Lenovo PSREF
Product Specifications
Reference

OVERVIEW

1. E-shutter switch	6. HDMI
2. Headphone / microphone combo jack (3.5mm)	7. USB-C 3.2 Gen 1
3. USB 3.2 Gen 1	8. Thunderbolt 4
4. USB 3.2 Gen 1 (Always On)	9. Card reader
5. Power button	

PERFORMANCE

Processor

Processor Family

13th Generation Intel® Core™ i5 / i7 / i9 Processor H-Series

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Core i9-13905H	14 (6 P-core + 8 E-core)	20	P-core 2.6GHz / E-core 1.9GHz	P-core 5.4GHz / E-core 4.1GHz	24MB	Intel Iris® Xe Graphics
Core i7-13705H	14 (6 P-core + 8 E-core)	20	P-core 2.4GHz / E-core 1.8GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	Intel Iris Xe Graphics
Core i5-13505H	12 (4 P-core + 8 E-core)	16	P-core 2.6GHz / E-core 1.9GHz	P-core 4.7GHz / E-core 3.5GHz	18MB	Intel Iris Xe Graphics

Operating System

Operating System**[1]

- Windows® 11 Pro
- Windows 11 Home
- Windows 11 Home Single Language
- No operating system

Notes:

1. Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, MIPI computer vision camera, WWAN, Human Presence Detection, etc.

Graphics

Graphics**

Graphics	Type	Memory	Boost Clock	TGP	Key Features
NVIDIA® GeForce RTX™ 4050 Laptop GPU	Discrete	6GB GDDR6	2355 MHz	80W	Advanced Optimus (OTA), Resizable BAR, Dynamic Boost 2.0, DirectX® 12 Ultimate
NVIDIA GeForce RTX 4060 Laptop GPU	Discrete	8GB GDDR6	2250 MHz	80W	Advanced Optimus (OTA), Resizable BAR, Dynamic Boost 2.0, DirectX 12 Ultimate
NVIDIA GeForce RTX 4070 Laptop GPU	Discrete	8GB GDDR6	1980 MHz	80W	Advanced Optimus (OTA), Resizable BAR, Dynamic Boost 2.0, DirectX 12 Ultimate

Monitor Support

Monitor Support

Supports up to 4 independent displays (native display and 3 external monitors via HDMI®, USB-C® and Thunderbolt™)
• HDMI supports up to 7680x4320@60Hz
• USB-C supports up to 3840x2160@60Hz
• Thunderbolt supports up to 7680x4320@60Hz

Chipset

Chipset

Intel SoC (System on Chip) platform

Memory

Max Memory

- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable
- 64GB soldered memory, not upgradable

Memory Slots

Memory soldered to systemboard, no slots, dual-channel

Memory Type

LPDDR5x-6400

Storage

Storage Support[1]

One drive, up to 1TB M.2 2280 SSD

Storage Slot

One M.2 2280 PCIe® 4.0 x4 slot

Storage Type

Disk Type	Interface	Offering
M.2 2280 SSD	PCIe NVMe®, PCIe 4.0 x4	512GB / 1TB

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

Card Reader

4-in-1 card reader (SD, SDHC, SDXC, MMC)

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC3306 codec

Speakers

4 stereo speakers, 2W x2 (woofers), 1W x2 (tweeters), optimized with Dolby® Atmos®, Smart Amplifier (AMP)

Microphone

Quad-microphone array with noise-cancelling

Camera**

- FHD 1080p + IR, with E-shutter, fixed focus, with ToF sensor
- 5.0MP + IR, with E-shutter, fixed focus, with ToF sensor

Sensor

Sensors

- Ambient light sensor (ALS)
- Hall sensor
- ToF sensor

Battery

Battery[1]

Integrated Li-Polymer 75Wh battery, supports Rapid Charge Pro (charge up to 50% in 30min)

Max Battery Life[2]

- Mini LED models:
  MobileMark® 2018@200nits: 7.58 hr
  Local video (1080p) playback@150nits: 10.12 hr
- IPS models:
  MobileMark 2018@200nits: 9.2 hr
  Local video (1080p) playback@150nits: 13.6 hr

Notes:

1 . Rapid Charge Pro is only effective in hibernates or fully shutting down the computer.

2 . All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, MobileMark 25, JEITA 2.0, continuous 1080p video playback (with 150nits brightness and default volume level) or Google Power Load Test (PLT) battery-life benchmark tests. Actual battery life will vary and depends on many factors such as product configuration and usage, software use, wireless functionality, power management settings, and screen brightness. The maximum capacity of the battery will decrease with time and use.

Power Adapter

Power Adapter[1]

140W USB-C slim (3-pin) AC adapter, supports PD 3.0, 100-240V, 50-60Hz

Notes:

1 . AC adapter offerings depend on the country.

DESIGN

Display

Display**[1][2]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle (L/R/U/D)	Key Features
14.5″	3K (3072x1920)	None	IPS	400 nits	Glossy	16:10	1500:1	100% P3, 100% sRGB	89°/89°/89°/89°	Refresh rate 120Hz (Max), ΔE<1 (Avg.), Eyesafe® Certified 2.0, Dolby Vision™, Glass
14.5″	3K (3072x1920)	Multi-touch	IPS	400 nits	Glossy, Anti-fingerprint	16:10	1500:1	100% P3, 100% sRGB	89°/89°/89°/89°	Refresh rate 120Hz (Max), ΔE<1 (Avg.), Eyesafe Certified 2.0, Dolby Vision, Glass
14.5″	3K (3072x1920)	Multi-touch	Mini LED	1200 nits	Glossy, Anti-fingerprint	16:10	1000000:1	100% P3, 100% Adobe® RGB, 100% sRGB	89°/89°/89°/89°	Refresh rate 165Hz (Max), ΔE<1 (Avg.), VESA DisplayHDR™ 1000, Eyesafe Certified 2.0, Dolby Vision, Glass

Color Calibration

TCON (Timing Controller) color calibration

Touchscreen

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

Notes:

1 . California Electronic Waste Recycling Fee In California USA, 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, please go to https://www.calrecycle.ca.gov/Electronics/Consumer
2 . IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device

Keyboard

6-row, multimedia Fn keys

Keyboard Backlight

LED backlight

Touchpad

Buttonless glass surface multi-touch touchpad, supports Precision TouchPad (PTP), 80 x 135 mm (3.15 x 5.31 inches)

Mechanical

Dimensions (WxDxH)[1]

Models	Dimensions
IPS models	326.95 x 223.54 x 16.9 mm (12.87 x 8.80 x 0.67 inches)
Mini LED models	326.95 x 223.54 x 17.6 mm (12.87 x 8.80 x 0.69 inches)

Weight[2]

Models	Weight
IPS models	Starting at 1.65 kg (3.64 lbs)
Mini LED models	Starting at 1.68 kg (3.70 lbs)

Case Color**

- Storm grey
- Tidal teal

Surface Treatment

Aluminium stamping (anodized with sandblasting)

Case Material

Aluminium (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

No onboard Ethernet

WLAN + Bluetooth®[1][2]

Wi-Fi® 6E, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card

Notes:

1. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.
2. Wi-Fi 6E full features might be limited by country-level restrictions. 6GHz Wi-Fi 6E operation depends on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.

Ports[1]

Standard Ports

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.2)
- 1x Thunderbolt 4 / USB4® 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort 1.4)
- 1x HDMI, up to 8K/60Hz
- 1x Card reader
- 1x Headphone / microphone combo jack (3.5mm)

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

SECURITY & PRIVACY

Security

Security Chip

Firmware TPM 2.0 integrated in SoC

Fingerprint Reader

No fingerprint reader

BIOS Security

- Administrator password
- User password
- Master hard disk password
- User hard disk password
- Self-healing BIOS

Other Security

- IR camera for Windows Hello
- E-shutter

SERVICE

Warranty[1]

Base Warranty**

- 1-year courier or carry-in service
- 1-year courier or carry-in with 2-year system board service (Korea only)
- 2-year (1-yr battery) courier or carry-in service
- 3-year (1-yr battery) courier or carry-in 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://pcsupport.lenovo.com/warranty.

ENVIRONMENTAL

Sustainability

Material

FSC-certificated Paper used in Box, Cushion, and Manual
50% Recycled Aluminum on D Cover
30% PCC Recycled Plastic used in Adapter
25% PCC Recycled Plastic used in Battery Pack
30% PCC Recycled Plastic used in Speaker Enclosure
65% PCC Recycled Plastic used in Keyboard
97% PIC Recycled Plastic used in Cushion

Operating Environment

Temperature

- At altitudes up to 2438 m (8,000 ft)
    - Operating: 5°C to 35°C (41°F to 95°F)
    - Storage: 5°C to 43°C (41°F to 109°F)
- At altitudes above 2438 m (8,000 ft)
    - Maximum temperature when operating under the unpressurized condition: 31.3°C (88°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)

CERTIFICATIONS

Green Certifications[1]

Green Certifications[2]

- EPEAT™ Gold Registered
- ENERGY STAR® 8.0
- ErP Lot 6
- ErP Lot 26
- RoHS compliant

Notes:

1. The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.
2. EPEAT is registered where applicable, please see https://www.epeat.net for registration status by country.

Other Certifications

Mil-Spec Test

MIL-STD-810H military test passed (21 test items)

Other Certifications[1]

- (Optional) Intel Evo™ Platform
- Eyesafe Certified 2.0
- TÜV Rheinland® Low Blue Light (Hardware Solution)

Notes:

1. Intel Evo is NOT available for the models without an operating system.

- Feature with ** means that only one offering listed under the feature is configured on selected models.

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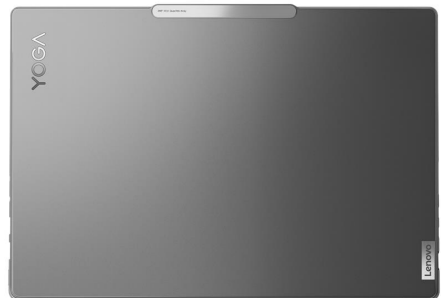
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