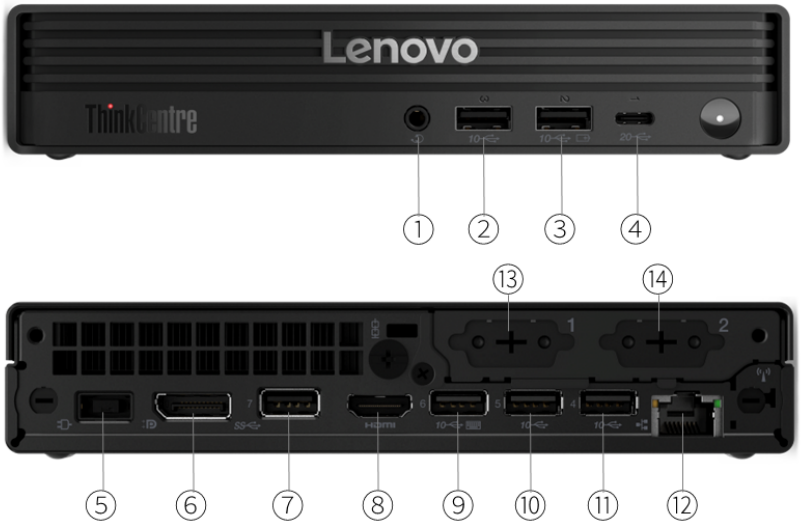
OVERVIEW



1. Headphone / microphone combo jack (3.5mm)	8. HDMI 2.1 TMDS
2. USB-A (USB 10Gbps)	9. USB-A (USB 10Gbps), with Smart Power On
3. USB-A (USB 10Gbps), Always On	10. USB-A (USB 10Gbps)
4. USB-C (USB 20Gbps), data transfer only	11. USB-A (USB 10Gbps)
5. Power connector	12. Ethernet (RJ-45)
6. DisplayPort 1.4	13. Punch out port 1 *
7. USB-A (USB 5Gbps)	14. Punch out port 2 *

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel Core™ Ultra 5 / 7 / 9 Processor (Series 2)

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics	NPU
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
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
Core Ultra 5 235T	14 (6 P-core + 8 E-core)	14	P-core 2.2GHz / E-core 1.6GHz	P-core 5.0GHz / E-core 4.4GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics, up to 6 TOPS	Intel® AI Boost, up to 13 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
Core Ultra 5 245T	14 (6 P-core + 8 E-core)	14	P-core 2.2GHz / E-core 1.7GHz	P-core 5.1GHz / E-core 4.5GHz	26MB L2 Cache / 24MB Intel® Smart Cache	DDR5-6400	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 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
Core Ultra 7 265T	20 (8 P-core + 12 E-core)	20	P-core 1.5GHz / E-core 1.2GHz	Max Turbo up to 5.3GHz / P-core 5.2GHz / E-core 4.6GHz	36MB L2 Cache / 30MB Intel® Smart Cache	DDR5-6400	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 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
Core Ultra 9 285T	24 (8 P-core + 16 E-core)	24	P-core 1.4GHz / E-core 1.2GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.6GHz	36MB Intel® Smart Cache	DDR5-6400	Intel® Graphics, up to 8 TOPS	Intel® AI Boost, up to 13 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	Max Resolution	Connector	Key Features
Integrated Intel® Graphics	Integrated	Shared	1920x1080@60Hz(VGA), 4096x2160@60Hz(DP 1.4a HBR2), 4096x2160@60Hz(HDMI® 4K), 7680x4320@60Hz(HDMI® 8K), 7680x4320@60Hz(Thunderbolt™ 4), 4096x2160@60Hz(USB-C® with DP function)	1x HDMI® 2.1 TMDS, 1x DP 1.4a HBR2, optional port 1 (VGA / HDMI® 2.1 TMDS / HDMI® 2.1 FRL / DP 1.4a HBR2 / USB-C® with DP 1.4a HBR2 function), optional port 2 (VGA / HDMI® 2.1 TMDS / HDMI® 2.1 FRL / DP 1.4a HBR2)	DirectX® 12
AMD Radeon™ RX 9060 XT LP	Discrete	16GB GDDR6	7680x4320@60Hz(DP) 7680x4320@60Hz(HDMI®)	1x DP 2.1a UHBR13.5, 1x HDMI® 2.1b FRL	DirectX® 12, OpenGL 4.6
Intel® Arc™ A310 Graphics	Discrete	4GB GDDR6	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 DP, onboard HDMI®, optional punch out port 1 [VGA / HDMI® 2.1 TMDS / HDMI® 2.1 FRL / DP 1.4a HBR2 / USB-C® with DP 1.4a HBR2 function], optional punch out port 2 [VGA / HDMI® 2.1 TMDS / HDMI® 2.1 FRL / DP 1.4a HBR2], and two optional DP by discrete Intel® Arc™ A310 Graphics)

Chipset

Chipset

Intel® Q870 chipset

Memory

Max Memory[1]

Up to 64GB (2x 32GB DDR5 SODIMM)

Memory Slots

Two DDR5 SODIMM slots, dual-channel capable

Memory Type

- DDR5-5600
- DDR5-6400

Notes:

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

Storage

Max Storage Support[1]

Up to three drives, 3x M.2 2280 SSD
• M.2 2280 SSD up to 2TB each

Storage Type***

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

RAID

RAID 0/1 support (RAID preset only available via special bid models)

Notes:

[1] The max capacity of each disk type is based on the test results with current Lenovo® storage offerings.

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC233VB or Conexant CX11771 codec

Speakers**

- Premium single speaker, 2W x1
- Single speaker, 2W x1

Power Supply

Power Supply**[1]

Power	Type	Efficiency	Key Features
65W	Adapter	89%	Autosensing
90W	Adapter	89%	Autosensing
135W	Adapter	90%	Autosensing
230W	Adapter	89%	Autosensing
245W	Adapter	90%	Autosensing
No power adapter	-	-	-

Notes:

[1] 135w power adapter is essential if optional USB-C® port is selected

When work with TIO monitor, an appropriate power adapter is needed. Customer may need to:
• Order a Tiny for TIO MT (13AE or 13AF) models
• Or order an additional 135W power adapter, if original power adapter is 90W or 65W
For detailed information, please refer to ThinkCentre® M90q Gen 6 Adapter Matrix

DESIGN

Input Device

Keyboard**

- Lenovo® Calliope Keyboard (USB connector), black
- Lenovo® Traditional Keyboard (USB connector), black
- Wireless EOS Keyboard, black
- No keyboard

Mouse**

- Lenovo® Calliope Mouse (USB connector), black
- Wireless EOS Mouse, black
- No mouse

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)[1]

Models	Dimensions
Tiny only	179 x 182.9 x 36.5 mm (7.05 x 7.2 x 1.44 inches)

Packaging Dimensions (WxDxH)

Tiny with Stand: 140 x 488 x 266 mm (5.51 × 19.21 × 10.47 inches)

Weight[2]

Models	Weight
Tiny only	Around 1.34 kg (2.95 lbs)

Packaging Weight

Tiny only: Around 3.905 kg (8.61 lbs)

Case Color

Black

Expansion Slots[3]

- One PCIe® 4.0 x8, low-profile
- Three M.2 PCIe® Gen 4x4 slots (for SSD)
- One M.2 slot (for WLAN)

EOU

- No support
- Toolless chassis open (toolless chassis screw required)

Stand

- Vertical stand
- No stand

Mounting

- Supports VESA mount 100mm
- None

Others

- (Optional) Dust filter
- (Optional) Power adapter cage

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] The actual data transfer rate of the following PCIe® interface also depends on the capabilities of the connected PCIe® device. The listed values represent theoretical maximums.
PCIe® 3.0 (x1 / x2 / x4 / x8 / x16): 1.0 GB/s (8.0 Gbps) / 2.0 GB/s (16.0 Gbps) / 4.0 GB/s (32.0 Gbps) / 8.0 GB/s (64.0 Gbps) / 16.0 GB/s (128.0 Gbps);
PCIe® 4.0 (x1 / x2 / x4 / x8 / x16): 2.0 GB/s (16.0 Gbps) / 4.0 GB/s (32.0 Gbps) / 8.0 GB/s (64.0 Gbps) / 16.0 GB/s (128.0 Gbps) / 32.0 GB/s (256.0 Gbps);
PCIe® 5.0 (x1 / x2 / x4 / x8 / x16): 4.0 GB/s (32.0 Gbps) / 8.0 GB/s (64.0 Gbps) / 16.0 GB/s (128.0 Gbps) / 32.0 GB/s (256.0 Gbps) / 64.0 GB/s (512.0 Gbps).

CONNECTIVITY

Network

WLAN + Bluetooth®**[1]

- Intel® Wi-Fi® 6 AX203, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.2, M.2 card
- 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
- 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
- No WLAN and Bluetooth®

Onboard Ethernet

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

Optional Ethernet

- Gigabit Ethernet, Intel® Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe® x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, supports Wake-on-LAN
- 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.

Ports[1]

Front Ports

- 1x USB-C® (USB 20Gbps / USB 3.2 Gen 2x2)
- 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

- 1x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2), one supports Smart Power On
- 1x HDMI® 2.1 TMDS
- 1x DisplayPort™ 1.4
- 1x Ethernet (GbE RJ-45)

Optional Rear Ports

- Punch out port 1 (one of VGA / DisplayPort™ 1.4a HBR2 / HDMI® 2.1 TMDS / HDMI® 2.1 FRL / serial / 2.5GbE RJ-45 / USB-C® (USB 10Gbps / USB 3.2 Gen 2) with DisplayPort™ 1.4a HBR2 function, PD-in 100W (20V@5A) and PD-out 15W (5V@3A))
- Punch out port 2 (one of VGA / DisplayPort™ / HDMI® 4K / HDMI® 8K / RJ-45 / serial / 2.5GbE RJ-45 / Thunderbolt™ 4)
- 2x USB-A (USB 10Gbps / USB 3.2 Gen 2), share 10Gbps bandwidth, occupy port 1 and 2
- 4x USB-A (USB 10Gbps / USB 3.2 Gen 2), share 10Gbps bandwidth, occupy port 1 and 2
- 4x GbE RJ-45, via additional PCIe® adapter
- 4x serial (via 4-port serial expansion card, PCIe® x1)

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.

SECURITY & PRIVACY

Security

Security Chip

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

Physical Locks

- (Optional) Kensington® Cable Lock

- Kensington Security Slot™, 3 x 7 mm

Chassis Intrusion Switch

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 management
- Cover tamper detected
- 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
- Secure boot
- Secure wipe
- More BIOS security features, please visit BIOS Simulator

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.

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 recycled plastic with 30% OBP used in cushion
30% OBP used in bag
FSC certified paper in packaging

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 2.0 Gold Registered
- (Optional) EPEAT 2.0 Silver Registered
- ErP Lot 3
- RoHS compliant
- TCO Certified, generation 10

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