

OVERVIEW



|  |                             |
|--|-----------------------------|
| 1. Headphone / microphone combo jack (3.5mm) | 6. Kensington Security Slot |
| 2. SD card reader                            | 7. Power connector          |
| 3. HDMI                                      | 8. Thunderbolt 4            |
| 4. 2x USB 3.2 Gen 1                          | 9. Smart card reader *      |
| 5. Ethernet (RJ-45)                          |                             |

- Notes:
- Items with \* are only available on selected models
  - Nano-SIM card slot on the rear side (not shown on the sample product above)

PERFORMANCE

Processor

Processor Family

12th Generation H series Intel® Core™ i5 / i7 / i9 processor, supports up to 14 cores, up to 5.0GHz

Processor\*\*

| Processor Name  | Cores                    | Threads | Base Frequency                | Max Frequency                 | Cache | Processor Graphics       |
|-----------------|--------------------------|---------|-------------------------------|-------------------------------|-------|--------------------------|
| Core™ i5-12500H | 12 (4 P-core + 8 E-core) | 16      | P-core 2.5GHz / E-core 1.8GHz | P-core 4.5GHz / E-core 3.3GHz | 18MB  | Intel® Iris® Xe 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 |

Operating System

Operating System

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 DG Windows® 10 Pro 64
- Red Hat Enterprise Linux 8.6 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- Ubuntu Linux LTS
- No operating system

Graphics

Graphics

| Graphics                                | Type       | Memory    | TGP           | Key Features                   |
|---|------------|-----------|---------------|--------------------------------|
| Intel® Iris® Xe Graphics <sup>[1]</sup> | Integrated | Shared    | Share CPU TDP | DirectX® 12.1                  |
| NVIDIA® RTX A2000 Laptop GPU            | Discrete   | 4GB GDDR6 | 35W           | Dynamic Boost 2.0, DirectX® 12 |
| NVIDIA® T1200 Laptop GPU                | Discrete   | 4GB GDDR6 | 35W           | DirectX® 12                    |
| NVIDIA® T600 Laptop GPU                 | Discrete   | 4GB GDDR6 | 35W           | 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.

Monitor Support

Monitor Support

Supports up to 3 independent displays (native display and 2 external monitors via HDMI® and Thunderbolt™)

- HDMI® supports up to 3840x2160@60Hz
- Thunderbolt™ supports up to 5120x3200@60Hz (Thunderbolt™ or USB-C® to DP)

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<sup>[1]</sup>

- Up to two drives, 2x M.2 SSD
- M.2 2280 SSD up to 4TB, 2TB 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   | Opal 2.0 |

RAID

RAID 0/1 support

Notes:

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

Removable Storage

Optical

None

Card Reader

SD card reader

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3287 codec

Speakers

Stereo speakers, 2W x2, Dolby® Audio™ Premium

Microphone

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

Camera\*\*

- HD 720p + IR hybrid, with privacy shutter, fixed focus
- HD 720p, with privacy shutter, fixed focus
- No camera

Battery

Battery

Integrated Li-Polymer 68Wh battery, supports Rapid Charge (charge up to 80% in 1hr)

Power Adapter

Power Adapter<sup>[1]</sup>

- 135W slim tip (3-pin) AC adapter, 100-240V, 50-60Hz
- No power adapter

Notes:

[1] AC adapter offerings depend on the country.

DESIGN

Display

Display\*\*<sup>[1]</sup>

| Size  | Resolution      | Touch       | Type | Brightness | Surface    | Aspect Ratio | Contrast Ratio | Color Gamut     | Viewing Angle (L/R/U/D) | Key Features  |
|-------|-----------------|-------------|------|------------|------------|--------------|----------------|-----------------|-------------------------|---|
| 15.6" | FHD (1920x1080) | None        | IPS  | 300nits    | Anti-glare | 16:9         | 800:1          | 45% NTSC        | 85°/85°/-/-             | DC dimming  |
| 15.6" | FHD (1920x1080) | None        | IPS  | 300nits    | Anti-glare | 16:9         | 1200:1         | 100% sRGB       | 85°/85°/-/-             | DC dimming  |
| 15.6" | FHD (1920x1080) | Multi-touch | IPS  | 300nits    | Anti-glare | 16:9         | 800:1          | 45% NTSC        | 85°/85°/-/-             | DC dimming  |
| 15.6" | UHD (3840x2160) | None        | IPS  | 600nits    | Anti-glare | 16:9         | 1400:1         | 100% Adobe® RGB | 85°/85°/-/-             | Dolby® Vision™, DisplayHDR™ 400, optional X-Rite® Factory Color Calibration, DC dimming |

Color Calibration

- X-Rite® factory color calibration (UHD display)
- No color calibration

Touchscreen

- On-cell multi-touch, supports 10-point touch (selected FHD display)
- Non-touch

Notes:

<sup>[1]</sup> IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device

Keyboard

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

Keyboard Backlight

- LED backlight
- Non-backlight

UltraNav™

3-button TrackPoint® pointing device and Mylar® surface multi-touch touchpad

Mechanical

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

366.5 x 250 x 22.7 mm (14.43 x 9.84 x 0.89 inches)

Weight<sup>[2]</sup>

| Models                          | Weight                          |
|---------------------------------|---------------------------------|
| Models with integrated graphics | Starting at 2.096 kg (4.62 lbs) |
| Models with discrete graphics   | Starting at 2.226 kg (4.91 lbs) |

Case Color

Black

Case Material

PC-ABS (top), PC-ABS (bottom)

Notes:

<sup>[1]</sup> The system dimensions may vary depending on configurations.

<sup>[2]</sup> 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\*\*

- Gigabit Ethernet, Intel® Ethernet Connection I219-LM (vPro® models), 1x RJ-45, supports Wake-on-LAN
- Gigabit Ethernet, Intel® Ethernet Connection I219-V (non-vPro® models), 1x RJ-45, supports Wake-on-LAN

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

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

#### 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

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 Thunderbolt™ 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI® 2.1, up to 4K/60Hz
- 1x Headphone / microphone combo jack (3.5mm)
- 1x Ethernet (RJ-45)
- 1x SD card reader
- 1x Power connector

#### 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™, USB-C®, or USB-A.

For more compatible docking solutions, please visit [Docking for ThinkPad® P15v Gen 3 \(Intel®\)](#)

### 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, FIPS 140-2 certified

### Physical Locks

Kensington® Security Slot™, 3 x 7 mm

### Smart Card Reader

- Smart card reader
- No smart card reader

### Fingerprint Reader

Touch style fingerprint reader on palm rest, match-on-chip

### BIOS Security

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

### Other Security

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

## MANAGEABILITY

## System Management

### System Management\*\*<sup>[1]</sup>

- Intel® vPro® Enterprise
- Intel® vPro® Essentials
- Non-vPro®

Notes:

<sup>[1]</sup> 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

## Sustainability

### Material

90% recycled and/or sustainable packaging

## 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)

### 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).

## 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](https://epeat.net) and [energystar.gov](https://energystar.gov) for more information.

[3] EPEAT™ is registered where applicable, please see [epeat.net](https://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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