## OVERVIEW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></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 2 and 3 is side docking connector
PERFORMANCE

Processor

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

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
- Windows 11 Pro 64
- Windows 11 Home 64
- Windows 11 DG Windows 10 Pro 64
- Linux
- Ubuntu Linux
- No operating system

Graphics

Graphics**[1]

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Iris Xe Graphics</td>
<td>Integrated</td>
<td>Shared</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA® GeForce® MX450</td>
<td>Discrete</td>
<td>2GB GDDR6</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

Notes:
1. Intel Iris Xe Graphics capability requires system to be configured with Intel Core i5 or i7 processor and dual-channel memory. On the system with Intel Core i5 or i7 processor and single-channel memory, Intel Iris Xe Graphics will function as Intel UHD graphics

Monitor Support

Monitor Support[1]

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[1]

- 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
Notes:
1. The max memory is based on the test results with current Lenovo\textsuperscript{\textregistered} memory offerings. The system may support more memory as the technology develops.

### Storage

#### Storage Support
One drive, up to 256GB M.2 2242 SSD or 2TB M.2 2280 SSD

#### Storage Slot
One M.2 2280 PCIe Gen 3x4 slot, supports M.2 2242/2280 SSD

#### Storage Type\textsuperscript{[1]}

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2242 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td></td>
</tr>
<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>Opal 2.0</td>
</tr>
</tbody>
</table>

Notes:
1. The SSD with PCI 4.0x4 performance is downgraded to closer to PCIe 3.0x4 performance due to the system slot limitation

### Removable Storage

#### Optical
None

#### Card Reader
MicroSD card reader

### Multi-Media

#### Audio Chip
High Definition (HD) Audio, Realtek\textsuperscript{\textregistered} ALC3287 codec

#### Speakers
Stereo speakers, 2W x2, Dolby\textsuperscript{\textregistered} Audio\textsuperscript{™}

#### Microphone\textsuperscript{[1]}
- Dual array microphone, far-field
- No microphone

#### Camera\textsuperscript{[2]}
- 720p, with privacy shutter, fixed focus
- IR & 720p hybrid, with privacy shutter, fixed focus
- No camera

Notes:
1. No microphone is for special bid only

### Battery

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

#### Max Battery Life\textsuperscript{[3]}
MobileMark\textsuperscript{\textregistered} 2018: 12 hr
JEITA 2.0: 16.8 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**[*1*]
- 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
2. In EMEA only 65W USB-C AC adapter is available

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&quot; FHD</td>
<td>(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&quot; FHD</td>
<td>(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&quot; UHD</td>
<td>(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>

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[*3]

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHD non-touch model with aluminium top cover</td>
<td>1.79 kg (3.96 lbs)</td>
</tr>
<tr>
<td>FHD non-touch model with PPS top cover</td>
<td>1.82 kg (4.02 lbs)</td>
</tr>
<tr>
<td>FHD touch model with aluminium top cover</td>
<td>1.81 kg (3.999 lbs)</td>
</tr>
</tbody>
</table>
### Case Color
- Black
- Storm grey

### Surface Treatment
- ISO 22196 compliant anti-microbial surface treatment (not including keyboard, display, and display bezel)
- Not anti-microbial surface treatment

### Case Material
- Aluminium (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)
- PPS / 50% GF (top), PC + ABS / Talc15 + magnesium alloy (keyboard cover), PA / 50% GF (bottom)

### Notes:
1. The system weight varies depending on configurations
2. Storm grey case is NOT available in EMEA

### CONNECTIVITY

#### Network

**Onboard Ethernet**
- Gigabit Ethernet, Intel Ethernet Connection I219-LM (vPro models)
- Gigabit Ethernet, Intel Ethernet Connection I219-V (non-vPro models)
- No Ethernet

**WLAN + Bluetooth®**
- 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

**WWAN**
- Wireless WAN upgradable to 4G
- Integrated Mobile Broadband 4G LTE, Quectel EM120R-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**
No SIM card inbox

**NFC**
- Near Field Communication
- No support

### Notes:
1. Intel WiFi 6 full features might be limited by country level restrictions
2. 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
3. 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 microSD card reader
- 1x Headphone / microphone combo jack (3.5mm)
- 1x Side docking connector

**Optional Ports**
- 1x Nano-SIM card slot (WWAN model)
- 1x Smart card reader
- 1x Ethernet (RJ-45)
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 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]
  - 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

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

ENVIRONMENTAL

Operating Environment

Temperature[^1]
• Operating: 5°C (41°F) to 35°C (95°F)
• 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)

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

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

Other Certifications

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

• 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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