OVERVIEW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Headphone (3.5mm)</td>
</tr>
<tr>
<td>2.</td>
<td>USB 3.2 Gen 2</td>
</tr>
<tr>
<td>3.</td>
<td>2x Thunderbolt 4</td>
</tr>
<tr>
<td>4.</td>
<td>Ethernet (2.5GbE RJ-45)</td>
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<tr>
<td>5.</td>
<td>Ethernet (GbE RJ-45)</td>
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<tr>
<td>6.</td>
<td>3x DisplayPort</td>
</tr>
<tr>
<td>7.</td>
<td>4x USB 3.2 Gen 2</td>
</tr>
<tr>
<td>8.</td>
<td>Power connector</td>
</tr>
<tr>
<td>9.</td>
<td>Optional ports on expansion cards *</td>
</tr>
</tbody>
</table>

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

Processor

Processor Family
12th Generation Intel® Core™ i3 / i5 / i7 / i9 processor, supports processors up to 16 cores; up to 5.2GHz; up to 125W TDP

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 i3-12100</td>
<td>4 (4 P-core + 0 E-core)</td>
<td>8</td>
<td>P-core 3.3GHz</td>
<td>P-core 4.3GHz</td>
<td>12MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i3-12300</td>
<td>4 (4 P-core + 0 E-core)</td>
<td>8</td>
<td>P-core 3.5GHz</td>
<td>P-core 4.4GHz</td>
<td>12MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i5-12400T</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 1.8GHz</td>
<td>P-core 4.2GHz</td>
<td>18MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i5-12600</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 3.3GHz</td>
<td>P-core 4.8GHz</td>
<td>18MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<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>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i5-12500</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 3.0GHz</td>
<td>P-core 4.6GHz</td>
<td>18MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i5-12600K</td>
<td>10 (6 P-core + 4 E-core)</td>
<td>16</td>
<td>P-core 3.7GHz / E-core 2.8GHz</td>
<td>P-core 4.9GHz / E-core 3.6GHz</td>
<td>20MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</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>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i7-12700K</td>
<td>12 (8 P-core + 4 E-core)</td>
<td>20</td>
<td>P-core 3.6GHz / E-core 2.7GHz</td>
<td>P-core 4.9GHz / E-core 3.8GHz</td>
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<td>DDR5-4800</td>
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</tr>
<tr>
<td>Core i7-12700T</td>
<td>12 (8 P-core + 4 E-core)</td>
<td>20</td>
<td>P-core 1.4GHz / E-core 1.0GHz</td>
<td>P-core 4.6GHz / E-core 3.4GHz</td>
<td>25MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i9-12900</td>
<td>16 (8 P-core + 8 E-core)</td>
<td>24</td>
<td>P-core 2.4GHz / E-core 1.8GHz</td>
<td>P-core 5.0GHz / E-core 3.8GHz</td>
<td>30MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
<tr>
<td>Core i9-12900K</td>
<td>16 (8 P-core + 8 E-core)</td>
<td>24</td>
<td>P-core 3.2GHz / E-core 2.4GHz</td>
<td>P-core 5.1GHz / E-core 3.9GHz</td>
<td>30MB</td>
<td>DDR5-4800</td>
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<td>30MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 770</td>
</tr>
</tbody>
</table>

Processor Sockets
1x FCLGA1700

Operating System

Operating System**
- Windows® 11 Pro 64
- Windows 11 Home 64
- Windows 11 DG Windows 10 Pro 64
- Ubuntu Linux
- Red Hat Enterprise Linux (certified only)
- No operating system

Graphics

Integrated Graphics**
- Intel UHD Graphics 730
- Intel UHD Graphics 770

Discrete Graphics Support
Supports up to one NVIDIA® RTX A5000 Laptop GPU

Discrete Graphics Offering**
### Monitor Support

**Monitor Support**

Supports up to 8 independent displays, 4 via onboard ports (3x DP and 2x Thunderbolt™, simultaneously supports 4 display) and 4 via discrete graphics.

Onboard ports support (with max simultaneous displays):
- DP supports up to 4096x2160@60Hz
- Thunderbolt supports up to 5120x2880@60Hz

Discrete graphics ports support (with max simultaneous displays):
- miniDP supports up to 5120x2880@60Hz

### Chipset

**Chipset**

Intel W680 chipset

### Memory

#### Max Memory

Up to 128GB DDR5-3600

#### Memory Type

- DDR5-3600 ECC
- DDR5-3600 non-ECC
- DDR5-4000 ECC
- DDR5-4000 non-ECC

#### Memory Slots

Four DDR5 SO-DIMM slots, dual-channel capable

#### Memory Protection

ECC on models with ECC DIMMs and ECC capable processor

### 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. ThinkStation® P360 Ultra comes with DDR5-4800 memory and will run at DDR5-4000 or DDR5-3600 due to platform limitation: 4x 32GB or four memory DIMMs with WIFI configuration runs at DDR5-3600; other configurations run at DDR5-4000

### Storage

#### Storage Support

Up to 1x 2.5" HDD + 2x M.2 SSD
- 2.5" HDD up to 1TB
- M.2 SSD up to 4TB each

#### 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>2.5&quot; SATA HDD</td>
<td>SATA 6Gb/s</td>
<td>7.2K</td>
<td>1TB / 1TB FIPS</td>
<td></td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe® NVMe®, PCIe 4.0 x4 Performance</td>
<td>-</td>
<td>512GB / 1TB / 2TB / 4TB</td>
<td>Opal2</td>
</tr>
</tbody>
</table>

#### Storage Controllers

<table>
<thead>
<tr>
<th>Storage Controller</th>
<th>Type</th>
<th>Interface</th>
<th>RAID</th>
<th>Cache</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated NVMe controller</td>
<td>Standard</td>
<td>PCIe NVMe</td>
<td>0/1</td>
<td>None</td>
</tr>
<tr>
<td>Integrated SATA controller</td>
<td>Standard</td>
<td>SATA 6.0Gb/s</td>
<td>-</td>
<td>None</td>
</tr>
</tbody>
</table>
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.

**Multi-Media**

**Audio Chip**
High Definition (HD) Audio, Realtek® ALC897-Q codec

**Speakers**
Single speaker

**Power Supply**

<table>
<thead>
<tr>
<th>Power</th>
<th>Type</th>
<th>Efficiency</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>170W</td>
<td>Adapter</td>
<td>90%</td>
<td>100V - 240V</td>
</tr>
<tr>
<td>230W</td>
<td>Adapter</td>
<td>90%</td>
<td>100V - 240V</td>
</tr>
<tr>
<td>300W</td>
<td>Adapter</td>
<td>90%</td>
<td>100V - 240V</td>
</tr>
</tbody>
</table>

**DESIGN**

**Mechanical**

**Form Factor**
Mini-tower (3.9L)

**Dimensions (WxDxH)**
86 x 223 x 202 mm (3.4 x 8.7 x 7.9 inches)

**Weight**
3.6 kg (7.94 lbs, maximum configuration)

**Bays**
1x 2.5” disk bay (optional, comes with disk)

**M.2 Slots**
- Two M.2 PCIe Gen 4x4 slots (for SSD)
- One M.2 slot (for WLAN)

**Expansion Slots**
- One PCIe 4.0 x16
- One PCIe 3.0 x8 (x4 lanes)

**CONNECTIVITY**

**Network**

**Onboard Ethernet**
Two Ethernet, 2.5GbE + GbE, Intel Ethernet Connection I225-LM and I210-AT, 2x RJ-45, supports Wake-on-LAN

**Optional Ethernet**
Gigabit Ethernet, Intel I350-T2, 2x RJ-45, PCIe x4

**WLAN + Bluetooth®** *(1)*
- Intel Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- Intel Wi-Fi 6E AX211, 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** *(1)*

**Front Ports**
• 1x USB 3.2 Gen 2
• 2x Thunderbolt 4
• 1x headphone / microphone combo jack (3.5mm)

Rear Ports
• 1x Ethernet (GbE RJ-45)
• 1x Ethernet (2.5GbE RJ-45)
• 4x USB 3.2 Gen 2
• 3x DisplayPort™ 1.2

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
Discrete TPM 2.0, TCG certified

Physical Locks
Kensington® Security Slot, 3 x 7 mm

Chassis Intrusion Switch
Chassis intrusion switch

BIOS Security
• Administrator password
• Power-on password
• UEFI Secure Boot
• Self-healing BIOS

MANAGEABILITY

System Management
System Management
• Intel vPro Enterprise with Intel AMT 16.0
• Standard Manageability

Notes:
1. Intel vPro offers a superset of DASH’s defined capabilities.

SERVICE

Warranty
Base Warranty
• 1-year limited onsite service
• 2-year limited onsite service
• 3-year limited onsite service with 9x5 NBD (for most models)
• No base warranty

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

ENVIRONMENTAL
Operating Environment

Temperature
- Operating: 10°C (50°F) to 35°C (95°F)
- Storage: -40°C (-40°F) to 60°C (140°F)

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

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

CERTIFICATIONS

Green Certifications
- EPEAT™ Gold
- ENERGY STAR® 8.0
- TCO Certified 9.0
- RoHS compliant

Other Certifications
- Mil-Spec Test
  MIL-STD-810H military test in progress

ISV Certifications
- ISV Certifications
  Please visit ISV certifications for Lenovo Workstations

- 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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