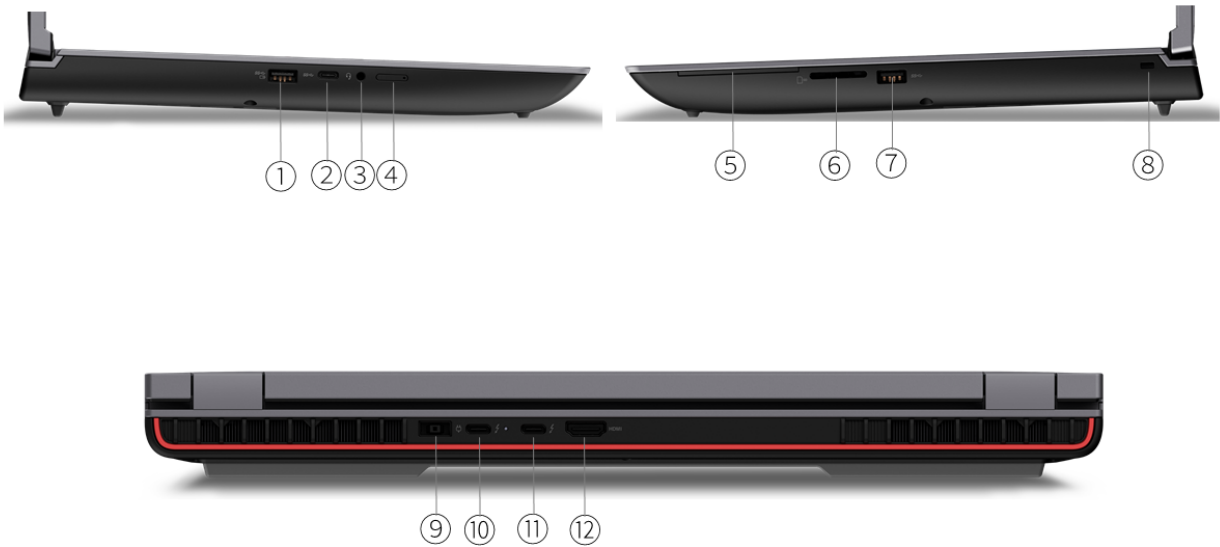


OVERVIEW



1. USB 3.2 Gen 1 (one Always On)	7. USB 3.2 Gen 1
2. USB-C 3.2 Gen 2	8. Kensington Nano Security Slot
3. Headphone / microphone combo jack (3.5mm)	9. Power connector
4. Nano-SIM card slot *	10. Thunderbolt 4
5. Smart card reader *	11. Thunderbolt 4
6. SD Express 7.0 card reader	12. HDMI

- Notes:
- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

12th Generation HX series Intel® Core™ i5 / i7 / i9 processor, supports processors up to 16 cores; up to 5.0 GHz; up to 55W TDP

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i5-12600HX	12 (4 P-core + 8 E-core)	16	P-core 2.5GHz / E-core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	18MB	DDR5-4800	Intel UHD Graphics
Core i7-12850HX	16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E-core 1.5GHz	P-core 4.8GHz / E-core 3.4GHz	25MB	DDR5-4800	Intel UHD Graphics
Core i9-12950HX	16 (8 P-core + 8 E-core)	24	P-core 2.3GHz / E-core 1.7GHz	P-core 5.0GHz / E-core 3.6GHz	30MB	DDR5-4800	Intel UHD Graphics
Core i7-12800HX	16 (8 P-core + 8 E-core)	24	P-core 2.0GHz / E-core 1.5GHz	P-core 4.8GHz / E-core 3.4GHz	25MB	DDR5-4800	Intel UHD Graphics
Core i9-12900HX	16 (8 P-core + 8 E-core)	24	P-core 2.3GHz / E-core 1.7GHz	P-core 5.0GHz / E-core 3.6GHz	30MB	DDR5-4800	Intel UHD Graphics

Operating System

Operating System**

- Windows® 11 Pro 64
- Windows 11 Home 64
- Windows 11 Home 64 Single Language
- Windows 11 DG Windows 10 Pro 64
- Fedora Linux
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 8.6 (certified only, available in late 2022, for detailed and latest information, please visit [Red Hat Certified Hardware](#))

Graphics

Graphics

Graphics	Type	Memory	TGP	Key Features
Intel UHD Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12.1
NVIDIA® RTX A1000 Laptop GPU	Discrete	4GB GDDR6	60W	Dynamic Boost 2.0, DirectX 12
NVIDIA RTX A2000 8GB Laptop GPU	Discrete	8GB GDDR6	60W	Dynamic Boost 2.0, DirectX 12
NVIDIA RTX A3000 12GB Laptop GPU	Discrete	12GB GDDR6 ECC	115W	Dynamic Boost 2.0, DirectX 12
NVIDIA RTX A4500 Laptop GPU	Discrete	16GB GDDR6 ECC	115W	Dynamic Boost 2.0, DirectX 12
NVIDIA RTX A5500 Laptop GPU	Discrete	16GB GDDR6 ECC	115W	Dynamic Boost 2.0, DirectX 12

Monitor Support

Monitor Support

Supports up to 5 independent displays (native display and 4 external monitors via HDMI®, USB-C® and Thunderbolt™)

- HDMI supports up to 3840x2160@60Hz on integrated or Arc graphics models; 7680x4320@60Hz on NVIDIA graphics models
- USB-C supports up to 5120x3200@60Hz
- Thunderbolt supports up to 5120x3200@60Hz

Chipset

Chipset

Intel WM690 chipset

Memory

Max Memory^[1]

Up to 128GB DDR5-4800

Memory Slots

Four DDR5 SO-DIMM slots, dual-channel capable

Memory Type^{**[2]}

- DDR5-4800 ECC
- DDR5-4800 non-ECC

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. The system may support more memory as the technology develops.
2. Installed memory is actually DDR5-4800 but runs at DDR5-4000 due to processor limitation

Storage

Storage Support^[1]

Up to two drives, 2x M.2 SSD

- M.2 2280 SSD up to 8TB, 4TB each
- RAID 0/1 support

Storage Slot

Two M.2 slots

- Two M.2 2280 PCIe® Gen 4x4 slots, support M.2 2280 SSD

Storage Type

Disk Type	Interface	RPM	Offering	Security
M.2 2280 SSD	PCIe NVMe®, PCIe 4.0 x4 Performance	-	512GB / 1TB / 2TB / 4TB	Opal2
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4 Value	-	256GB / 512GB / 1TB	Opal2

RAID

RAID 0/1 support

Notes:

1. The storage capacity supported is based on the test results with current Lenovo storage offerings. The system may support larger storage as the technology develops.

Removable Storage

Optical

None

Card Reader

SD Express 7.0 card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

Stereo speakers, 2W x2, Dolby® Atmos®

Microphone

- Dual array microphone, far-field, Dolby Voice
- No microphone

Camera^{**}

- FHD 1080p, with privacy shutter, fixed focus
- IR & FHD 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 94Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 170W and 230W AC adapter

Power Adapter

Power Adapter**[1]

- 170W slim tip (3-pin) AC adapter, 100-240V, 50-60Hz
- 230W slim tip (3-pin) AC adapter, 100-240V, 50-60Hz

Notes:

1. AC adapter offerings depend on the country.

DESIGN

Display

Display**[1]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
16.0"	WUXGA (1920x1200)	None	IPS	300 nits	Anti-glare	16:10	1200:1	100% sRGB	178°	Low Blue Light, X-Rite® Pantone® Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16.0"	WQXGA (2560x1600)	None	IPS	400 nits	Anti-glare	16:10	1200:1	100% sRGB	170°	Low Blue Light, X-Rite Pantone Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16.0"	WQUXGA (3840x2400)	None	IPS	600 nits	Anti-glare	16:10	1500:1	100% Adobe® RGB	178°	Low Blue Light, Dolby Vision™, DisplayHDR™ 400, X-Rite Pantone Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16.0"	WQUXGA (3840x2400)	Multi-touch	OLED	400 nits	Anti-reflection, Anti-smudge	16:10	100,000:1	100% DCI-P3	175°	Low Blue Light, Dolby Vision, HDR 500 True Black, X-Rite Pantone Factory Color Calibration, 83.4% screen to body ratio, DC dimming

Color Calibration

X-Rite Pantone factory color calibration

Touchscreen

- OGM multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

Input Device

Pen

- Lenovo Precision Pen 2 with built-in rechargeable battery, 4096 levels of pressure sensitivity, tilt detection, supports WGP, AES 2.0 and MPP 2.0 protocols. For more information, please read [Lenovo Precision Pen 2](#).

- No pen (with a pen garage ready, pen sold separately)
- No support

Keyboard

6-row, spill-resistant, multimedia Fn keys with Unified Communications controls, numeric keypad

Keyboard Backlight

LED backlight

UltraNav™

3-button TrackPoint® pointing device and Mylar® surface multi-touch touchpad, 67.6 x 115 mm (2.66 x 4.53 inches)

Mechanical^[1]**Dimensions (WxDxH)**

364 x 266 x 30.23 mm (14.3 x 10.5 x 1.2 inches)

Weight

Starting at 2.95 kg (6.5 lbs)

Case Color

Storm grey (top), thunder black (bottom)

Case Material

AL5052 (97.25% aluminium, 2.5% magnesium, and 0.25% chromium; Top), PPS + 50% GF (Bottom)

Notes:

1. The system dimensions and weight vary depending on configurations.

CONNECTIVITY

Network**Ethernet^[1]**

No onboard Ethernet

WLAN + Bluetooth®^[2]

Intel Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1

WWAN**

- Wireless WAN upgradable to 4G (with antenna ready)
- Fibocom L860-GL-16, 4G LTE CAT16, MIMO 4x4, M.2 card
- No support

SIM Card

- Gemalto eSIM card (physical)
- No SIM card inbox

NFC

- Near Field Communication
- No support

Notes:

1. Ethernet support via optional docking or Lenovo USB-C to Ethernet Adapter
2. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitation

Ports^[1]**Standard Ports**

- Models with NVIDIA graphics: 1x HDMI, up to 8K/60Hz
- Models with integrated or Intel Arc graphics: 1x HDMI, up to 4K/60Hz
- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0, and DisplayPort™ 1.4)
- 2x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x SD Express 7.0 card reader

Optional Ports

- 1x Smart card reader

- 1x Nano-SIM card slot (WWAN support models)

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;
USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
Thunderbolt 3/4: 40 Gbit/s

Docking

Docking

Various docking solutions supported via Thunderbolt or USB-C.

For more compatible docking solutions, please visit [Docking for ThinkPad® P16 Gen 1](#)

Monitor Cable

Monitor Cable

- (Optional) Lenovo USB-C to DisplayPort Adapter
- (Optional) Lenovo HDMI to VGA Monitor Adapter
- (Optional) Lenovo USB-C to VGA Adapter

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

Physical Locks

Kensington® Nano Security Slot™, 2.5 x 6 mm

Smart Card Reader

- Smart card reader
- No smart card reader

Fingerprint Reader

Touch style fingerprint reader on power button, match-on-chip

BIOS Security

- Power-on password
- Supervisor password
- NVMe password
- Self-healing BIOS

Other Security

- (Optional) Camera privacy shutter
- (Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Enterprise
- Non-vPro

SERVICE

Warranty

Base Warranty^[1]**

- 1-year depot service
- 1-year depot with 2-year system board service (Korea only)

- 1-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service

Notes:

1. More information of warranty policy, please access <https://pcsupport.lenovo.com/warranty>

ENVIRONMENTAL

Operating Environment

Temperature^[1]

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage and transportation in original shipping packaging: -20°C (-4°F) to 60°C (140°F)
- Storage without package: 5°C (41°F) to 43°C (109°F)

Humidity

- Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)
- Storage and transportation: 5% to 95% at wet-bulb temperature 27°C (81°F)

Altitude

Maximum altitude (without pressurization): 3048 m (10,000 ft)

Notes:

1. When you charge the battery, its temperature must be no lower than 10°C (50°F).

ACCESSORIES

Bundled Accessories

Bundled Accessories

- Lenovo USB-C to Ethernet Adapter (1Gbps)
- Lenovo USB-C to Ethernet Adapter (2.5Gbps)
- None

CERTIFICATIONS

Green Certifications

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified 9.0
- RoHS compliant

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed

Other Certifications

TÜV Rheinland® Low Blue Light

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.
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