PERFORMANCE

Processor

Processor Family
8th generation Intel® Core™ i5 / i7 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 i5-8265U</td>
<td>4</td>
<td>8</td>
<td>1.6GHz</td>
<td>3.9GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i5-8365U</td>
<td>4</td>
<td>8</td>
<td>1.6GHz</td>
<td>4.1GHz</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-8565U</td>
<td>4</td>
<td>8</td>
<td>1.8GHz</td>
<td>4.6GHz</td>
<td>8MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-8665U</td>
<td>4</td>
<td>8</td>
<td>1.9GHz</td>
<td>4.8GHz</td>
<td>8MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
</tbody>
</table>

Operating System

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

Graphics

<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>
</tbody>
</table>

Monitor Support

Supports up to 3 independent displays via native display and 2 external monitors; supports external monitors via HDMI® (up to 4096x2160@24Hz), Thunderbolt™ (up to 4096x2304@60Hz)

Chipset

Intel SoC (System on Chip) platform

Memory

Memory Type
DDR4-2400

Notes:
- Installed memory is actually 2666MHz but run at 2400MHz due to processor limitation

Memory Slots
Memory soldered to systemboard, no slots

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

Notes:
- 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, 1x M.2 2280 SSD or 1x M.2 2242 SSD
- M.2 2280 SSD up to 1TB
- M.2 2242 SSD up to 128GB
- Optional Intel Optane™ Memory integrated with SSD, M.2

Storage Type
<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2242 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>SATA 6Gb/s</td>
<td>-</td>
<td>Opal2</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>-</td>
<td>Opal2</td>
</tr>
<tr>
<td>Intel Optane Memory with Solid State Storage, M.2 2280</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Removable Storage**

**Optical**
- Not Support

**Card Reader**
- MicroSD card slot (WiFi model)
- Nano-SIM + microSD card slot (WWAN model)

**Multi-Media**

**Audio Chip**
- High Definition (HD) Audio, Realtek® ALC3287 codec

**Speakers**
- Stereo speakers, 1W x2, Dolby® Audio™ Premium

**Microphone**
- Dual array microphone, far-field
- Not configured

**Notes:**
- Microphone not configured is for special bid only

**Camera**
- 720p, with ThinkShutter, fixed focus
- IR & 720p, with ThinkShutter, fixed focus
- Not configured

**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: 20 hr
- JEITA 2.0: 23.95 hr

**Notes:**
- All battery life claims are approximate maximum and based on results using the MobileMark 2014 and/or MobileMark 2018 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**
- 45W USB-C AC adapter
- 65W USB-C AC adapter
- 65W USB-C slim AC adapter

**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>14.0&quot;</td>
<td>FHD</td>
<td>None</td>
<td>IPS</td>
<td>250 nits</td>
<td>Anti-</td>
<td>16:9</td>
<td>700:1</td>
<td>45%</td>
<td>170°</td>
<td>-</td>
</tr>
</tbody>
</table>
ThinkPad T490s

<table>
<thead>
<tr>
<th>Model</th>
<th>Display Type</th>
<th>Multi-touch</th>
<th>IPS</th>
<th>Anti-glare</th>
<th>Aspect Ratio</th>
<th>Brightness</th>
<th>Contrast</th>
<th>Color</th>
<th>Viewing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.0&quot; FHD (1920x1080)</td>
<td>Multi-touch</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>700:1</td>
<td>45%</td>
<td>170°</td>
<td>-</td>
</tr>
<tr>
<td>14.0&quot; FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>400 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>800:1</td>
<td>72%</td>
<td>170°</td>
<td>Low Power</td>
</tr>
<tr>
<td>14.0&quot; FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>400 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1000:1</td>
<td>72%</td>
<td>170°</td>
<td>ThinkPad® Privacy Guard</td>
</tr>
<tr>
<td>14.0&quot; WQHD (2560x1440)</td>
<td>None</td>
<td>IPS</td>
<td>500 nits</td>
<td>Glossy</td>
<td>16:9</td>
<td>1500:1</td>
<td>100%</td>
<td>170°</td>
<td>Dolby Vision™, HDR</td>
</tr>
</tbody>
</table>

Notes:
- 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

Touchscreen
- On-cell touch, supports 10-point touch
- Non-touch

Input Device

Keyboard
6-row, spill-resistant, multimedia Fn keys

Keyboard Backlight
- LED backlight
- Not support

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

Mechanical

Dimensions (WxDxH)

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver models</td>
<td>329.15 x 226.45 x 17.2 mm (12.96 x 8.92 x 0.68 inches)</td>
</tr>
<tr>
<td>Black with FHD touch / FHD non-touch / FHD Privacy Guard models</td>
<td>329.0 x 226.15 x 16.7 mm (12.95 x 8.90 x 0.66 inches)</td>
</tr>
<tr>
<td>Black with FHD Low Power / WQHD models</td>
<td>328.8 x 225.8 x 16.1 mm (12.94 x 8.89 x 0.63 inches)</td>
</tr>
</tbody>
</table>

Weight

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver models</td>
<td>1.49 kg (3.29 lbs)</td>
</tr>
<tr>
<td>Black with FHD Low Power / WQHD models</td>
<td>1.27 kg (2.81 lbs)</td>
</tr>
<tr>
<td>Black with FHD touch / FHD non-touch / FHD Privacy Guard models</td>
<td>1.35 kg (2.98 lbs)</td>
</tr>
</tbody>
</table>

Case Color
- Black
- Silver

Case Material
CFRP hybrid or aluminium (top), magnesium (bottom)

Notes:
- CFRP Hybrid top cover for black models; Aluminum top cover for silver models

CONNECTIVITY

Network
Onboard Ethernet
• Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2
• Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), RJ45 via optional ThinkPad Ethernet Extension Adapter Gen 2

WLAN + Bluetooth™
• Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
• Intel Wi-Fi 6 AX200, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 card

Notes:
• Intel WiFi 6 full features might be limited by country level restrictions
  BT5.1 is supported on Windows 10 version 2004 or above (limited to BT5.0 on earlier version)

WWAN
• Wireless WAN upgradable
• Integrated Mobile Broadband 4G LTE, Fibocom L830-EB, M.2 card
• Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card
• Not configured

Notes:
• Fibocom L830-EB is only available in EMEA
  For non-WWAN model, it means the model is NOT WWAN upgradable

SIM Card
• Gemalto eSIM
• Nano-SIM Card, Verizon LTE (US)
• Not configured

NFC
• Near Field Communication
• Not support

Ports
Standard Ports
• 1x USB 3.1 Gen 1
• 1x USB 3.1 Gen 1 (Always On)
• 1x USB-C 3.1 Gen 1 (support data transfer, Power Delivery and DisplayPort™ 1.2)
• 1x USB-C 3.1 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort 1.2)
• 1x HDMI 1.4b
• 1x Ethernet extension connector
• 1x headphone / microphone combo jack (3.5mm)
• 1x side docking connector

Notes:
• Depending on many factors, actual data transfer speed may be lower than theoretical speed

Optional Ports
• 1x microSD card slot (WiFi model)
• 1x Nano-SIM + microSD card slot (LTE model)
• 1x Smart Card Reader

Monitor Cable
• Lenovo HDMI to VGA Monitor Adapter
• Lenovo USB-C to DisplayPort Adapter
• Lenovo USB-C to VGA Adapter
• Not configured

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

**Smart Card Reader**
- Smart card reader
- Not configured

**Fingerprint Reader**
- Touch style fingerprint reader on palm rest, match-on-chip
- Not configured

**BIOS Security**
- Power-on password
- Supervisor password
- Hard disk password
- Self-healing BIOS

**Other Security**
- (Optional) ThinkShutter camera cover
- (Optional) IR camera for Windows Hello
- (Optional) ThinkPad Privacy Guard with Privacy Alert

**MANAGEABILITY**

**System Management**
- Intel vPro Technology, DASH
- None

**SERVICE**

**Warranty**

**Base Warranty**
- 1-year depot service
- 1-year limited onsite service
- 1-year depot with 2-year system board 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

**ACCESSORIES**

**Bundled Accessories**
- ThinkPad Ethernet Extension Adapter Gen 2
- Not configured

**CERTIFICATIONS**

**Green Certifications**
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO
- RoHS

**Other Certifications**
- Mil-Spec Test
MIL-STD-810G military test passed