## OVERVIEW

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</thead>
<tbody>
<tr>
<td>1</td>
<td>Power connector</td>
<td>6</td>
<td>SD card reader</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Thunderbolt 4</td>
<td>7</td>
<td>Nano-SIM card slot</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Thunderbolt 4</td>
<td>8</td>
<td>USB 3.2 Gen 1</td>
<td></td>
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<tr>
<td>4</td>
<td>HDMI</td>
<td>9</td>
<td>USB 3.2 Gen 1 (Always On)</td>
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<tr>
<td>5</td>
<td>Headphone (3.5mm)</td>
<td>10</td>
<td>Kensington Security Slot</td>
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</tr>
</tbody>
</table>
PERFORMANCE

Processor

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

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

Operating System

Operating System**(1)

- Windows® 11 Pro 64
- Windows 11 Home 64
- Windows 11 Home 64 Single Language
- 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
- Windows 10 Home 64 Single Language
- Fedora Linux
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 8.4 (certified only, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No operating system

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

Graphics

Graphics**(1)

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel UHD Graphics</td>
<td>Integrated</td>
<td>Shared</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA® GeForce RTX™ 3080 Laptop GPU</td>
<td>Discrete</td>
<td>16GB GDDR6</td>
<td>Resizable BAR, Dynamic Boost 2.0, DirectX 12</td>
</tr>
<tr>
<td>NVIDIA RTX A4000 Laptop GPU</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>Dynamic Boost 2.0, DirectX 12</td>
</tr>
<tr>
<td>NVIDIA RTX A5000 Laptop GPU</td>
<td>Discrete</td>
<td>16GB GDDR6</td>
<td>Dynamic Boost 2.0, DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 3070 Laptop GPU</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>Resizable BAR, Dynamic Boost 2.0, DirectX 12</td>
</tr>
<tr>
<td>NVIDIA T1200 Laptop GPU</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA RTX A2000 Laptop GPU</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>Dynamic Boost 2.0, DirectX 12</td>
</tr>
<tr>
<td>NVIDIA RTX A3000 Laptop GPU</td>
<td>Discrete</td>
<td>6GB GDDR6</td>
<td>Dynamic Boost 2.0, DirectX 12</td>
</tr>
</tbody>
</table>

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 (native display and 3 external monitors via HDMI® and Thunderbolt™)
- HDMI supports up to 4K@60Hz on NVIDIA T1200 or Intel UHD models, or 8K@60Hz on other discrete graphics models
- Thunderbolt supports up to 5120x3200@60Hz
**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**¹
- DDR4-3200 ECC
- DDR4-3200 non-ECC

**Memory Protection**
ECC on models with ECC DIMMs and Xeon processor

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**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**¹²
- One drive, up to 2TB M.2 2280 SSD
- Models 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**³
Two M.2 slots
- One M.2 2280 PCIe® 3.0 x4 slot
- One M.2 2280 PCIe 4.0 x4 slot

**Storage Type**³⁴

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Offering</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe®, PCIe 4.0 x4 Performance</td>
<td>-</td>
<td>512GB / 1TB / 2TB</td>
<td>Opal2</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe x4</td>
<td>-</td>
<td>256GB / 512GB / 1TB</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

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

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**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.
2. Dual storage is only available on models with Intel UHD graphics, NVIDIA T1200, and NVIDIA RTX A2000
3. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
4. PCIe x4 SSD may be PCIe 3.0 x4 or PCIe 4.0 x4 as substitution.
5. 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
- FHD 1080p, with privacy shutter, fixed focus
- IR & FHD 1080p hybrid, with privacy shutter, fixed focus
- No camera

Battery

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

Max Battery Life
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, 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

<table>
<thead>
<tr>
<th>Size</th>
<th>Resolution</th>
<th>Touch</th>
<th>Type</th>
<th>Brightness</th>
<th>Surface</th>
<th>Aspect Ratio</th>
<th>Contrast Ratio</th>
<th>Color Gamut</th>
<th>Viewing Angle</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.0&quot;</td>
<td>WQXGA (2560x1600)</td>
<td>None</td>
<td>IPS</td>
<td>400 nits</td>
<td>Anti-glare</td>
<td>16:10</td>
<td>1200:1</td>
<td>100% sRGB</td>
<td>170°</td>
<td>Low blue light, 85.8% screen to body ratio, DC dimming</td>
</tr>
<tr>
<td>16.0&quot;</td>
<td>WQUXGA (3840x2400)</td>
<td>None</td>
<td>IPS</td>
<td>600 nits</td>
<td>Anti-glare</td>
<td>16:10</td>
<td>1500:1</td>
<td>100% Adobe® RGB</td>
<td>170°</td>
<td>Low blue light, Dolby Vision™, DisplayHDR™ 400, 85.4% screen to body ratio, DC dimming</td>
</tr>
<tr>
<td>16.0&quot;</td>
<td>WQUXGA (3840x2400)</td>
<td>Multi-touch</td>
<td>IPS</td>
<td>600 nits</td>
<td>Anti-reflection, Anti-smudge</td>
<td>16:10</td>
<td>1500:1</td>
<td>100% Adobe RGB</td>
<td>170°</td>
<td>Low blue light, Dolby Vision, DisplayHDR 400, 85.4% screen to body ratio, DC dimming</td>
</tr>
</tbody>
</table>

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.cairecycle.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, 67.6 x 115 mm (2.66 x 4.53 inches)

**Mechanical**

**Dimensions (WxDxH)**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch models</td>
<td>359.5 x 253.8 x 18.2 mm (14.15 x 9.99 x 0.72 inches)</td>
</tr>
<tr>
<td>Non-touch models</td>
<td>359.5 x 253.8 x 17.7 mm (14.15 x 9.99 x 0.7 inches)</td>
</tr>
</tbody>
</table>

**Weight**

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-touch models</td>
<td>1.81 kg (3.99 lbs)</td>
</tr>
<tr>
<td>Touch models</td>
<td>1.86 kg (4.1 lbs)</td>
</tr>
</tbody>
</table>

**Case Color**
- Black
- 37-degree twill CF weave

**Case Material**
- CFRP / GFRP (top), Aluminium (bottom)
- CFRP / GFRP hybrid (top), Aluminium (bottom)

Notes:
1. The system dimensions and weight vary depending on configurations.

**CONNECTIVITY**

**Network**

**Ethernet**
No onboard Ethernet

**WLAN + Bluetooth®**
Intel Wi-Fi® 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1

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

**SIM Card**
No SIM card inbox
NFC
No support

Notes:
1. Ethernet support via optional docking or Lenovo USB-C® to Ethernet Adapter
2. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitation
3. 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.
4. 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 support models)
- 1x HDMI 2.0 (models with integrated graphics)
- 1x HDMI 2.0 (models with NVIDIA T1200 graphics)
- 1x HDMI 2.1 (models with GeForce RTX graphics)
- 1x HDMI 2.1 (models 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 3/4: 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 4

Monitor Cable

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

SECURITY & PRIVACY

Security

Security Chip
Discrete TPM 2.0, TCG 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 on power button, match-on-chip

BIOS Security
- Power-on password
- Supervisor password
MANAGEABILITY

System Management

System Management[1]
- Intel vPro
- Non-vPro

Notes:
1. Intel vPro offers a superset of DASH’s defined capabilities.

SERVICE

Warranty

Base Warranty**[1]
- 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

Notes:
1. More information of warranty policy, please access https://pcsupport.lenovo.com/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 (1Gbps)
- None

CERTIFICATIONS
Green Certifications

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

Other Certifications

Mil-Spec Test
MIL-STD-810H military test passed

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.

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