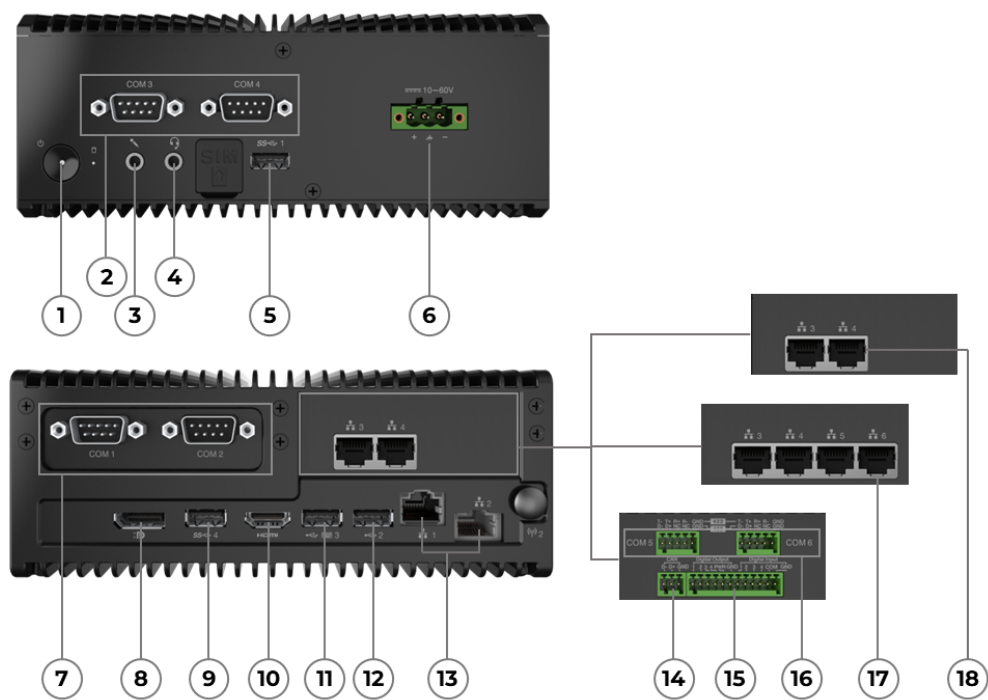


OVERVIEW



|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| 1. Power button                              | 10. HDMI                                         |
| 2. 2x Serial (RS232) *                       | 11. USB 2.0                                      |
| 3. Microphone jack (3.5mm)                   | 12. USB 2.0                                      |
| 4. Headphone / microphone combo jack (3.5mm) | 13. 2x Ethernet (RJ-45)                          |
| 5. USB 3.2 Gen 1                             | 14. CAN BUS on industry card *                   |
| 6. Power connector                           | 15. DIO (4DIx4DO) on industry card *             |
| 7. 2x Serial (RS232)                         | 16. 2x Serial (RS422 / RS485) on industry card * |
| 8. DisplayPort                               | 17. 4x Ethernet (RJ-45) *                        |
| 9. USB 3.2 Gen 1                             | 18. 2x Ethernet (RJ-45) *                        |

Notes:

- Items with \* are only available on selected models

PERFORMANCE

Processor

Processor Family

8th Generation Intel® Core™ i5 / i7 Processor

Processor\*\*

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics      |
|----------------|-------|---------|----------------|---------------|-------|----------------|-------------------------|
| Core i5-8365UE | 4     | 8       | 1.6GHz         | 4.1GHz        | 6MB   | DDR4-2400      | Intel® UHD Graphics 620 |
| Core i7-8665UE | 4     | 8       | 1.7GHz         | 4.4GHz        | 8MB   | DDR4-2400      | Intel® UHD Graphics 620 |

Operating System

Operating System\*\*

- Windows® 11 IoT Enterprise LTSC 2024
- Windows® 10 IoT Enterprise LTSC 2019
- Ubuntu Core 20 64 Bit (kernel 5.4)
- Ubuntu (Server) 20.04 LTS 64 Bit (kernel 5.4)
- No preload operating system

Graphics

Graphics

| Graphics            | Type       | Memory | Max Resolution                               | Connector       | Key Features |
|---------------------|------------|--------|----------------------------------------------|-----------------|--------------|
| Intel® UHD graphics | Integrated | Shared | 4096x2304@30Hz(HDMI®),<br>4096x2304@60Hz(DP) | 1x HDMI®, 1x DP | DirectX® 12  |

Monitor Support

Monitor Support

Supports up to 2 independent displays via onboard ports (DisplayPort™ and HDMI®)

Chipset

Chipset

Intel® SoC (System on Chip) platform

Memory

Max Memory

Up to 64GB DDR4-2400

Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

Memory Type<sup>[1]</sup>

DDR4-2400

Memory Protection

Non-ECC

Notes:

[1] Installed memory is actually DDR4-2666 but run as DDR4-2400 due to the memory support capability of processor.

Storage

Storage Support<sup>[1]</sup>

Up to two drives, 1x 2.5" HDD/SSD + 1x M.2 SSD

- 2.5" SSD up to 256GB
- M.2 SSD up to 2TB

Storage Type\*\*\*

| Disk Type | Interface | RPM | Security |
|-----------|-----------|-----|----------|
|-----------|-----------|-----|----------|

|               |                           |      |          |
|---------------|---------------------------|------|----------|
| 2.5" SATA HDD | SATA 6Gb/s                | 5.4K | -        |
| 2.5" SATA HDD | SATA 6Gb/s                | 7.2K | -        |
| 2.5" SATA SSD | SATA 6Gb/s                | -    | -        |
| M.2 2242 SSD  | PCIe® NVMe®, PCIe® 3.0 x2 | -    | -        |
| M.2 2280 SSD  | PCIe® NVMe®, PCIe® 3.0 x4 | -    | Opal     |
| M.2 2280 SSD  | PCIe® NVMe®, PCIe® 4.0 x4 | -    | Opal 2.0 |

Notes:

[1] 2.5" HDD is EOL

Power Supply

Power Supply

| Power           | Type    | Efficiency | Key Features | Dimensions                      |
|-----------------|---------|------------|--------------|---------------------------------|
| 65W             | Adapter | 89%        | 100-240V     | 129 x 53 x 30 mm, 1800 mm cable |
| No power supply | -       | -          | -            | -                               |

DESIGN

Input Device

Keyboard

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

Mouse

- Lenovo® Calliope Mouse (USB connector), black
- No mouse

Mechanical

Dimensions (WxDxH)<sup>[1]</sup>

179 x 182.9 x 72 mm (7.05 x 7.20 x 2.83 inches)

Packaging Dimensions (WxDxH)

490 x 170 x 260 mm (19.3 x 6.7 x 10.2 inches)

Weight<sup>[2]</sup>

Around 2.985 kg (6.58 lbs)

Packaging Weight

Around 0.55 kg (1.21 lbs)

Case Color

Black

EOU

No support

Mounting\*\*

- Supports VESA mount 75mm and 100mm
- (Optional) ThinkEdge™ DIN rail mount kits
- (Optional) Flat head screw for VESA mount

Others

(Optional) Dust filter

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.

## CONNECTIVITY

### Network

#### Ethernet

Gigabit Ethernet, Realtek® RTL8119i, 2x RJ-45, supports Wake-on-LAN

#### Optional Ethernet\*\*

- Gigabit Ethernet, Intel® Ethernet Server Adapter I350-T2, 2x RJ-45, PCIe® card
- Gigabit Ethernet, Intel® Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe® card
- No optional Ethernet

#### WLAN + Bluetooth®\*\*

- Realtek® RTL8821CE, Wi-Fi® 5, 802.11ac Dual Band 1x1 Wi-Fi® + Bluetooth® 4.2, M.2 card
- Realtek® RTL8822BE, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 4.2, M.2 card
- Realtek® RTL8822CE, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 5.0, M.2 card
- Intel® Dual Band Wireless-AC 3165, Wi-Fi® 5, 802.11ac Dual Band 1x1 Wi-Fi® + Bluetooth® 4.2, M.2 Card
- Intel® Dual Band Wireless-AC 8265, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 4.2, M.2 Card
- Intel® Wireless-AC 9560, Wi-Fi® 5, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth® 5.1, M.2 card
- No WLAN and Bluetooth®

### Ports<sup>[1]</sup>

#### Front Ports

- 1x USB 3.2 Gen 1
- 1x headphone (3.5mm)
- 1x headphone / microphone combo jack (3.5mm)
- 1x power connector

#### Optional Front Ports

- 2x serial (RS232) on industry card
- None

#### Rear Ports

- 1x USB 3.2 Gen 1
- 2x USB 2.0
- 1x HDMI®
- 1x DisplayPort™
- 2x Ethernet (RJ-45)
- 2x serial (RS232)

#### Optional Rear Ports\*\*\*

- 1x parallel (external USB to parallel dongle)
- 2x serial (RS422 / RS485) on industry card
- 1x CAN BUS on industry card
- 1x DIO (4DI / 4DO) on industry card
- None

#### 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.

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified

## SERVICE

### Warranty<sup>[1]</sup>

#### Base Warranty\*\*

- 1-year courier or carry-in service
- 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://support.lenovo.com/warrantylookup/warrantypolicy>.

## ACCESSORIES

### Bundled Accessories

#### Bundled Accessories\*\*\*

- DP to HDMI® dongle
- DP to VGA cable (1.5m)
- DP to VGA dongle
- IP50 dust cover kits
- None

## OPERATING REQUIREMENTS

### Operating Environment<sup>[1]</sup>

#### Temperature

- Operating: IEC60068-2-1 Test A: Cold, IEC 60068-2-2 Test B: Dry heat, 0~50°C, with airflow 0.7m/s (for wide temperature models)
- Storage: IEC60068-2-1 Test A: Cold, IEC 60068-2-2 Test B: Dry heat, -40°C (-40°F) to 85°C (185°F)

#### Relative Humidity

- Relative humidity operating: IEC 60068-2-66 Damp heat, steady state 95%@40°C non-condensing
- Relative humidity storage: IEC 60068-2-66 Damp heat, steady state 90%@60°C

#### Shock Protection

IEC 60068-2-27, shock, operating, 30G / 11ms, half sine

#### Vibration Protection

IEC 60068-2-64, Vibration, Operating, 3Grms, random, 5 ~ 500Hz, 1hr/axis

#### HALT

HALT testing methodology, LOL / UOL depends on real test result

Notes:

[1] The environmental specifications information is only for wide temperature models (SSD + Non-WLAN or SSD + Intel® WLAN).

## CERTIFICATIONS

### Green Certifications

#### Green Certifications

- Low Halogen
- REACH
- RoHS compliant
- TED (ECO-declaration)
- WEEE

## Other Certifications

### EMC

- EMC CE / FCC / ICES Class A
- RCM
- VCCI
- BSMI

### Safety

- CE for Europe
- CM for Morocco
- BSMI for Taiwan region
- BIS for India
- EAC for Belarus, Kazakhstan, Russia
- GS for Germany
- INSM for Moldavia
- KEBS for Kenya
- KUCAS for Kuwait
- KVALITET for Serbia
- NOM for Mexico
- SABS for South Africa
- SASO Saudi Arabia
- SII (general license)
- SONCAP for Nigeria
- STZ for Uzibekistan
- UL for US / Canada

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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