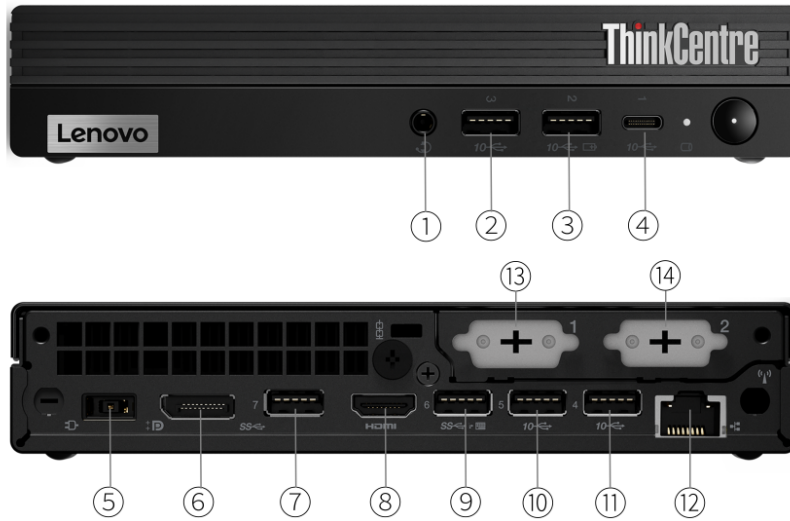


OVERVIEW



1. Headphone / microphone combo jack (3.5mm)	8. HDMI
2. USB 3.2 Gen 2	9. USB 3.2 Gen 1 (with Smart Power On feature)
3. USB 3.2 Gen 2 (Always On and fast charge)	10. USB 3.2 Gen 2
4. USB-C 3.2 Gen 2	11. USB 3.2 Gen 2
5. Power connector	12. Ethernet (RJ-45)
6. DisplayPort 1.4a	13. Punch out port 1 *
7. USB 3.2 Gen 1	14. Punch out port 2 *

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

13th Generation Intel® Core™ i3 / i5 / i7 / i9 Processor, 35W or 65W

Processor**^[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core™ i3-13100	4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	12MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i3-13100T	4 (4 P-core + 0 E-core)	8	P-core 2.5GHz	P-core 4.2GHz	12MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-13400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	20MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-13400T	10 (6 P-core + 4 E-core)	16	P-core 1.3GHz / E-core 1.0GHz	P-core 4.4GHz / E-core 3.0GHz	20MB	DDR5-4800	Intel® UHD Graphics 730
Core™ i5-13500	14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E-core 1.8GHz	P-core 4.8GHz / E-core 3.5GHz	24MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i5-13500T	14 (6 P-core + 8 E-core)	20	P-core 1.6GHz / E-core 1.2GHz	P-core 4.6GHz / E-core 3.2GHz	24MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i5-13600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i5-13600T	14 (6 P-core + 8 E-core)	20	P-core 1.8GHz / E-core 1.3GHz	P-core 4.8GHz / E-core 3.4GHz	24MB	DDR5-4800	Intel® UHD Graphics 770
Core™ i7-13700	16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E-core 1.5GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz	30MB	DDR5-5600	Intel® UHD Graphics 770
Core™ i7-13700T	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	DDR5-5600	Intel® UHD Graphics 770
Core™ i9-13900	24 (8 P-core + 16 E-core)	32	P-core 2.0GHz / E-core 1.5GHz	Max Turbo up to 5.6GHz / P-core 5.2GHz / E-core 4.2GHz	36MB	DDR5-5600	Intel® UHD Graphics 770
Core™ i9-13900T	24 (8 P-core + 16 E-core)	32	P-core 1.1GHz / E-core 0.8GHz	Max Turbo up to 5.3GHz / P-core 5.1GHz / E-core 3.9GHz	36MB	DDR5-5600	Intel® UHD Graphics 770

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
- Windows® 10 IoT Enterprise LTSC 2021
- 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 730	Integrated	Shared	1x HDMI® 2.1 TMDS, 1x DP 1.4a (HBR2, DSC), 2x punch out ports ([2x HDMI®/VGA/DP] or [USB-C® with DP function, HDMI®/VGA/DP])	4096x2304@60Hz(HDMI®), 1920x1200@60Hz(VGA), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C® with DP function)	DirectX® 12
Intel® UHD graphics 770	Integrated	Shared	1x HDMI® 2.1 TMDS, 1x DP 1.4a (HBR2, DSC), 2x punch out ports ([2x HDMI®/VGA/DP] or [USB-C® with DP function, HDMI®/VGA/DP])	4096x2304@60Hz(HDMI®), 1920x1200@60Hz(VGA), 4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C® with DP function)	DirectX® 12

Monitor Support

Monitor Support

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])

Chipset

Chipset

Intel® Q670 chipset

Memory

Max Memory^[1]

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

Memory Slots

Two DDR5 SO-DIMM slots, dual-channel capable

Memory Type**^[2]

- DDR5-4800
- DDR5-5200
- DDR5-5600

Notes:

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

[2] Installed memory is actually 5600MHz, but may run at 4800MHz, 5200MHz, or 5600MHz depending on the memory support capability of processor.

Storage

Storage Support^[1]

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

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

Storage Type***

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	7.2K	1TB	-
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

None

Notes:

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

ThinkCentre M90q Gen 4

Removable Storage

Optical

None

Card Reader

No card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC256VB codec

Speakers**

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

Power Supply

Power Supply**

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

DESIGN

Input Device

Keyboard**

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

Mechanical

Form Factor

Tiny (1L)

Dimensions (WxDxH)^[1]

Models	Dimensions
Tiny only	179 x 182.9 x 36.5 mm with rubber feet (7.05 x 7.2 x 1.44 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)

Packaging Dimensions (WxDxH)^[2]

- Tiny only: 490 x 250 x 130 mm (19.29 x 9.84 x 5.12 inches)
- Tiny & ODD: 490 x 268 x 166 mm (19.29 x 10.55 x 6.54 inches)

Weight^[3]

Models	Weight
Tiny only	1.25 kg (2.76 lbs)
With VESA mount & ODD box	1.74 kg (3.84 lbs)

Packaging Weight^[4]

- Tiny only: Around 3.2 kg (7.05 lbs)
- Tiny & ODD: Around 3.9 kg (8.6 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- No bays

Expansion Slots

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

EOU

- (Optional) toolless chassis open (toolless chassis screw required) and toolless M.2 SSD, HDD, memory assembly / removal
- No support

Stand

- Vertical stand
- No stand

IO Box

No IO box

Mounting

- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- None

Others

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

Notes:

[1] The system dimensions may vary depending on configurations.

[2] The new packages take effect from September 2023. The old packages are:

Tiny only: 500 x 150 x 280 mm (19.69 x 5.91 x 11.02 inches)

Tiny & ODD: 500 x 175 x 280 mm (19.69 x 6.89 x 11.02 inches)

[3] 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.

[4] The new packages take effect from September 2023. The old package are:

Tiny only: 2.85 kg (6.28 lbs)

Tiny & ODD: 3.58 kg (7.89 lbs)

CONNECTIVITY

Network

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
- Gigabit Ethernet, Intel® Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe® x4
- No optional Ethernet

WLAN + Bluetooth®**

- Realtek® Wi-Fi® 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card^[1]
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.2, M.2 Card^[2]
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support, M.2 Card^[3]
- No WLAN and Bluetooth®

Notes:

[1], [3] Bluetooth® 5.3 requires Windows® 11.

[2] Bluetooth® 5.2 requires Windows® 11.

Ports^[1]

Front Ports

- 1x USB-C® 3.2 Gen 2 (support data transfer)
- 1x USB 3.2 Gen 2 (Always On and 5V@2.1A charging)
- 1x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

Optional Front Ports

None

Rear Ports

- 2x USB 3.2 Gen 1 (one supports Smart Power On)
- 2x USB 3.2 Gen 2
- 1x HDMI® 2.1 TMDS
- 1x DisplayPort™ 1.4a (HBR2, DSC)
- 1x Ethernet (RJ-45)

Optional Rear Ports

- Punch out port 1 (one of VGA / DisplayPort™ / HDMI® / serial / USB-C® 3.2 Gen 1 with DisplayPort™ functions)
- Punch out port 2 (one of VGA / DisplayPort™ / HDMI® / serial / RJ-45)
- 1x Thunderbolt™ 4 (supports data transfer, Power Delivery 3.0 and DisplayPort™ 1.4, via Thunderbolt™ expansion card, PCIe® x4)
- 2x USB 3.2 Gen 1 (share one USB 3.2 Gen 1 bandwidth, occupies port 1 and 2)
- 4x USB 3.2 Gen 1 (share one USB 3.2 Gen 1 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.

Monitor Cable

Monitor Cable

- HDMI® to HDMI® cable (1.5m)
- HDMI® to VGA dongle
- DP to VGA dongle
- DP to DVI dongle
- DP to dual DP dongle
- DP to HDMI® dongle
- No monitor cable

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

Fingerprint Reader

No fingerprint reader

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
- 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® Enterprise^[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

Sustainability

Material^[1]

85% PCC recycled plastic used in product chassis.

95% PCC recycled plastic used in USB keyboard/mouse.

90% PIC recycled plastic EPE cushion or 90% PCC recycled plastic thermal shell with 30% OBP material.

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.

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)

CERTIFICATIONS

Green Certifications^[1]

Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Silver Registered^[2]
- (Optional) EPEAT™ Gold Registered^[3]
- 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.

[2], [3] 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

- 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.
- Lenovo reserves the right to change specifications or other product information without notice. Lenovo is not responsible for photographic or typographical errors. LENOVO PROVIDES THIS PUBLICATION "AS IS," WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore this disclaimer may not apply to you.
- The specifications on this page may not be available in all regions, and may be changed or updated without notice.



intel



intel



intel



intel



intel



intel