## OVERVIEW

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
<tr>
<td>2</td>
<td>USB 3.2 Gen 2</td>
</tr>
<tr>
<td>3</td>
<td>USB 3.2 Gen 2 (Always On and fast charge)</td>
</tr>
<tr>
<td>4</td>
<td>USB-C 3.2 Gen 2</td>
</tr>
<tr>
<td>5</td>
<td>Power connector</td>
</tr>
<tr>
<td>6</td>
<td>DisplayPort 1.4</td>
</tr>
<tr>
<td>7</td>
<td>USB 3.2 Gen 1</td>
</tr>
<tr>
<td>8</td>
<td>HDMI 2.1 TMDS</td>
</tr>
<tr>
<td>9</td>
<td>USB 3.2 Gen 1 (with Smart Power On feature)</td>
</tr>
<tr>
<td>10</td>
<td>USB 3.2 Gen 2</td>
</tr>
<tr>
<td>11</td>
<td>USB 3.2 Gen 2</td>
</tr>
<tr>
<td>12</td>
<td>Ethernet (RJ-45)</td>
</tr>
<tr>
<td>13</td>
<td>2 Optional ports or 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

<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>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 i3-12100T</td>
<td>4 (4 P-core + 0 E-core)</td>
<td>8</td>
<td>P-core 2.2GHz</td>
<td>P-core 4.1GHz</td>
<td>12MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i3-12300T</td>
<td>4 (4 P-core + 0 E-core)</td>
<td>8</td>
<td>P-core 2.3GHz</td>
<td>P-core 4.2GHz</td>
<td>12MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i3-12300T</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 i5-12500T</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 730</td>
</tr>
<tr>
<td>Core i5-12500T</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 2.0GHz</td>
<td>P-core 4.4GHz</td>
<td>18MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
<tr>
<td>Core i5-12600T</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>
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</tr>
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<td>Core i5-12600T</td>
<td>6 (6 P-core + 0 E-core)</td>
<td>12</td>
<td>P-core 2.1GHz</td>
<td>P-core 4.6GHz</td>
<td>18MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</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 730</td>
</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 730</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 730</td>
</tr>
<tr>
<td>Core i9-12900T</td>
<td>16 (8 P-core + 8 E-core)</td>
<td>24</td>
<td>P-core 1.4GHz / E-core 1.0GHz</td>
<td>P-core 4.8GHz / E-core 3.6GHz</td>
<td>30MB</td>
<td>DDR5-4800</td>
<td>Intel UHD Graphics 730</td>
</tr>
</tbody>
</table>

**Processor Sockets**

1x FCLGA1700

### Operating System

**Operating System**

- Windows® 11 Home 64
- Windows 11 Home 64 Single Language
- Windows 11 DG Windows 10 Pro 64
- Ubuntu Linux LTS
- Red Hat Enterprise Linux 8.6 (certified only, Red Hat Enterprise Linux 8.7 available in late 2022, for detailed and latest information, please visit [Red Hat Certified Hardware](#))
- No operating system

### Graphics

**Integrated Graphics**

- Intel UHD Graphics 730
Discrete Graphics Support
Supports up to one NVIDIA® T1000 on models with 35W processor

Discrete Graphics Offering

<table>
<thead>
<tr>
<th>Graphics</th>
<th>Memory</th>
<th>Power</th>
<th>Connector</th>
<th>SLI / NVlink</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVIDIA T4000 4GB</td>
<td>4GB GDDR6</td>
<td>40W</td>
<td>3x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>NVIDIA T600 4GB</td>
<td>4GB GDDR6</td>
<td>40W</td>
<td>4x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>NVIDIA T1000 4GB</td>
<td>4GB GDDR6</td>
<td>50W</td>
<td>4x miniDP 1.4</td>
<td>None</td>
</tr>
<tr>
<td>NVIDIA T1000 8GB</td>
<td>8GB GDDR6</td>
<td>50W</td>
<td>4x miniDP 1.4</td>
<td>None</td>
</tr>
</tbody>
</table>

Monitor Support

Monitor Support
Onboard graphics supports up to 4 independent displays via (onboard DP, onboard HDMI®, punch out port 1 [VGA / HDMI / DP / USB-C®], and punch out port 2 [VGA / HDMI / DP]); the number of maximum monitors also depends on the discrete graphic card in use

Chipset

Chipset
Intel Q670 chipset

Memory

Max Memory
Up to 64GB DDR5-4800

Memory Type
DDR5-4800 non-ECC

Memory Slots
Two DDR5 SO-DIMM slots, dual-channel capable

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 two drives, 2x M.2 SSD, up to 2TB 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>M.2 2280 SSD</td>
<td>PCIe® NVMe®, PCIe 4.0 x4 Performance</td>
<td>-</td>
<td>256GB / 512GB / 1TB / 2TB</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>
</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.

Removable Storage

Optical Support
Optional one 9.0mm optical drive via optical drive kit, DVD-ROM or DVD±RW

Multi-Media

Audio Chip
High Definition (HD) Audio, Realtek® ALC256VB codec

**Speakers**
- Single speaker
- Single speaker, premium

**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>
</tbody>
</table>

**DESIGN**

**Mechanical**

**Form Factor**
Tiny (1L)

**Dimensions (WxDxH)**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiny only</td>
<td>179 x 182.9 x 37mm with rubber feet (7.05 x 7.2 x 1.5 inches with rubber feet)</td>
</tr>
<tr>
<td>Tiny &amp; ODD</td>
<td>204.2 x 186.6 x 64 mm with rubber feet (8.04 x 7.35 x 2.52 inches with rubber feet)</td>
</tr>
</tbody>
</table>

**Weight**

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiny only</td>
<td>1.4 kg (3 lbs, maximum configuration)</td>
</tr>
</tbody>
</table>

**Bays**
No bays

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

**Expansion Slots**
One PCIe 4.0 x8, low-profile

**CONNECTIVITY**

**Network**

**Onboard Ethernet**
Gigabit Ethernet, Intel Ethernet Connection I219-LM, 1x RJ-45, supports Wake-on-LAN

**Optional Ethernet**
One additional ethernet adapter support, up to one additional 2.5 GbE port
- Gigabit Ethernet, Intel I350-T2, 2x RJ-45, PCIe x4
- Gigabit Ethernet, Intel I350-T4, 4x RJ-45, PCIe x4
- 2.5 Gigabit Ethernet, Realtek RTL8125BGS, 1x RJ-45, PCIe x1

**WLAN + Bluetooth®**
- AMD RZ2616, Wi-Fi® 6E, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek Wi-Fi 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card
- Intel Wi-Fi 6E AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, 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 2
- 1x USB 3.2 Gen 2 (Always On and 5V@2.1A charging)
- 1x USB-C 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)

**Rear Ports**
- 2x USB 3.2 Gen 1 (one supports Smart Power On)
- 2x USB 3.2 Gen 2
- 1x HDMI 2.1 TMDS
- 1x DisplayPort™ 1.4
- 1x Ethernet (RJ-45)

**Optional Rear Ports**
- Punch out port 1 (one of VGA / DisplayPort / HDMI / serial / USB-C 3.2 Gen 1 with DisplayPort and PD 3.0 functions)
- 1x USB-C 3.2 Gen 1 (DP and PD)
- 2x USB 3.2 Gen 1 (occupies port 1 and 2)
- 1x 2.5GbE RJ-45, via RTL8125BGS
- 2x GbE RJ-45, via I350-T2
- 4x GbE RJ-45, via I350-T4
- 1x Thunderbolt™ 4
- Punch out port 2 (one of VGA / DisplayPort / HDMI / serial / RJ-45)

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
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Certificate based BIOS management
- Cover presence switch
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

**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.
2. 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
- No base warranty

Notes:

**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
- ErP Lot 3
- TCO Certified 9.0
- RoHS compliant

**Other Certifications**
- Mil-Spec Test
  - MIL-STD-810H military test passed

**ISV Certifications**
- Please visit [ISV certifications for Lenovo Workstations](https://support.lenovo.com)

- 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
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