OVERVIEW

1. 2x USB 2.0
2. 2x USB 3.2 Gen 1
3. Headphone (3.5mm)
4. Power button
5. Microphone (3.5mm)
6. 4x USB 2.0
7. USB-C 3.2 Gen 2
8. USB 3.2 Gen 2
9. 2x USB 3.2 Gen 1
10. Ethernet (RJ-45)
11. 6x Audio line-out (3.5mm)
12. Optional ports on expansion cards
13. Power connector
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>
</tr>
<tr>
<td>Core i7-11700K</td>
<td>8</td>
<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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<td>5.3GHz</td>
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<td>DDR4-3200</td>
<td>-</td>
</tr>
</tbody>
</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>AMD Radeon™ RX 6800XT</td>
<td>Discrete</td>
<td>16GB GDDR6</td>
<td>1x HDMI 2.1, 3x DP 1.4, 1x USB-C 3.2 Gen2</td>
<td>7680x4320@120Hz (HDMI), 7680x4320@60Hz (DP)</td>
<td>DirectX® 12</td>
</tr>
<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 2080 SUPER</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 3060</td>
<td>Discrete</td>
<td>12G 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 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>
</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 5 independent displays via discrete graphics ports** (DP, HDMI, USB-C 3.2 Gen2, and DVI)

Notes:
1. 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 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&quot; 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 4.0 x4</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>
</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>
<tr>
<td>850W</td>
<td>Fixed</td>
<td>90%</td>
<td>100V - 240V</td>
</tr>
</tbody>
</table>

**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) Three front system fan with ARGB, one rear system fan with ARGB, two top system fan with ARGB
- (Optional) Three front system fan with ARGB, one rear system fan with ARGB
- (Optional) Front system fan, rear system fan for airflow or liquid
- (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. 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;
   - 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
• 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

ENVIRONMENTAL

Operating Environment
Temperature
Storage and transportation: -40°C to 55°C (-40°F to 131°F)

Humidity
Operating: 20% to 80% (non-condensing)
Storage: 20% to 93% (non-condensing)

Atmospheric Pressure
86 kPa to 106 kPa

CERTIFICATIONS

Green Certifications
Green Certifications

- ENERGY STAR® 8.0 (On some models)
- ErP Lot 3
- RoHS compliant