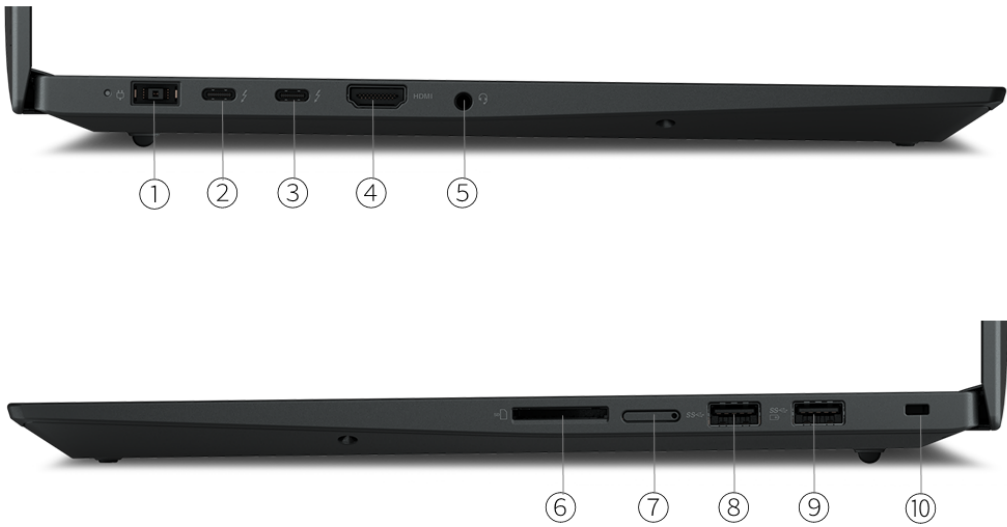


OVERVIEW



1. Power connector	6. SD 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 Security Slot

PERFORMANCE

Processor

Processor Family

11th Generation Intel® Core™ i7 / i9 or Intel Xeon® Processor

Processor**

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Core i7-11800H	8	16	2.3GHz	4.6GHz	24MB	DDR4-3200	Intel UHD Graphics
Core i7-11850H	8	16	2.5GHz	4.8GHz	24MB	DDR4-3200	Intel UHD Graphics
Core i9-11950H	8	16	2.6GHz	5.0GHz	24MB	DDR4-3200	Intel UHD Graphics
Xeon W-11855M	6	12	3.2GHz	4.9GHz	18MB	DDR4-3200	Intel UHD Graphics

Operating System

Operating System**[1]

- Windows® 11 Pro 64
- Windows 11 Home 64
- Windows 11 DG Windows 10 Pro 64
- Windows 11 DG Windows 10 Pro 64 for Workstations
- Windows 10 Pro 64
- Windows 10 Pro 64 for Workstations
- Windows 10 Home 64
- Fedora Linux
- Ubuntu Linux LTS
- Red Hat Enterprise Linux (certified only)
- No operating system

Notes:

1. As preloaded OS, Fedora and Ubuntu Linux will be available in October 2021

Graphics

Graphics**[1]

Graphics	Type	Memory	Key Features
Intel UHD Graphics	Integrated	Shared	DirectX® 12
NVIDIA® GeForce® RTX™ 3070 Laptop GPU	Discrete	8GB GDDR6	Advanced Optimus, Resizable BAR, Dynamic Boost 2.0, DirectX 12
NVIDIA GeForce RTX 3080 Laptop GPU	Discrete	16GB GDDR6	Advanced Optimus, Resizable BAR, Dynamic Boost 2.0, DirectX 12
NVIDIA RTX A3000 Laptop GPU	Discrete	6GB GDDR6	DirectX 12
NVIDIA RTX A4000 Laptop GPU	Discrete	8GB GDDR6	DirectX 12
NVIDIA RTX A5000 Laptop GPU	Discrete	16GB GDDR6	DirectX 12
NVIDIA T1200 Laptop GPU	Discrete	4GB GDDR6	DirectX 12
NVIDIA RTX A2000 Laptop GPU	Discrete	4GB GDDR6	DirectX 12

Notes:

1. Vapor Chamber cooling is available only with NV RTX A3000 /A4000 / A5000 and GeForce RTX 3070 / 3080 GPUs

Monitor Support

Monitor Support

Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via HDMI®

(up to 4K@60Hz on NVIDIA T1200 or Intel UHD model, or 8K@60Hz on other discrete graphics model) or Thunderbolt™
(up to 5120x3200@60Hz)

Chipset

Chipset
Intel WM590 chipset

Memory

Max Memory^[1]
Up to 64GB DDR4-3200
Memory Slots
Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type**
• DDR4-3200 ECC
• DDR4-3200 non-ECC

Memory Protection
ECC on models with ECC DIMMs and Xeon processor

Notes:
1. The max memory is based on the test results with current Lenovo® memory offerings. The system may support more memory as the technology develops.

Storage

Storage Support^[1]
• One drive, up to 2TB M.2 2280 SSD
• Model with Intel UHD Graphics, NVIDIA T1200, and NVIDIA RTX A2000 Graphics:
up to two drives, 2x M.2 SSD
• M.2 2280 SSD up to 2TB
• RAID 0/1 support

Storage Slot^[2]
Two M.2 slots
• One M.2 2280 PCIe® Gen 3x4 slot, supports M.2 2280 SSD
• One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD

Storage Type***

Disk Type	Interface	RPM	Offering	Security
M.2 2280 SSD	PCIe NVMe®, PCIe x4	-	256GB / 512GB / 1TB	Opal2
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4 Performance	-	512GB / 1TB / 2TB	Opal2

RAID^[3]
RAID 0/1 support (All M.2 SSD drives will work at PCIe Gen 3 in RAID mode)

Notes:
1. Dual storage is only available on models with Intel UHD graphics, NVIDIA T1200, and NVIDIA RTX A2000
2. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
3. Opal capability is not available in RAID mode.

Removable Storage

Optical
None
Card Reader
SD card reader, supports UHS-II SD card

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC3306 codec
Speakers

Stereo speakers, Dolby® Atmos®

Microphone

- Dual array microphone, far-field
- No microphone

Camera**

- 1080p, with privacy shutter, fixed focus
- IR & 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

Battery

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

Max Battery Life^[1]

MobileMark® 2018: 10.9 hr
JEITA 2.0: 13.7 hr

Notes:

1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, 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**

- 135W slim tip (3-pin) AC adapter
- 170W slim tip (3-pin) AC adapter
- 230W slim tip (3-pin) AC adapter

DESIGN

Display

Display**^[2]

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
16.0"	WQXGA (2560x1600)	None	IPS	400 nits	Anti-glare	16:10	1200:1	100% sRGB	170°	Low blue light, DC dimming
16.0"	WQUXGA (3840x2400)	None	IPS	600 nits	Anti-glare	16:10	1500:1	100% Adobe® RGB	170°	Low blue light, Dolby Vision™, HDR 400, DC dimming
16.0"	WQUXGA (3840x2400)	Multi-touch	IPS	600 nits	Anti-reflection, Anti-smudge	16:10	1500:1	100% Adobe RGB	170°	Low blue light, Dolby Vision, HDR 400, DC dimming

Color Calibration

- X-Rite® Pantone® factory color calibration
- No color calibration

Touchscreen

- Capacitive-type on-cell multi-touch, supports 10-point touch
- Non-touch

Notes:

1. California Electronic Waste Recycling Fee
In California, 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, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>
2. For non-OLED display, HDR is only supported under hybrid mode.

Input Device

Pen

- Lenovo Pen Pro
- No pen (pen sold 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

Mechanical

Dimensions (WxDxH)

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

Weight^[1]

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

Case Color

Black

Case Material**

- 37-degree twill CF Weave (top), Aluminium (bottom)
- CF plate / GFRP hybrid (top), aluminium (bottom)

Notes:

1. The system weight varies depending on configurations.

CONNECTIVITY

Network

Onboard Ethernet

- Ethernet support via optional Lenovo USB-C to Ethernet Adapter
- No Ethernet

WLAN + Bluetooth^[1]

Intel Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

WWAN^[2]

- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support

SIM Card

- Nano SIM card, Lenovo Connect 24 months, 4G LTE
- No SIM card inbox

NFC

No support

Notes:

1. 6GHz Wi-Fi 6E operation is dependent on the support of the operating system, routers/APs/Gateways that support Wi-Fi 6E, and the regional regulatory certifications & spectrum allocation.
Bluetooth 5.2 is supported with driver version 22.30 and later.

2. WWAN is only available on models with Intel UHD graphics, NVIDIA T1200, and NVIDIA RTX A2000.

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™ 1.4a)
- 1x SD card reader
- 1x Headphone / microphone combo jack (3.5mm)

Optional Ports^{***}

- 1x Nano-SIM card slot (WWAN model)
- 1x HDMI 2.0 (model with integrated graphics)
- 1x HDMI 2.0 (model with NVIDIA T1200 graphics)
- 1x HDMI 2.1 (model with GeForce RTX graphics)
- 1x HDMI 2.1 (model with NVIDIA RTX graphics)

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;
 - USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
 - Thunderbolt 3: 40 Gbit/s;
 - FireWire 400: 400 Mbit/s;
 - FireWire 800: 800 Mbit/s

Monitor Cable

Monitor Cable^{***}

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

SECURITY & PRIVACY

Security

Security Chip^{**}

- Discrete TPM 2.0, TCG certified
- Firmware TPM 2.0 integrated in chipset
- Disabled (in some regions)

Physical Locks

Kensington® Security Slot (2.5 x 6 mm)

Smart Card Reader

No smart card reader

Fingerprint Reader

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

BIOS Security

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

Other Security

(Optional) IR camera for Windows Hello

MANAGEABILITY

System Management

System Management

- Intel vPro Technology, DASH
- None

SERVICE**Warranty****Base Warranty****

- 1-year depot service
- 1-year depot with 2-year system board service
- 1-year limited onsite service
- 1-year + 2-year depot service
- 1-year + 2-year limited onsite service
- 3-year (1-yr battery) depot service
- 3-year (1-yr battery) limited onsite service
- No base warranty

ENVIRONMENTAL**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)

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**

- Lenovo USB-C to Ethernet Adapter
- None

CERTIFICATIONS**Green Certifications****Green Certifications**

- EPEAT™ Gold
- ENERGY STAR® 8.0
- RoHS compliant

Other Certifications**Mil-Spec Test**

MIL-STD-810H military test passed

ISV Certifications**ISV Certifications**

Please visit www.thinkworkstations.com/isv-certifications/

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Feature with *** means that one or more offerings listed under the feature could be configured on selected models.
- Lenovo reserves the right to change specifications or other product information without notice. Lenovo is not responsible for photographic or typographical errors. LENOVO PROVIDES THIS PUBLICATION “AS IS,” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore this disclaimer may not apply to you.
- The specifications on this page may not be available in all regions, and may be changed or updated without notice.

