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>
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<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>
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<td>Core i7-10810U</td>
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</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 Type</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 systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Max Memory

- Up to 40GB (8GB soldered + 32GB SO-DIMM)
- Up to 48GB (16GB 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
<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>PCIe NVMe, PCIe 3.0 x4</td>
<td>Opal2</td>
<td></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>

Notes:
• M.2 2242 is special bid only

Removable Storage
Optical
Not Support
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
• Not configured
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)
Max Battery Life
MobileMark® 2014: 16.5 hr
MobileMark 2018: 10.48 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

<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®</td>
<td>170°</td>
<td>Dolby Vision™, HDR 400</td>
</tr>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</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:
- 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

Color Calibration
- X-Rite Pantone factory color calibration (UHD display)
- Not configured

Touchscreen
- On-cell touch on selected FHD models, supports 10-point touch
- Non-touch

Input Device
Pen
Not support

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

Keyboard Backlight
- LED backlight
- Not support

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

Mechanical
Dimensions (WxDxH)
365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)

Weight
1.75 kg (3.86 lbs)

Case Color
Black

Case Material
PPS / 50% GF (top), PA / 50% GF (bottom)

CONNECTIVITY

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
- Not configured

WWAN
- Wireless WAN upgradable
- Integrated Mobile Broadband 4G LTE-A, Fibocom L850-GL, M.2 card
- Integrated Mobile Broadband 4G LTE-A, Fibocom L860-GL, MIMO 2x2, M.2 card
- Not configured

SIM Card
- Gemalto eSIM
- Not configured

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 Nano-SIM card slot (WWAN models)
- 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

**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
Not Support

CERTIFICATIONS

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

Other Certifications

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

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