## OVERVIEW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Power connector</td>
</tr>
<tr>
<td>2.</td>
<td>HDMI (for 8145UE models) / DP (for others)</td>
</tr>
<tr>
<td>3.</td>
<td>USB 3.2 Gen 2 (USB 2.0 for Celeron models)</td>
</tr>
<tr>
<td>4.</td>
<td>USB-C 3.2 Gen 2 (display and power-in)</td>
</tr>
<tr>
<td>5.</td>
<td>2x Ethernet (1x Ethernet for Celeron)</td>
</tr>
<tr>
<td>6.</td>
<td>Kensington Security Slot</td>
</tr>
<tr>
<td>7.</td>
<td>Power button</td>
</tr>
<tr>
<td>8.</td>
<td>2x Serial (RS232)</td>
</tr>
<tr>
<td>9.</td>
<td>USB-C 3.2 Gen 2</td>
</tr>
<tr>
<td>10.</td>
<td>2x USB 3.2 Gen 2</td>
</tr>
<tr>
<td>11.</td>
<td>Headphone / microphone combo jack (3.5mm)</td>
</tr>
</tbody>
</table>
PERFORMANCE

Processor

Processor Family
Intel® Celeron® or 8th Generation Intel Core™ i3 / i5 Processor

Processor**[1]

<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>Celeron 4205U</td>
<td>2</td>
<td>2</td>
<td>1.8GHz</td>
<td>-</td>
<td>2MB</td>
<td>DDR4-2133</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Celeron 4305UE</td>
<td>2</td>
<td>2</td>
<td>2.0GHz</td>
<td>-</td>
<td>2MB</td>
<td>DDR4-2133</td>
<td>Intel UHD Graphics 610</td>
</tr>
<tr>
<td>Core i3-8145U</td>
<td>2</td>
<td>4</td>
<td>2.1GHz</td>
<td>3.9GHz[2]</td>
<td>4MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
<tr>
<td>Core i3-8145UE</td>
<td>2</td>
<td>4</td>
<td>2.2GHz</td>
<td>3.9GHz[3]</td>
<td>4MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics 620</td>
</tr>
<tr>
<td>Core i5-8365U</td>
<td>4</td>
<td>8</td>
<td>1.6GHz</td>
<td>4.1GHz[4]</td>
<td>6MB</td>
<td>DDR4-2400</td>
<td>Intel UHD Graphics</td>
</tr>
</tbody>
</table>

Notes:
[1] Celeron 4205U, Core i3-8145U and Core i5-8365U have been already end of life and not available any more.
[2], [3], [4] Intel Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see http://www.intel.com/technology/turboboost/ for more information.

Operating System

Operating System**
- FreeDOS
- Ubuntu Linux[1]
- Windows® 10 Home 64
- Windows 10 Home 64 Single Language
- Windows 10 IoT Enterprise
- Windows 10 Pro 64
- No operating system

Notes:
[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, Human Presence Detection, etc.

Graphics

Graphics**[1]

<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>Intel UHD Graphics 610</td>
<td>Integrated</td>
<td>Shared</td>
<td>1x DP, 1 USB-C*</td>
<td>4096x2304@60Hz(DP); 4096x2304@60Hz(USB-C)</td>
<td>DirectX® 12</td>
</tr>
<tr>
<td>Intel UHD Graphics 620</td>
<td>Integrated</td>
<td>Shared</td>
<td>1x HDMI*, 1 USB-C</td>
<td>4096x2304@60Hz(USB-C)</td>
<td>DirectX 12</td>
</tr>
<tr>
<td>Intel UHD Graphics</td>
<td>Integrated</td>
<td>Shared</td>
<td>1x DP, 1 USB-C</td>
<td>4096x2304@60Hz(DP), 4096x2304@60Hz(USB-C)</td>
<td>DirectX 12</td>
</tr>
</tbody>
</table>

Notes:
[1] The Intel UHD Graphics which is integrated in Celeron 4205U, Core i3-8145U, or Core i5-8365U is not available any more, because those CPUs have been already end of life.

Monitor Support

Monitor Support
Supports up to 2 independent displays via onboard ports (DisplayPort™ and USB-C, 8145UE models support HDMI and USB-C)

Chipset

ThinkCentre M90n-1 Nano IoT - October 31 2023
Chipset
Intel SoC (System on Chip) platform

Memory
Max Memory[^1]
- 4GB soldered memory, not upgradable
- 8GB soldered memory, not upgradable
Memory Slots
Memory soldered to system board, no slots
Memory Type[^2]
DDR4-2666

Notes:
[^1] The max memory is based on the test results with current Lenovo® memory offerings.
[^2] Installed memory is actually 2666MHz, but runs at 2133MHz or 2400MHz depending on the memory support capability of processor.

Storage
Storage Support[^3]
Up to two drives, 2x M.2 SSD
- M.2 SSD up to 1TB each
- Optional Intel Optane™ Memory Integrated with SSD, M.2
Storage Type***

<table>
<thead>
<tr>
<th>Disk Type</th>
<th>Interface</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.2 2242 SSD</td>
<td>PCIe NVMe®, PCIe 3.0 x2</td>
<td>-</td>
</tr>
<tr>
<td>M.2 2280 SSD</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>Opal</td>
</tr>
<tr>
<td>Intel Optane Memory with Solid State Storage, M.2 2280</td>
<td>PCIe NVMe, PCIe 3.0 x4</td>
<td>-</td>
</tr>
</tbody>
</table>

RAID
RAID 0/1 support for M.2 SSDs (RAID preset only available via special bid models)

Notes:
[^3] The max capacity of each disk type is based on the test results with current Lenovo storage offerings.

Removable Storage
Optical
None
Card Reader
No card reader

Multi-Media
Audio Chip
High Definition (HD) Audio, Realtek® ALC233VB codec
Speakers
Single speaker, 1W x1

Power Supply
Power Supply**

<table>
<thead>
<tr>
<th>Power</th>
<th>Type</th>
<th>Efficiency</th>
<th>Key Features</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>65W</td>
<td>Adapter</td>
<td>88%</td>
<td>100-240 VAC, wide temperature</td>
<td>129 x 53 x 30 mm, 1800 mm cable</td>
</tr>
<tr>
<td>65W</td>
<td>Adapter</td>
<td>88%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No power supply</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### Input Device

**Keyboard**
- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Traditional Keyboard (USB connector), black
- No keyboard

**Mouse**
- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black (EOL on Jan, 2023)
- No mouse

### Mechanical

**Form Factor**
Nano (0.55L)

**Dimensions (WxDxH)**

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nano only</td>
<td>179 x 88 x 34.5 mm (7.05 x 3.46 x 1.36 inches)</td>
</tr>
<tr>
<td>Nano with IO box</td>
<td>179 x 88 x 61.3 mm (7.05 x 3.46 x 2.41 inches)</td>
</tr>
</tbody>
</table>

**Packaging Dimensions (WxDxH)**
490 x 125 x 255 mm (19.29 x 4.92 x 10.04 inches)

**Weight**

<table>
<thead>
<tr>
<th>Models</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nano only</td>
<td>Around 0.72 kg (1.58 lbs)</td>
</tr>
<tr>
<td>Nano with IO box</td>
<td>Around 1.2 kg (2.65 lbs)</td>
</tr>
</tbody>
</table>

**Packaging Weight**
0.83 kg (1.83 lbs)

**Case Color**
Iron grey (top cover), black (mid bezel), black (bottom cover)

**Bays**
No bays

**Expansion Slots**
Three M.2 slots (one for WLAN, two for SSD)

**Stand**
No stand

**IO Box**
- IO box: 2x serial (RS232 / RS422 / RS485, SDK selectable) and 2x Ethernet (RJ-45, Realtek RTL8153B, gigabit Ethernet) on front, 1x DIO (4DI / 4DO), 1x USB-C (connect to Nano) and 1x DC-in connector (9V - 36V) on rear
- No IO box

**Mounting**
- VESA mount bracket kit with adapter holder, supports VESA mount 75mm and 100mm
- VESA mount bracket kit, supports VESA mount 75mm and 100mm
- DIN rail mount bracket kit
- None

---

**Notes:**

[1] The system dimensions may vary depending on configurations.
[2] The system weight is approximate and based on results in Lenovo lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.
**Network**

**Onboard Ethernet**
- Gigabit Ethernet, Realtek RTL8111K, 1x RJ-45, supports Wake-on-LAN
- Two Gigabit Ethernet, Intel Ethernet Connection I219-LM and Realtek RTL8111H, 2x RJ-45, supports Wake-on-LAN
- Two Gigabit Ethernet, Realtek RTL8111K and RTL8111H, 2x RJ-45, supports Wake-on-LAN

**Optional Ethernet**
- No optional Ethernet

**WLAN + Bluetooth**
- 802.11ac 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9462, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro® technology support, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- No WLAN and Bluetooth

**WWAN**
- Intel XMM 7360, 4G CAT9, M.2 Card
- No support

**Ports**

**Front Ports**
- 1x USB-C 3.2 Gen 2
- 2x USB 3.2 Gen 2
- 1x headphone / microphone combo jack (3.5mm)
- 2x serial (RS-232)

**Optional Front Ports**
- 2x gigabit Ethernet (RJ-45) on SE30 IO box
- 2x serial (RS232 / RS422 / RS485, SDK selectable) on SE30 IO box

**Rear Ports**
- 1x USB-C 3.2 Gen 2 (support display function and power-in [20V and >45W])
- 1x USB 2.0 (for Celeron models)
- 1x USB 3.2 Gen 2 (for i3 / i5 models only)
- 1x HDMI (for 8145UE models)
- 1x DisplayPort (for 4205U / 4305UE / 8145U / 8365U models)
- 1x Ethernet (RJ-45, for Celeron models)
- 2x Ethernet (RJ-45, for i3 / i5 models)

**Optional Rear Ports**
- 1x DC-in 3pin Phoenix connector on SE30 IO box
- 1x DIO (4DI / 4DO) on SE30 IO box

**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;
- USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
- USB4 40Gbps (USB 40Gbps): 40 Gbit/s;
- Thunderbolt™ 3/4: 40 Gbit/s.

**Monitor Cable**

**Monitor Cable**
- USB-C to DP dongle
- USB-C to HDMI dongle
- USB-C to VGA dongle
- DP to VGA dongle
- DP to HDMI dongle
- No monitor cable
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

Fingerprint Reader
• Touch style fingerprint reader on mouse (EOL on Jan, 2023)
• No fingerprint reader

BIOS Security
• Administrator password
• Power-on password
• Hard disk password
• Boot sequence control
• Boot without keyboard and mouse
• Individual USB port disablement

MANAGEABILITY

System Management
System Management
• Intel vPro
• Non-vPro

Notes:
[1] Intel vPro offers a superset of DASH's defined capabilities.

SERVICE

Warranty

Base Warranty
• 1-year limited onsite service
• 3-year limited onsite service
• No base warranty

Notes:
[1] The warranty upgrades may be bundled with some models, please check the "Included upgrade" column in the specific model's configurations. For more service extensions, please go to https://smartfind.lenovo.com/. To learn more details of warranty policy, please access https://pcsupport.lenovo.com/warranty.

ENVIRONMENTAL

Operating Environment

Temperature
• Operating:
  - From 0°C (32°F) to 50°C (122°F): for the machine types of 11AK, 11AL, 11AM, 11AS, 11J3, 11J4, 11J7, and 11J8
  - From 0°C (32°F) to 35°C (95°F): for the machine types of 11AH and 11AJ
• Storage: -40°C (-40°F) to 60°C (140°F)

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

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

CERTIFICATIONS

Green Certifications

- ENERGY STAR® 8.0
- EPEAT™ Silver Registered
- ErP Lot 3
- REACH
- RoHS compliant
- TCO Certified 8.0
- WEEE

Notes:
[1] The items listed under the “Green Certifications” section may not only refer to certification but also registration or self-declaration.
[2] Energy Star 8.0 and EPEAT are not available for the models with I/O box, No OS, or Free DOS.
[3] EPEAT is registered where applicable, please see https://www.epeat.net for registration status by country.

Other Certifications

- (Optional) TÜV Rheinland® Low Noise
- (Optional) TÜV Rheinland Ultra Low Noise

Mil-Spec Test

- MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Fungus, Solar Radiation)
- None

Notes:
[1] Not for the models with I/O box.

- 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.
- Lenovo reserves the right to change specifications or other product information without notice. Lenovo is not responsible for photographic or typographical errors. LENOVO PROVIDES THIS PUBLICATION “AS IS,” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore this disclaimer may not apply to you.
- The specifications on this page may not be available in all regions, and may be changed or updated without notice.