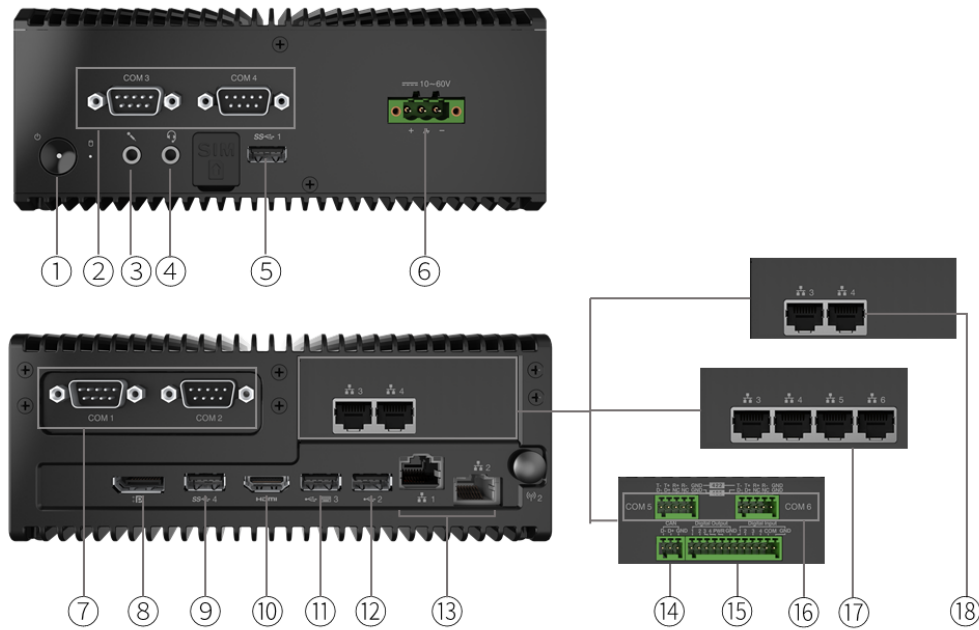


**OVERVIEW**



1. Power button	10. HDMI
2. 2x Serial (RS232) *	11. USB 2.0
3. Headphone (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\*\*

- Ubuntu Linux
- Windows® 10 IoT Enterprise
- No operating system

### Graphics

#### Graphics

Graphics	Type	Memory	Connector	Max Resolution	Key Features
Intel UHD graphics	Integrated	Shared	1x HDMI®, 1x DP	4096x2304@30Hz(HDMI), 4096x2304@60Hz(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 2666MHz, but run at 2400MHz due to the memory support capability of processor.

### Storage

#### Storage Support

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

- 2.5" HDD up to 1TB
- 2.5" SSD up to 256GB
- M.2 SSD up to 1TB

#### 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

## 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) DIN rail mount bracket kit
- (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, 802.11ac Dual Band 1x1 Wi-Fi® + Bluetooth 4.2, M.2 card
- Realtek RTL8822BE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 card
- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, M.2 card
- Intel Dual Band Wireless-AC 3165, 802.11ac Dual Band 1x1 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Dual Band Wireless-AC 8265, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 4.2, M.2 Card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card<sup>[1]</sup>
- No WLAN and Bluetooth

Notes:

[1] Bluetooth 5.2 is hardware ready but may run at a lower version due to OS limitations.

## 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.

## Monitor Cable

### Monitor Cable\*\*

- DP to VGA dongle
- DP to VGA cable (1.5M)
- DP to HDMI dongle
- No monitor cable

## 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://pcsupport.lenovo.com/warranty>.

## ENVIRONMENTAL

### 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)

#### Humidity

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

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

#### Green Certifications

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

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration.

### 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 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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