# OVERVIEW

<table>
<thead>
<tr>
<th>1. Power button</th>
<th>7. HDMI 2.0b</th>
</tr>
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<tbody>
<tr>
<td>2. Headphone / microphone combo jack (3.5mm)</td>
<td>8. VGA</td>
</tr>
<tr>
<td>3. USB-C 3.2 Gen 1</td>
<td>9. 4x USB 2.0</td>
</tr>
<tr>
<td>4. USB 3.2 Gen 1</td>
<td>10. Ethernet (RJ-45)</td>
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<tr>
<td>5. USB 3.2 Gen 2</td>
<td>11. Optional ports on expansion cards</td>
</tr>
<tr>
<td>6. Audio line-out (3.5mm)</td>
<td>12. Power connector</td>
</tr>
</tbody>
</table>

**Notes:**
- Ports with * are only available on selected models
PERFORMANCE

Processor

Processor Family
12th 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 i5-12400</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 2.5GHz</td>
<td>P-core 4.4GHz</td>
<td>18MB</td>
<td>DDR4-3200</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i5-12400F</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 2.5GHz</td>
<td>P-core 4.4GHz</td>
<td>18MB</td>
<td>DDR4-3200</td>
<td>-</td>
</tr>
<tr>
<td>Core i7-12700</td>
<td>12 (8 P-core + 4 E-core)</td>
<td>20</td>
<td>P-core 2.1GHz / E-core 1.6GHz</td>
<td>P-core 4.8GHz / E-core 3.6GHz</td>
<td>25MB</td>
<td>DDR4-3200</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i7-12700F</td>
<td>12 (8 P-core + 4 E-core)</td>
<td>20</td>
<td>P-core 2.1GHz / E-core 1.6GHz</td>
<td>P-core 4.8GHz / E-core 3.6GHz</td>
<td>25MB</td>
<td>DDR4-3200</td>
<td>-</td>
</tr>
</tbody>
</table>

Operating System

Operating System
• Windows® 11 Home 64
• No operating system

Graphics

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Type</th>
<th>Memory</th>
<th>Connector</th>
<th>Max Resolution</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMD Radeon™ RX 6400</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>1x HDMI 2.1, 1x DP 1.4</td>
<td>7680x4320@60Hz(HDMI), 7680x4320@60Hz(DP)</td>
<td>DirectX® 12, OpenGL 4.6</td>
</tr>
<tr>
<td>AMD Radeon RX 6500XT</td>
<td>Discrete</td>
<td>4GB GDDR6</td>
<td>1x HDMI 2.1, 1x DP 1.4</td>
<td>7680x4320@60Hz(HDMI), 7680x4320@60Hz(DP)</td>
<td>DirectX® 12, OpenGL 4.6</td>
</tr>
<tr>
<td>NVIDIA® GeForce GTX 1650 SUPER</td>
<td>Discrete</td>
<td>4GB GDDR5</td>
<td>1x HDMI 2.0b, 2x DP 1.4</td>
<td>4096x2160@60Hz(HDMI), 5120x3200@60Hz(DP)</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA GeForce GTX 1660 SUPER</td>
<td>Discrete</td>
<td>6GB GDDR6</td>
<td>1x DVI, 1x HDMI 2.0b, 1x DP 1.4</td>
<td>4096x2160@60Hz(HDMI), 5120x3200@60Hz(DP), 2560x1660@60Hz(DVI)</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX™ 3060 Ti</td>
<td>Discrete</td>
<td>12G GDDR6</td>
<td>3x DP 1.4a, 1x HDMI 2.1</td>
<td>7680x4320@60Hz(HDMI), 5120*2880@60Hz(DP)</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 3060 Ti</td>
<td>Discrete</td>
<td>8G GDDR6</td>
<td>3x DP 1.4a, 1x HDMI 2.1</td>
<td>7680x4320@60Hz(HDMI), 7680*4320@120Hz(DP)</td>
<td>DirectX® 12</td>
</tr>
</tbody>
</table>

Notes:
1. The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support
Supports up to 2 independent displays via onboard ports (VGA and HDMI), more displays support via discrete graphics

Chipset

Chipset
Intel B660 chipset

Memory

Max Memory(1)
Up to 32GB DDR4-3200
Memory Slots
Two DDR4 UDIMM slots, dual-channel capable

Memory Type
DDR4-3200

Memory Protection
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
Up to three drives, 2x 3.5" HDD + 1x M.2 SSD
• 3.5" HDD up to 2TB
• M.2 SSD up to 1TB

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>3.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe® NVMe®, PCIe 3.0 x4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe® NVMe, PCIe 4.0 x4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

RAID
No support

Notes:
1. The storage capacity supported is based on the test results with current Lenovo storage offerings. The system may support larger storage as the technology develops.

Removable Storage

Optical
None

Card Reader
No card reader

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC623-CG codec

Speakers
No speakers

Power Supply

Power Supply

<table>
<thead>
<tr>
<th>Power</th>
<th>Type</th>
<th>Efficiency</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>300W</td>
<td>Fixed</td>
<td>85%</td>
<td>100-240V, 50-60Hz</td>
</tr>
<tr>
<td>310W</td>
<td>Fixed</td>
<td>92%</td>
<td>100-240V, 50-60Hz</td>
</tr>
<tr>
<td>380W</td>
<td>Fixed</td>
<td>92%</td>
<td>-</td>
</tr>
<tr>
<td>500W</td>
<td>Fixed</td>
<td>92%</td>
<td>100-240V, 50-60Hz</td>
</tr>
</tbody>
</table>

DESIGN

Input Device
Keyboard
Lenovo Calliope Keyboard (USB connector), black
- No keyboard

Mouse
- Lenovo Calliope Mouse (USB connector), black
- No mouse

**Mechanical**

**Form Factor**
Tower (17L)

**Dimensions (WxDxH)**
170 x 304 x 376 mm (6.69 x 11.97 x 14.8 inches)

**Packaging Dimensions (WxDxH)**
240 x 395 x 530 mm (9.45 x 15.55 x 20.87 inches)

**Weight**
8.4 kg (18.52 lbs)

**Packaging Weight**
All models: 11.5 kg (25.35 lbs)

**Case Color**
Raven black

**Bays**
2x 3.5" disk bay

**Expansion Slots**
- One PCIe 4.0 x1, full height
- One PCIe 4.0 x16, full height
- Two M.2 slots (one for WLAN, one for SSD)

**Cooling System (Fan & Cooler)**
- (Optional) 1x front system fan, 1x rear system fan
- (Optional) 1x rear system fan

**CONNECTIVITY**

**Network**

**Onboard Ethernet**
Gigabit Ethernet, 1x RJ-45

**WLAN + Bluetooth**
- 802.11ac 2x2 Wi-Fi® + Bluetooth 5.0, M.2 card
- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

Notes:
1. Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitation

**Ports**

**Front Ports**
- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 2
- 1x USB-C® 3.2 Gen 1 (support data transfer and 5V@3A charging)
- 1x headphone / microphone combo jack (3.5mm)

**Rear Ports**
- 4x USB 2.0
- 1x VGA
- 1x HDMI 2.0b
- 1x Ethernet (RJ-45)
- 1x headphone (3.5mm)
- 1x power connector
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™ 3/4: 40 Gbit/s
2. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security

Security Chip
Firmware TPM 2.0 integrated in chipset

BIOS Security
- Administrator password
- Power-on password
- Hard disk password

SERVICE

Warranty

Base Warranty
- 1-year mail-in service
- 1-year depot service
- 1-year limited onsite service
- 2-year depot service
- 3-year depot service
- 2-year depot service
- OB

Notes:
1. More information of warranty policy, please access https://pcsupport.lenovo.com/warranty

ENVIRONMENTAL

Operating Environment

Temperature
- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

Humidity
- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude
- Operating: 0 m (0 ft) to 3048 m (10,000 ft)
- Storage: 0 m (0 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications
- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- RoHS compliant
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