## OVERVIEW

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<td>Thunderbolt 4</td>
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<td>Thunderbolt 4</td>
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<td>USB 3.2 Gen 1</td>
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<td>4</td>
<td>HDMI 2.0</td>
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<td>5</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
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<td>6</td>
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<td>7</td>
<td>USB 3.2 Gen 1 (Always On)</td>
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<td>8</td>
<td>Kensington Nano Security Slot</td>
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**Notes:**
- Ports with * are only available on selected models
PERFORMANCE

Processor

Processor Family
11th Generation Intel® Core™ i5 / i7 Processor

<table>
<thead>
<tr>
<th>Processor Name</th>
<th>Cores</th>
<th>Threads</th>
<th>Base Frequency</th>
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<th>Cache</th>
<th>Memory Support</th>
<th>Processor Graphics</th>
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<tr>
<td>Core i5-1135G7</td>
<td>4</td>
<td>8</td>
<td>2.4GHz</td>
<td>4.2GHz</td>
<td>8MB</td>
<td>LPDDR4x-4266</td>
<td>Intel Iris® Xe Graphics</td>
</tr>
<tr>
<td>Core i5-1145G7</td>
<td>4</td>
<td>8</td>
<td>2.6GHz</td>
<td>4.4GHz</td>
<td>8MB</td>
<td>LPDDR4x-4266</td>
<td>Intel Iris Xe Graphics</td>
</tr>
<tr>
<td>Core i7-1165G7</td>
<td>4</td>
<td>8</td>
<td>2.8GHz</td>
<td>4.7GHz</td>
<td>12MB</td>
<td>LPDDR4x-4266</td>
<td>Intel Iris Xe Graphics</td>
</tr>
<tr>
<td>Core i7-1185G7</td>
<td>4</td>
<td>8</td>
<td>3.0GHz</td>
<td>4.8GHz</td>
<td>12MB</td>
<td>LPDDR4x-4266</td>
<td>Intel Iris Xe Graphics</td>
</tr>
</tbody>
</table>

Operating System

Operating System
- Windows® 10 Home 64
- Windows 10 Pro 64
- Fedora Linux
- Linux
- Ubuntu Linux
- No operating system

Graphics

<table>
<thead>
<tr>
<th>Graphics Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Xe Graphics</td>
<td>Integrated</td>
<td>DirectX® 12</td>
</tr>
</tbody>
</table>

Monitor Support

Monitor Support
Supports up to 4 independent displays via native display and 3 external monitors; supports external monitors via Thunderbolt™ (5K@60Hz) or HDMI® (up to 4K@60Hz)

Notes:
1. Refresh rates >60hz also supported, however max resolution will be limited

Chipset

Chipset
Intel SoC (System on Chip) platform

Memory

Max Memory
- 8GB soldered memory, not upgradable
- 16GB soldered memory, not upgradable
- 32GB soldered memory, not upgradable

Memory Slots
Memory soldered to systemboard, no slots, 8-channel

Memory Type
LPDDR4x-4266

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

**Storage Slot**
One M.2 2280 PCIe Gen 4x4 slot, supports M.2 2280 SSD

**Storage Type**

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe x4</td>
<td>Opal2</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 4.0 x4 Performance</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

**Removable Storage**

Optical
None

Card Reader
No card reader

**Multi-Media**

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

**Speakers**
Stereo speakers, 2W x2 and 0.8W x2, Dolby® Atmos®

**Microphone**
Four array microphones, 360° far-field

**Camera**
- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus

**Battery**

**Battery**
Integrated Li-Polymer 57Wh battery, supports Rapid Charge (charge up to 80% in 1hr) with 65W AC adapter

**Max Battery Life**

- MobileMark® 2014: 21.3 hr
- MobileMark 2018: 16.7 hr
- JEITA 2.0: 26.0 hr

**Notes:**
1. All battery life claims are approximate maximum and based on results using the MobileMark 2014, MobileMark 2018, and/or JEITA 2.0 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**

- 45W USB-C AC adapter
- 65W USB-C slim AC adapter
- 65W USB-C AC adapter
- No power adapter

**Notes:**
1. No power adapter is for special bid only

**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</th>
<th>Contrast</th>
<th>Color</th>
<th>Viewing</th>
<th>Key Features</th>
</tr>
</thead>
</table>

ThinkPad X1 Carbon Gen 9 - July 19 2021
### 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. In marketing terms, WUXGA is FHD+ and WQUXGA is UHD+

### Input Device

**Keyboard**
6-row, spill-resistant, multimedia Fn keys with Unified Communications controls

**Keyboard Backlight**
LED backlight

**UltraNav™**
TrackPoint® pointing device and glass surface multi-touch touchpad

### Mechanical

**Dimensions (WxDxH)**
315 x 221.6 x 14.9 mm (12.4 x 8.72 x 0.59 inches)

**Weight**
1.133 kg (2.49 lbs)

**Case Color**
- Black, paint
- Black, weave

**Case Material**
Carbon fiber (top), magnesium alloy (bottom)

### Notes:
1. The system weight varies depending on configurations

### CONNECTIVITY

### Network

**Onboard Ethernet**
Ethernet support via optional Lenovo USB-C to Ethernet Adapter

**WLAN + Bluetooth®**
Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2

**WWAN**
- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-GL, M.2 card, with embedded eSIM functionality
- Qualcomm® Snapdragon™ X55 5G Modem M.2 card - RF System with embedded eSIM functionality
- No support
SIM Card
No SIM card inbox

NFC
- Near Field Communication
- No support

Notes:
1. Intel WiFi 6 full features might be limited by country level restrictions
   Bluetooth 5.2 is supported with driver version 22.30 and later

Ports

Standard Ports
- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4a)
- 1x HDMI 2.0
- 1x headphone / microphone combo jack (3.5mm)

Optional Ports
1x Nano-SIM card slot (WWAN model)

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
2. Depending on many factors, actual data transfer speed may be lower than theoretical speed

Monitor Cable

Monitor Cable
- Lenovo HDMI to VGA Monitor 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® Nano Security Slot

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
- Camera privacy shutter
- (Optional) IR camera for Windows Hello
• (Optional) Privacy Guard with Privacy Alert
• (Optional) Human Presence Detection

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

Notes:
1. No base warranty is for special bid only

ENVIRONMENTAL

Operating Environment

Temperature
• Storage and transportation in original shipping package: -20°C (-4°F) to 60°C (140°F)
• Storage without package: 5°C (41°F) to 43°C (109°F)
• Operating: 5°C (41°F) to 35°C (95°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
• TCO
• RoHS compliant

Other Certifications

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

Other Certifications
• (Optional) Intel Evo™ Platform
• (Optional) TÜV Rheinland Low Blue Light
• TÜV Rheinland Dynamic Privacy Filter (DPF) Certification