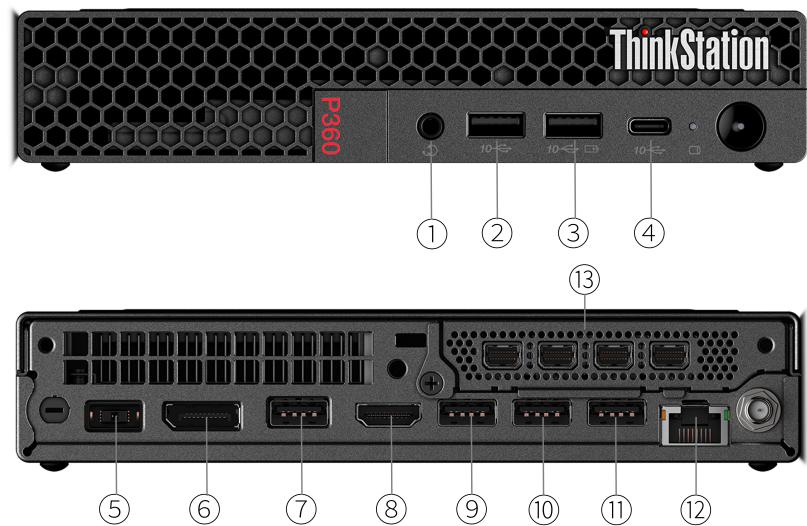# OVERVIEW

1. Headphone / microphone combo jack (3.5mm)	8. HDMI 2.1 TMDS	
2. USB-A (USB 10Gbps)	9. USB-A (USB 5Gbps), with Smart Power On	
3. USB-A (USB 10Gbps), Always On	10. USB-A (USB 10Gbps)	
4. USB-C (USB 10Gbps), data transfer only	11. USB-A (USB 10Gbps)	
5. Power connector	12. Ethernet (RJ-45)	
6. DisplayPort 1.4	13. 2 Punch out ports or expansion card *	
7. USB-A (USB 5Gbps)		

Notes:
• Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

12th Generation Intel® Core™ i3 / i5 / i7 / i9 Processor

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 i3-12100T	4 (4 P-core + 0 E-core)	8	P-core 2.2GHz	P-core 4.1GHz	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 i3-12300T	4 (4 P-core + 0 E-core)	8	P-core 2.3GHz	P-core 4.2GHz	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 i5-12500T	6 (6 P-core + 0 E-core)	12	P-core 2.0GHz	P-core 4.4GHz	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 i5-12600T	6 (6 P-core + 0 E-core)	12	P-core 2.1GHz	P-core 4.6GHz	18MB	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 i7-12700T	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 i9-12900T	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 Home
- Windows® 11 Home Single Language
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux LTS

- Red Hat Enterprise Linux 9.2 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

Graphics

Integrated Graphics**

- Intel® UHD Graphics 730
- Intel® UHD Graphics 770
- None

Discrete Graphics Support[1]

Supports up to one NVIDIA® T1000 on models with 35W processor

Discrete Graphics Offering***

Graphics	Memory	Power	Connector	SLI / NVLink
NVIDIA® T400 4GB	4GB GDDR6	40W	3x miniDP 1.4	None
NVIDIA® T600	4GB GDDR6	40W	4x miniDP 1.4	None
NVIDIA® T1000	4GB GDDR6	50W	4x miniDP 1.4	None
NVIDIA® T1000 8GB	8GB GDDR6	50W	4x miniDP 1.4	None
Quadro® P400	2GB GDDR5	30W	3x miniDP 1.4	None
Quadro® P620	2GB GDDR5	40W	4x miniDP 1.4	None

Notes:

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

Monitor Support

Monitor Support

Onboard graphics supports up to 4 independent displays via (onboard DP, onboard HDMI®, punch out port 1 [VGA / HDMI® / DP / USB-C®], and punch out port 2 [VGA / HDMI® / DP]);
the number of maximum monitors also depends on the discrete graphic card in use

Chipset

Chipset

Intel® Q670 chipset

Memory

Max Memory[1]

Up to 64GB (2x 32GB DDR5 SO-DIMM)

Memory Type

DDR5-4800 SO-DIMM non-ECC

Memory Slots

Two DDR5 SO-DIMM slots, dual-channel capable

Notes:

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

Storage

Storage Support[1]

Up to two drives, 2x M.2 SSD, up to 2TB each

Storage Type

Disk Type	Interface	Offering	Security
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	256GB / 512GB / 1TB / 2TB	Opal 2.0

Storage Controllers

Storage Controller	Type	Interface	RAID	Cache

Integrated NVMe® controller	Standard	PCIe® NVMe®	0/1	None

Notes:

[1] The storage capacity supported is based on the test results with current Lenovo® storage offerings.

Removable Storage

Optical Support

No optical support

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC256VB codec

Speakers**

- Single speaker
- Single speaker, premium

Power Supply

Power Supply**[1]

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

Notes:

[1] When work with TIO monitor, an appropriate power adapter is needed. Customer may need to:
- Order a Tiny for TIO MT (30FC or 30FD) models
- Or order an additional 230W power adapter if original power adapter is less than 230W.

DESIGN

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)[1]

Models	Dimensions
Tiny only	179 x 182.9 x 37mm with rubber feet (7.0 x 7.2 x 1.5 inches with rubber feet)
Tiny & ODD	204.2 x 186.6 x 64 mm with rubber feet (8.04 x 7.35 x 2.52 inches with rubber feet)

Weight[2]

Models	Weight
Tiny only	1.4 kg (3 lbs, maximum configuration)

Bays

No bays

M.2 Slots

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

Expansion Slots

One PCIe® 4.0 x8, low-profile[3]

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] Supports discrete graphic card by x16 riser card (x8 signal), and supports Ethernet card / Thurderbolt 4 card by x4 riser card. Riser card comes with the expension cards.

CONNECTIVITY

Network

Onboard Ethernet

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

Optional Ethernet

One additional ethernet adapter support, up to one additional 2.5GbE port
• Gigabit Ethernet, Intel® I350-T2, 2x RJ-45, PCIe® x4
• Gigabit Ethernet, Intel® I350-T4, 4x RJ-45, PCIe® x4
• Gigabit Ethernet, Broadcom BCM5720, 2x RJ-45, PCIe® x1
• Gigabit Ethernet, Broadcom BCM5719, 4x RJ-45, PCIe® x4
• 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, BTB

WLAN + Bluetooth®**

• Realtek® RTL8822CE, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 5.0
• Intel® Wireless-AC 9560, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 5.1
• Realtek® Wi-Fi® 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi® + Bluetooth® 5.1
• Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.2 hardware ready)[1]
• Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.2 hardware ready), Intel® vPro® technology support
• AMD Wi-Fi® 6E RZ616, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1[2]
• Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.3 hardware ready), Intel® vPro® technology support[3]
• 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], [3] 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

• 1x USB-C® (USB 10Gbps / USB 3.2 Gen 2), data transfer only
• 1x USB-A (USB 10Gbps / USB 3.2 Gen 2), Always On
• 1x USB-A (USB 10Gbps / USB 3.2 Gen 2)
• 1x headphone / microphone combo jack (3.5mm)

Rear Ports[2]

• 2x USB-A (USB 10Gbps / USB 3.2 Gen 2)
• 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), one supports Smart Power On
• 1x HDMI® 2.1 TMDS
• 1x DisplayPort™ 1.4
• 1x Ethernet (RJ-45)

Optional Rear Ports

• Punch out port 1 (one of VGA / DisplayPort™ / HDMI® / serial / USB-C® 5Gbps with DisplayPort™ and PD 3.0 functions)
• Punch out port 2 (one of VGA / DisplayPort™ / HDMI® / serial / RJ-45)
• 1x Thunderbolt™ 4 (via additional PCIe® adapter)
• USB-C® (USB 5Gbps / USB 3.2 Gen 1), with USB PD and DP
• 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), occupies port 1 and 2
• 1x 2.5GbE RJ-45, via RTL8125BGS
• 2x GbE RJ-45, via additional PCIe® adapter
• 4x GbE RJ-45, via additional PCIe® adapter

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

- (Optional) Cable lock
- Kensington® Security Slot™, 3 x 7 mm

Chassis Intrusion Switch

Chassis intrusion switch

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Certificate based BIOS management
- Cover presence switch
- Individual USB port disablement
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)

MANAGEABILITY

System Management

System Management[1]

- Intel® vPro® Enterprise with Intel® AMT 16
- 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.

OPERATING REQUIREMENTS

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
- ErP Lot 3
- 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. For ESG & regulatory compliance documents, please visit https://compliance.lenovo.com.

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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