## OVERVIEW

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thunderbolt 4</td>
</tr>
<tr>
<td>2</td>
<td>Thunderbolt 4</td>
</tr>
<tr>
<td>3</td>
<td>Side docking connector</td>
</tr>
<tr>
<td>4</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>5</td>
<td>HDMI 2.0</td>
</tr>
<tr>
<td>6</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
<tr>
<td>7</td>
<td>MicroSD card reader</td>
</tr>
<tr>
<td>8</td>
<td>Smart card reader *</td>
</tr>
<tr>
<td>9</td>
<td>USB 3.2 Gen 1 (Always On)</td>
</tr>
<tr>
<td>10</td>
<td>Ethernet (RJ-45)</td>
</tr>
<tr>
<td>11</td>
<td>Kensington Security Slot</td>
</tr>
</tbody>
</table>

Notes:
- Ports with * are only available on selected models
- Optional nano-SIM card slot on the rear side (not shown on the sample product above)
- The combination of 1, 2 and 3 is side docking connector
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>
<th>Max Frequency</th>
<th>Cache</th>
<th>Memory Support</th>
<th>Processor Graphics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core i5-1135G7</td>
<td>4</td>
<td>8</td>
<td>2.4GHz</td>
<td>4.2GHz</td>
<td>8MB</td>
<td>DDR4-3200</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>DDR4-3200</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>DDR4-3200</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>DDR4-3200</td>
<td>Intel Iris Xe Graphics</td>
</tr>
</tbody>
</table>

Operating System

Operating System

- Windows® 10 Pro 64
- Windows 10 Home 64
- Ubuntu Linux
- Red Hat Enterprise Linux (certified only)
- No operating system

Graphics

Graphics

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>TGP</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel UHD Graphics</td>
<td>Integrated</td>
<td>Shared</td>
<td>Share CPU TDP</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>Intel Iris Xe Graphics</td>
<td>Integrated</td>
<td>Shared</td>
<td>Share CPU TDP</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA® T500 Laptop GPU</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>18W</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

Notes:
1. Intel Iris Xe Graphics requires dual-channel memory. On models with single-channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics.

Monitor Support

Monitor Support

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

- Up to 40GB (8GB soldered + 32GB SO-DIMM) DDR4-3200
- Up to 48GB (16GB soldered + 32GB SO-DIMM) DDR4-3200

Memory Slots

One memory soldered to systemboard, one DDR4 SO-DIMM slot, dual-channel capable

Memory Type

DDR4-3200 non-ECC

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 3x4 slot, supports M.2 2242/2280 SSD

Storage Type

<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 x4</td>
<td>-</td>
<td>-</td>
<td>Opal2</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 4.0 x4 Performance</td>
<td>-</td>
<td>-</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

RAID
No support

**Notes:**
1. M.2 PCIe Gen 4 SSD in a M.2 PCIe Gen 3 slot runs at PCIe Gen 3 speeds
2. System comes with one M.2 SSD slot that supports PCIe 3.0

**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, far-field
- No microphone

Camera
- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

**Battery**

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

Max Battery Life
MobileMark® 2018: 9.3 hr
JEITA 2.0: 15.8 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
- 45W USB-C (2-pin) AC adapter
45W USB-C (3-pin) AC adapter
- 65W USB-C slim (3-pin) AC adapter
- 65W USB-C slim (2-pin) AC adapter
- 65W USB-C (2-pin) AC adapter
- 65W USB-C (3-pin) 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 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>FHD (1920x1080)</td>
<td>None</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>800:1</td>
<td>45% NTSC</td>
<td>170°</td>
<td>-</td>
</tr>
<tr>
<td>15.6”</td>
<td>FHD (1920x1080)</td>
<td>Multi-touch</td>
<td>IPS</td>
<td>300 nits</td>
<td>Anti-glare</td>
<td>16:9</td>
<td>800:1</td>
<td>45% NTSC</td>
<td>170°</td>
<td>-</td>
</tr>
<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>
</tbody>
</table>

Color Calibration
- X-Rite® Pantone® factory color calibration (UHD display)
- No color calibration

Touchscreen
- On-cell 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

Input Device

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

Keyboard Backlight
- LED backlight
- No 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>All models</td>
<td>365.8 x 248 x 19.1 mm (14.40 x 9.76 x 0.75 inches)</td>
</tr>
</tbody>
</table>

Weight

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium models</td>
<td>1.783 kg (3.93 lbs)</td>
</tr>
<tr>
<td>PC + ABS models</td>
<td>1.75 kg (3.86 lbs)</td>
</tr>
</tbody>
</table>

Case Color

4 of 8
Case Material**
- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PC + ABS (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

Notes:
1. The system weight varies depending on configurations

CONNECTIVITY

Network
Onboard Ethernet**
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models), supports Wake-on-LAN
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models), supports Wake-on-LAN

WLAN + Bluetooth®**(1)
- Intel Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- Intel Wi-Fi 6E AX210, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2
- No WLAN and Bluetooth

WWAN**
- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM12OR-GL, M.2 card, with embedded eSIM functionality
- Integrated Mobile Broadband 4G LTE, Quectel EM160R, MIMO 4x4, M.2 card, with embedded eSIM functionality
- No support

SIM Card
- eSIM
- No SIM card inbox

NFC
- Near Field Communication
- No support

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

Ports**(1)

Standard Ports
- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 1 (Always On)
- 2x Thunderbolt 4 / USB4™ 40Gbps / USB-C 3.2 Gen 2 (support data transfer, Power Delivery 3.0 and DisplayPort™ 1.4)
- 1x HDMI 2.0
- 1x microSD card reader
- 1x Ethernet (RJ-45)
- 1x Headphone / microphone combo jack (3.5mm)
- 1x Side docking connector

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

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

**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
  - Firmware TPM 2.0 integrated in chipset
  - Disabled (in some regions)

**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**
- Supervisor password
- Power-on password
- NVMe password
- Self-healing BIOS

**Other Security**
- (Optional) Camera privacy shutter
- (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
  - 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

**ENVIRONMENTAL**
Operating Environment

Temperature
- 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)

CERTIFICATIONS

Green Certifications

- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified Notebooks 8
- 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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