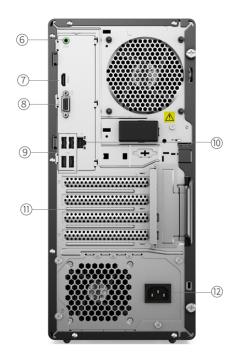


# **OVERVIEW**





| 1. Power button                              | 7. HDMI 2.0b                          |
|--|---------------------------------------|
| 2. Headphone / microphone combo jack (3.5mm) | 8. VGA                                |
| 3. USB-C 3.2 Gen 1                           | 9. 4x USB 2.0                         |
| 4. USB 3.2 Gen 1                             | 10. Ethernet (RJ-45)                  |
| 5. USB 3.2 Gen 2                             | 11. Optional ports on expansion cards |
| 6. Audio line-out (3.5mm)                    | 12. Power connector                   |

## Notes:

• Ports with \* are only available on selected models



## **PERFORMANCE**

### **Processor**

### **Processor Family**

12th Generation Intel® Core™ i5 / i7 Processor

#### **Processor**

| Processor<br>Name  | Cores                       | Threads | Base Frequency                    | Max Frequency                     | Cache | Memory<br>Support | Processor<br>Graphics     |
|--------------------|-----------------------------|---------|-----------------------------------|-----------------------------------|-------|-------------------|---------------------------|
| Core i5-<br>12400  | 6 (6 P-core +<br>0 E-core)  | 12      | P-core 2.5GHz                     | P-core 4.4GHz                     | 18MB  | DDR4-3200         | Intel UHD<br>Graphics 730 |
| Core i5-<br>12400F | 6 (6 P-core +<br>0 E-core)  | 12      | P-core 2.5GHz                     | P-core 4.4GHz                     | 18MB  | DDR4-3200         | -                         |
| Core i7-<br>12700  | 12 (8 P-core +<br>4 E-core) | 20      | P-core 2.1GHz / E-<br>core 1.6GHz | P-core 4.8GHz / E-<br>core 3.6GHz | 25MB  | DDR4-3200         | Intel UHD<br>Graphics 770 |
| Core i7-<br>12700F | 12 (8 P-core +<br>4 E-core) | 20      | P-core 2.1GHz / E-<br>core 1.6GHz | P-core 4.8GHz / E-<br>core 3.6GHz | 25MB  | DDR4-3200         | Intel UHD<br>Graphics 770 |

## **Operating System**

## **Operating System**

- Windows® 11 Home 64
- No operating system

## **Graphics**

## Graphics[1]

| Graphics                         | Туре       | Memory       | Connector                          | Max Resolution  | Key Features              |
|----------------------------------|------------|--------------|------------------------------------|---|---------------------------|
| Intel UHD graphics 730           | Integrated | Shared       | 1x VGA, 1x HDMI®<br>2.0b           | 2048x1536@60Hz(VGA),<br>4096x2160@60Hz(HDMI)                        | DirectX® 12               |
| AMD Radeon™ RX<br>6400           | Discrete   | 4GB<br>GDDR6 | 1x HDMI 2.1, 1x DP<br>1.4          | 7680x4320@60Hz(HDMI),<br>7680x4320@60Hz(DP)                         | DirectX 12,<br>OpenGL 4.6 |
| AMD Radeon RX<br>6500XT          | Discrete   | 4GB<br>GDDR6 | 1x HDMI 2.1, 1x DP<br>1.4a         | 7680x4320@60Hz(DP),<br>7680x4320@60Hz(HDMI)                         | DirectX 12,<br>OpenGL 4.6 |
| NVIDIA® GeForce®<br>GTX 1650     | Discrete   | 4GB<br>GDDR5 | 1x HDMI 2.0b, 2x<br>DP 1.4         | 4096x2160@60Hz(HDMI),<br>5120x3200@60Hz(DP)                         | DirectX 12                |
| NVIDIA GeForce<br>GTX 1660 SUPER | Discrete   | 6GB<br>GDDR6 | 1x DVI, 1x HDMI<br>2.0b, 1x DP 1.4 | 4096x2160@60Hz(HDMI),<br>5120x3200@60Hz(DP),<br>2560x1660@60Hz(DVI) | DirectX 12                |
| NVIDIA GeForce<br>RTX™ 3060      | Discrete   | 12G<br>GDDR6 | 3x DP 1.4a, 1x<br>HDMI 2.1         | 7680x4320@60Hz(HDMI),<br>7680x4320@60Hz(DP)                         | DirectX 12                |
| NVIDIA GeForce<br>RTX 3060 Ti    | Discrete   | 8G<br>GDDR6  | 3x DP 1.4a, 1x<br>HDMI 2.1         | 7680x4320@60Hz(HDMI),<br>7680x4320@60Hz(DP)                         | DirectX 12                |

## Notes:

## **Monitor Support**

### **Monitor Support**

Supports up to 2 independent displays via onboard ports (VGA and HDMI), more displays support via discrete graphics

## **Chipset**

## Chipset

Intel B660 chipset

## **Memory**

<sup>1.</sup> The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)



### Max Memory[1]

Up to 32GB DDR4-3200

## **Memory Slots**

Two DDR4 UDIMM slots, dual-channel capable

### **Memory Type**

DDR4-3200

### **Memory Protection**

Non-ECC

## 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 three drives, 2x 3.5" HDD + 1x M.2 SSD

- 3.5" HDD up to 2TB
- M.2 SSD up to 1TB

### **Storage Type**

| Disk Type     | Interface                | RPM  | Offering | Security |
|---------------|--------------------------|------|----------|----------|
| 3.5" SATA HDD | SATA 6Gb/s               | 7.2K | -        | -        |
| M.2 2280 SSD  | PCIe® NVMe®, PCIe 3.0 x4 | -    | -        | -        |
| M.2 2280 SSD  | PCIe NVMe, PCIe 4.0 x4   | -    | -        | -        |

#### **RAID**

No support

## **Removable Storage**

### **Optical**

None

### **Card Reader**

No card reader

### Multi-Media

### **Audio Chip**

High Definition (HD) Audio, Realtek® ALC623-CG codec

### **Speakers**

No speakers

## **Power Supply**

## **Power Supply**

| Power | Туре  | Efficiency | Key Features |
|-------|-------|------------|--------------|
| 310W  | Fixed | 85%        | -            |
| 310W  | Fixed | 92%        | -            |
| 380W  | Fixed | 92%        | -            |
| 500W  | Fixed | 92%        | -            |

## **DESIGN**

## **Input Device**

## Keyboard

• Lenovo Calliope Keyboard (USB connector), black



· No keyboard

#### Mouse

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

#### Mechanical

#### **Form Factor**

Tower (17L)

#### **Dimensions (WxDxH)**

| Models     | Dimensions                                      |
|------------|---|
| All models | 170 x 304 x 376 mm (6.69 x 11.97 x 14.8 inches) |

#### Weight

| Models     | Weight             |
|------------|--------------------|
| All models | 8.4 kg (18.52 lbs) |

#### **Case Color**

Raven black

#### **Bays**

2x 3.5" disk bay

#### **Expansion Slots**

- One PCIe 4.0 x16, full height
- One PCIe 4.0 x1, full height
- Two M.2 slots (one for WLAN, one for SSD)

#### Cooling System (Fan & Cooler)

(Optional) 1x front system fan, 1x rear system fan

### CONNECTIVITY

### **Network**

### **Onboard Ethernet**

Gigabit Ethernet, 1x RJ45

### WLAN + Bluetooth®

- 802.11ac 2x2 Wi-Fi® + Bluetooth 5.0, M.2 card
- Wi-Fi 6, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 card
- No WLAN and Bluetooth

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

#### **Front Ports**

- 1x USB 3.2 Gen 1
- 1x USB 3.2 Gen 2
- 1x USB-C 3.2 Gen 1 (support data transfer and 5V@3A charging)
- 1x headphone / microphone combo jack (3.5mm)

### Rear Ports[2]

- 4x USB 2.0
- 1x VGA
- 1x HDMI 2.0b
- 1x Ethernet (RJ-45)
- 1x headphone (3.5mm)
- 1x power connector

#### 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: 40 Gbit/s; FireWire 400: 400 Mbit/s; FireWire 800: 800 Mbit/s

2. For video ports on discrete graphics, please see graphics section

## **SECURITY & PRIVACY**

## **Security**

### **Security Chip**

Firmware TPM 2.0 integrated in chipset

#### **BIOS Security**

- Administrator password
- · Power-on password
- Hard disk password

## **SERVICE**

# Warranty

### **Base Warranty**

- 1-year mail-in service
- 1-year depot service
- 1-year limited onsite service
- 2-year depot service
- 3-year depot service
- OB

## **ENVIRONMENTAL**

## **Operating Environment**

## **Temperature**

Operating: 5°C (41°F) to 35°C (95°F)
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**

#### **Green Certifications**

- (Optional) ENERGY STAR® 8.0
- ErP Lot 3
- · RoHS compliant

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