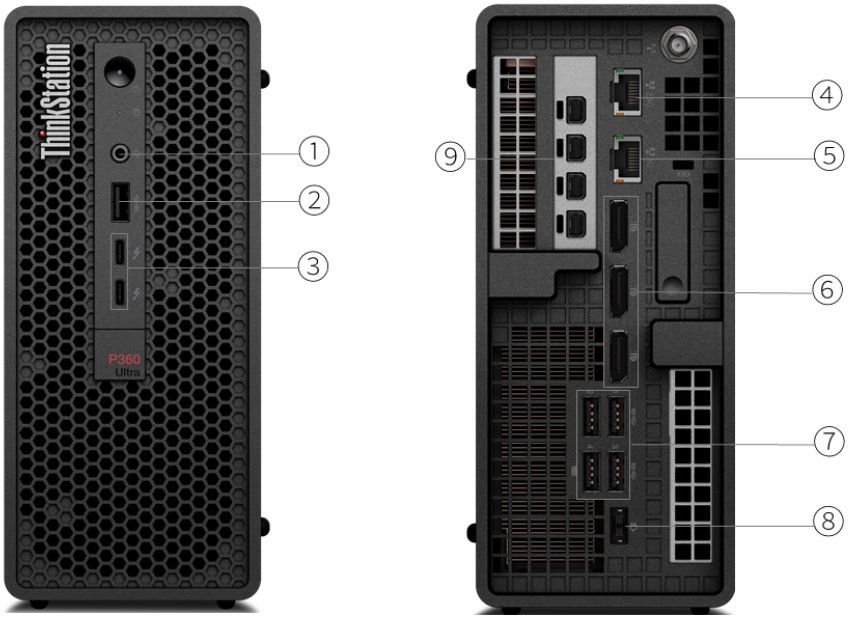
OVERVIEW



1. Headphone (3.5mm)	6. 3x DisplayPort
2. USB-A (USB 10Gbps)	7. 4x USB-A (USB 10Gbps)
3. 2x Thunderbolt 4	8. Power connector
4. Ethernet (2.5GbE RJ-45)	9. Optional ports on expansion cards *
5. Ethernet (GbE RJ-45)	

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Up to one 125W 12th Generation Intel® Core™ i3 / i5 / i7 / i9 processor, supports processors up to 16 cores; up to 5.2GHz

Processor**[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core™ i3-12100	4 (4 P-core + 0 E-core)	8	P-core 3.3GHz	P-core 4.3GHz	12MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i3-12300	4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.4GHz	12MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-12400	6 (6 P-core + 0 E-core)	12	P-core 2.5GHz	P-core 4.4GHz	18MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-12400T	6 (6 P-core + 0 E-core)	12	P-core 1.8GHz	P-core 4.2GHz	18MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-12500	6 (6 P-core + 0 E-core)	12	P-core 3.0GHz	P-core 4.6GHz	18MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i5-12600	6 (6 P-core + 0 E-core)	12	P-core 3.3GHz	P-core 4.8GHz	18MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i5-12600K	10 (6 P-core + 4 E-core)	16	P-core 3.7GHz / E-core 2.8GHz	P-core 4.9GHz / E-core 3.6GHz	20MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i7-12700	12 (8 P-core + 4 E-core)	20	P-core 2.1GHz / E-core 1.6GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz	25MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i7-12700K	12 (8 P-core + 4 E-core)	20	P-core 3.6GHz / E-core 2.7GHz	Max Turbo up to 5.0GHz / P-core 4.9GHz / E-core 3.8GHz	25MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i7-12700T	12 (8 P-core + 4 E-core)	20	P-core 1.4GHz / E-core 1.0GHz	Max Turbo up to 4.7GHz / P-core 4.6GHz / E-core 3.4GHz	25MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i9-12900	16 (8 P-core + 8 E-core)	24	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.1GHz / P-core 5.0GHz / E-core 3.8GHz	30MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i9-12900K	16 (8 P-core + 8 E-core)	24	P-core 3.2GHz / E-core 2.4GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 3.9GHz	30MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i9-12900T	16 (8 P-core + 8 E-core)	24	P-core 1.4GHz / E-core 1.0GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz	30MB	DDR5-4800	Intel® UHD Graphics 770

Processor Sockets

1x FCLGA1700

Notes:

[1] 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
- Red Hat Enterprise Linux 8.7 (certified only, for detailed and latest information, please visit Red Hat Certified Hardware)

- Ubuntu Linux LTS
- No preload operating system

Graphics

Integrated Graphics**

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770

Discrete Graphics Support[1]

Supports up to one NVIDIA® RTX A5500 Laptop GPU

Discrete Graphics Offering**

Graphics	Memory	Power	Connector	Form Factor	SLI / NVLink
NVIDIA® T400	2GB GDDR6	40W	3x miniDP 1.4	Single slot	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	Single slot	None
NVIDIA® T1000	4GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	Single slot	None
NVIDIA® RTX A2000 12GB	12GB GDDR6	70W	4x miniDP 1.4a	Dual slot	None
NVIDIA® RTX A3000 Laptop GPU	12GB GDDR6	80W	4x miniDP 1.4a	MXM Card	None
NVIDIA® RTX A5000 Laptop GPU	16GB GDDR6	115W	4x miniDP 1.4a	MXM Card	None
NVIDIA® RTX A5500 Laptop GPU	16GB GDDR6 with ECC	115W	4x miniDP 1.4a	MXM Card	None
Quadro® P1000	4GB GDDR5	50W	4x miniDP 1.4	Single slot	None

Notes:

[1] Discrete graphics support may vary by configurations such as processor selection or power supply wattage.

Monitor Support

Monitor Support

Supports up to 8 independent displays, 4 via onboard ports (3x DP and 2x Thunderbolt™, simultaneously supports 4 display) and 4 via discrete graphics.
Onboard ports support (with max simultaneous displays):
• DP supports up to 4096x2160@60Hz
• Thunderbolt™ supports up to 5120x2880@60Hz
Discrete graphics ports support (with max simultaneous displays):
• miniDP supports up to 5120x2880@60Hz

Chipset

Chipset

Intel® W680 chipset

Memory

Max Memory[1]

Up to 128GB (4x 32GB DDR5 SO-DIMM)

Memory Type**[2]

- DDR5-4800 SO-DIMM ECC
- DDR5-4800 SO-DIMM non-ECC

Memory Slots

Four DDR5 SO-DIMM slots, dual-channel capable

Memory Protection

ECC on models with ECC DIMMs and ECC capable processor

Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.
[2] System comes with DDR5-4800 memory and will run at lower speed due to platform limitations:
4x 32GB or four memory DIMMs with WiFi configurations runs at DDR5-3600;

other configurations run at DDR5-4000.

Storage

Storage Support[1][2]

Up to 1x 2.5" HDD + 2x M.2 SSD
• 2.5" HDD up to 1TB
• M.2 SSD up to 4TB each

Storage Type***

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	1TB / 1TB FIPS	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	-	256GB / 512GB / 1TB / 2TB / 4TB	Opal 2.0

Storage Controllers***

Storage Controller	Type	Interface	RAID	Cache
Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1	None
Integrated SATA controller	Standard	SATA 6.0Gb/s	-	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.
[2] For detailed storage bays infomation and how to upgrade optional drives for ThinkStation® products, please visit ThinkStation® Storage Upgrade Guide

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC897-Q codec

Speakers

Single speaker

Power Supply

Power Supply**

Power	Type	Efficiency	Key Features
170W	Adapter	90%	100V - 240V
230W	Adapter	90%	100V - 240V
300W	Adapter	90%	100V - 240V

DESIGN

Mechanical

Form Factor

Mini-tower (3.9L)

Dimensions (WxDxH)[1]

87 x 223 x 202 mm (3.43 x 8.78 x 7.95 inches)

Weight[2]

3.6 kg (7.94 lbs, maximum configuration)

Bays

1x 2.5" disk bay (optional, comes with disk)

M.2 Slots

- Two M.2 PCIe® Gen 4x4 slots (for SSD)
- One M.2 slot (for WLAN)

Expansion Slots

Two PCIe® slots with one PCIe® 4.0 x16 and one PCIe® 3.0 x8.

• Slot 1: PCIe® 4.0 x16 (via MXM to PCIe® riser card), low profile, 75W, double-width
• Slot 2: PCIe® 3.0 x8 (x4 lanes), low profile, 25W

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

Onboard Ethernet

Two Ethernet, 2.5GbE + GbE, Intel® Ethernet Connection I225-LM and I210-AT, 2x RJ-45, supports Wake-on-LAN

Optional Ethernet

One additional Ethernet adapter support, up to one additional 10 GbE ports
• Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
• Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
• Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
• 10 Gigabit Ethernet, Marvell AQtion AQN-107, 1x RJ-45, PCIe® x4

WLAN + Bluetooth®**

- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.2 hardware ready)[1]
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.3 hardware ready), Intel® vPro® technology support[2]
- No WLAN and Bluetooth®

Notes:

[1] Bluetooth® 5.2 is hardware ready but may run at a lower version due to OS limitations. Wi-Fi® 6E is only enabled on Windows® 11 and operates as Wi-Fi® 6 with Windows® 10.
[2] Bluetooth® 5.3 is hardware ready but may run at a lower version due to OS limitations. Wi-Fi® 6E is only enabled on Windows® 11 and operates as Wi-Fi® 6 with Windows® 10.

Ports[1]

Front Ports

- 2x Thunderbolt™ 4
- 1x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 1x headphone / microphone combo jack (3.5mm)

Rear Ports[2]

- 3x DisplayPort™ 1.2
- 1x Ethernet (2.5GbE RJ-45)
- 1x Ethernet (GbE RJ-45)
- 4x USB-A (USB 10Gbps / USB 3.2 Gen 2)

Optional Rear Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2), support data transfer, via USB-C® PCIe® x4 card
- 2x USB-C® (USB 10Gbps / USB 3.2 Gen 2), support data transfer, via additional PCIe® adapter
- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via additional PCIe® adapter
- 4x serial (via 4-port serial expansion card, PCIe® x1)

Notes:

[1] The transfer speed of the 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 the theoretical speed.
[2] For video ports on discrete graphics, please see graphics section.

SECURITY & PRIVACY

Security

Security Chip

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

Physical Locks

Kensington® Security Slot™, 3 x 7 mm

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- UEFI Secure Boot
- Self-healing BIOS

MANAGEABILITY

System Management

System Management[**][1]

- Intel® vPro® Enterprise with Intel® AMT 16
- Intel® vPro® Enterprise with Intel® AMT 16 on wired LAN
- Non-vPro®

Notes:

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

SERVICE

Warranty[1]

Base Warranty[**]

- 1-year limited onsite service
- 2-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: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Altitude

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

Relative Humidity

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

CERTIFICATIONS

Green Certifications[1]

Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered[2]
- RoHS compliant
- TCO Certified 9.0

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.
[2] EPEAT™ is registered where applicable, please see epeat.net for registration status by country.

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

ISV Certifications

ISV Certifications

Please visit ISV certifications for Lenovo® Workstations

- 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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