**PERFORMANCE**

**Processor**

**Processor Family**

10th Generation Intel® Core™ i5 / i7 / i9 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 i7-10700K</td>
<td>8</td>
<td>16</td>
<td>3.8GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics 630</td>
</tr>
<tr>
<td>Core i7-10700KF</td>
<td>8</td>
<td>16</td>
<td>3.8GHz</td>
<td>5.1GHz</td>
<td>16MB</td>
<td>DDR4-2933</td>
<td>-</td>
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<td>16</td>
<td>3.6GHz</td>
<td>5.0GHz</td>
<td>16MB</td>
<td>DDR4-3200</td>
<td>Intel UHD Graphics 750</td>
</tr>
<tr>
<td>Core i9-10850K</td>
<td>10</td>
<td>20</td>
<td>3.6GHz</td>
<td>5.2GHz</td>
<td>20MB</td>
<td>DDR4-2933</td>
<td>Intel UHD Graphics 630</td>
</tr>
<tr>
<td>Core i9-10900K</td>
<td>10</td>
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</table>

**Notes:**
- 1. Intel UHD Graphics 630 in processor is disabled

**Operating System**

**Operating System**
- Windows® 10 Home 64
- Windows 10 Pro 64
- No operating system

**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® RTX™ 2060 CD</td>
<td>Discrete</td>
<td>6GB GDDR6</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>
<tr>
<td>NVIDIA GeForce RTX 2070 CD</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>1x HDMI 2.0b, 3x DP 1.4</td>
<td>7680x4320@60Hz(DP)</td>
<td>DirectX 12 VR ready</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 2070 SUPER</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>1x HDMI 2.0b, 1x USB Type-C Gen 2, 3x DP 1.4</td>
<td>7680x4320@60Hz(DP)</td>
<td>DirectX 12 VR ready</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), 7680x4320@60Hz(DP)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 3070</td>
<td>Discrete</td>
<td>8G GDDR6</td>
<td>3x DP 1.4a, 1x HDMI 2.1</td>
<td>7680x4320@60Hz(HDMI), 7680x4320@60Hz(DP)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 3080</td>
<td>Discrete</td>
<td>10G GDDR6X</td>
<td>3x DP 1.4a, 1x HDMI 2.1</td>
<td>7680x4320@60Hz(HDMI), 7680x4320@60Hz(DP)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>NVIDIA GeForce RTX 2080 SUPER</td>
<td>Discrete</td>
<td>8GB GDDR6</td>
<td>1x HDMI 2.0b, 3x DP 1.4</td>
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</tr>
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</table>

**Notes:**
- 1. Integrated graphics information and onboard video ports information are not applicable for all models without integrated graphics (for the details, please refer to processor section)

**Monitor Support**

**Monitor Support**

Supports up to 5 independent displays via discrete graphics ports** (DP, HDMI, USB-C 3.2 Gen2, and DVI)

**Notes:**
Ports may vary by the discrete graphics.

**Chipset**

*Chipset*

Intel Z490 chipset

**Memory**

**Memory Type**

- DDR4-3200
- DDR4-3200, Armor
- DDR4-3600, RGB Armor, XMP

**Memory Slots**

Four DDR4 UDIMM slots, dual-channel capable

**Memory Protection**

Non-ECC

**Max Memory**

Up to 128GB DDR4-2933

**Notes:**

1. Installed memory is actually 3200MHz or 3600MHz, but may run at 2933MHz depending on the memory support capability of the processor.
2. 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 4 drives, 2x 3.5” HDD + 2x M.2 SSD
- 3.5” HDD up to 2TB each
- M.2 SSD up to 1TB each

**RAID**

RAID 0/1/5 support

**Storage Type**

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>RPM</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5” SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</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>
</tr>
</tbody>
</table>

**Removable Storage**

**Optical**

- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

**Card Reader**

No card reader

**Multi-Media**

**Audio Chip**

High Definition (HD) Audio, Realtek® ALC892 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>550W</td>
<td>Fixed</td>
<td>88%</td>
<td>220V</td>
</tr>
<tr>
<td>650W</td>
<td>Fixed</td>
<td>90%</td>
<td>100V - 240V</td>
</tr>
</tbody>
</table>
850W | Fixed | 90% | 100V - 240V

**DESIGN**

**Input Device**

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

**Mouse**
- Lenovo Calliope Mouse (USB connector), black

**Mechanical**

**Form Factor**
- Tower (34L)

**Dimensions (WxDxH)**
- 211 x 450 x 483 mm (8.3 x 17.7 x 19 inches)

**Weight**
- 12.5 kg (27.6 lbs)

**Case Color**
- Raven black

**Bays**
- 2x 3.5” disk bay
- 4x 2.5” disk bay

**Expansion Slots**
- Two PCIe 3.0 x16
- Three PCIe 3.0 x1
- Three M.2 slots (one for WLAN, two for SSD)

**Cooling System (Fan&Cooler)**
- (Optional) Front system fan, rear system fan for airflow or liquid
- (Optional) Three front system fan with ARGB, one rear system fan with ARGB
- (Optional) Three front system fan with ARGB, one rear system fan with ARGB, two top system fan with ARGB
- (Optional) 150W side flow Air-Cooler, or 200W Liquid-Cooler

**System Lighting**
- Front panel light; optional ARGB cooler light and ARGB system fan light

**Others**
- Carry handle

**CONNECTIVITY**

**Network**

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

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

**Ports**

**Rear Ports**
- 4x USB 2.0
- 2x USB 3.2 Gen 1
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 2
- 1x Ethernet (RJ-45)
- 1x microphone in (pink)
• 1x line in (blue)
• 1x line out/one front output (green)
• 1x centre and subwoofer combine output (orange)
• 1x side surround output (grey)
• 1x rear surround output (black)
• 1x power connector

Top Ports
• 2x USB 2.0
• 2x USB 3.2 Gen 1
• 1x headphone (3.5mm)
• 1x microphone (3.5mm)

Notes:
1. For video ports on discrete graphics, please see graphics section

SECURITY & PRIVACY

Security
BIOS Security
• Power-on password
• Administrator password

SERVICE

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

CERTIFICATIONS

Green Certifications
Green Certifications
• ENERGY STAR® 8.0 (On some models)
• ErP Lot 3
• RoHS compliant