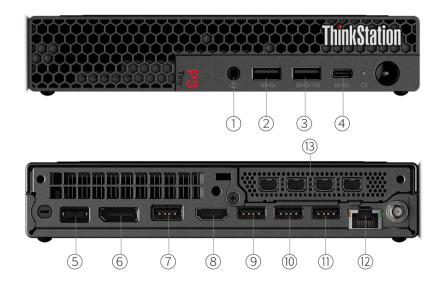
# **OVERVIEW**



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**

Up to one Intel<sup>®</sup> Core<sup>™</sup> i3 / i5 / i7 / i9 (13th Gen or 14th Gen) processor; supports up to 24 cores; up to 5.8GHz

## 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
Core i3- 14100	4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.7GHz	12MB	DDR5- 4800	Intel® UHD Graphics 730
Core i3- 14100T	4 (4 P-core + 0 E-core)	8	P-core 2.7GHz	P-core 4.4GHz	12MB	DDR5- 4800	Intel® UHD Graphics 730
Core i5- 14400	10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.7GHz / E-core 3.5GHz	20MB	DDR5- 4800	Intel® UHD Graphics 730
Core i5- 14400T	10 (6 P-core + 4 E-core)	16	P-core 1.5GHz / E- core 1.1GHz	P-core 4.5GHz / E-core 3.2GHz	20MB	DDR5- 4800	Intel® UHD Graphics 730
Core i5- 14500	14 (6 P-core + 8 E-core)	20	P-core 2.6GHz / E-core 1.9GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	DDR5- 4800	Intel® UHD Graphics 770
Core i5- 14500T	14 (6 P-core + 8 E-core)	20	P-core 1.7GHz / E- core 1.2GHz	P-core 4.8GHz / E-core 3.4GHz	24MB	DDR5- 4800	Intel® UHD Graphics 770
Core i5- 14600	14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E-core 2.0GHz	P-core 5.2GHz / E-core 3.9GHz	24MB	DDR5- 5600	Intel® UHD Graphics 770
Core i5- 14600T	14 (6 P-core + 8 E-core)	20	P-core 1.8GHz / E- core 1.3GHz	P-core 5.1GHz / E-core 3.6GHz	24MB	DDR5- 5600	Intel® UHD Graphics 770
Core i7- 14700	20 (8 P-core + 12 E-core)	28	P-core 2.1GHz / E- core 1.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	33MB	DDR5- 5600	Intel® UHD Graphics 770



Lenovo

Core i7- 14700T	20 (8 P-core + 12 E-core)	28		Max Turbo up to 5.2GHz / P- core 5.0GHz / E-core 3.7GHz	33MB	DDR5- 5600	Intel® UHD Graphics 770
Core i9- 14900	24 (8 P-core + 16 E-core)	32		Max Turbo up to 5.8GHz / P- core 5.4GHz / E-core 4.3GHz	36MB	DDR5- 5600	Intel® UHD Graphics 770
Core i9- 14900T	24 (8 P-core + 16 E-core)	32	P-core 1.1GHz / E- core 0.8GHz	Max Turbo up to 5.5GHz / P- core 5.1GHz / E-core 4.0GHz	36MB	DDR5- 5600	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 DG Windows® 10 Pro 64
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 9.4 (certified only, for detailed and latest information, please visit
- Red Hat Certified Hardware)
- No preload operating system

## Graphics

### Integrated Graphics\*\*

- Intel<sup>®</sup> UHD Graphics 730
- Intel<sup>®</sup> UHD Graphics 770

#### Discrete Graphics Support<sup>[1]</sup>

Supports up to one NVIDIA® T1000 8GB

### Discrete Graphics Offering

Graphics	Memory	Power	Connector	SLI / NVLink
NVIDIA® RTX A1000	8GB GDDR6	50W	4x miniDP 1.4a	None
NVIDIA® RTX A400	4GB GDDR6	50W	4x miniDP 1.4a	None
NVIDIA® T400 4GB	4GB GDDR6	40W	3x 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

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<sup>[1]</sup>

Lenovo

Up to 96GB (2x 48GB DDR5 SO-DIMM)

### Memory Type

- DDR5-4800 SO-DIMM non-ECC, maximum transfer speeds of up to 4800 MT/s
- DDR5-5600 SO-DIMM non-ECC, maximum transfer speeds of up to 5200 MT/s<sup>[2]</sup>

### 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.

[2] System comes with DDR5-5600 memory and some configurations will run at 5200 MT/s due to the memory support capability of processor.

## Storage

### Storage Support<sup>[1]</sup>

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

#### Storage Controllers

Storage Controller	Туре	Interface	RAID	Cache
Integrated NVMe® controller	Standard	PCIe <sup>®</sup> NVMe <sup>®</sup>	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<sup>®</sup> ALC256VB codec

### Speakers\*\*

- Single speaker
- Single speaker, premium

## **Power Supply**

### **Power Supply\*\***

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

# DESIGN

## Mechanical

Form Factor

## Tiny (1L)

Dimensions (WxDxH)<sup>[1]</sup>

Models

Dimensions

Lenovo

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)

Tiny only 179 x 182.9 x 37mm with rubber feet (7.0 x 7.2 x 1.5 inches with rubber feet)

#### Weight<sup>[2]</sup>

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

#### Bays

No bays

#### M.2 Slots

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

### **Expansion Slots**

One PCIe® 4.0 x8, low-profile<sup>[3]</sup>

Notes:

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

[2] The system weight is approximate and based on results in Lenovo<sup>®</sup> 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 / serial card by x4 riser card. Riser card comes with the expension cards.

# CONNECTIVITY

## Network

### WLAN + Bluetooth®\*\*

- Realtek<sup>®</sup> Wi-Fi<sup>®</sup> 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi<sup>®</sup> + Bluetooth<sup>®</sup> 5.1
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.2 hardware ready)
- Intel<sup>®</sup> Wi-Fi<sup>®</sup> 6E AX211, 802.11ax 2x2 Wi-Fi<sup>®</sup> + Bluetooth<sup>®</sup> 5.1 (Bluetooth<sup>®</sup> 5.3 hardware ready), Intel<sup>®</sup> vPro<sup>®</sup> technology support<sup>[1]</sup>
- No WLAN and Bluetooth®

### **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<sup>®</sup> x4
- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, BTB

#### Notes:

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

### Ports<sup>III</sup>

#### **Front Ports**

- 1x USB-C<sup>®</sup> (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<sup>[2]</sup>

- 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<sup>™</sup> 1.4

Lenovo

• 1x Ethernet (RJ-45)

### **Optional Rear Ports**

- Punch out port 1 (one of VGA / DisplayPort<sup>™</sup> / HDMI<sup>®</sup> / serial / USB-C<sup>®</sup> 5Gbps with DisplayPort<sup>™</sup> and PD 3.0 functions)
- Punch out port 2 (one of VGA / DisplayPort™ / HDMI® / serial / RJ-45)
- 1x Thunderbolt<sup>™</sup> 4 (via additional PCIe<sup>®</sup> adapter)
- + 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), occupies port 1 and 2
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1), share 5Gbps bandwidth, occupy port 1 and 2
- 2x GbE RJ-45, via additional PCIe<sup>®</sup> adapter
- 4x GbE RJ-45, via additional PCIe<sup>®</sup> adapter
- 4x serial (via 4-port serial expansion card, PCIe<sup>®</sup> 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

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

#### **Chassis Intrusion Switch**

Chassis intrusion switch

#### **BIOS Security**

- Administrator password
- Hard disk password
- Power-on 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<sup>[1]</sup>

- Intel<sup>®</sup> vPro<sup>®</sup> Enterprise with Intel<sup>®</sup> AMT 16
- Non-vPro<sup>®</sup>

Notes:

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

# SERVICE

## **Warranty**<sup>III</sup>

#### **Base Warranty\*\***

- 1-year limited onsite service
- 2-year limited onsite service
- 3-year limited onsite service

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 <u>https://smartfind.lenovo.com/</u>. To learn more details of warranty policy, please access <u>https://support.lenovo.com/warrantylookup/warrantypolicy</u>.

# **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)

#### 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%

# **ENVIRONMENTAL**

## **Sustainability**

#### Material<sup>[1]</sup>

- 65% PCC ABS bezel
- 95% PCC ABS wired USB keyboard/mouse top/bottom cover
- 95% PCC thermal shell with OBP
- 90% PIC recycled plastic EPE 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**<sup>III</sup>

### **Green Certifications**

- (Optional) ENERGY STAR<sup>®</sup> 8.0
- (Optional) EPEAT<sup>™</sup> Gold Registered<sup>[2]</sup>
- 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 <u>https://compliance.lenovo.com</u>.
[2] EPEAT<sup>™</sup> is registered where applicable, please visit <u>epeat.net</u> 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 option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- 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.

PSREF Product Specifications Reference









