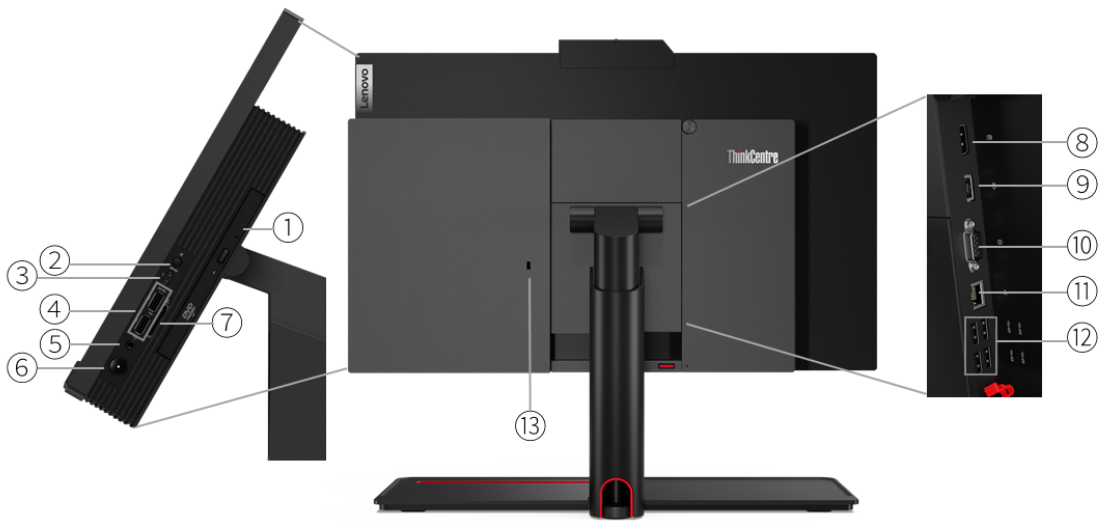


OVERVIEW



1. Optical drive *	8. DisplayPort (DP in/out combo port)
2. Microphone mute button	9. Power connector
3. USB-C 3.2 Gen 2	10. Serial or HDMI *
4. 2x USB 3.2 Gen 2	11. Ethernet (RJ-45)
5. Headphone / microphone combo jack (3.5mm)	12. 4x USB 3.2 Gen 1
6. Power button	13. Kensington Security Slot
7. Card reader *	

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel® Pentium®, 10th Generation Intel® Core™ i3, or 11th Generation Intel® Core™ i5 / i7 / i9 Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Celeron® G5905	2	2	3.5GHz	-	4MB	DDR4-2666	Intel® UHD Graphics 610
Celeron® G5925	2	2	3.6GHz	-	4MB	DDR4-2666	Intel® UHD Graphics 610
Pentium® Gold G6405	2	4	4.1GHz	-	4MB	DDR4-2666	Intel® UHD Graphics 610
Pentium® Gold G6505	2	4	4.2GHz	-	4MB	DDR4-2666	Intel® UHD Graphics 630
Pentium® Gold G6605	2	4	4.3GHz	-	4MB	DDR4-2666	Intel® UHD Graphics 630
Core™ i3-10105	4	8	3.7GHz	4.4GHz ^[1]	6MB	DDR4-2666	Intel® UHD Graphics 630
Core™ i3-10305	4	8	3.8GHz	4.5GHz ^[2]	8MB	DDR4-2666	Intel® UHD Graphics 630
Core™ i3-10325	4	8	3.9GHz	4.7GHz ^[3]	8MB	DDR4-2666	Intel® UHD Graphics 630
Core™ i5-11400	6	12	2.6GHz	4.4GHz ^[4]	12MB	DDR4-3200	Intel® UHD Graphics 730
Core™ i5-11500	6	12	2.7GHz	4.6GHz ^[5]	12MB	DDR4-3200	Intel® UHD Graphics 750
Core™ i5-11600	6	12	2.8GHz	4.8GHz ^[6]	12MB	DDR4-3200	Intel® UHD Graphics 750
Core™ i7-11700	8	16	2.5GHz	4.9GHz ^[7]	16MB	DDR4-3200	Intel® UHD Graphics 750
Core™ i9-11900	8	16	2.5GHz	5.2GHz ^[8]	16MB	DDR4-3200	Intel® UHD Graphics 750

Notes:

[1], [2], [3], [4], [5], [6], [7], [8] Intel® Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see <http://www.intel.com/technology/turboboost/> for more information.

Operating System

Operating System**

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 DG Windows® 10 Pro 64
- Windows® 10 Pro 64
- Windows® 10 Home 64
- Windows® 10 Home 64 Single Language
- Windows® 10 IoT Enterprise
- Ubuntu Linux^[1]
- No preload operating system

Notes:

[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel® RST RAID, Human Presence Detection, etc.

Graphics

Graphics**

Graphics	Type	Memory	Connector	Max Resolution	Key Features
Intel® UHD graphics 610	Integrated	Shared	1x DP 1.4b, 1x optional HDMI® 2.1	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI®)	DirectX® 12
Intel® UHD graphics 630	Integrated	Shared	1x DP 1.4b, 1x optional HDMI® 2.1	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI®)	DirectX® 12
Intel® UHD graphics 730	Integrated	Shared	1x DP 1.4b, 1x optional HDMI® 2.1	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI®)	DirectX® 12
Intel® UHD graphics 750	Integrated	Shared	1x DP 1.4b, 1x optional HDMI® 2.1	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI®)	DirectX® 12
AMD Radeon™ 630	Discrete	2GB GDDR5	1x DP 1.4b, 1x optional HDMI® 2.1	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI®)	DirectX® 12

Monitor Support

Monitor Support

Supports up to 3 displays via native display and 2 external monitor; supports external monitors via DisplayPort™ and optional HDMI®; work as standalone monitor via DisplayPort™ (DP in / out combo)

Chipset

Chipset

Intel® Q570 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-3200

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type**^[2]

- DDR4-2666
- DDR4-3200

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

[2] Installed memory is actually DDR4-3200 but may run as DDR4-2666 depending on the memory support capability of processor.

Storage

Storage Support^{[1][2]}

Up to three drives, 2x 2.5" HDD + 1x M.2 SSD

- 2.5" HDD up to 2TB each
- M.2 SSD up to 1TB

Technical support up to 2 HDDs + 1 SSD, but Lenovo® only offers the models with up to 2 HDDs or 1 SSD + 1 HDD

Storage Type***

Disk Type	Interface	RPM	Security
2.5" SATA HDD	SATA 6Gb/s	5.4K	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 3.0 x4	-	Opal
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4	-	Opal
M.2 2242 SSD	PCIe® NVMe®, PCIe® 3.0 x2	-	-
M.2 2242 SSD	PCIe® NVMe®, PCIe® 3.0 x4	-	-

ThinkCentre M90a Gen 2

RAID^[3]

RAID 0/1 support for HDDs

Notes:

- [1] The max capacity of each disk type is based on the test results with current Lenovo® storage offerings.
- [2] 2nd 2.5" HDD occupies ODD bay, and needs ODD to HDD bracket kit (optional, come with 2nd 2.5" HDD).
- [3] 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, Dolby® Atmos®

Microphone

- Dual-microphone array
- No microphone

Camera**

- 5.0-megapixel, IR + RGB hybrid, with ThinkShutter (physical switch on/off), Windows® Hello support
- 5.0-megapixel, with ThinkShutter (physical switch on/off)
- No camera

Power Supply

Power Supply**

Power	Type	Efficiency	Key Features
150W	Adapter	89%	Autosensing
170W	Adapter	89%	Autosensing

DESIGN

Display

Display**^[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Refresh Rate	Viewing Angle (L/R/U/D)	Key Features
23.8"	FHD (1920x1080)	None	IPS	250nits	Anti-glare	16:9	1000:1	72% NTSC	60Hz	89°/89°/89°/89°	Borderless design, low blue light
23.8"	FHD (1920x1080)	None	IPS	350nits	Anti-glare	16:9	1000:1	72% NTSC	60Hz	89°/89°/89°/89°	Borderless design, low blue light, PrivacyGuard
23.8"	FHD (1920x1080)	Multi-touch	IPS	250nits	Anti-glare	16:9	1000:1	72% NTSC	60Hz	89°/89°/89°/89°	Borderless design, low blue light

Touchscreen

- Advanced In-cell Touch (AIT), supports 10-point touch
- Non-touch

Notes:

[1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device

Keyboard**

- Lenovo® Calliope Keyboard (USB connector), black
- Lenovo® Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo® Traditional Keyboard (USB connector), black
- No keyboard

Mouse**

- Lenovo® Calliope Mouse (USB connector), black
- Lenovo® Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo® Fingerprint Mouse (USB connector), Windows® Hello support, black (EOL on Jan, 2023)
- No mouse

Mechanical

Buttons

- Microphone mute button
- Power button
- PrivacyGuard on/off button (PrivacyGuard models only)

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)^[1]

Models	Dimensions
Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera)	Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches) Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches)
Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera)	Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches) Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches)
Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (without stand, with ODD, with PrivacyGuard, with camera)	541 x 61.3 x 340.5 mm (21.3 x 2.4 x 13.4 inches)
Models (without stand, with ODD, without PrivacyGuard, with camera)	541 x 57.8 x 340.5 mm (21.3 x 2.3 x 13.4 inches)
Models (without stand, without ODD, with PrivacyGuard, with camera)	541 x 49.5 x 340.5 mm (21.3 x 1.9 x 13.4 inches)
Models (without stand, without ODD, without PrivacyGuard, with camera)	541 x 46 x 340.5 mm (21.3 x 1.8 x 13.4 inches)

Weight^[2]

Models	Weight
Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera)	Around 8.58 kg (18.9 lbs)
Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera)	Around 8.26 kg (18.2 lbs)

Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera)	Around 8.71 kg (19.2 lbs)
Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera)	Around 7.84 kg (17.3 lbs)
Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera)	Around 8.39 kg (18.5 lbs)
Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera)	Around 7.51 kg (16.6 lbs)
Models (without stand, with ODD, with PrivacyGuard, with camera)	Around 6.45 kg (14.2 lbs)
Models (without stand, with ODD, without PrivacyGuard, with camera)	Around 5.57 kg (12.3 lbs)
Models (without stand, without ODD, with PrivacyGuard, with camera)	Around 6.13 kg (13.5 lbs)
Models (without stand, without ODD, without PrivacyGuard, with camera)	Around 5.25 kg (11.6 lbs)

Case Color

Black

Bays^[3]

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

Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

EOU

Toolless cover and stand assembly / removal

Stand**

- UltraFlex IV stand, supports -5° to +70° tilt, up to 164mm lift (flat mode) / up to 115mm lift (vertical mode)
- Full function monitor stand, supports -5° to +30° tilt, up to 80mm lift
- No stand

Mounting

Supports VESA mount 100mm

Others

Supports Smart Power On

Notes:[\[1\]](#) The system dimensions may vary depending on configurations.[\[2\]](#) The system weight is approximate and based on results in Lenovo® lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.[\[3\]](#) 2nd 2.5" HDD needs ODD to HDD bracket kit (optional, come with 2nd 2.5" HDD).**CONNECTIVITY****Network**^[1]**Onboard Ethernet**

Gigabit Ethernet, Intel® Ethernet Connection I219-LM, 1x RJ-45, 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, Intel® vPro® technology support, 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® 5.1, Intel® vPro® technology support, M.2 Card^[2]
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1, M.2 Card^[3]
- No WLAN and Bluetooth®

Notes:[\[1\]](#) This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.[\[2\]](#), [\[3\]](#) Bluetooth® 5.2 is hardware ready but may run at a lower version due to OS limitations.

Ports^[1]

Rear Ports

- 4x USB 3.2 Gen 1
- 1x DisplayPort™
- 1x Ethernet (RJ-45)

Optional Rear Ports**

- 1x HDMI®
- 1x serial

Right Ports

- 1x USB-C® 3.2 Gen 2 (support data transfer and 5V@3A charging)
- 2x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Optional Right Ports

1x card reader

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.

USB 2.0: 480 Mbit/s;

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

USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;

USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;

USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;

Thunderbolt™ 3/4: 40 Gbit/s.

Monitor Cable

Monitor Cable***

- DP to VGA dongle
- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI® dongle
- No monitor cable

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Security Slot™, 3 x 7 mm

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse (EOL on Jan, 2023)
- No fingerprint reader

Other Security

(Optional) ThinkShutter camera cover

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Self-healing BIOS

- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY

System Management

System Management

- Intel® vPro®^[1]
- Non-vPro®

Notes:

[1] Intel® vPro® offers a superset of DASH's defined capabilities.

SERVICE

Warranty^[1]

Base Warranty**

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

Notes:

[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to <https://smartfind.lenovo.com/>. To learn more details of warranty policy, please access <https://pcsupport.lenovo.com/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)

Relative Humidity

Operating: 20% to 80%

Altitude

- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications

- ENERGY STAR® 8.0
- EPEAT™ Silver Registered
- ErP Lot 3
- RoHS compliant
- TCO Certified 8.0
- TCO edge

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland® Eye Comfort Certification
- (Optional) TÜV Rheinland® Ultra Low Noise
- TÜV Rheinland® Low Blue Light

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)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
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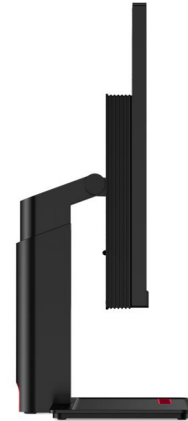
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