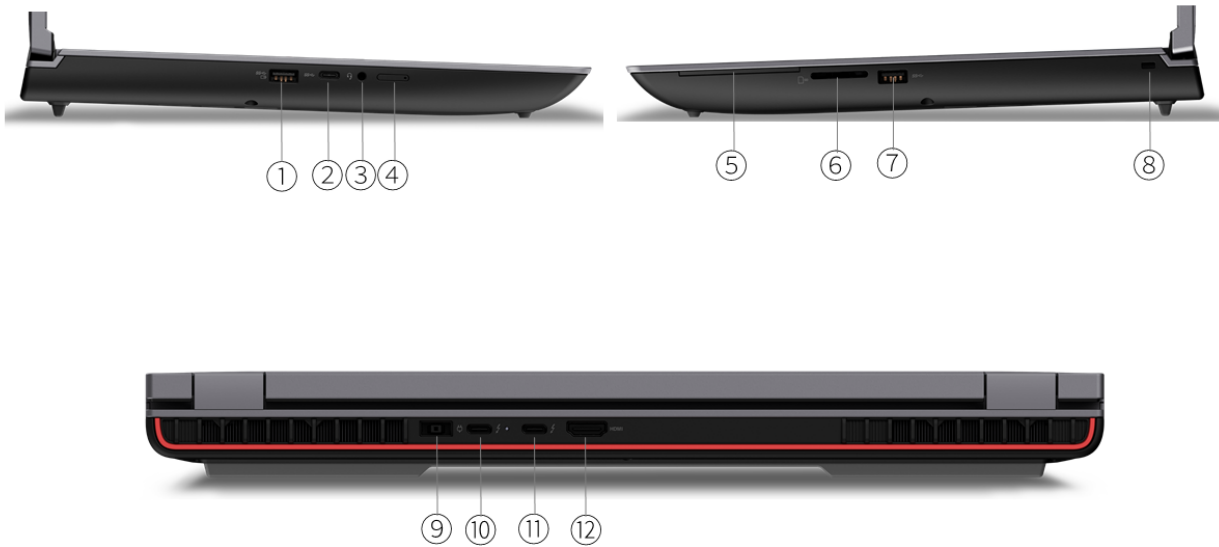


## OVERVIEW



1. USB 3.2 Gen 1 (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:

- Items with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

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

#### Processor\*\*

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	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	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	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	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	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	Intel® UHD Graphics

### Operating System

#### Operating System\*\*

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

### Graphics

#### Graphics

Graphics	Type	Memory	TGP	Key Features
Intel® UHD Graphics	Integrated	Shared	Share CPU TDP	DirectX® 12.1
Intel® Arc™ Pro A30M Graphics	Discrete	4GB GDDR6	35W	DirectX® 12 Ultimate, Deep Link technologies
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

Up to 128GB (4x 32GB DDR5 SO-DIMM)

### Memory Slots

Four DDR5 SO-DIMM slots, dual-channel capable

### Memory Type\*\*<sup>[1]</sup>

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

### Memory Protection

ECC on models with ECC DIMMs and ECC capable processor (i5-12600HX / i7-12850HX / i9-12950HX)

Notes:

<sup>[1]</sup> System comes with DDR5-4800 memory and will run at DDR5-4000 and DDR5-3600 due to platform limitation: 4x 32GB configuration runs at DDR5-3600, other configurations run at DDR5-4000.

## Storage

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

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 2280 PCIe® 4.0 x4 slots

### 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 / 4TB	Opal 2.0

### RAID

RAID 0/1 support

Notes:

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

## Removable Storage

### 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-microphone array, far-field, Dolby® Voice
- No microphone

### Camera\*\*

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

## Battery

### Battery

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

## Power Adapter

### Power Adapter\*\*<sup>[1]</sup>

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

Notes:

<sup>[1]</sup> AC adapter offerings depend on the country.

## DESIGN

## Display

### Display\*\*

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle (L/R/U/D)	Key Features
16"	WUXGA (1920x1200)	None	IPS <sup>[1]</sup>	300nits	Anti-glare	16:10	1200:1	100% sRGB	89°/89°/89°/89°	Low Blue Light, X-Rite® Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16"	WQXGA (2560x1600)	None	IPS <sup>[2]</sup>	400nits	Anti-glare	16:10	1200:1	100% sRGB	85°/85°/85°/85°	Low Blue Light, X-Rite® Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16"	WQUXGA (3840x2400)	None	IPS <sup>[3]</sup>	600nits	Anti-glare	16:10	1500:1	100% Adobe® RGB	89°/89°/89°/89°	Low Blue Light, Dolby® Vision™, DisplayHDR™ 400, X-Rite® Factory Color Calibration, 83.4% screen to body ratio, DC dimming
16"	WQUXGA (3840x2400)	Multi-touch	OLED	400nits	Anti-reflection, anti-smudge	16:10	100,000:1	100% DCI-P3	87.5°/87.5°/87.5°/87.5°	Low Blue Light, Dolby® Vision™, HDR 500 True Black, X-Rite® Factory Color Calibration, 83.4% screen to body ratio

## Color Calibration

X-Rite® factory color calibration

## Touchscreen

- OGM (One Glass Metal mesh) multi-touch, supports 10-point touch
- Non-touch

Notes:

[1], [2], [3] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

## 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 (purchase 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 glass-like Mylar® surface multi-touch touchpad, 67.6 x 115 mm (2.66 x 4.53 inches)

## Mechanical

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

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

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

Starting at 2.95 kg (6.5 lbs)

### Case Color

Storm grey (top), villi 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 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.

## CONNECTIVITY

### Network

#### Ethernet

No onboard Ethernet

#### WLAN + Bluetooth<sup>[1]</sup>

- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.3 hardware ready)
- No WLAN and Bluetooth®

#### 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 physical SIM card inbox

#### NFC

# ThinkPad P16 Gen 1

- Near Field Communication
- No support

## Notes:

[1] Bluetooth® 5.3 is hardware ready but may run at a lower version due to OS limitations.

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

### Standard Ports<sup>[2]</sup>

- 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)
- Models with NVIDIA® graphics: 1x HDMI® 2.1, up to 8K/60Hz
- Models with integrated or Intel® Arc™ graphics: 1x HDMI® 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)
- 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;

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.

[2] Power Delivery only supports power-out for charging peripherals.

## 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
- Lenovo® HDMI® to VGA Monitor Adapter
- Lenovo® USB-C® to VGA Adapter
- Lenovo® USB-C® to DisplayPort™ Adapter
- No monitor cable

## SECURITY & PRIVACY

## Security

### Security Chip

Discrete TPM 2.0, TCG certified, FIPS 140-2 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 integrated in power button, match-on-chip

## BIOS Security

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

## Other Security

- (Optional) IR camera for Windows® Hello (facial recognition)
- (Optional) Camera privacy shutter
- Bottom cover tamper detection

# MANAGEABILITY

## System Management

### System Management

- Intel® vPro® Enterprise<sup>[1]</sup>
- Non-vPro®

Notes:

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

# SERVICE

## Warranty

### Base Warranty\*\*

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 1-year limited onsite service
- 3-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) limited onsite service

# ENVIRONMENTAL

## Operating Environment

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

- 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)

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

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

Notes:

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

## CERTIFICATIONS

### Green Certifications<sup>[1]</sup>

#### Green Certifications<sup>[2]</sup>

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered<sup>[3]</sup>
- 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] EPEAT™ registration and ENERGY STAR® certification are dependent on system OS. Please visit [epeat.net](http://epeat.net) and [energystar.gov](http://energystar.gov) for more information.

[3] EPEAT™ is registered where applicable, please see [epeat.net](http://epeat.net) for registration status by country.

### 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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