

OVERVIEW



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

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

12th Generation H series Intel® Core™ i7 / i9 processor, supports up to 14 cores, up to 5.0GHz

Processor**^[1]

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Core i7-12700H	14 (6 P-core + 8 E-core)	20	P-core 2.3GHz / E-core 1.7GHz	P-core 4.7GHz / E-core 3.5GHz	24MB	Intel® Iris® Xe Graphics
Core i7-12800H	14 (6 P-core + 8 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	P-core 4.8GHz / E-core 3.7GHz	24MB	Intel® Iris® Xe Graphics
Core i9-12900H	14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E-core 1.8GHz	P-core 5.0GHz / E-core 3.8GHz	24MB	Intel® Iris® Xe Graphics

Notes:

[1] Intel® Iris® Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel® Iris® Xe Graphics will function as 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
- Ubuntu Linux LTS
- Ubuntu Linux with Data Science Preload
- Red Hat Enterprise Linux 8.6 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No preload operating system

Graphics

Graphics

Graphics	Type	Memory	TGP	Key Features
Intel® Iris® Xe Graphics ^[1]	Integrated	Shared	Share CPU TDP	DirectX® 12.1
NVIDIA® GeForce RTX™ 3070 Ti Laptop GPU ^[2]	Discrete	8GB GDDR6	80W	Dynamic Boost 2.0, VR ready, DirectX® 12
NVIDIA® GeForce RTX™ 3080 Ti Laptop GPU ^[3]	Discrete	16GB GDDR6	80W	Dynamic Boost 2.0, VR ready, DirectX® 12
NVIDIA® RTX A1000 Laptop GPU	Discrete	4GB GDDR6	35W	Dynamic Boost 2.0, DirectX® 12
NVIDIA® RTX A2000 8GB Laptop GPU	Discrete	8GB GDDR6	35W	Dynamic Boost 2.0, DirectX® 12
NVIDIA® RTX A3000 12 GB Laptop GPU ^[4]	Discrete	12GB GDDR6 ECC	80W	Dynamic Boost 2.0, DirectX® 12
NVIDIA® RTX A4500 Laptop GPU ^[5]	Discrete	16GB GDDR6 ECC	80W	Dynamic Boost 2.0, DirectX® 12
NVIDIA® RTX A5500 Laptop GPU ^[6]	Discrete	16GB GDDR6 ECC	80W	Dynamic Boost 2.0, DirectX® 12

Notes:

[1] Intel® Iris® Xe Graphics capability requires system to be configured with dual-channel memory. On the system with single-channel memory, Intel® Iris® Xe Graphics will function as Intel® UHD graphics.

[2], [3], [4], [5], [6] Vapor Chamber cooling is available only with NV RTX A3000 / A4500 / A5500 and GeForce RTX 3070 / 3080 GPUs.

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI® and Thunderbolt™)

- HDMI® supports up to 3840x2160@60Hz on Intel® Iris® Xe models; 7680x4320@60Hz on discrete NVIDIA® graphics models
- Thunderbolt™ supports up to 5120x3200@60Hz

Chipset

Chipset

Intel® SoC (System on Chip) platform

Memory

Max Memory

Up to 64GB DDR5-4800

Memory Slots

Two DDR5 SO-DIMM slots, dual-channel capable

Memory Type

DDR5-4800 non-ECC

Storage

Storage Support^[1]

- Models with integrated graphics or NVIDIA® RTX A1000/A2000: up to two drives, 2x M.2 SSD
 - M.2 2280 SSD up to 8TB, 4TB each
 - RAID 0/1 support
- Models with NVIDIA® GeForce/RTX A3000/A4500/A5500: one drive, up to 4TB M.2 2280 SSD

Storage Slot

- Models with Intel® integrated graphics or NVIDIA® RTX A1000/A2000: two M.2 2280 PCIe® 4.0 x4 slots
- Models with NVIDIA® GeForce/RTX A3000/A4500/A5500: one M.2 2280 PCIe® 4.0 x4 slot

Storage Type^[2]

Disk Type	Interface	Offering	Security
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4 Performance	512GB / 1TB / 2TB / 4TB	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® x4	256GB / 512GB / 1TB	Opal 2.0

RAID

- RAID 0/1 support (for models with integrated graphics or NVIDIA® RTX A1000/A2000)
- No support

Notes:

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

[2] PCIe® x4 SSD may be PCIe® 3.0 x4 or PCIe® 4.0 x4 as substitution.

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, optimized with Dolby Atmos®

Microphone

Dual-microphone array, far-field, Dolby Voice®

Camera**

- FHD 1080p + IR with privacy shutter, fixed focus

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

Battery

Battery

Integrated Li-Polymer 90Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Power Adapter

Power Adapter**^[1]

- 135W slim tip (3-pin) AC adapter, 100-240V, 50-60Hz
- 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 (L/R/U/D)	Key Features
16"	WUXGA (1920x1200)	None	IPS	300nits	Anti-glare	16:10	1200:1	100% sRGB	89° / 89° / - / -	X-Rite® Factory Color Calibration, 86.42% screen to body ratio, DC dimming
16"	WQXGA (2560x1600)	None	IPS	500nits	Anti-glare	16:10	1200:1	100% sRGB	89° / 89° / - / -	X-Rite® Factory Color Calibration, 86.42% screen to body ratio, DC dimming
16"	WQUXGA (3840x2400)	None	IPS	600nits	Anti-glare	16:10	1500:1	100% Adobe® RGB	85° / 85° / - / -	X-Rite® Factory Color Calibration, Dolby Vision®, DisplayHDR™ 400, 86.08% screen to body ratio, DC dimming
16"	WQUXGA (3840x2400)	Multi-touch	IPS	600nits	Anti-reflection, anti-smudge	16:10	1500:1	100% Adobe® RGB	85° / 85° / - / -	X-Rite® Factory Color Calibration, Dolby Vision®, DisplayHDR™ 400, 86.08% screen to body ratio, DC dimming

Color Calibration

X-Rite® factory color calibration

Touchscreen

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

Notes:

^[1] 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 (non-touch display doesn't support pen input)

Keyboard

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

Keyboard Backlight

LED backlight

UltraNav™

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

Mechanical

Dimensions (WxDxH)^[1]

Models	Dimensions
Non-touch models	359.5 x 253.8 x 17.7 mm (14.15 x 9.99 x 0.7 inches)
Touch models	359.5 x 253.8 x 18.2 mm (14.15 x 9.99 x 0.72 inches)

Weight^[2]

Models	Weight
Non-touch models	Starting at 1.81 kg (3.99 lbs)
Touch models	Starting at 1.86 kg (4.1 lbs)

Case Color**

- 37-degree twill CF weave
- Black

Case Material**

- CFRP / GFRP (top), aluminium (bottom)
- CFRP / GFRP hybrid (top), aluminium (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^[1]

No onboard Ethernet

WLAN + Bluetooth®^[2]

Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.1 (Bluetooth® 5.3 hardware ready)

WWAN

- Fibocom FM350-GL, 5G Sub-6 GHz, M.2 Card, with embedded eSIM functionality
- No support

SIM Card

No physical 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® 5.3 is hardware ready but may run at a lower version due to OS limitations.

Ports^[1]

Standard Ports

- 2x USB 3.2 Gen 1 (one Always On)
- 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 graphics: 1x HDMI® 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)
- 1x SD Express 7.0 card reader
- 1x Power connector

Optional Ports

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.

Docking

Docking

Various docking solutions supported via Thunderbolt™ or USB-C®.

For more compatible docking solutions, please visit [Docking for ThinkPad® P1 Gen 5](#)

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

No smart card reader

Fingerprint Reader

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

BIOS Security

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

Other Security

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

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

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
- No base warranty

ACCESSORIES

Bundled Accessories

Bundled Accessories^[1]

- Lenovo® HDMI® to VGA Monitor Adapter
- Lenovo® USB-C® to DisplayPort™ Adapter
- Lenovo® USB-C® to Ethernet Adapter (1Gbps)
- Lenovo® USB-C® to Ethernet Adapter (2.5Gbps)
- Lenovo® USB-C® to VGA Adapter

Notes:

[1] For more compatible accessory solutions, please visit [Accessories for ThinkPad® P1 Gen 5](#)

OPERATING REQUIREMENTS

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)

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).

ENVIRONMENTAL

Sustainability

Material^[1]

90% recycled and/or sustainable packaging

Notes:

[1] PCC: Post Consumer Content, recycled materials from customers.
FSC: Forest Stewardship Council.

CERTIFICATIONS

Green Certifications^[1]

Green Certifications^[2]

- ENERGY STAR® 8.0
- EPEAT™ Gold Registered^[3]
- RoHS compliant

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>.

[2] EPEAT™ registration and ENERGY STAR® certification are dependent on system OS. Please visit epeat.net and energystar.gov for more information.

[3] EPEAT™ is registered where applicable, please visit epeat.net 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 offering listed under the feature is configured on selected models.
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