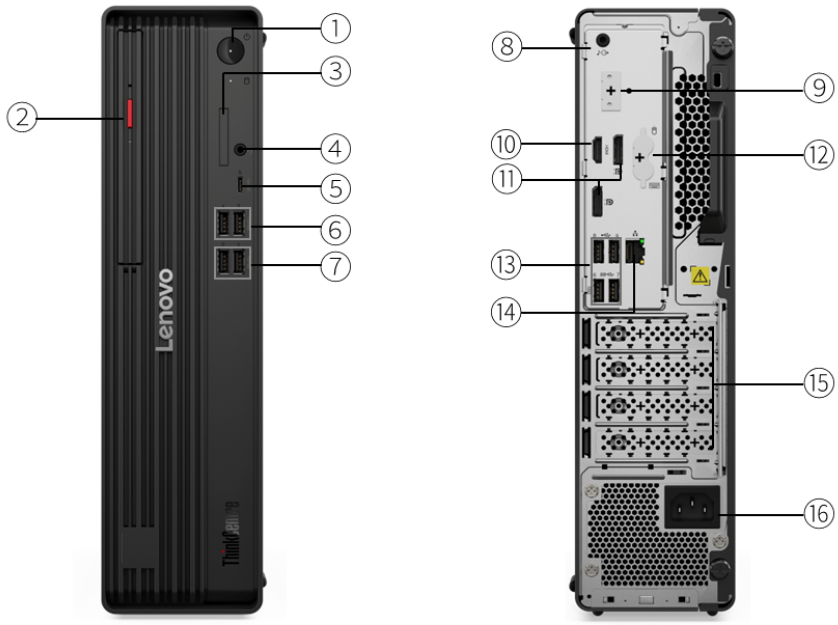
OVERVIEW



1. Power button	9. Flex IO *
2. Optical drive *	10. HDMI 2.1 TMDS
3. Card reader *	11. 2x DisplayPort 1.4a
4. Headphone / microphone combo jack (3.5mm)	12. 2x PS/2 ports (keyboard / mouse) *
5. USB-C (USB 20Gbps), data transfer only	13. 4x USB-A (2x USB 5Gbps + 2x Hi-Speed USB)
6. 2x USB-A (USB 5Gbps)	14. Ethernet (RJ-45)
7. 2x USB-A (USB 10Gbps)	15. Optional ports on expansion cards *
8. Audio-out (3.5mm)	16. Power connector

Notes:

- Items 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 Core™ Ultra 3 / 5 / 7 / 9 Processor (Series 2)

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics	NPU	Overall TOPS
Core Ultra 3 205	8 (4 P-core + 4 E-core)	8	P-core 3.8GHz / E-core 3.2GHz	P-core 4.9GHz / E-core 4.4GHz	16MB L2 Cache / 15MB Intel® Smart Cache	Intel® Graphics	Intel® AI Boost, up to 13 TOPS	Up to 22 TOPS
Core Ultra 5 225	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	Intel® Graphics, up to 4 TOPS	Intel® AI Boost, up to 13 TOPS	Up to 23 TOPS
Core Ultra 5 225F	10 (6 P-core + 4 E-core)	10	P-core 3.3GHz / E-core 2.7GHz	P-core 4.9GHz / E-core 4.4GHz	22MB L2 Cache / 20MB Intel® Smart Cache	-	Intel® AI Boost, up to 13 TOPS	Up to 19 TOPS
Core Ultra 5 235	14 (6 P-core + 8 E-core)	14	P-core 3.4GHz / E-core 2.9GHz	P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	Intel® Graphics, up to 6 TOPS	Intel® AI Boost, up to 13 TOPS	Up to 27 TOPS
Core Ultra 5 245	14 (6 P-core + 8 E-core)	14	P-core 3.5GHz / E-core 3.0GHz	P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 TOPS	Up to 29 TOPS
Core Ultra 7 265	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 TOPS	Up to 33 TOPS
Core Ultra 7 265F	20 (8 P-core + 12 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	-	Intel® AI Boost, up to 13 TOPS	Up to 25 TOPS
Core Ultra 9 285	24 (8 P-core + 16 E-core)	24	P-core 2.5GHz / E-core 1.9GHz	Max Turbo up to 5.6GHz / P-core 5.4GHz / E-core 4.6GHz	40MB L2 Cache / 36MB Intel® Smart Cache	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 TOPS	Up to 36 TOPS

AI (Artificial Intelligence)

AI PC Category

AI PC[1]

NPU

Integrated Intel® AI Boost, up to 13 TOPS

Notes:

[1] AI PCs have a Neural Processing Unit (NPU) designed to accelerate artificial intelligence and machine learning workloads on the device.

Operating System

Operating System**

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 IoT Enterprise LTSC 2024

- Ubuntu Linux
- No preload operating system

Graphics

Graphics[**][1]

Graphics	Type	Memory	AI TOPS (Peak)	Max Resolution	Connector	Key Features
Intel® Graphics	Integrated	Shared	-	5120x2880@60Hz(DP), 4096x2160@60Hz(HDMI®), 3840x2160@60Hz[Flex IO(HDMI®) / Flex IO(DP)], 3840x2160@60Hz[Flex IO(USB-C®)], 1920x1080@60Hz[Flex IO(VGA)]	2x DP 1.4a (HBR3, DSC), 1x HDMI® 2.1 TMDS, 1x Flex IO (VGA / DP 1.4 HBR2 / HDMI® 2.1 TMDS / USB-C®)	DirectX® 12
NVIDIA GeForce RTX™ 3050	Discrete	6GB GDDR6	108 TOPS	7680x4320@60Hz(HDMI®), 7680x4320@120Hz(DP)	1x HDMI® 2.1 FRL, 1x DP 1.4a	DirectX® 12, OpenGL 4.6
Intel® Arc™ A310 LP Graphics	Discrete	4GB GDDR6	60.2 TOPS	7680x4320@60Hz(DP)	2x DisplayPort™ 2.0	DirectX® 12, OpenGL 4.6

Notes:

[1] The information of integrated graphics are not applicable for the models with processor which has no integrated graphics inside (for the details, please refer to processor section).

Monitor Support

Monitor Support

Supports up to 4 independent displays via onboard ports (2x DP, 1x HDMI®, and 1x optional Flex IO), more displays support via discrete graphics

Chipset

Chipset

Intel® Q870 chipset

Memory

Max Memory[1]

Up to 128GB DDR5

Memory Slots

Four DDR5 UDIMM slots, dual-channel capable

Memory Type**

- DDR5-4400[2]
- DDR5-4800[3]
- DDR5-5600

Memory Protection

Non-ECC

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.
[2] Installed memory is actually DDR5-5600 but may run as DDR5-4400 depending on the memory support capability of processor.
[3] Installed memory is actually DDR5-5600 but may run as DDR5-4800 depending on the memory support capability of processor.

Storage

Max Storage Support[1]

Up to five drives, 1x 3.5" HDD + 1x 2.5" HDD + 3x M.2 SSD

• 3.5″ HDD up to 2TB
• 2.5″ HDD bay is only for customer self upgrade
• M.2 SSD up to 2TB each[2]

Storage Type***

Disk Type	Interface	RPM	Security
3.5″ SATA HDD	SATA 6Gb/s	7.2K	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4	-	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® 5.0 x4 Performance	-	Opal 2.0

RAID

RAID 0/1/5 support

Notes:

[1] The max capacity of each disk type is based on the test results with current Lenovo® storage offerings.
[2] 2.5″ HDD bay is optional part, only for customer self upgrade purpose and the hard drive is sold separately.

Removable Storage

Optical**

- DVD-ROM, SATA connector, slim (9.0mm)
- DVD burner (DVD±RW), SATA connector, 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
260W	Fixed	90%	100-240V, 50-60Hz
310W	Fixed	92%	100-240V, 50-60Hz

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 (8.2L)

Dimensions (WxDxH)[1]

92.5 x 299.7 x 339.5 mm (3.6 x 11.8 x 13.4 inches)

Packaging Dimensions (WxDxH)

195 x 395 x 530 mm (7.7 x 15.6 x 20.9 inches)

Weight[2]

5.3 kg (11.7 lbs, maximum configuration)

Packaging Weight

7.6 kg (16.8 lbs, maximum configuration)

Case Color

Black

Bays

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

Expansion Slots

- One PCIe® 5.0 x16, low-profile, length ≤ 155mm, height ≤ 70mm
- One PCIe® 4.0 x16 (x4 signal), low-profile, length ≤ 155mm, height ≤ 70mm
- Two PCIe® 3.0 x1, low-profile, length ≤ 155mm, height ≤ 70mm
- Four M.2 slots (one for WLAN, three for SSD)

EOU

Toolless cover, memory, disk, optical, extension card assembly / removal

Stand

- Vertical stand
- No stand

Others

(Optional) Dust filter

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.

CONNECTIVITY

Network

WLAN + Bluetooth®**[1]

- Realtek® Wi-Fi® 6E RTL8852CE, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support, M.2 card[2]
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card
- Intel® Wi-Fi® 7 BE200, 802.11be 2x2 Wi-Fi® + Bluetooth® 5.4, Intel® vPro® technology support, M.2 card[3]
- No WLAN and Bluetooth®

Onboard Ethernet

Gigabit Ethernet, Intel® Ethernet Connection I219-LM, 1x RJ-45, supports Wake-on-LAN

Optional Ethernet

- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, PCIe® x1
- No optional Ethernet

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.
[2], [3] Intel® vPro® platform requires the hardware and software necessary to deliver the manageability use cases, security features, system performance, and stability that define the platform. For detailed vPro® support information, please refer to the System Management section.

Ports[1]

Front Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), with 15W charging
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

1x card reader

Rear Ports[2]

- 2x USB-A (Hi-Speed USB / USB 2.0)
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On and USB Always On[3]
- 1x HDMI® 2.1 TMDS
- 2x DisplayPort™ 1.4a (HBR3, DSC)
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports***

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with DisplayPort™ function and 5V@3A charging (Flex IO)
- 1x HDMI® 2.1 TMDS (Flex IO)
- 1x DP 1.4 HBR2 (Flex IO)
- 1x VGA (Flex IO)
- 2x USB-A (Hi-Speed USB / USB 2.0), via 2-port adapter
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via 2-port USB expansion card, PCIe® x1
- 1x 2.5GbE RJ-45, via additional PCIe® adapter
- 1x parallel
- 1x serial
- 1x 2nd serial
- 2x PS/2

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
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.
Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.
[2] For video ports on discrete graphics, please see graphics section
[3] The Smart Power-on feature helps you start up or wake up the computer from Hibernation (S4) or Power-off (S5) modes simply by pressing Alt+P.
USB Always On: the USB port supports continuous power delivery, even when the system is off.

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington Security Slot™, 3 x 7 mm
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

No fingerprint reader

BIOS Security

- Absolute persistence module
- Administrator password
- Boot sequence control
- Boot without keyboard and mouse
- Configuration change detection
- Certificate-based BIOS authentication
- Cover tamper detected[1]
- Intel® BIOS guard
- Individual USB port disablement
- Hard disk password
- Power-on password
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Self-healing BIOS (Level 2)
- Secure boot
- Secure wipe
- More BIOS security features, please visit BIOS Simulator

Notes:

[1] Only available for the models with Chassis Intrusion Switch

MANAGEABILITY

System Management

System Management[1]

- Intel® vPro® Enterprise
- 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://support.lenovo.com/warrantylookup/warrantypolicy.

ACCESSORIES

Bundled Accessories

Bundled Accessories***

- DP to DVI dongle
- DP to HDMI® dongle
- HDMI® to VGA dongle
- Smart Cable (USB-A to USB-C®)

OPERATING REQUIREMENTS

Operating Environment

Temperature

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Relative Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

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

ENVIRONMENTAL

Sustainability

Material[1]

60% PIC + 30% OBP Cushion and 30% OBP bag FSC carton in packaging
85% PCC ABS in chassis
95% PCC ABS in KB/mouse
65% PCC ABS (EOS 2.4G wireless)

Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.
PIC: Post Industry Content, recycled materials from internal factories.
EPE: Expanded Polyethylene.
OBP: Ocean Bound Plastic, reducing plastic spill into the sea.
FSC: Forest Stewardship Council.

CERTIFICATIONS

Green Certifications[1]

Green Certifications

- (Optional) ENERGY STAR® 9.0
- (Optional) EPEAT Gold Registered
- (Optional) TCO Certified 10
- ErP Lot 3
- GREENGUARD®
- RoHS compliant

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit https://compliance.lenovo.com.

Other Certifications

Other Certifications

(Optional) TÜV Rheinland® Ultra Low Noise

Mil-Spec Test

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

- Feature with ** means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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