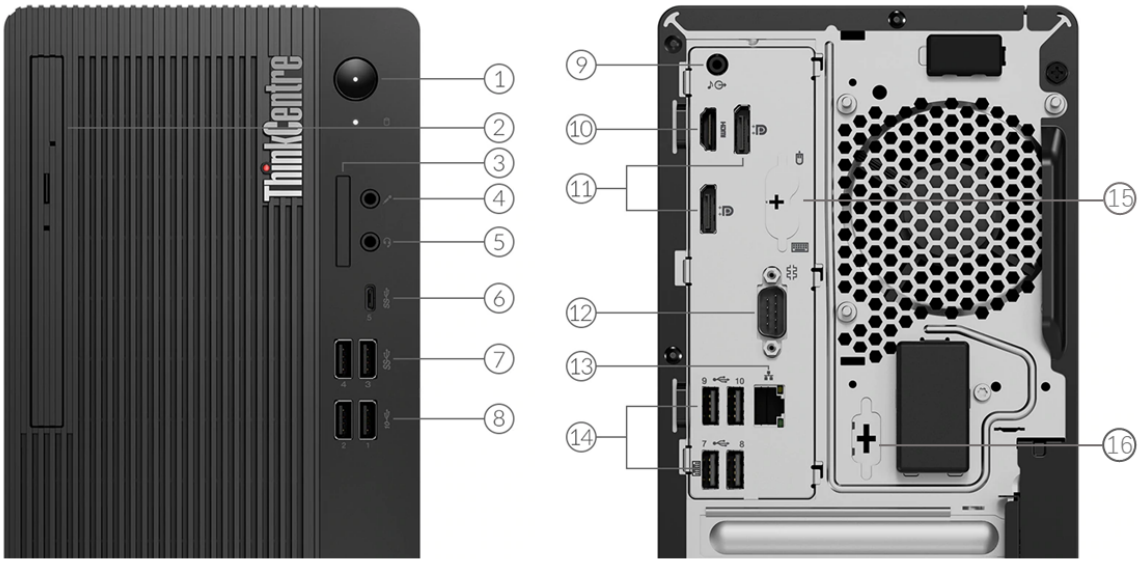








OVERVIEW



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 (1x HDMI + 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
2.5″ SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, full-height (length < 215mm)
- One PCIe 3.0 x1, 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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

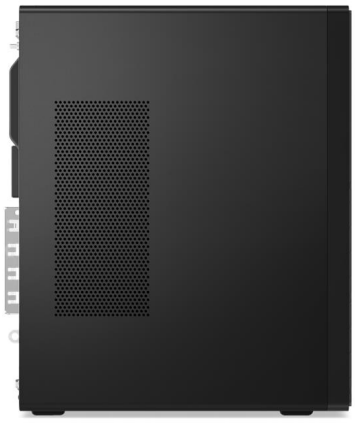
- (Optional) TÜV Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- None





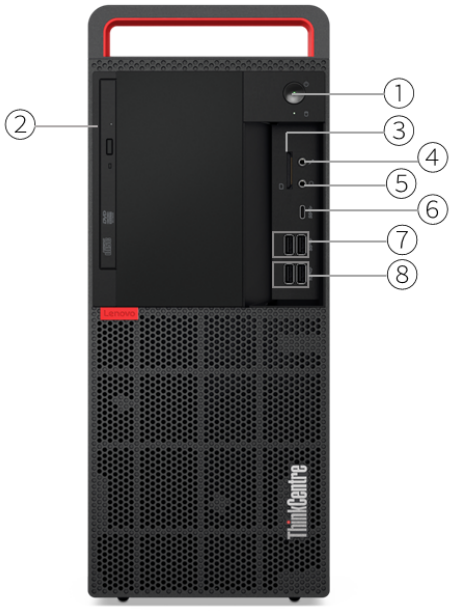


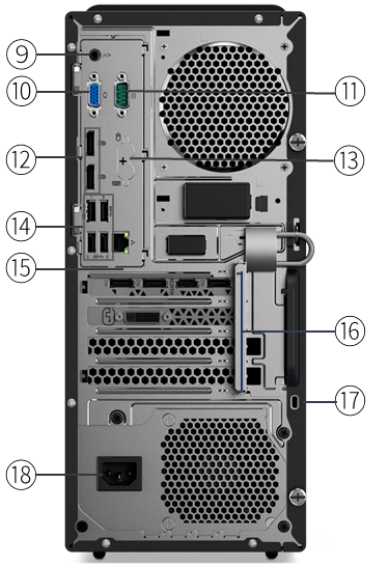






OVERVIEW





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 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 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	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

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 (1x VGA +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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
Intel Optane Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

Not 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 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
- Lenovo Mouse (PS/2 connector), black (only available via special bid)

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 slim ODD bay
- 1x 3.5″ disk bay
- 1x 3.5″ disk bay (optional bay, or bay comes with disk)

Expansion Slots

- One PCIe 3.0 x16, half-length (< 189mm) full-height (< 104mm)
- Two PCIe 3.0 x1, 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x VGA
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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

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 Low Noise certified
- None





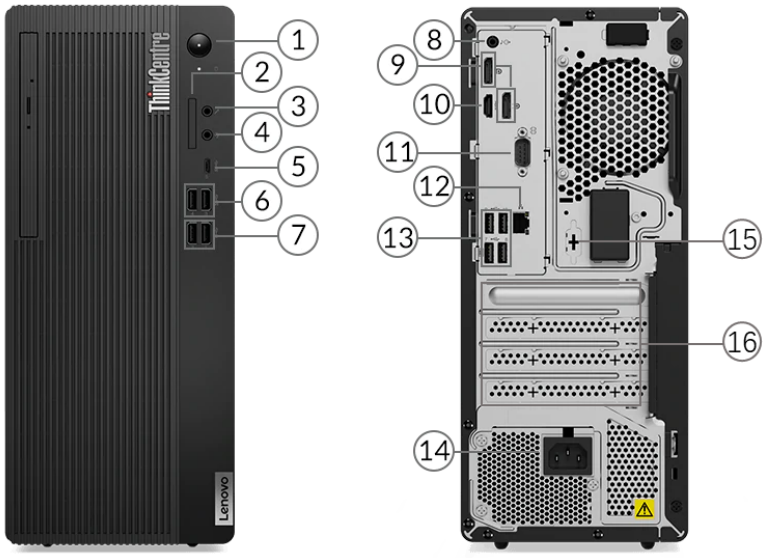



Lenovo





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 5 5600G	6	12	3.9GHz	4.4GHz	3MB L2 / 16MB 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 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	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 (1x HDMI + 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, full-height (length < 215mm)
- One PCIe 3.0 x1, full-height (length < 215mm)
- Two M.2 slots (one for WLAN, one for SSD)

EOU

EOU design for HDD

CONNECTIVITY

Network

Onboard Ethernet

Gigabit Ethernet, Realtek RTL8111EPV, 1x RJ45, supports Wake-on-LAN

Optional Ethernet[1]

- 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. 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to DVI Dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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 Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- None

Mil-Spec Test

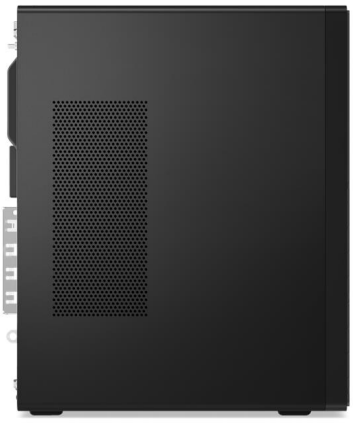
MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)





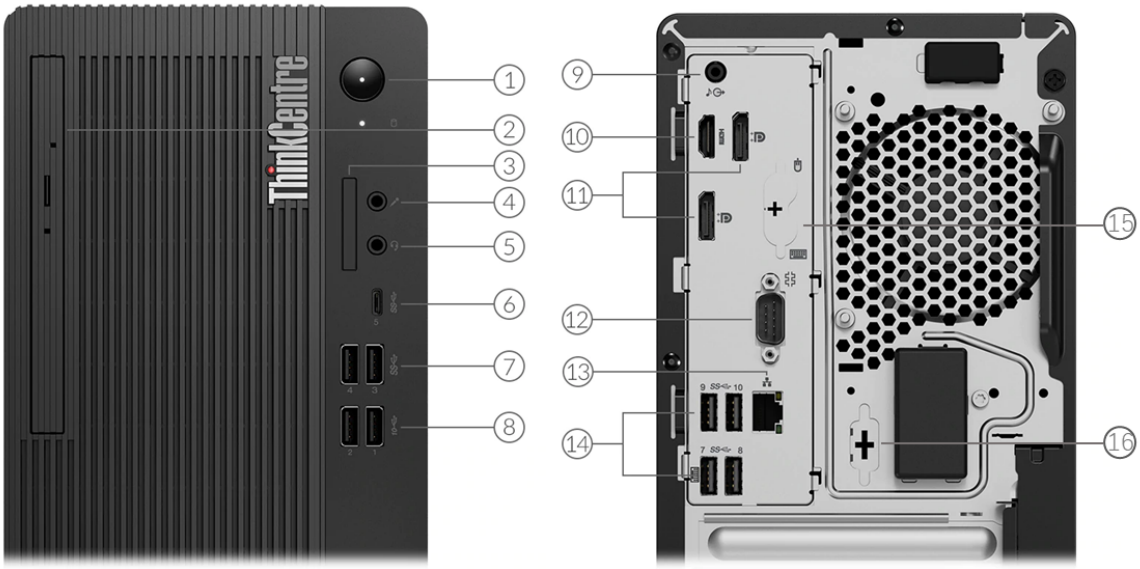








OVERVIEW



1. Optical drive *	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 (1x HDMI + 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
2.5″ SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (optional bay, or bay comes with disk)
- 1x 3.5" disk bay

Expansion Slots

- One PCIe 3.0 x16, full-height (length < 215mm)
- One PCIe 3.0 x4, full-height (length < 215mm)
- One PCIe 3.0 x1, 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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x HDMI
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- HDMI to HDMI Cable (1.5m)
- HDMI to VGA Dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)

- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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:

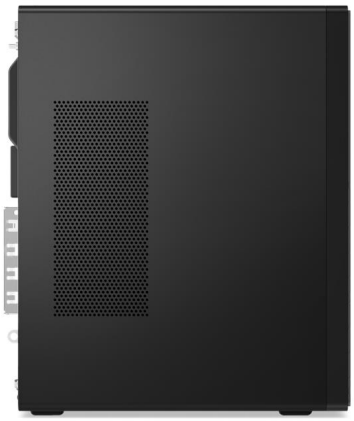
1. ENERGY STAR 8.0 and EPEAT are only available for MT 11CS/11CT

Other Certifications

Other Certifications

- (Optional) TÜV Low Noise certified
- (Optional) TÜV Ultra Low Noise certified
- None





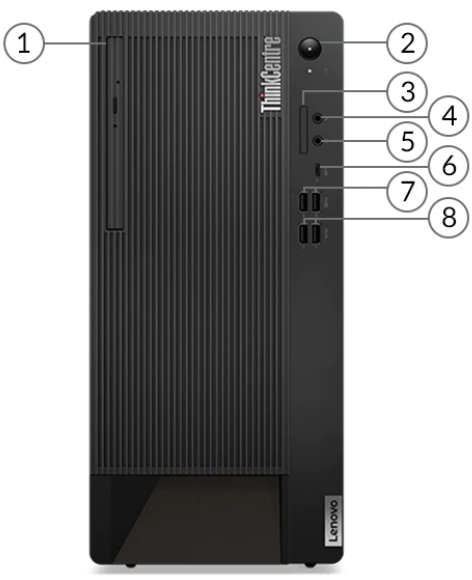


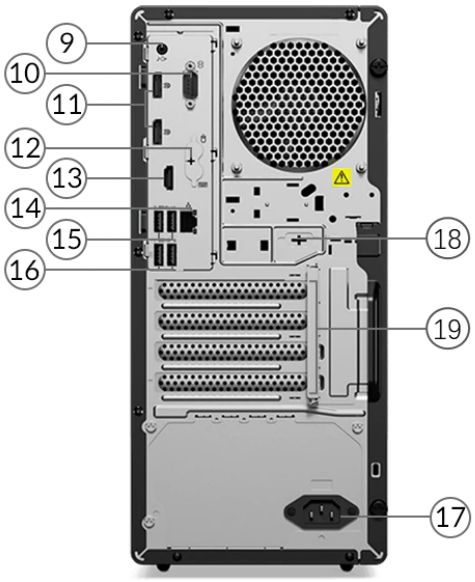






OVERVIEW





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™ + 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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal
3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x2	-	-
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	90%	-
300W	Fixed	85%	-
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 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

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 slim ODD bay
- 1x 2.5" disk bay (bay comes with disk)
- 1x 3.5" disk bay
- 1x 3.5" disk bay (optional bay, or bay comes with disk)

Expansion Slots

- One PCIe 3.0 x16, full-height (length < 245mm)
- One PCIe 3.0 x4, full-height (length < 245mm)
- One PCIe 3.0 x1, 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
- 1x serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)
- 2x DisplayPort

Optional Rear Ports

- Optional Video Port (One of HDMI / DisplayPort / USB-C 3.2 Gen 1 with DisplayPort function)
- 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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
- Self-healing BIOS

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 11D0/11CY)
- ErP Lot 3
- TCO Certified 8.0
- RoHS compliant

Other Certifications

Other Certifications

- (Optional) TÜV Ultra Low Noise certified
- None





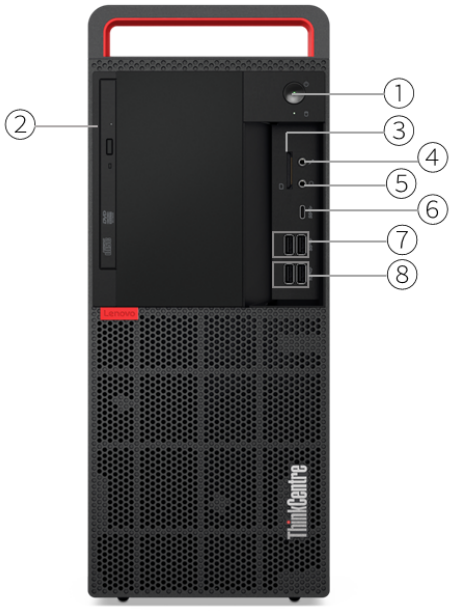


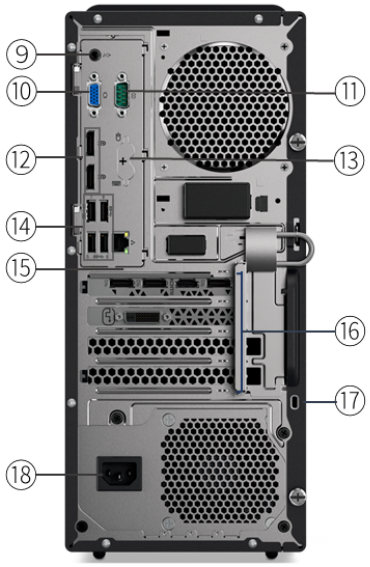






OVERVIEW





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 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 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 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
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 (1x VGA +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
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal

3.5" SATA HDD	SATA 6Gb/s	7.2K	-
2.5" SATA SSD	SATA 6Gb/s	-	Opal
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	-	-
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 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 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
- Lenovo Mouse (PS/2 connector), black (only available via special bid)

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 slim ODD bay
- 1x 2.5″ disk bay (optional bay, or bay comes with disk)
- 1x 3.5″ disk bay
- 1x 3.5″ disk bay (optional bay, or bay comes with disk)
- 1x 5.25″ ODD / optional front access HDD

Expansion Slots

- 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 PCIe 3.0 x1, 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) Dust Filter
- (Optional) Carry Handle
- (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 serial (9-pin)
- 1x Ethernet (RJ-45)
- 1x VGA
- 1x line-out (3.5mm)
- 2x DisplayPort

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA Cable (1.5M)
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- Kensington® Security Slot
- Padlock Loop
- (Optional) Smart Cable Clip

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- 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[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 for MT 10U0/10U1 with i3/i5/i7/i9 models)
- ErP Lot 3
- TCO
- RoHS compliant

Other Certifications

Other Certifications

- (Optional) TÜV Low Noise certified
- None








Lenovo





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PSREF

Product Specifications Reference

ThinkStation



Version 580
July 21, 2021

Lenovo

Contents

Cover **1**
Contents **2**
Summary Of Change **3**
P Series **4**
ThinkStation P340 SFF 4
ThinkStation P340 Tiny 11
ThinkStation P340 Tower 17
ThinkStation P350 SFF 24
ThinkStation P350 Tiny 31
ThinkStation P350 Tower 37
ThinkStation P520 44
ThinkStation P520c 52
ThinkStation P620 59
ThinkStation P720 66
ThinkStation P920 75
ThinkStation P920 Rack 84
Legal Information **85**

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

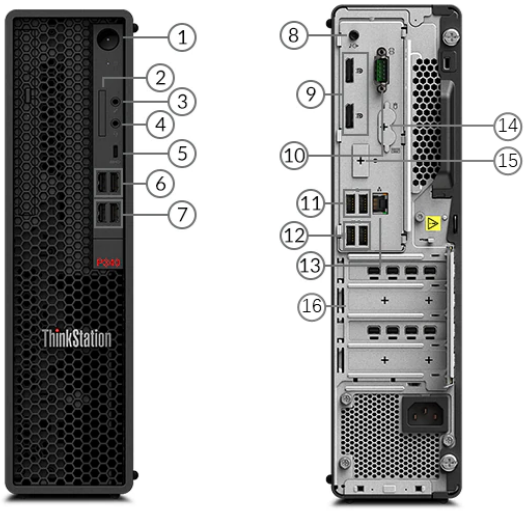
►**New product(s)**
ThinkStation P350 Tower
ThinkStation P350 SFF
ThinkStation P350 Tiny

►**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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





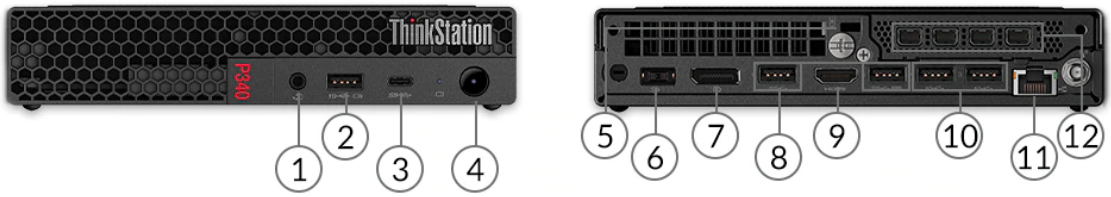








OVERVIEW



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

Uo 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





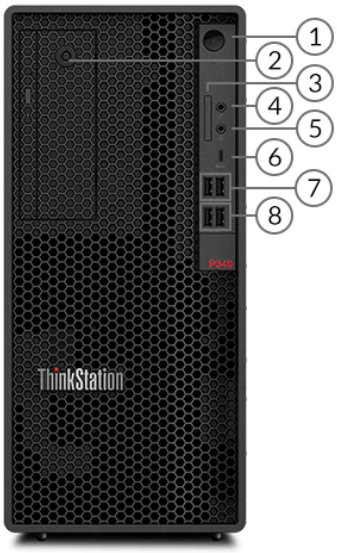


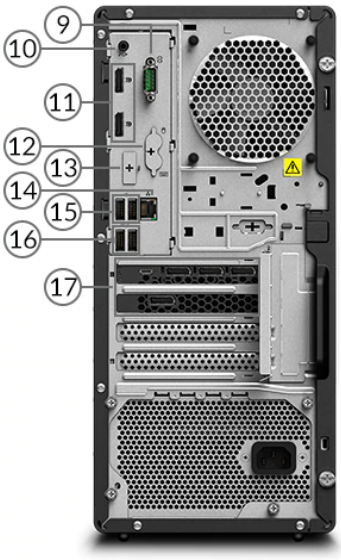






OVERVIEW





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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





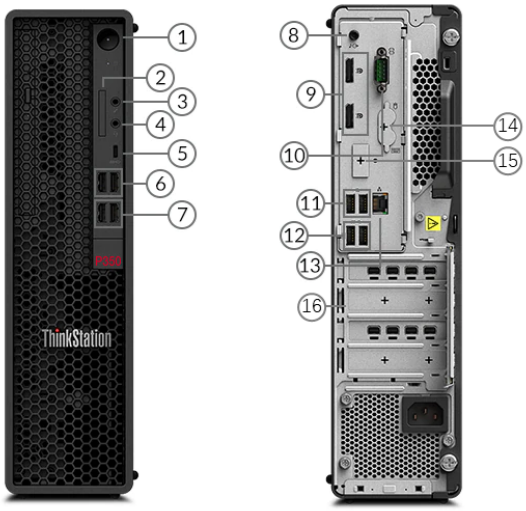








OVERVIEW



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:

1. 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





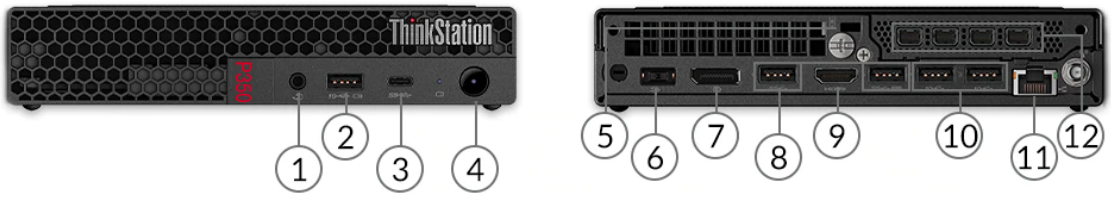








OVERVIEW



1. 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

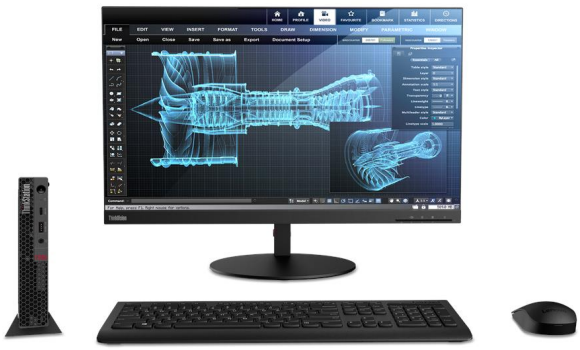
Mil-Spec Test

MIL-STD-810G military test passed

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/





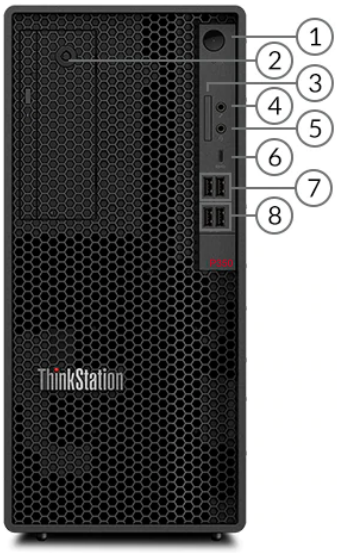


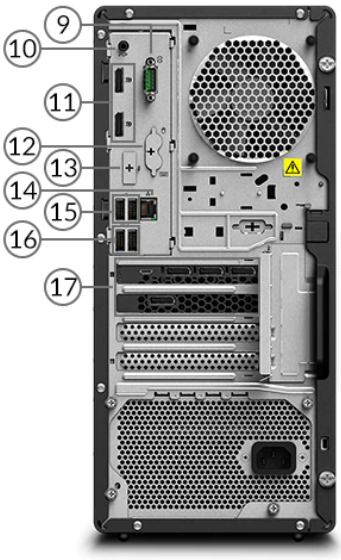






OVERVIEW





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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





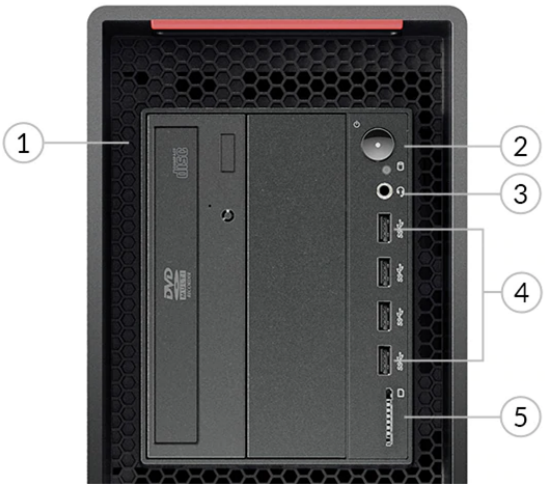


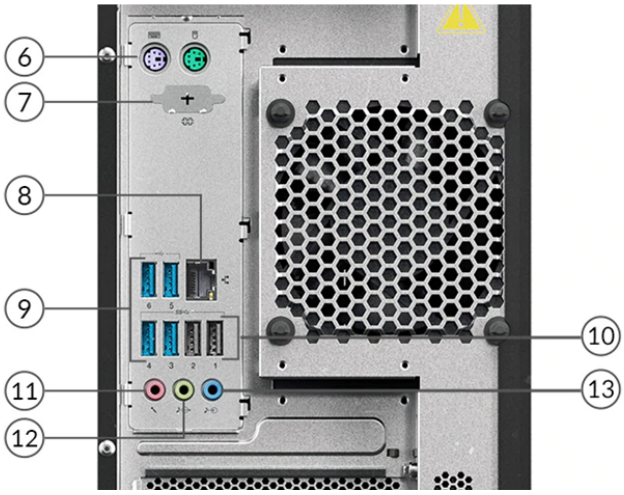






OVERVIEW





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:

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 / 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/







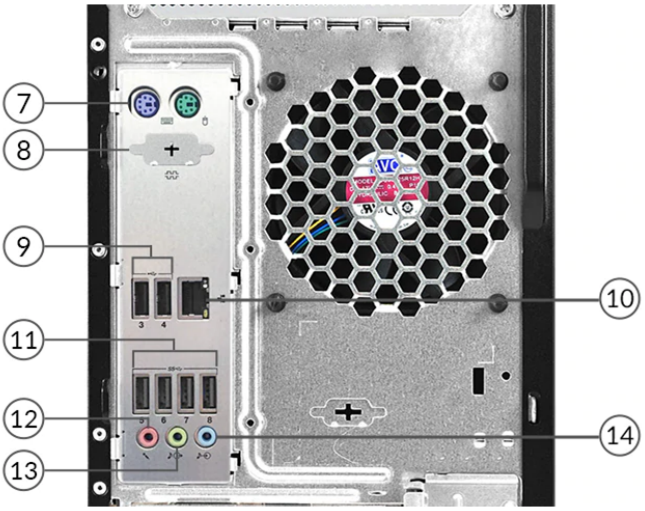






OVERVIEW





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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/


ThinkStation

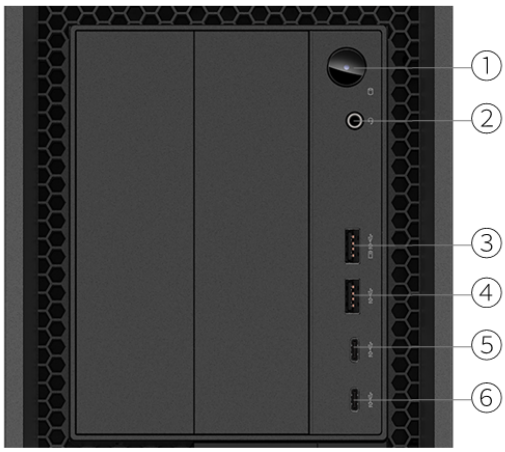

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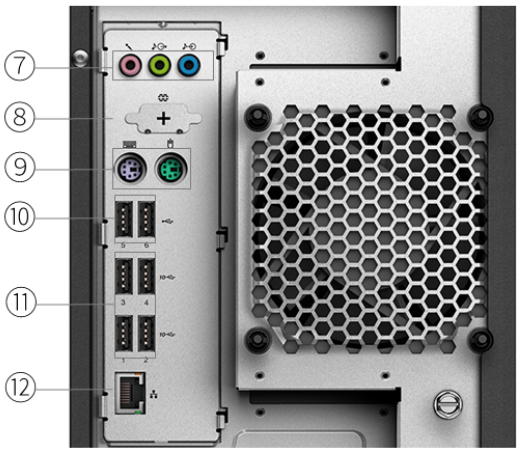



ThinkStation


ThinkStation

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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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/





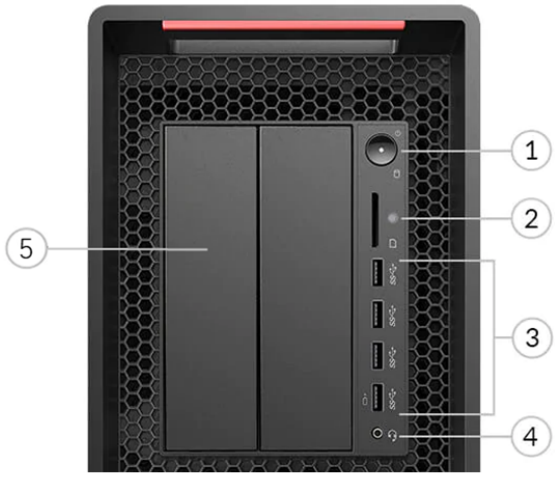








OVERVIEW





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. Addtional 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

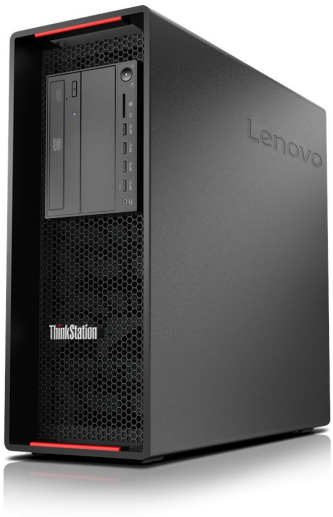
ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/


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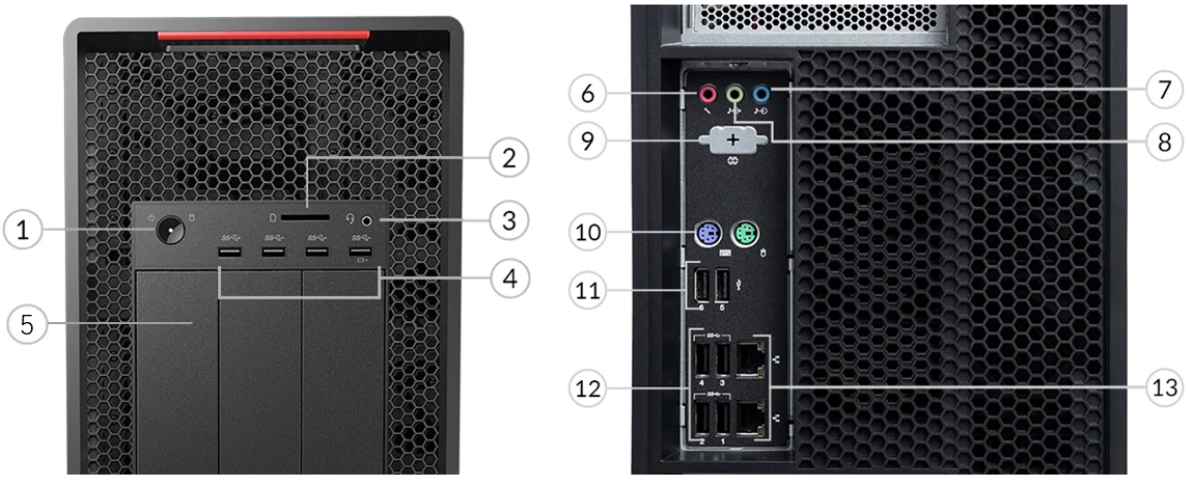



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OVERVIEW



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. Addtional 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, formely USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
   USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formely 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

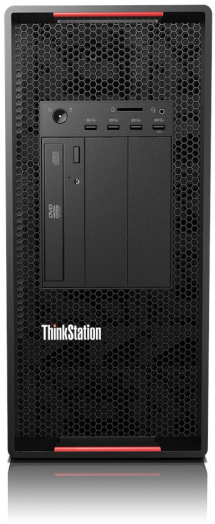
- EPEAT™ Silver
- ENERGY STAR® 8.0 (On model 30BC003WUS)
- GREENGUARD®
- RoHS compliant

ISV Certifications

ISV Certifications

Please visit www.thinkworkstations.com/isv-certifications/




ThinkStation




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ThinkStation P920 Rack Platform Specifications

Form factor	2U rack
Dimensions	Height: 87 mm (3.4 in). Width: 445 mm (17.5 in). Depth: 720 mm (28.3 in)
Weight	Maximum configuration: 70.54 lb (32 kg)
Processor Sockets	2x FCLGA3647
Processor Support	Up to two Gen 2 Intel Xeon Scalable family processors, Bronze, Silver, or Gold

Processor Offering

Processor	# of Cores	# of Threads	Base Frequency	Cache	TDP	Memory Types
Xeon Gold 6252	24	48	2.1GHz	35.75MB	150W	DDR4-2933
Xeon Gold 6234	8	16	3.3GHz	25MB	130W	DDR4-2933
Xeon Gold 6230	20	40	2.1GHz	28MB	125W	DDR4-2933
Xeon Gold 5218	16	32	2.3GHz	22MB	125W	DDR4-2666
Xeon Gold 5215	10	20	2.5GHz	13.75MB	85W	DDR4-2666
Xeon Silver 4215	8	16	2.5GHz	11MB	85W	DDR4-2400
Xeon Silver 4214	12	24	2.2GHz	17MB	85W	DDR4-2400
Xeon Silver 4210	10	20	2.2GHz	14MB	85W	DDR4-2400
Xeon Silver 4208	8	16	2.1GHz	11MB	85W	DDR4-2400
Xeon Bronze 3204	6	6	1.9GHz	8.25MB	85W	DDR4-2133

Chipset	Intel C624 Platform Controller Hub
Memory Sockets	24 DIMM sockets with 12 channels. 12 DIMM sockets with 6 channels per processor
Memory Types	DDR4-2933 RDIMM, 8GB/16GB/32GB available
Memory Capacity	768GB with 24x 32GB DDR4-2933 RDIMM
Memory protection	ECC, memory mirroring, and memory sparing

Expansion slots

Slot 1 (riser card 1)	Full height, half length, double-wide
Slot 2	Not present, for double-wide card in slot 1
Slot 3 (riser card 1)	PCIe 3.0 x16 (x8 lanes). Full height, half length
Slot 4 (onboard)	PCIe 3.0 x8, low profile
Slot 5 (riser card 2)	PCIe 3.0 x16, full height, half length, requires 2nd CPU
Slot 6 (riser card 2)	PCIe 3.0 x16, full height, half length, requires 2nd CPU
Slot 7 (onboard)	PCIe 3.0 x8 (dedicated to an internal storage controller)

Integrated Graphics	Integrated Matrox G200 in XClarity Controller

Discrete Graphics Offering

Graphics	Memory	Power	Connector	SLI / NVlink	Max Qty
Quadro P620	2GB GDDR5	40W	4xminiDP		3
Quadro RTX 4000	8GB GDDR6	160W	3xDP, 1xVirtualLink		3
Quadro RTX 5000	16GB GDDR6	265W	4xDP, 1xVirtualLink		2
T4	16GB GDDR6	70W	-		5
V100	16GB/32GB HBM2	250W	-		2

Storage Controller

Storage Controller	Type	Interface	RAID	Cache
530-8i	Optional	12Gbps SAS	0/1/10/5/50	-

Storage Support

Disk Type	Interface	RPM	Offering	Max Qty
3.5" SATA HDD	SATA 6Gb/s	7.2K	1TB/4TB/6TB/8TB/10TB/12TB/14TB	8
3.5" SATA SSD	SATA 6Gb/s	7.2K	240GB/480GB/960GB/1.92TB/3.84TB	8
M.2 SATA SSD	SATA 6Gb/s		480GB	2

Storage Bays

Bay Type	Maximum Drives Qty
M.2	2x M.2 SATA SSD non-hot swap
Disk bay	8x 3.5" SATA/SAS hot-swap disk bays

Power supply	Up to two redundant hot-swap 1100W or 1600W 80 PLUS Platinum qualified AC power supplies. 100V - 240V
Media reader	None
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
Diagnostic	Light Path Diagnostics
Base warranty	3-year limited onsite service with 9x5/NBD

Warranty upgrades

5WS7A72784	Foundation Service - 3Yr Next Business Day Response
5WS7A72785	Foundation Service - 4Yr Next Business Day Response
5WS7A72786	Foundation Service - 5Yr Next Business Day Response
5PS7A72787	Essential Service - 3Yr 24x7 4Hr Response + YourDrive YourData
5PS7A72788	Essential Service - 4Yr 24x7 4Hr Response + YourDrive YourData
5PS7A72789	Essential Service - 5Yr 24x7 4Hr Response + YourDrive YourData

HD Audio	None
Front ports	One XClarity Controller USB connector, one USB 3.0, one optional VGA
Rear ports	One VGA, two USB 3.0, one XClarity Controller network connector
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.

Environmental specification

Supports ASHRAE A4 with limitations.

Temperature - operating	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)
Temperature - non operating (no package)	-10°C to 60°C (14°F to 140°F)
Temperature - non operating (with package)	-40°C to 70°C (-40°F to 158°F)
Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
Humidity - operating, non-condensing	A4: 8%~90%. A3:8%~85%. A2:8%~80%
Humidity - storage (with package), non-condensing	8%~90%

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*

Environmental Certifications	Energy Star Server 2.1 certified. More environmental information please see: www.lenovo.com/social_responsibility/us/en/environment/
ISV certifications	Certifications from NVIDIA Quadro ISV Certified

Options

4XB7A62801	Intel S4510 3.5" 240G SSD OPT
4XB7A62802	Intel S4510 3.5" 480G SSD OPT
4XB7A62803	Intel S4510 3.5" 960G SSD OPT
4XB7A62804	Intel S4510 3.5" 1.92T SSD OPT
4XB7A62805	Intel S4510 3.5" 3.84T SSD OPT
4XB7A62806	4TB7.2K 6GSATA 3.5G4HS HDD OPT
4XB7A62807	6TB7.2K 6GSATA512e 3.5G4HS OPT
4XB7A62808	8TB7.2K 6GSATA512e 3.5G4HS OPT
4XB7A62809	10T7.2K 6GSATA512e 3.5G4HS OPT
4XB7A62810	3.5" 12TB 7.2K SATA 512e HDD
4XB7A62811	14T 3.5" 7.2 SATA HDD OPT
4ZC7A62797	8GB 1RX8 PC4-2933R 8Gb 1.2V
4ZC7A62798	16GB 1RX4 PC4-2933R 8Gb 1.2V
4ZC7A62799	16GB 2RX8 PC4-2933R 8Gb 1.2V
4ZC7A62800	32GB 2RX4 PC4-2933R 8Gb 1.2V

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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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PSREF

Product Specifications Reference

ThinkVision



Version 580
July 20, 2021

Lenovo

Contents

Cover **1**
Contents **2**
Summary Of Change **4**
20 Inch - 23 Inch **5**
ThinkVision E20-20 5
ThinkVision E2054 6
ThinkVision E22-20 7
ThinkVision E22-28 8
ThinkVision S22e-18 9
ThinkVision S22e-19 10
ThinkVision S22e-20 11
ThinkVision T2054p 12
ThinkVision T2224d 13
ThinkVision T2254 14
ThinkVision T22i-10 15
ThinkVision T22i-20 16
ThinkVision T22v-10 17
ThinkVision T22v-20 18
ThinkVision T23d-10 19
ThinkVision T23i-10 20
ThinkVision T23i-20 21
24 Inch - 26 Inch **22**
ThinkVision E24-20 22
ThinkVision E24-28 23
ThinkVision E24q-20 24
ThinkVision P24h-20 25
ThinkVision P24h-2L 26
ThinkVision P24q-20 27
ThinkVision S24e-03 28
ThinkVision S24e-10 29
ThinkVision S24e-20 30
ThinkVision S24q-10 31
ThinkVision T24d-10 32
ThinkVision T24h-20 33
ThinkVision T24i-10 34
ThinkVision T24i-19 35
ThinkVision T24i-20 36
ThinkVision T24i-2L 37
ThinkVision T24m-10 38
ThinkVision T24m-20 39
ThinkVision T24t-20 40
ThinkVision T24v-10 41
ThinkVision T24v-20 42
ThinkVision T25d-10 43
ThinkVision T25m-10 44
27 Inch - 30 Inch **45**
ThinkVision Creator Extreme 45
ThinkVision E27q-20 46
ThinkVision E29w-20 47
ThinkVision P27h-10 48
ThinkVision P27h-20 49

Contents

ThinkVision P27q-20 50
ThinkVision P27u-10 51
ThinkVision S27e-20 52
ThinkVision S27i-10 53
ThinkVision S27q-10 54
ThinkVision S28u-10 55
ThinkVision T27h-20 56
ThinkVision T27h-2L 57
ThinkVision T27hv-20 58
ThinkVision T27i-10 59
ThinkVision T27p-10 60
ThinkVision T27q-20 61
ThinkVision X1 (2nd Gen) 62
Above 30 Inch **63**
ThinkVision P32p-20 63
ThinkVision P32u-10 64
ThinkVision P40w-20 65
ThinkVision P44w-10 66
ThinkVision T32h-20 67
ThinkVision T32p-20 68
ThinkVision T34w-20 69
Under 20 Inch **70**
ThinkVision LT1913p Square 70
ThinkVision M14 71
ThinkVision M14t 72
ThinkVision M15 73
ThinkVision T1714 74
ThinkVision T1714p 75
Legal Information **76**

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

Panel Size	19.5"
Panel Type	IPS
Backlight	WLED
Viewable Area (Diagonal)	19.5"
Screen Dimensions (W x H) (mm)	418.61 (H) x 262.35 (V)
Resolution	1440 x 900
Aspect Ratio	16:10
Viewing Angle (H/V at CR 10:1)	178°/178°
Maximum Brightness (Typical)	250 cd/m²
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (W x H) (mm)	0.0969 x 0.2915
Dot/Pixel Per Inch (DP/PPI)	87.3
Color Gamut (CIE 1931)	72%
Number of Colors	16.7 Million
Response Time	
Extreme Mode	<5 ms
Normal Mode	7 ms
Off-Mode	14 ms
Anti-Glare	Yes

MECHANICAL

Tilt Angle (Front / Back)	-5° ~ 22°
Swivel Angle (Left / Right)	No
Lift (mm)	No
Pivot	No
VESA Mount (mm)	100 x 100
Kensington Lock Slot	Yes
Cable Management	No
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width	
Sides (mm / inches)	17.9 / 0.7"
Top (mm / inches)	18 / 0.71"
Bottom (mm / inches)	26 / 1.02"

SIGNAL INPUT

Video Input Signals	VGA
Video Cables Supplied	VGA
Video Cable Length	1.8 m
USB Hub	No
USB Cable Supplied	No

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 83 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1440 x 900
Maximum Pixel Clock Speed / Bandwidth	VGA : 205 MHz
Default Color Temperature	7200K
Preset Display Modes	18
User-defined Display Modes	10
OSD Buttons	5
OSD Languages	8

POWER CONSUMPTION

Power Consumption	
Typical	16 W
Maximum	20 W
Sleep-Mode	0.5 W
Off-Mode	0.5 W
Heat Dissipation	
Typical	54.56 Btu/h
Maximum	68.2 Btu/h
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC, 0.75 A - 0.3 A
Voltage Dynamic Frequency	47 Hz – 63 Hz

ENVIRONMENTAL

Temperature	
Operating	0°C – 45°C (non-condensing)
Non-operating	-20°C – 60°C (non-condensing)
Humidity	
Operating	8% – 80% (non-condensing)
Non-operating	5% – 95% (non-condensing)
Altitude	
Operating	5,000 m
Non-operating	40,000 ft

DIMENSIONS (W x D x H)

Size Packed	
(mm)	513 x 388 x 124
(inches)	20.2" x 15.27" x 4.88"
Size Unpacked with Stand	
(mm)	456 x 188.3 x 372
(inches)	17.95" x 7.41" x 14.65"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	456 x 44.5 x 308
(inches)	17.95" x 1.75" x 12.13"
Distance from Table to Panel (mm / inches)	
Lowest Pixel at Bottom of Screen	90 / 3.54"
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)

COMPLIANCE

Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
PCC % of Plastic Resins	85%
EPEAT	Silver
ENERGY STAR Rating	8.0
TCO	6.0
TCO Edge	No
TUV	No
RoHS (EU 2002/95/EC)	Yes
China Energy Efficiency Standard	Tier 1
Windows Certification	Windows 7, Windows 8, Windows 8.1, Windows 10

WARRANTY AND AVAILABILITY

Warranty	3 Years
Geography Availability	World Wide
ThinkVision Logo	Yes
Global Model	No

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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: 4XH0N04098)

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.

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/m^2

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: 4XH0N04098)

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.

DISPLAY

Tamanho do Painel
21,5 polegadas

Dimensão da Tela (L x A)
476,06 × 267,79 mm

Tipo de Painel
3-side NearEdgelss, VA

Luz de Fundo
WLED

Proporção da Tela
16:9

Resolução
1920 x 1080 mm

Distância entre pixels (A x V)
0.2480 × 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):
-5º ~ +22º

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):
-5º ~ +22º

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.

ThinkVision S22e-19

DISPLAY

Panel Size
21.5-inch

Screen Dimensions (W x H) (mm)
476.06 mm × 267.79 mm

Panel Type
3-side NearEdgelss, VA

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080 mm

Pixel Pitch (H x V) (mm)
0.2480 × 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:4XF0N03161)

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.

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 Hz[1]

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: 0A36190)

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: 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)
2.0 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 405.1x 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

Panel Size	19.5"
Panel Type	IPS
Backlit	WLED
Viewable Area (Diagonal)	19.5"
Screen Dimensions (W x H) (mm)	262.35 x 418.61
Resolution	1440 x 900
Aspect Ratio	16:10
Viewing Angle (H/V at CR 10:1)	178° / 178°
Maximum Brightness (Typical)	250 cd/m²
Contrast Ratio (Typical)	1000:1
Pixel Pitch (W x H) (mm)	0.0969 x 0.2915
Dot/Pixel Per Inch (DP / PPI)	87.3
Color Gamut (CIE 1931)	72%
Number of Colors	16.7 M
Response Time	7 ms
Anti-Glare	Yes

MECHANICAL

Tilt Angle (Front / Back)	-5° ~ 22°
Swivel Angle (Left / Right)	-45° – 45°
Lift (mm)	110
Pivot	No
VESA Mount (mm)	100 x 100
Kensington Lock Slot	Yes
Cable Management	Yes
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width (Side) (mm / inches)	17 / 0.67"
Bezel Width (Top / Bottom) (mm / inches)	17 / 0.67"

SIGNAL INPUT

Video Input Signals	VGA, HDMI, DisplayPort
Video Cables Supplied	VGA
Video Cable Length	1.8 m
USB Hub	No
USB Cable Supplied	No

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 81 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1440 x 900
Maximum Pixel Clock Speed / Bandwidth	VGA : 150 MHz HDMI : 150 MHz DisplayPort: 150 MHz
Default Color Temperature	7200K
Preset Display Modes	22
User-defined Display Modes	16
OSD Buttons	5
OSD Languages	8

POWER CONSUMPTION

Power Consumption	
Typical	14.5 W
Max. without USB Hub	21 W
Max. with USB Hub	N/A
Sleep-Mode	0.3 W
Off-Mode	0.3 W
Heat Dissipation	
Typical	49.45 Btu/h
Max.	71.61 Btu/h
Power Supply	Internal
Power Voltage	90 – 264 VAC, 1.5 A
Voltage Dynamic Frequency	47 – 63 Hz

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	6.0
TCO Edge	2.0
TUV	Yes
GREENGUARD	No
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7, Windows 8, Windows 8.1, Windows 10
China Energy Efficiency Standard	Tier 1

DIMENSIONS (W X D X H)

Size Packed	
(mm)	509 x 176 x 368
(inches)	20.04" x 6.93" x 14.49"
Size Unpacked with Stand	
(mm)	454.2 x 242.6 x 345.9 ~ 455.9
(inches)	17.88" x 9.55" x 13.62" ~ 17.95"
Size Unpacked without Stand (Head Only)	
(mm)	454.2 x 53 x 297.9
(inches)	17.88" x 2.09" x 11.73"
Distance from Table to Panel	**(mm / inches)**
Lowest Pixel at Bottom of Screen	65.8 / 2.59"
Highest Pixel at Top of Screen	328.2 / 12.92"
Stand Base Footprint Area (mm / inches)	Diameter 240 / 9.45"
Weight	
Packed	Starting at 10.8 lbs (4.9 kg)
Unpacked	Starting at 8.15 lbs (3.7 kg)
Monitor Head	Starting at 4.85 lbs (2.2 kg)

ENVIRONMENTAL

Temperature	
Operating	0 °C – 45 °C
Non-operating	-20 °C – 60 °C (non-condensing)
Humidity	
Operating	10% – 80%
Non-operating	5% – 95% (non-condensing)
Altitude	
Operating	8,000 ft
Non-operating	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
ThinkVision Logo	Yes
Global Model	Yes

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ThinkVision T2224d MONITOR

SPECIFICATIONS

DISPLAY

Panel Size	21.5"
Panel Type	IPS
Backlight	WLED
Screen Dimensions (W x H) (mm)	476.064 (H) x 267.786 (V)
Resolution	1920 x 1080
Aspect Ratio	16:9 (Wide)
Viewing Angle (H/V at CR 10:1)	178°/178°
Maximum Brightness (Typical)	250 cd/m²
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3000000:1
Pixel Pitch (mm)	0.248
Dot/Pixel Per Inch (DP/PPI)	102
Color Gamut (CIE 1931) NTSC	72%
Number of Colors	16.7 Million
Response Time	4 ms (extreme mode)
Anti-Glare	Yes

MECHANICAL

Tilt Angle (Front / Back)	-5° / 22°
Swivel Angle (Left / Right)	No
Lift Range	No
Pivot	No
VESA Mount (mm)	100 x 100
Kensington Lock Slot	Yes
Cable Management	Yes
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width	
Bottom (mm / inches)	25.6 / 1.01"
Top (mm / inches)	17.6 / 0.69"
Sides (mm / inches)	17.6 / 0.69"

SIGNAL INPUT

Video Input Signals	VGA + DisplayPort
Video Cables Supplied	VGA + DisplayPort
Video Cable Length	1.8 m
USB Hub	No
USB Cable Supplied	No

POWER CONSUMPTION

Typical	20 W
Maximum	25 W
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

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz ~ 83 kHz
Vertical Frequency	50 Hz ~ 75 Hz
Native Resolution	1920 x 1080
Maximum Pixel Clock Speed Bandwidth	
VGA	205 MHz
DisplayPort	165 MHz
Default Color Temperature	7200K
Plug 'n' Play	Yes
Preset Display Modes	22
User-defined Display Modes	22
OSD Buttons	5
OSD Languages	8
Lockable Controls	No

DIMENSIONS (W x D x H)

Size Unpacked with Stand	
(mm)	512.9 x 204.9 x 381.4
(inches)	20.19" x 8.07" x 15.01"
Size Unpacked without Stand (Head Only)	
(mm)	512.9 x 51 x 312.6
(inches)	20.19" x 2.01" x 12.31"
Distance from Table to Panel (mm / inches)	
Lowest Pixel at Bottom of Screen	94.4 / 3.72"
Highest Pixel at Top of Screen	363.9 / 14.33"
Stand Base Footprint Area (mm / inches)	180 x 180 / 7.09" x 7.09"
Weight	
Packed	Starting at 9.19 lbs (4.17 kg)
Unpacked	Starting at 6.48 lbs (2.94 kg)
Monitor Head Only	Starting at 5.93 lbs (2.69 kg)

ENVIRONMENTAL

Temperature	
Operating	0°C - 45°C
Non-operating	-20°C - 60°C
Humidity	
Operating	10% - 80%
Non-operating	5% - 95%
Altitude	
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

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
TCO	Display 7.0 / Edge 2.0
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7, Windows 10
Image Quality Capability	ISO 9241-307
China Energy Efficiency Standard	Tier 1

WARRANTY AND AVAILABILITY

Warranty	3 Years
Geography Availability	World Wide
Global Model	Yes

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SPECIFICATIONS

DISPLAY

Panel Size	22" Wide
Panel Type	TN
Backlight	WLED
Viewable Area (Diagonal)	22" (558.8 mm)
Screen Dimensions (W x H)	473.76 mm x 296.1 mm
Resolution	1680 x 1050
Aspect Ratio	16:10
Viewing Angle (H/V at CR 10:1)	170°/160°
Maximum Brightness (Typical)	250 cd/m²
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (mm)	0.282 (H) x 0.282 (W)
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

MECHANICAL

Tilt Angle (Front / Back)	-5° to 30°
Swivel Angle (left/right)	NA
Lift	110 mm
Pivot	NA
VESA® Mount	100 x 100 mm
Kensington® Lock Slot	Yes
Cable Management	Yes
Ambient Light sensor	No
Bezel Color	Raven Black
Bezel Width (Side)	17 mm
Bezel Width (Top / Bottom)	17 mm

SIGNAL INPUT

Video Input Signals	VGA, DVI
Video Cables Supplied	VGA, DVI
Video Cable Length	1.8 m
USB Hub	None
USB Cable Supplied	None

POWER CONSUMPTION

Power	
Typical	16 W
Max.	22 W
Sleep Mode	0.5 W
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

Horizontal Frequency	30 kHz to 83 kHz
Vertical Frequency	50 kHz to 75 Hz
Native Resolution	1680 x 1050
Maximum Pixel Clock Speed / Bandwidth	146.25 MHz
Default Color Temperature	7200 K
Preset Display Modes	28
User-defined Display Modes	20
OSD Buttons	5
OSD Languages	8

DIMENSIONS (W x D x H)

Size Packed	22.44" x 7.52" x 16.57" (570 mm x 191 mm x 421 mm)
Size Unpacked with stand	20.05" x 9.61" x 14.97" (509.3 mm x 244.2 mm x 380.2 mm)
Size Unpacked without stand (Head Only)	20.05" x 1.73" x 13.06" (509.3 mm x 44 mm x 331.7 mm)
Min. Distance from Table to Panel (lowest pixel at bottom of screen)	2.58" (65.5 mm)
Max. Distance from Table to Panel (highest pixel at top of screen)	14.30" (363.2 mm)
Stand Base Footprint Area	8.31" (211 mm) (diameter)
Weight Packed	6.98 kg (15.38 lbs)
Weight Unpacked	4.71 kg (10.38 lbs)
Weight (Monitor Head Only)	3.09 kg (6.81 lbs)

COMPLIANCE

EPEAT®	GOLD
ENERGY STAR Rating	6.0
ULE	Gold
TCO®	Display 6.0
TCO® Edge	2.0
TUV	Yes
GREENGUARD®	No
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7, Windows 8.0, Windows 8.1
China Energy Efficiency Standard	Tier 1

ENVIRONMENTAL

Temperature – Operating	0 °C to 45 °C
Temperature – Non-operating	-20 °C to 60 °C (non-condensing)
Humidity – Operating	10% to 80%
Humidity – Non-operating	5% to 95% (non-condensing)
Altitude – Operating	5,000 m
Altitude – Non-operating	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	EMEA, ASEAN, Japan



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ThinkVision T22i-10 MONITOR



SPECIFICATIONS

DISPLAY

Panel Size	21.5" Wide
Panel Type	IPS
Backlight	WLED
Resolution (H x V)	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Borderless Screen	Yes
Screen Dimensions (W x H)	
(mm)	476.064 x 267.786
(inches)	18.74" x 10.54"
Maximum Brightness (Typical)	250 cd/m^2
Viewing Angle (H/V at CR 10:1)	178°/178°
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

DIMENSIONS (W x D x H)

Size Packed	
(mm)	577 x 378 x 191
(inches)	22.7" x 14.9" x 7.5"
Size Unpacked with Stand	
(mm)	489.7 x 251.9 x 357.6
(inches)	19.28" x 9.92" x 14.08"
Size Monitor Head Only	
(mm)	489.7 x 43.5 x 297
(inches)	19.28" x 1.71" x 11.69"
Stand Base Footprint Area	
(mm)	240 x 240
(inches)	9.45" x 9.45"
Weight	
Packed	Starting at 16.36 lbs (7.42 kg)
Unpacked	Starting at 10.85 lbs (4.92 kg)
Monitor Head Only	Starting at 6.94 lbs (3.15 kg)

CONNECTIVITY

Video Input Signals	VGA + HDMI 1.4 + DisplayPort 1.2
Video Cables Supplied (Length)	1.8 m
Audio	Audio-Out
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

POWER CONSUMPTION

Typical	20 W
Maximum	55 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.5 W
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm / inches)	110 / 4.33"
Pivot	-90° / 90°
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)	21.4 / 0.84"
Sides (mm / inches)	2 / 0.08"

COMPLIANCE

Arsenic-Free Glass	Yes
ULE	Gold
PVC-Free	Yes; Without Cable
Mercury-Free	Yes
EPEAT	Silver
ENERGY STAR Rating	8.0
TCO	7.0
TCO Edge	2.0
RoHS (EU 2002/95/EC)	Yes
China Energy Efficiency Standard	Tier 2
Windows Certification	Windows 7 / Windows 10

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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/m^2

Brightness (peak)
250 cd/m^2

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.

ThinkVision T22v-10 MONITOR

SPECIFICATIONS

DISPLAY

Panel Size	21.5"
Panel Type	In-Plane Switching
Backlight	WLED
Resolution	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Screen Dimensions (W x H) (mm)	476.06 x 267.79
Maximum Brightness (Typical)	250 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (W x H) (mm)	0.25 x 0.25
Dot/Pixel Per Inch (DP/PPI)	102
Color Gamut (CIE 1931)	72% sRGB
Response Time (Extreme/Typical/Off)	4/6/14 ms (G-to-G)

POWER CONSUMPTION

Typical	18 W
Maximum	43 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	90 VAC – 264 VAC
Voltage Dynamic Frequency	47 Hz – 63 Hz

SIGNAL INPUT

Video Input Signals	HDMI 1.4 + DisplayPort 1.2 + VGA
Video Cables Supplied	HDMI (ROW) + DisplayPort + VGA + USB 3.0[1]
Video Cable Length	1.8 m
USB Hub	Yes
USB Cable Supplied	Yes
Audio-Out	Yes (3.5 mm)

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 81 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1920 x 1080
Maximum Pixel Clock Speed/ Bandwidth	VGA : 205 MHz HDMI : 165 MHz DisplayPort : 165 MHz
Default Color Temperature	6500K
Preset/User Modes	24/20
OSD Buttons	5+2 Buttons
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

MECHANICAL

Tilt Angle (Front / Back)	-5° / 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm)	Yes (110)
Pivot	+/-90°
VESA Mount (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)	21.4 / 0.84"
Sides (mm / inches)	2 / 0.08"

ENVIRONMENTAL

Temperature	
Operating	0°C – 40°C
Non-Operating	-20°C – 60°C
Humidity	
Operating	10% – 80%
Non-Operating	5% – 95%
Altitude	
Operating	0 m – 8000 m
Non-Operating	0 ft – 40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
PCC % of Plastic Resins	>85%

DIMENSIONS (W x D x H)

Size Packed	
(mm)	554 x 365 x 187
(inches)	21.81" x 14.37" x 7.36"
Size Unpacked with Stand	
Lowest Position	
(mm)	489.7 x 251.9 x 375.8
(inches)	19.28" x 9.92" x 14.79"
Highest Position	
(mm)	489.7 x 251.9 x 485.8
(inches)	19.28" x 9.92" x 19.13"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	489.7 x 43.5 x 315.1
(inches)	19.28" x 1.71" x 12.41"
Distance from Table to Panel	
Lowest Pixel at Bottom of Screen (mm / inches)	82.1 / 3.23"
Highest Pixel at Top of Screen (mm / inches)	192.1 / 7.56"
Stand Base Footprint Area (mm / inches)	232 x 203.6 / 9.13" x 8.02"
Weight	
Packed	Starting at 14.46 lbs (6.56 kg)
Unpacked	Starting at 10.16 lbs (4.61 kg)
Monitor Head Only	Starting at 6.48 lbs (2.94 kg)

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	TCO Display 7.0 / TCO Edge 2.0
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7 / Windows 10
China Energy Efficiency Standard	Grade 2
TÜV Eye Comfort	Yes

WARRANTY AND AVAILABILITY

Warranty	
ROW	3 Years
PRC	18 Months
Geography Availability	WW

[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 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/m^2

Brightness (peak)
250 cd/m^2

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

[1]This 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:4XF0N82412+PN:4XF0N03161)

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

Panel Size	23 Wide
Panel Type	IPS
Backlight	WLED
Resolution (H x V)	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Borderless Screen	Yes
Screen Dimensions (W x H)	
(mm)	517.2 x 302.8
(inches)	20.36" x 11.92"
Maximum Brightness (Typical)	250 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
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

DIMENSIONS (W x D x H)

Size Packed	
(mm)	590 x 187 x 422
(inches)	23.23" x 7.36" x 16.61"
Size Unpacked with Stand	
(mm)	522.2 x 264.2 x 337.7
(inches)	20.56" x 10.4" x 13.3"
Size Monitor Head Only	
(mm)	522.2 x 42.7 x 317.6
(inches)	20.56" x 1.68" x 12.5"
Stand Base Footprint Area	
(mm)	218.7 x 218.7
(inches)	8.61" x 8.61"
Weight	
Packed	Starting at 16.36 lbs (7.42 kg)
Unpacked	Starting at 10.85 lbs (4.92 kg)
Monitor Head Only	Starting at 6.94 lbs (3.15 kg)

CONNECTIVITY

Video Input Signals	VGA + HDMI 1.4 + DisplayPort 1.2
Video Cables Supplied (Length)	1.8 m
Audio	Audio-Out
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

POWER CONSUMPTION

Typical	16 W
Maximum	45 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.5 W
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm / inches)	110 / 4.33"
Pivot	-90° / 90°
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)	23.7 / 0.93"
Sides (mm / inches)	2 / 0.08"

COMPLIANCE

Arsenic-Free Glass	Yes
PVC-Free	Yes; Without Cable
Mercury-Free	Yes
EPEAT	Silver
ENERGY STAR Rating	8.0
TCO	7.0
TCO Edge	2.0
RoHS (EU 2002/95/EC)	Yes
China Energy Efficiency Standard	Tier 2
Windows Certification	Windows 7 / Windows 10

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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.

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: 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

* 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.

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/m^2

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)
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

* 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.

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/m^2

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.

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/m^2

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 0A36190)

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 W[2]

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

[1]This software can only be used with Windows 10
[2]up 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/m^2

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-C[3] 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 W[4]

Smart Power[1]
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

[1]The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device.
[2]This software can only be used with Windows 10
[3]USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.
[4]Up 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

[1]This 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: 0A36190)

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: 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)
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 NearEdgelss, 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.

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: 0A36190)

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: 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)
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/m^2

Brightness (peak)
300 cd/m^2

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.

ThinkVision T24d-10 MONITOR

SPECIFICATIONS

DISPLAY

Panel Size	24"
Panel Type	In-Plane Switching
Resolution	1920 x 1200
Backlight	WLED
Aspect Ratio	16:10
Pixel Pitch (W x H) (mm)	0.27 x 0.27
Dot/Pixel Per Inch (DPI/PPI)	94 PPI
Anti-Glare	Yes
Screen Dimensions (W x H)	
(mm)	518.4 x 324
(inches)	20.41" x 12.75"
Maximum Brightness (Typical)	300 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Color Gamut (CIE 1931)	99% sRGB
Display Colors (Typical)	16.7 Million
Response Time	
Extreme	4 ms
Typical	7 ms
Off	15 ms

DIMENSIONS (W x D x H)

Size Packed	
(mm)	160 x 655 x 422
(inches)	6.3" x 25.79" x 16.61"
Size Unpacked with Stand	
(mm)	533.2 x 260.4 x 497.4
(inches)	20.99" x 10.25" x 19.58"
Size Monitor Head Only	
(mm)	533.2 x 42.3 x 355.1
(inches)	20.99" x 1.67" x 13.98"
Distance from Table to Panel	
Lowest Pixel at Bottom of Screen (mm / inches)	56 / 2.2"
Highest Pixel at Top of Screen (mm / inches)	490 / 19.29"
Stand Base Footprint Area	
(mm)	250 x 250
(inches)	9.84" x 9.84"
Weight	
Packed	Starting at 19.18 lbs (8.7 kg)
Unpacked	Starting at 12.41 lbs (5.63 kg)
Monitor Head Only	Starting at 8.77 lbs (3.98 kg)

SIGNAL INPUT

Video Input Signals	VGA + DisplayPort 1.2 + HDMI 1.4
Video Cables Supplied	VGA + DisplayPort + HDMI
Video Cable Length	1.8 m
USB Hub	USB 3.0[1]
USB Cable Supplied	Yes
Audio-Out	Yes (3.5 mm)

POWER CONSUMPTION

Typical	22 W
Maximum	64 W
Sleep-Mode	<0.3 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC
Voltage Dynamic Frequency	50 Hz – 60 Hz

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz - 83 KHz
Vertical Frequency	50 Hz - 75 Hz
Native Resolution	1920 x 1200
Maximum Pixel Clock Speed/ Bandwidth	
VGA	205 MHz
HDMI™	165 MHz
DisplayPort™	165 MHz
Default Color Temperature	6500 K
Preset Display Modes	20
OSD Buttons	5
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

ENVIRONMENTAL

Temperature	
Operating	0°C – 40°C
Non-Operating	-20°C – 60°C
Humidity	
Operating	10% – 80%
Non-Operating	5% – 95%
Altitude	
Operating	0 m – 5000 m
Non-Operating	0 ft – 40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
PCC % of Plastic Resins	>85%

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm)	110
Pivot	+/-90°
VESA® Mount (mm x mm)	100 x 100
Cable Management	Yes
Kensington® Lock	Yes
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"

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	TCO Display 7.0 / TCO Edge 2.0
RoHS (EU 2002/95/EC)	Yes
China Energy Efficiency Standard	Tier 2
Windows Certification	Windows 7 / Windows 10

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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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.

ThinkVision T24i-10 MONITOR



SPECIFICATIONS

DISPLAY

Panel Size	23.8" Wide
Panel Type	In-Plane Switchng
Backlight	WLED
Resolution (H x V)	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Near Edgeless Screen	Yes
Screen Dimensions (W x H)	
(mm)	527.04 x 296.46
(inches)	20.75" x 11.67"
Maximum Brightness (Typical)	250 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (mm)	0.2745 x 0.2745
Color Gamut (CIE 1931)	72% NTSC
Color Support (Typical)	16.7 Million
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

DIMENSIONS (W x D x H)

Size Packed	
(mm)	422 x 622 x 190
(inches)	16.61" x 24.48" x 7.48"
Size Unpacked with Stand Lowest Position	
(mm)	540.2 x 261.75 x 373.4
(inches)	21.26" x 10.3" x 14.7"
Highest Position	
(mm)	540.2 x 261.75 x 483.4
(inches)	21.26" x 10.3" x 19"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	540.2 x 46.45 x 325.98
(inches)	21.26" x 1.82" x 12.83"
Stand Base Footprint Area	
(mm)	250 x 250
(inches)	9.84" x 9.84"
Weight	
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

CONNECTIVITY

Video Input Signals	VGA + HDMI 1.4 + DisplayPort 1.2
Video Cables Supplied (Length)	1.8 m
USB Hub	1 x USB 3.0[1] (Upstream) 4 x USB 3.0[1] (Downstream, Incl. 1 BC)
Audio Out	Yes (3.5 mm)

POWER CONSUMPTION

Typical	16.5 W
Maximum	55 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	90 VAC – 264 VAC

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
Swivel Angle (Left / Right)	+/-45°
Lift Range (mm)	110
Pivot	+/-90°
Cable Management	Yes
Kensington Lock	Yes
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"

WHAT'S IN THE BOX

Monitor with Stand
1 x Power Cable
1 x VGA Cable
1 x DisplayPort - DisplayPort Cable
1 x HDMI Cable (NA Only)
Quick Setup Guide

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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ThinkVision T24i-19 MONITOR



SPECIFICATIONS

DISPLAY

Panel Size	23.8" Wide
Panel Type	In-Plane-Switching
Backlight	WLED
Resolution	FHD (1920 x 1080)
Aspect Ratio	16:9
Anti-Glare	Yes
Near Edgeless Screen	Yes
Screen Dimensions (W x H)	
(mm)	527.04 x 296.46
(inches)	20.75" x 11.67"
Brightness	250 nits
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Speakers	2 x 2W
Pixel Pitch (mm)	0.2745 x 0.2745
Color Gamut (CIE 1931)	72% NTSC
Color Depth	8 bit
Color Support (Typical)	16.7 Million
Response Time (GtG)	
Extreme / Normal	4 ms / 6 ms
OSD Controls	
Buttons	5
Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

DIMENSIONS (W x D

Size Packed	
(mm)	422 x 622 x 190
(inches)	16.61" x 24.48" x 7.48"
Size Unpacked with Stand Lowest Position	
(mm)	540.2 x 261.75 x 373.4
(inches)	21.26" x 10.3" x 14.7"
Highest Position	
(mm)	540.2 x 261.75 x 483.4
(inches)	21.26" x 10.3" x 19"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	540.2 x 46.45 x 325.98
(inches)	21.26" x 1.82" x 12.83"
Stand Base Footprint Area	
(mm)	250 x 250
(inches)	9.84" x 9.84"
Weight	
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

CONNECTIVITY

Video Input Signals	VGA + HDMI + DisplayPort
Video Cables Supplied	VGA, DisplayPort, USB, Power, HDMI (for NA only)
USB Hub	USB 3.0[1] (4 x down, 1 x BC)
Audio Out	Yes (3.5 mm)
Power	Internal
Soundbar Support*	Yes

POWER CONSUMPTION

Typical	16.5 W
Maximum	59 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	90 VAC – 264 VAC
ENERGY STAR (P_{on})	13.67 W
ENERGY STAR (E_{TEC})	43.51 kWh

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
Swivel Angle (Left / Right)	+/-45°
Lift Range (mm)	110
Pivot	+/-90°
Stand	LTPS
Cable Management	Yes
Kensington Lock	Yes
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"

WHAT'S IN THE BOX

Monitor with Stand
1 x Power Cable
1 x VGA Cable
1 x DisplayPort - DisplayPort Cable
1 x HDMI Cable (NA Only)
Quick Setup Guide

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
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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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.

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 x539.8mm
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

Panel Size	23.8"
Panel Type	In-Plane Switching
Backlight	WLED
Resolution	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Screen Dimensions (W x H) (mm)	527.04 (H) x 296.46 (V)
Maximum Brightness (Typical)	250 cd/m^2
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio (Typical)	3M:1
Pixel Pitch (mm)	0.2745 (H) x 0.2745 (V)
Dot/Pixel Per Inch (DPI/PPI)	92
Color Gamut (CIE 1931)	72% NTSC
Response Time (gray to gray)	4 ms (Extreme mode) 6 ms (Normal mode)

POWER CONSUMPTION

Typical	19 W
Maximum	116 W
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

Video Input Signals	HDMI 1.4 + DisplayPort 1.2a + USB Type-C
Video Cables Supplied	USB Type-C to Type-C Cable
Video Cable Length	1.8 m
USB Hub	Yes
	1 x USB 3.0[1] (Upstream, by USB Type-C)
	4 x USB 3.0[1] (Downstream, incl. 1BC)
Audio-Out	Yes (3.5 mm)

MECHANICAL

Tilt Angle (Front / Back)	-5° / 30°
Swivel Angle (Left / Right)	+/-45°
Lift Range (mm)	110
Pivot	+/-90°
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"
Sides (mm / inches)	2 / 0.08"

DIMENSIONS (W x D x H)

Size Packed	
(mm)	422 x 622 x 190
(inches)	16.61" x 24.48" x 7.48"
Size Unpacked with Stand Lowest Position	
(mm)	540.2 x 261.75 x 373.4
(inches)	21.26" x 10.3" x 14.7"
Highest Position	
(mm)	540.2 x 261.75 x 483.4
(inches)	21.26" x 10.3" x 19"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	540.2 x 46.45 x 325.98
(inches)	21.26" x 1.82" x 12.83"
Distance from Table to Panel Lowest Pixel at Bottom of Screen (mm / inches)	70.37 / 2.77"
Highest Pixel at Top of Screen (mm / inches)	476.8 / 18.77"
Stand Base Footprint Area (mm / inches)	250 x 250 / 9.84" x 9.84"
Weight	
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

SPECIAL FEATURES

Thin Client Support (Tiny)	Yes (by Tiny Clamp Bracket Kit + VESA Mount)

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

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	TCO 7.0 / TCO Edge 2.0
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7 / Windows 10
China Energy Efficiency Standard	Tier 2
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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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-C[1] 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-C[1])

USB Downstream
4 x USB3.2 Gen1
(1 x BC1.2)

SPECIAL FEATURES

Software
Lenovo ThinkColour[3] (Lenovo Display Control Center)

POWER

Power Consumption (Typ./Max)
22W / 140W

Power Consumption Sleep/Off Mode
< 0.5W[4]

Power Consumption Switch-Off Mode
< 0.3W

Energystar Power Consumption (Pon/E_{TEC})
15W / 49kWh

Power Supply
Internal

USB Type-C[1] (DP Alt Mode) power delivery
Up to 90W[5]

Smart Power[2]
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/m^2

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 90W[3]

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. [2]USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum. [3]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. [4]This 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.

ThinkVision T24v-10 MONITOR

SPECIFICATIONS

DISPLAY

Panel Size	23.8"
Panel Type	In-Plane Switching
Backlight	WLED
Resolution	1920 x 1080
Aspect Ratio	16:9
Anti-Glare	Yes
Screen Dimensions (W x H) (mm)	527.04 x 296.46
Maximum Brightness (Typical)	250 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (W x H) (mm)	0.25 x 0.25
Dot/Pixel Per Inch (DP/PPI)	102
Color Gamut (CIE 1931)	72% sRGB
Response Time (Extreme/Typical/Off)	4/6/14 ms (G-to-G)

POWER CONSUMPTION

Typical	20 W
Maximum	45 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	90 VAC – 264 VAC
Voltage Dynamic Frequency	47 Hz – 63 Hz

SIGNAL INPUT

Video Input Signals	HDMI 1.4 + DisplayPort 1.2 + VGA
Video Cables Supplied	HDMI (ROW) + DisplayPort + VGA + USB 3.0[1]
Video Cable Length	1.8 m
USB Hub	Yes
USB Cable Supplied	Yes
Audio-Out	Yes (3.5 mm)

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 81 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1920 x 1080
Maximum Pixel Clock Speed/ Bandwidth	VGA : 205 MHz HDMI : 165 MHz DisplayPort : 165 MHz
Default Color Temperature	6500K
Preset/User Modes	27/21
OSD Buttons	5+2 Buttons
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

MECHANICAL

Tilt Angle (Front / Back)	-5° / 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm)	Yes (110)
Pivot	+/-90°
VESA Mount (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)	22 / 0.87"
Sides (mm / inches)	2 / 0.08"

ENVIRONMENTAL

Temperature	
Operating	0°C – 40°C
Non-Operating	-20°C – 60°C
Humidity	
Operating	10% – 80%
Non-Operating	5% – 95%
Altitude	
Operating	0 m – 8000 m
Non-Operating	0 ft – 40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
PCC % of Plastic Resins	>85%

DIMENSIONS (W x D x H)

Size Packed	
(mm)	608 x 395 x 187
(inches)	23.94" x 15.55" x 7.36"
Size Unpacked with Stand	
Lowest Position	
(mm)	540.2 x 261.9 x 390.5
(inches)	21.28" x 10.32" x 15.39"
Highest Position	
(mm)	540.2 x 261.9 x 500.5
(inches)	21.28" x 10.32" x 19.72"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	540.2 x 43.8 x 343.7
(inches)	21.27" x 1.72" x 13.53"
Distance from Table to Panel	
Lowest Pixel at Bottom of Screen (mm / inches)	69.6 / 2.74"
Highest Pixel at Top of Screen (mm / inches)	69.6 / 2.74"
Stand Base Footprint Area (mm / inches)	242.5 x 212.8 / 9.55" x 8.38"
Weight	
Packed	Starting at 15.78 lbs (7.16 kg)
Unpacked	Starting at 11.18 lbs (5.07 kg)
Monitor Head Only	Starting at 7.3 lbs (3.31 kg)

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	TCO Display 7.0 / TCO Edge 2.0
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7 / Windows 10
China Energy Efficiency Standard	Grade 2
TÜV Eye Comfort	Yes

WARRANTY AND AVAILABILITY

Warranty	
ROW	3 Years
PRC	18 Months
Geography Availability	WW

[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 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/m^2

Brightness (peak)
250 cd/m^2

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

[1]This 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 × Power Cable
1 × USB 3.1 Gen1 Cable
1 × HDMI Cable*
1 × 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.

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/m^2

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 × 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 × Power Cable
1 × 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.

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 ThinkColour[2]
(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 100W[1]

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: 4XF0N03161)

ThinkCentre M Series Nano support
Yes, by Tiny/Nano monitor clamp II (PN: 4XH0Z42451) & Tiny VESA mount II (PN: 4XF0N03161)

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
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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/m^2

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.

ThinkVision E29w-20

DISPLAY

Panel Size
29-inch

Screen Dimensions
683.6 mm x 299.1 mm

Panel Type
3-side NearEdgeless
In-Plane Switching

Active Area
672.8 mm x 283.8 mm

Backlight
WLED

Aspect Ratio
21:9

Resolution
2560 x 1080

Pixel Pitch
0.2628 mm x 0.2628 mm

Pixel Per Inch (DPI/PPI)
96

Viewing angle (H x V @ CR 10:1)
178° / 178°

Response Time
4ms (Extreme Mode)
6ms (Normal Mode)

Refresh Rate
90 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 (Hi-FRC)

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 3W)

Optional Soundbar Support
Yes (PN number: 0A36190)

SPECIAL FEATURES

Software
Lenovo ThinkColour[2]
(Lenovo Display Control Center)

Sync Technology
AMD FreeSync™[1]

POWER

Power Consumption (typical/max)
36W / 45W

Power Consumption Sleep/Off Mode
< 0.3W

Power Consumption Switch-off Mode
< 0.3W

ENERGY STAR Power Consumption (Pon/E_{TEC})
13W / 40kWh

Power Supply
Internal

Voltage Required
AC 100 to 240 V (50-60 Hz)

MECHANICAL

Tilt Angle (front/back)
-5° / 22°

Swivel Angle (left/right)
360°

Lift (Max range)
155 mm

VESA Mount Capability
Yes (100 x 100 mm)

Kensington Lock Slot
Yes

Cable Management
Yes

Bezel Color
Raven Black

Bezel Width (side)
1.8 mm

Bezel Width (top / bottom)
1.8 / 26.4 mm

DIMENSION

Size Packed (D x H x W, mm/inch)
796.0 x 155.0 x 395.0 mm
31.34 x 6.11 x 15.56 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (Lowest Position)
220.0 x 331.1 x 688.4 mm
8.66 x 13.04 x 27.10 inches

Size Unpacked w/ Stand (D x H x W, mm/inch) (Highest Position)
220.0 x 508.1 x 688.4 mm
8.66 x 20.00 x 27.10 inches

Size Unpacked w/o Stand (D x H x W, mm/inch) (Head Only)
47.5 x 320.0 x 688.4 mm
1.87 x 12.60 x 27.10 inches

Weight Packed (kg/lb)
8.5 kg / 18.7 lbs.

Weight Unpacked (kg/lb)
6.6 kg / 14.6 lbs.

Weight (Monitor Head Only) (kg/lb)
4.4 kg / 9.7 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
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]AMD FreeSync works only with AMD Randeon series graphic card
[2]This 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 P27h-10 MONITOR



SPECIFICATIONS

DISPLAY

Panel Size	27" Wide
Panel Type	IPS
Backlight	WLED
Resolution	2560 x 1440
Aspect Ratio	16:9
Anti-Glare	Yes
Borderless Screen	Yes
Screen Dimensions (W x H) (mm)	596.74 (H) x 335.66 (V)
Maximum Brightness (Typical)	350 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
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

Video Input Signals	2 x HDMI 1.4 + USB-C + DisplayPort 1.2 + DisplayPort-Out
Video Cables Supplied (Length)	USB-C – USB-C Cable (NA only: HDMI, DisplayPort – DisplayPort, USB-C – USB-C) (1.8 m)

SIGNAL INTERFACE / PERFORMANCE

Audio	Audio-Out
OSD Languages	English, French, Italian, German, Spanish, Japanese, Chinese, Russian

POWER CONSUMPTION

Typical	38 W
Maximum	140 W
Sleep-Mode	<0.5 W
Off-Mode	<0.5 W
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC

[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.

DIMENSIONS (W x D x H)

Size Packed	
(mm)	453 x 732 x 210
(inches)	17.83" x 28.82" x 8.27"
Size Unpacked with Stand	
(mm)	611.6 x 269.8 x 513
(inches)	24.08" x 10.62" x 20.2"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	611.6 x 45.5 x 368.4
(inches)	24.08" x 1.79" x 14.5"
Stand Base Footprint Area	
(mm / inches)	260 x 260 / 10.24" x 10.24"
Weight	
Packed	Starting at 24.25 lbs (11 kg)
Unpacked	Starting at 15.43 lbs (7 kg)
Monitor Head Only	Starting at 11.02 lbs (5 kg)

MECHANICAL

Tilt Angle (Front / Back)	-5°/ 30°
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"

COMPLIANCE

Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
EPEAT	Silver
ENERGY STAR Rating	8.0
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

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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/m^2

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-C[2] 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 W[3]

Smart Power[1]
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

[1]The Smart Power function intelligently detects overall power consumption and dynamically manages the power delivery to each device.
[2]USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.
[3]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.
[4]This software can only be used with Windows 10

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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

[1]This 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

Panel Size	27″
Panel Type	In-Panel Switching
Backlight	WLED
Resolution	3840 x 2160
Aspect Ratio	16:9
Anti-Glare	Yes
Screen Dimensions (W x H) (mm)	596.74 (H) x 335.66 (V)
Maximum Brightness (Typical)	350 cd/m²
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	3M:1
Pixel Pitch (mm)	0.1554 (H) x 0.1554 (V)
Dot/Pixel Per Inch (DP/PPI)	163
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

Typical	50 W
Maximum	160 W
Sleep-Mode	<0.5 W
Switch Off-Mode	<0.3 W
Power Supply	Internal
Power Voltage	100 VAC – 240 VAC
Voltage Dynamic Frequency	50 Hz – 60 Hz

SIGNAL INPUT

Video Input Signals	2 HDMI + DisplayPort + USB Type-C
Video Cables Supplied	HDMI*, DisplayPort, USB Type-C
Video Cable Length	1.8 m
USB Hub	Yes
USB Cable Supplied	Yes (USB Type-C to Type-A Cable)
Audio-Out	Yes

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 160 kHz
Vertical Frequency	23 Hz – 80 Hz
Native Resolution	3840 (H) x 2160 (V)
Maximum Pixel Clock Speed/ Bandwidth	HDMI : 600 MHz DisplayPort : 5.4 Gbps USB Type-C : 5.4 Gbps/Lane
Default Color Temperature	6500K
Preset/User Modes	27/20
OSD Buttons	5 Buttons
OSD Languages	English, French, German, Spanish, Italian, Japanese, Simplified Chinese, Russian

MECHANICAL

Tilt Angle (Front / Back)	-5° / 30°
Swivel Angle (Left / Right)	+/-45°
Lift (mm)	Yes (110)
Pivot	+/-90°
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″

ENVIRONMENTAL

Temperature	
Operating	0°C – 45°C
Non-Operating	-20°C – 60°C
Humidity	
Operating	10% – 80%
Non-Operating	5% – 95%
Altitude	
Operating	0 ft – 5000 ft
Non-Operating	0 ft – 40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes (without Cable)
Mercury-Free	Yes
PCC % of Plastic Resins	0.85

DIMENSIONS (W x D x H)

Size Packed	
(mm)	453 x 732 x 210
(inches)	17.83″ x 28.82″ x 8.27″
Size Unpacked with Stand Lowest Position	
(mm)	611.6 x 269.8 x 403.3
(inches)	24.08″ x 10.62″ x 15.88″
Highest Position	
(mm)	611.6 x 269.8 x 513.3
(inches)	24.08″ x 10.62″ x 20.21″
Size Unpacked without Stand (Monitor Head Only)	
(mm)	611.6 x 45.5 x 368.4
(inches)	24.08″ x 1.79″ x 14.5″
Distance from Table to Panel Lowest Pixel at Bottom of Screen	
(mm / inches)	60.2 / 2.37″
Highest Pixel at Top of Screen	
(mm / inches)	505.8 / 19.91″
Stand Base Footprint Area	
(mm / inches)	260 x 260 / 10.24″ x 10.24″
Weight	
Packed	Starting at 24.25 lbs (11 kg)
Unpacked	Starting at 15.32 lbs (6.95 kg)
Monitor Head Only	Starting at 11.02 lbs (5 kg)

COMPLIANCE

TCO	TCO Edge 2.0
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 7 / Windows 10
China Energy Efficiency Standard	Tier 2

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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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/m^2

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: 0A36190)

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.

ThinkVision S27i-10

DISPLAY

Panel Size
27-inch

Screen Dimensions (W x H mm)
597.89 mm × 336.31 mm

Panel Type
3-side NearEdgelss,
In-Plane Switching

Backlight
WLED

Aspect Ratio
16:9

Resolution
1920 x 1080

Pixel Pitch (H x V) (mm)
0.3110 × 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:4XF0N82412+PN:4XF0N03161)

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.

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/m^2

Brightness (peak)
350 cd/m^2

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.

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/m^2

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.

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/m^2

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.

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/m^2

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[1] 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 W[5]

Smart Power[2]
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

[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.
[3]This software can only be used with Windows 10
[4]Compatible ThinkCentre Nano PCs include ThinkCentre M90n, ThinkCentre M90n IoT, ThinkCentre M75n, and ThinkCentre M75n IoT.
[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 3.1 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 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/m^2

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-C[2] 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 USB3.2 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_{TEC})
20.59w / 66.47 kWh

Power Supply
Internal

USB Type-C power delivery (W)
up to 90W[3]

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

[1]This software can only be used with Windows 10
[2]USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.
[3]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.

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Specifications may vary depending upon region.

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/m^2

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:4XF0N82412+ PN:4XF0N03161)

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.

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.

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/m^2

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.

ThinkVision X1 (2nd GEN) MONITOR



SPECIFICATIONS

DISPLAY

Panel Size	27″
Panel Type	IPS
Backlight	WLED
Resolution	3840 (H) x 2160 (V)
Aspect Ratio	16:9
Anti-Glare	Yes
Screen Dimensions (W x H) (mm)	596.7 (H) x 335.7 (V)
Maximum Brightness (Typical)	350 cd/m^2
Viewing Angle (H/V at CR 10:1)	178°/178°
Contrast Ratio (Typical)	1000:1
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

Typical	40 W
Maximum	150 W
Sleep-Mode	0.5 W
Switch Off-Mode	0.5 W
Power Supply	External
Power Voltage	10 VAC - 240 VAC
Voltage Dynamic Frequency	50 Hz - 60 Hz

SIGNAL INPUT

Video Input Signals	DisplayPort 1.2 + HDMI 2.0 + Thunderbolt™ 3
Video Cables Supplied	HDMI + Thunderbolt™ 3
Video Cable Length	1.8 m
USB Hub	Yes (4 x USB 3.0[1])
USB Cable Supplied	N/A
Audio-Jack	Yes

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 KHz - 136 KHz
Vertical Frequency	30 Hz - 60 Hz
Native Resolution	3840 x 2160
Maximum Pixel Clock Speed/ Bandwidth	20 Gbps
Default Color Temperature	6500K
Preset Modes	24
OSD Buttons	2 Buttons + Tracking Point
OSD Languages	English, French, Italian, German, Spanish, Japanese, Chinese, Russian

MECHANICAL

Tilt Angle (Front / Back)	-5° / 30°
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″

ENVIRONMENTAL

Temperature	
Operating	0°C – 45°C
Non-Operating	-20°C – 60°C
Humidity	
Operating	8% – 80%
Non-Operating	5% – 95%
Altitude	
Operating	16,000 ft
Non-Operating	40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes (W/O cable)
Mercury-Free	Yes
PCC % of Plastic Resins	25%

DIMENSIONS (W x D x H)

Size Packed	
(mm)	718 x 140 x 470
(inches)	28.27″ x 5.51″ x 18.5″
Size Unpacked with Stand	
(mm)	609.74 x 234.81 x 474.76
(inches)	24″ x 9.24″ x 18.69″
Size Unpacked without Stand Monitor Head Only	
(mm)	609.74 x 32.7 x 351.71
(inches)	24″ x 1.29″ x 13.85″
Distance from Table to Panel	
Lowest Pixel at Bottom of Screen (mm / inches)	134 / 5.276″
Highest Pixel at Top of Screen (mm / inches)	450 / 17.717″
Stand Base Footprint Area	
(mm)	234.81 x 234.81
(inches)	9.24″ x 9.24″
Weight	
Packed	Starting at 18.45 lbs (8.37 kg)
Unpacked	Starting at 12.21 lbs (5.54 kg)
Monitor Head Only	Starting at 9.46 lbs (4.29 kg)

COMPLIANCE

ULE	Gold
TCO	7.0
RoHS	Yes
Windows Certification	Windows 10
China Energy Label	Grade 2

WARRANTY AND AVAILABILITY

Warranty	3 Years
Geography Availability	WW

[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 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-C[1] 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:0A36190)

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 W[3]

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: 4XF0V81630)[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

[1]USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum.
[2]This software can only be used with Windows 10
[3]Up 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.
[4]Accessories 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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Specifications may vary depending upon region.

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

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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 Hz[6]

Brightness (Typical)
300 cd/m^2

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
Yes[4]

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 1[8]
(1 by USB Type-B)
1 x Thunderbolt™ 4

USB Downstream
4 x USB 3.2 Gen 1 Type-A[8]
1 x USB 3.2 Gen 1 Type-C[8]
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 27W[3]

TBT Power Delivery (W)
Yes (Up to 100W[3])

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

[1] This software can only be used with Windows 10. [2] USB Type-C and USB-C are registered trademarks of USB Implementers Forum. [3] 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. [4] HDR10 only. [5] True Split is available with Thunderbolt™ or DisplayPort™ connection in Windows only. [6] Thunderbolt™ and DisplayPort™ only. [7] eKVM functionality may vary if using a different brand of mouse. [8] 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 P44w-10

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 Pro[1]

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

[1]AMD Freesync™ is enabled for AMD Radeon™ Series graphics cards

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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/m^2

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.

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/m^2

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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Specifications may vary depending upon region.

ThinkVision T34w-20

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/m^2

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.

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Lenovo ThinkVision LT1913p Monitor

SPECIFICATIONS

DISPLAY

Panel Size	19"
Panel Type	In Plane Switching
Aspect Ratio	5:4
Resolution	1280 x 1024
Viewable Area (mm)	479.958
Screen Dimensions (W x H) (mm)	374.7 x 299.8
Pixel Pitch (W x H) (mm)	0.0976 x 0.2928
Dot/Pixel Per Inch (DP / PPI)	86.78
Brightness (Typical)	250 nits
Contrast Ratio (Typical)	1000:1
Viewing Angle (H/V at CR 10:1)	178°/178°
Response Time (Typical)	7 ms
Color Gamut	72%
Number of Colors	16.7 Million

MECHANICAL

Tilt Angle (Front / Back)	-5° - 30°
Swivel Angle (Left / Right)	45° / 45°
Lift (mm)	110
Pivot	0° - 90° (Clockwise)
VESA® Mount	Yes
Kensington® Lock Slot	Yes
USB Hub	No
Multimedia	Optional USB Sound Bar
Bezel Color	Black
Bezel Width	
Sides (mm / inches)	17.4 / 0.68"
Top (mm / inches)	17.4 / 0.68"
Bottom (mm / inches)	17.4 / 0.68"

SIGNAL INPUT

Video Input Signals	VGA, DVI
Cables Supplied	VGA, DVI
Sync on Green	No
Plug 'n' Play	DDC/CI
Preset Display Modes	20
User-defined Display Modes	20
OSD Buttons	Yes
OSD Languages	8
Lockable Controls	Yes

POWER CONSUMPTION

Power Consumption	
Typical	24 W
Maximum	27 W
Sleep-Mode	<0.5 W
Off-Mode	<0.5 W
Heat Dissipation	
Typical	81.84 Btu/h
Maximum	92.07 Btu/h
Power Supply	Internal

DIMENSIONS (W x D x H)

Size Unpacked	
(mm)	411 x 264.2 x 371.5
(inches)	16.18" x 10.4" x 14.63"
Weight Unpacked	Starting at 10.69 lbs (4.85 kg)

COMPLIANCE

TCO	Display 7.0
TCO Edge	1.1
EPEAT	Silver
ENERGY STAR Rating	8.0
TÜV Green Mark	Yes
Windows Certification	Windows 10 / Windows 8.1 / Windows 8 / Windows 7
China Energy Label	Tier 1 (New Standard Tier 2)
PCC	85%

WARRANTY

Warranty	3 Years



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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)

*Actual weight may vary due to components, manufacturing process and options.

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ThinkVision M14t

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.

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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/m^2

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 W[3]

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

[1]Actual weight may vary due to components, manufacturing process and options. [2] USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum. [3]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. [4]This 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.

ThinkVision T1714 Essential Monitor

SPECIFICATIONS

DISPLAY

Panel Size	17"
Panel Type	TN
Backlight	WLED
Viewable Area (Diagonal)	17"
Screen Dimensions (W x H) (mm)	270.34 x 337.92
Resolution	1280 x 1024
Aspect Ratio	5:4
Viewing Angle (H/V at CR 10:1)	170°/160°
Maximum Brightness (Typical)	250 cd/m²
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	NA
Pixel Pitch (W x H) (mm)	0.26 x 0.26
Dot/Pixel Per Inch (DPI / PPI)	96.21
Color Gamut (CIE 1931)	72%
Number of Colors	16.7 Million
Response Time	5 ms (On / Off)
Anti-Glare	Yes

MECHANICAL

Tilt Angle (Front / Back)	-5° ~ 22°
Swivel Angle (Left / Right)	No
Lift	No
Pivot	No
VESA Mount (mm)	100 x 100
Kensington Lock Slot	Yes
Cable Management	Yes
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width	
Sides (mm / inches)	17.5 / 0.69"
Top (mm / inches)	17.5 / 0.69"
Bottom (mm / inches)	17.5 / 0.69"

POWER CONSUMPTION

Power Consumption	
Typical	14 W
Maximum	18 W
Sleep-Mode	0.5 W
Off-Mode	0.3 W
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

SIGNAL INPUT

Video Input Signals	VGA, DVI
Video Cables Supplied	VGA, DVI
Video Cable Length	1.8 m
USB Hub	No
USB Cable Supplied	No

COMPLIANCE

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	7.0
TCO Edge	2.0
TUV	Yes
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 10 / Windows 8.1 / Windows 8 / Windows 7
China Energy Efficiency Standard	Tier 1 (New Standard Tier 2)

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 83 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1280 x 1024
Maximum Pixel Clock Speed / Bandwidth	VGA : 205 MHz DVI : 165 MHz
Default Color Temperature	7200K
Preset Display Modes	17
User-defined Display Modes	17
OSD Buttons	5
OSD Languages	8

ENVIRONMENTAL

Temperature	
Operating	0°C – 45°C
Non-operating	-20°C – 60°C (non-condensing)
Humidity	
Operating	10% – 80%
Non-operating	5% – 95% (non-condensing)
Altitude	
Operating	8,000 ft
Non-operating	40,000 ft
Arsenic-Free Glass	Yes
PVC-Free	Yes
Mercury-Free	Yes
PCC % of Plastic Resins	85%
Low Halogen	No

DIMENSIONS (W x D x H)

Size Packed	
(mm)	432 x 428 x 140
(inches)	17.01" x 16.85" x 5.51"
Size Unpacked with Stand	
(mm)	374.5 x 200 x 373.9
(inches)	14.74" x 7.87" x 14.72"
Size Unpacked without Stand (Monitor Head Only)	
(mm)	374.5 x 53 x 306.9
(inches)	14.74" x 2.09" x 12.08"
Distance from Table to Panel (mm / inches)	
Lowest Pixel at Bottom of Screen	84.5 / 3.33"
Highest Pixel at Top of Screen	356.4 / 14.03"
Stand Base Footprint Area (mm / inches)	200 x 200 / 7.87" x 7.87"
Weight	
Packed (EPS)	Starting at 8.6 lbs (3.9 kg)
Unpacked	Starting at 5.75 lbs (2.61 kg)
Monitor Head Only	Starting at 5.11 lbs (2.32 kg)

WARRANTY AND AVAILABILITY

Warranty	3 Years
Geography Availability	PRC + AP
ThinkVision Logo	Yes
Global Model	No

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Lenovo ThinkVision T1714p Essential Monitor

SPECIFICATIONS

DISPLAY

Panel Size	17"
Panel Type	TN
Backlight	WLED
Viewable Area (Diagonal)	17"
Screen Dimensions (W x H) (mm)	270.34 x 337.92
Resolution	1280 x 1024
Aspect Ratio	5:4
Viewing Angle (H/V at CR 10:1)	170°/160°
Maximum Brightness (Typical)	250 cd/m^2
Contrast Ratio (Typical)	1000:1
Dynamic Contrast Ratio	NA
Pixel Pitch (W x H) (mm)	0.26 x 0.26
Dot/Pixel Per Inch (DPI / PPI)	96.21
Color Gamut (CIE 1931)	72%
Number of Colors	16.7 Million
Response Time	5 ms (On / Off)
Anti-Glare	Yes

MECHANICAL

Tilt Angle (Front / Back)	-5° ~ 22°
Swivel Angle (Left / Right)	No
Lift	110
Pivot	No
VESA Mount (mm)	100 x 100
Kensington Lock Slot	Yes
Cable Management	Yes
Ambient Light Sensor	No
Control Buttons	Yes
Bezel Color	Raven Black
Bezel Width	
Sides (mm / inches)	17.5 / 0.69"
Top (mm / inches)	17.5 / 0.69"
Bottom (mm / inches)	17.5 / 0.69"

SIGNAL INPUT

Video Input Signals	VGA, DVI, DisplayPort
Video Cables Supplied	VGA, DVI
Video Cable Length	1.8 m
USB Hub	No
USB Cable Supplied	No

SIGNAL INTERFACE / PERFORMANCE

Horizontal Frequency	30 kHz – 83 kHz
Vertical Frequency	50 Hz – 75 Hz
Native Resolution	1280 x 1024
Maximum Pixel Clock Speed / Bandwidth	VGA : 205 MHz 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

Power Consumption	
Typical	14 W
Maximum	18 W
Sleep-Mode	0.5 W
Off-Mode	0.3 W
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

EPEAT	Silver
ENERGY STAR Rating	8.0
ULE	Gold
TCO	7.0
TCO Edge	2.0
TUV	Yes
RoHS (EU 2002/95/EC)	Yes
Windows Certification	Windows 10 / Windows 8.1 / Windows 8 / Windows 7
China Energy Efficiency Standard	Tier 1 (New Standard Tier 2)

DIMENSIONS (W x D x H)

Size Packed	
(mm)	454 x 406 x 191
(inches)	17.87" x 15.98" x 7.52"
Size Unpacked with Stand	
(mm)	374.5 x 244.2 x 337.9-447.9
(inches)	14.74" x 9.61" x 13.3"-17.63"
Size Unpacked without Stand (Head Only)	
(mm)	374.5 x 53 x 306.9
(inches)	14.74" x 2.09" x 12.08"
Distance from Table to Panel (mm / inches)	
Lowest Pixel at Bottom of Screen	66 / 2.6"
Highest Pixel at Top of Screen	337.9 / 13.3"
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)

ENVIRONMENTAL

Temperature	
Operating	0°C – 45°C
Non-operating	-20°C – 60°C (non-condensing)
Humidity	
Operating	10% – 80%
Non-operating	5% – 95% (non-condensing)
Altitude	
Operating	8,000 ft
Non-operating	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
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.
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.

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