PERFORMANCE

PROCESSOR

Processor Family
10th 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 i5-10210U</td>
<td>4</td>
<td>8</td>
<td>1.6GHz</td>
<td>4.2GHz</td>
<td>6MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i5-10310U</td>
<td>4</td>
<td>8</td>
<td>1.7GHz</td>
<td>4.4GHz</td>
<td>6MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10510U</td>
<td>4</td>
<td>8</td>
<td>1.8GHz</td>
<td>4.9GHz</td>
<td>8MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10610U</td>
<td>4</td>
<td>8</td>
<td>1.8GHz</td>
<td>4.9GHz</td>
<td>8MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10710U</td>
<td>6</td>
<td>12</td>
<td>1.1GHz</td>
<td>4.7GHz</td>
<td>12MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i7-10810U</td>
<td>6</td>
<td>12</td>
<td>1.1GHz</td>
<td>4.9GHz</td>
<td>12MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics</td>
</tr>
</tbody>
</table>

Operating System
- Windows® 10 Home 64
- Windows 10 Pro 64
- Windows 10 Government Edition 64 (for special bids models)
- Red Hat Enterprise Linux (certified only)
- Ubuntu Linux LTS
- 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>NVIDIA® Quadro® P520</td>
<td>Discrete</td>
<td>2GB GDDR5</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), USB-C (up to 4096x2304@60Hz) or Thunderbolt™ (up to 4096x2304@60Hz)

Chipset
Intel SoC (System on Chip) platform

Memory

Memory Type
DDR4-2666 Non-ECC

Notes:
- Installed memory is actually DDR4-3200 but may run at DDR4-2666 due to processor limitation

Memory Slots
One memory soldered to system board, one DDR4 SO-DIMM slot, dual-channel capable

Max Memory
- Up to 48GB (16GB soldered + 32GB SO-DIMM)
- Up to 40GB (8GB soldered + 32GB SO-DIMM)

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, up to 2TB M.2 2280 SSD

Storage Type
### Removable Storage

**Optical**
None

**Card Reader**
MicroSD card reader

### Multi-Media

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

**Speakers**
Stereo speakers, 2W x2, Dolby® Audio™

**Microphone**
- Dual array microphone, near-field
- No microphone

**Camera**
- 720p, with ThinkShutter, fixed focus
- IR & 720p, with ThinkShutter, fixed focus
- No camera

### Battery

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

**Max Battery Life**
- MobileMark® 2014: 16.5 hr
- MobileMark 2018: 10.48 hr
- JEITA 2.0: 16.5 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

- 65W USB-C AC adapter
- 65W USB-C slim AC adapter

### DESIGN

### Display

#### 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>15.6”</td>
<td>UHD (3840x2160)</td>
<td>None</td>
<td>IPS</td>
<td>600 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>1400:1</td>
<td>100% Adobe® RGB</td>
<td>170°</td>
<td>Dolby Vision™, HDR 400</td>
</tr>
<tr>
<td>15.6”</td>
<td>FHD</td>
<td>None</td>
<td>IPS</td>
<td>250 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>800:1</td>
<td>45%</td>
<td>170°</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
- M.2 2242 is special bid only
### Connectors

**Network**
- **Onboard Ethernet**
  - Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
  - Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)
- **WLAN + Bluetooth**
  - Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
  - No WLAN and Bluetooth
- **WWAN**
  - Wireless WAN upgradable
  - Integrated Mobile Broadband 4G LTE-A, Fibocom LB50-GL, M.2 card
  - Integrated Mobile Broadband 4G LTE-A, Fibocom LB60-GL, MIMO 2x2, M.2 card
  - Not Support
- **SIM Card**
  - Gemalto eSIM
  - No SIM card
- **NFC**
  - Near Field Communication
  - Not support
Ports

Standard Ports
- 2x USB 3.2 Gen 1 (one Always On)
- 1x USB-C 3.2 Gen 1 (support data transfer, Power Delivery and DisplayPort™)
- 1x USB-C 3.2 Gen 2 / Thunderbolt 3 (support data transfer, Power Delivery and DisplayPort)
- 1x HDMI 1.4b
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)
- 1x side docking connector
- 1x Security keyhole

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

Optional Ports
- 1x smart card reader
- 1x Nano-SIM card slot (WWAN models)

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

Physical Locks
Kensington® Security Slot

Smart Card Reader
- Smart card reader
- No smart card reader

Fingerprint Reader
- Touch style fingerprint reader on palm rest, match-on-chip
- No fingerprint reader

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

MANAGEABILITY

System Management
- Intel vPro Technology, DASH
- None

SERVICE

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

ACCESSORIES
Bundled Accessories
None

CERTIFICATIONS
Green Certifications
• EPEAT™ Gold
• ENERGY STAR® 8.0
• RoHS compliant

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

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