## OVERVIEW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Power button</td>
</tr>
<tr>
<td>2.</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
<tr>
<td>3.</td>
<td>USB-C 3.2 Gen 1</td>
</tr>
<tr>
<td>4.</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>5.</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>6.</td>
<td>Card reader</td>
</tr>
<tr>
<td>7.</td>
<td>Line-out (3.5mm)</td>
</tr>
<tr>
<td>8.</td>
<td>HDMI 1.4b</td>
</tr>
<tr>
<td>9.</td>
<td>VGA</td>
</tr>
<tr>
<td>10.</td>
<td>2x USB 2.0</td>
</tr>
<tr>
<td>11.</td>
<td>Ethernet (RJ-45)</td>
</tr>
<tr>
<td>12.</td>
<td>2x USB 2.0</td>
</tr>
<tr>
<td>13.</td>
<td>Optional ports on expansion cards</td>
</tr>
<tr>
<td>14.</td>
<td>Optional ports on expansion cards</td>
</tr>
</tbody>
</table>

**Notes:**
- Ports with * are only available on selected models
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 i5-10400</td>
<td>6</td>
<td>12</td>
<td>2.9GHz</td>
<td>4.3GHz</td>
<td>12MB</td>
<td>DDR4-2666</td>
<td>Intel UHD Graphics 630</td>
</tr>
<tr>
<td>Core i5-10400F</td>
<td>6</td>
<td>12</td>
<td>2.9GHz</td>
<td>4.3GHz</td>
<td>12MB</td>
<td>DDR4-2666</td>
<td>-</td>
</tr>
<tr>
<td>Core i7-10700</td>
<td>8</td>
<td>16</td>
<td>2.9GHz</td>
<td>4.8GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics 630</td>
</tr>
<tr>
<td>Core i7-10700F</td>
<td>8</td>
<td>16</td>
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<td>4.8GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>-</td>
</tr>
</tbody>
</table>

Operating System

Operating System
- Windows® 10 Home 64
- Windows 10 Pro 64

Graphics

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>NVIDIA® GeForce® GTX 1650 SUPER</td>
<td>Discrete</td>
<td>4GB</td>
<td>1x HDMI 2.0b, 2x DP 1.4</td>
<td>7680x4320 @60Hz(DP)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce GTX 1660 SUPER</td>
<td>Discrete</td>
<td>6GB</td>
<td>1x DVI, 1x HDMI 2.0b, 1x DP 1.4</td>
<td>7680x4320 @60Hz(DP)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX™ 2060 CD</td>
<td>Discrete</td>
<td>6GB</td>
<td>1x HDMI 2.0b, 3x DP 1.4</td>
<td>4096x2160@60Hz(HDMI), 7680x4320@60Hz with DSC(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 B460 chipset

Memory

Max Memory
Up to 32GB DDR4-2933

Memory Slots
Two DDR4 UDIMM slots, dual-channel capable

Memory Type
- DDR4-2666
- DDR4-2933

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.
2. Installed memory is actually 2666MHz or 2933MHz, but may run at 2666MHz or 2933MHz depending on the memory support capability of processor

### Storage

#### Storage Support
Up to 2 drives, 1x 3.5" HDD + 1x M.2 SSD
- 3.5" HDD up to 1TB
- M.2 SSD up to 512GB

<table>
<thead>
<tr>
<th>Storage Type</th>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</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 2242 SSD</td>
<td>PCIe NVMe</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### RAID
No support

### Removable Storage

#### Optical
None

#### Card Reader
- 3-in-1 card reader (SD, SDHC, SDXC)
- No card reader

### Multi-Media

#### Audio Chip
High Definition (HD) Audio, Realtek® ALC222-CG codec

### 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>310W</td>
<td>Fixed</td>
<td>92%</td>
<td>100V - 240V</td>
</tr>
<tr>
<td>380W</td>
<td>Fixed</td>
<td>92%</td>
<td>100V - 240V</td>
</tr>
</tbody>
</table>

### DESIGN

#### Input Device

##### Keyboard
Lenovo Calliope Keyboard (USB connector), black

##### Mouse
Lenovo Calliope Mouse (USB connector), black

### Mechanical

#### Form Factor
Tower (13.6L)

#### Dimensions (WxDxH)
145 x 292.2 x 365 mm (5.71 x 11.5 x 14.37 inches)

#### Weight
5.8 kg (12.79 lbs)

#### Case Color
Raven black

#### Bays
1x 2.5” disk bay
1x 3.5” disk bay

**Expansion Slots**
- One PCIe 3.0 x1, full height
- One PCIe 3.0 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

**CONNECTIVITY**

**Network**

**Onboard Ethernet**
Gigabit Ethernet, 1x RJ45

**WLAN + Bluetooth®**
- 802.11ac 2x2 Wi-Fi + Bluetooth 5.0, M.2 Card
- 802.11ax 2x2 Wi-Fi + Bluetooth 5.0, M.2 Card

**Ports**

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

**Optional Front Ports**
1x card reader

**Rear Ports**
- 4x USB 2.0
- 1x VGA
- 1x HDMI 1.4b
- 1x Ethernet (RJ-45)
- 1x headphone / microphone combo jack (3.5mm)

**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
2. For video ports on discrete graphics, please see graphics section

**SECURITY & PRIVACY**

**Security**

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

**SERVICE**

**Warranty**

**Base Warranty**
- 1-year mail-in service
• 1-year depot service
• 2-year depot service

ENVIRONMENTAL

Operating Environment

Temperature
Storage: -40°C (-40°F) to 60°C (140°F)

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

Altitude
• Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
• Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

• ENERGY STAR® 8.0 (on some models)
• ErP Lot 3
• RoHS compliant