OVERVIEW



1. 12-24V DC-in	5. 2x 2.5GbE Ethernet (RJ-45)
2. 1x USB-C (USB 10Gbps)	6. 1x Serial (RS232 / RS422 / RS485)
3. 3x USB-A (USB 5Gbps)	7. I/O expansion slot *
4. 1x USB-A (Hi-Speed)	

Notes:

- Items with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel Core™ 5 / 7 Processor (Series 1)

Processor**

Processor Name	Cores	Threads	Max Frequency	Cache	Processor Graphics
Core 5 120UL	10 (2 P-core + 8 E-core)	12	P-core 4.6GHz / E-core 3.4GHz	12MB Intel® Smart Cache	Intel® Graphics
Core 5 130UL	10 (2 P-core + 8 E-core)	12	P-core 4.7GHz / E-core 3.5GHz	12MB Intel® Smart Cache	Intel® Graphics
Core 7 150UL	10 (2 P-core + 8 E-core)	12	P-core 5.0GHz / E-core 3.7GHz	12MB Intel® Smart Cache	Intel® Graphics
Core 7 160UL	10 (2 P-core + 8 E-core)	12	P-core 5.2GHz / E-core 3.9GHz	12MB Intel® Smart Cache	Intel® Graphics

Operating System

Operating System

- Windows® 11 IoT Enterprise LTSC 2024
- Ubuntu (Desktop) 24.04 LTS 64 Bit (kernel 6.17)
- IGEL Linux OS12
- No preload operating system

Graphics

Graphics

Graphics	Type	Memory	Max Resolution	Connector	Key Features
Intel® Graphics	Integrated	Shared	3840x2160@60Hz(USB-C®)	1x USB-C®	DirectX® 12.1

Monitor Support

Monitor Support

Supports up to 2 independent displays via native display and 1 external monitor; supports external monitor via USB-C®

Chipset

Chipset

Intel® SoC (System on Chip) platform

Memory

Max Memory

Up to 32GB DDR5-5200

Memory Slots

One DDR5 SODIMM slot

Memory Type[1]

DDR5-5200

Notes:

[1] Installed memory is actually DDR5-5600 but may run as DDR5-5200 depending on the memory support capability of Intel®.

Storage

Max Storage Support[1]

Up to two drives, 1x M.2 SATA SSD + 1x M.2 SSD
• M.2 2280 SSD up to 1TB
• M.2 2242 SATA SSD up to 1TB

Storage Type

Disk Type	Interface	Security
M.2 2242 SSD	SATA 6Gb/s	-
M.2 2280 SSD	PCIe® NVMe®, PCIe® 4.0 x4	Opal 2.0
M.2 2280 SSD	PCIe® NVMe®, PCIe® 5.0 x4 Performance	Opal 2.0

Notes:

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

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC888S-VD2-GR codec

Speakers

Integrated Speakers, 2W x2

Power Supply

Power Supply**

Power	Type	Efficiency	Key Features
150W	Adapter	89%	150W, for operating temperature 0~40°C 120W, for operating temperature 0~50°C 100V-240V, 50-60Hz, input 12V@12.5A, output
170W	Adapter	90%	170W, for operating temperature 0~35°C 120W, for operating temperature 0~50°C 100V-240V, 50-60Hz, input 20V@8.5A, output
No power adapter	-	-	-

DESIGN

Display

Display

Size	Resolution	Touch	Type	Brightness	Aspect Ratio	Contrast Ratio	Viewing Angle (L/R/U/D)
21.5"	FHD (1920x1080)	Multi-touch	IPS	250nits	16:9	1000:1	85° / 85° / 85° / 85°

Touchscreen

Capacitive-type multi-touch, supports 10-point touch

Input Device

Keyboard

No keyboard

Mouse

No mouse

Mechanical

Dimensions (WxDxH)[1]

538.05 × 341.05 × 64.0 mm (21.18 x 13.43 × 2.52 inches)

Packaging Dimensions (WxDxH)

Models without Stand: 645 x 507 x 130 mm (25.39 x 19.96 x 5.12 inches)

Weight[2]

Around 7.3 kg (16.09 lbs)

Packaging Weight

Models with stand: 11.4 kg (25.13 lbs)

Case Color

Black

Expansion Slots

Three M.2 slots (Key E for WLAN, Key M for PCIe® 4.0 x4 NVMe® SSD, Key B for SATA SSD)[3]

Mounting***

- Wall Mount Bracket
- Monitor stand
- 21" Panel Mount
- Supports VESA mount 75mm
- None

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.
[3] Gen 5 SSD on M.2 PCIe® 4.0 slot will run on PCIe® 4.0 protocols.

CONNECTIVITY

Network

Ethernet

- 2.5GbE, Intel® Ethernet Controller I225-LM, 1x RJ-45, supports Wake-on-LAN
- 2.5GbE, Intel® Ethernet Controller I226-LM, 1x RJ-45, supports Wake-on-LAN

WLAN + Bluetooth®[1]

- Intel® Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3
- No WLAN and Bluetooth®

Notes:

[1] Wi-Fi® operation (including Wi-Fi® 6, Wi-Fi® 6E, Wi-Fi® 7, etc.) is subject to the regulatory requirements of each country. Bluetooth® may operate at a lower version than hardware design depending on the factors such as operating system, driver, etc.

Ports[1]

Rear Ports

- 1x USB-C® (USB 10Gbps / 3.2 Gen 2), power output 5V@3A and Display Port 1.4
- 1x USB-A (Hi-Speed USB / USB 2.0)
- 3x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 1x 12-24V DC-in
- 1x Serial (RS232 / RS422 / RS485)

Optional Rear Ports

- 4x USB-A (5Gbps / USB 3.2 Gen 1) IET module
- 1x 12-bit GPIO + 1x 2-pin CAN bus IET module
- 2x Isolated RS-232 IET module
- None

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.
Thunderbolt™ 5: 80 Gbit/s (bidirectional), up to 120 Gbit/s in bandwidth boost mode for video-intensive applications.

SECURITY & PRIVACY

Security

Security Chip

Discrete TPM 2.0, TCG certified

BIOS Security

- Administrator password
- Intel® BIOS guard
- Hard disk password
- Secure boot
- More BIOS security features, please visit BIOS Simulator

SERVICE

Warranty[1]

Base Warranty**

- 1-year courier or carry-in service
- 1-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 https://smartfind.lenovo.com/. To learn more details of warranty policy, please access https://support.lenovo.com/warrantylookup/warrantypolicy.

OPERATING REQUIREMENTS

Operating Environment

Temperature

- Operating: IEC60068-2-1 Test A: Cold, IEC 60068-2-2 Test B: Dry heat, 0°C (32°F) to 50°C (122°F) with 0.7m/s air flow
- Storage: IEC60068-2-3 Test Ca: High temperature & Humidity storage, IEC60068-2-1 Test Ab:Cold, -20°C (-4°F) to 60°C (140°F)

Relative Humidity

- Relative humidity operating: IEC 60068-2-78 Test:Cab Damp heat, steady state 95%@40°C non-condensing
- Relative humidity storage: IEC 60068-2-78 Damp heat, steady state 90%@60°C

Shock Protection

shock, operating, 20G / 11ms, half sine

Vibration Protection

IEC 60068-2-64, Vibration, Operating, 2Grms, random, 5 ~ 500Hz, 0.5hr/axis

MTBF Prediction

MTBF @20°C

Ingress Protection

- Back cover: IP41
- Front panel: IP65

CERTIFICATIONS

Green Certifications

Green Certifications

- GREENGUARD®
- REACH
- RoHS compliant
- TED (The ECO-declaration)
- WEEE

Other Certifications

EMC

- EMC CE / FCC Class A
- FCC for USA
- CE for Europe
- IC for Canada
- RCM for Australia / New Zealand
- VCCI for Japan
- BSMI for Taiwan
- KCC for Korea

Safety

- CB for WW
- NRTL (ETL, cETL) for USA / Canada
- EAC for Kazakhstan/Armenia/Kyrgyzstan
- Ukrsepro for Ukraine
- KUCAS for Kuwait
- KVALITET for Serbia
- NOM-019 for Mexico
- SABS for South Africa

RF

- CE for Europe
- SRRC for China
- SUBTEL for Chile
- UKCA for United Kingdom
- WPC for India
- NOM-208 for Mexico
- NTC for Philippines
- SDPPI for Indonesia
- SIRIM for Malaysia
- ANRT for Morocco

Other Certifications

- AWS IoT Greengrass Certified
- IGEL Certified
- Red Hat Enterprise Linux Certified
- Ubuntu Core Certified
- Ubuntu Server Certified

Mil-Spec Test

MIL-STD-810H w-Change 1-2022 (Low Pressure [Altitude] 500.6, High Temperature 501.7, Low Temperature 502.7, Temperature Shock 503.7, Solar Radiation 505.7, Humidity 507.6, Sand and Dust 510.7, Vibration 514.8, Shock 516.8)

- 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.
- Feature with *** means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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