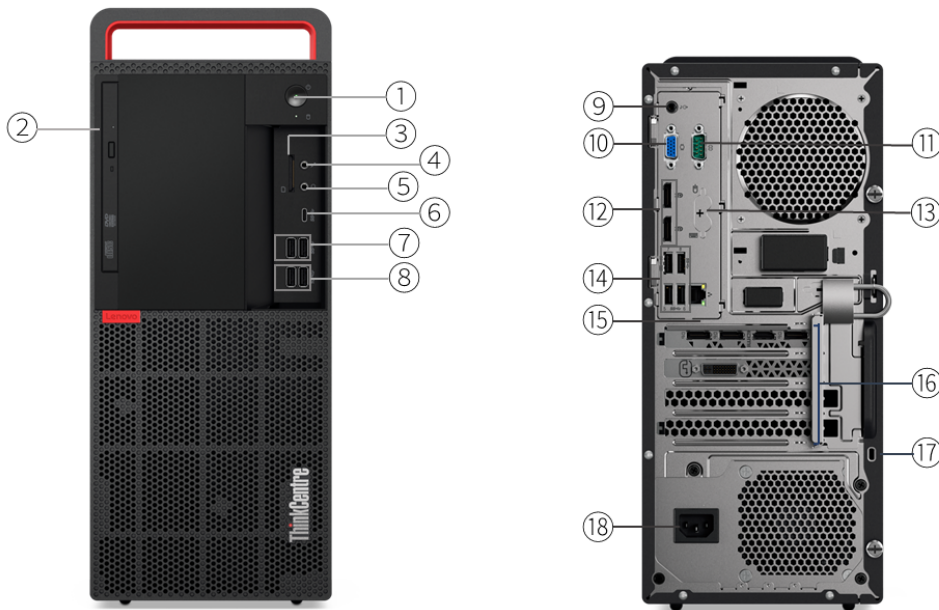


OVERVIEW



| | |
|--|---|
| 1. Power button | 10. VGA |
| 2. Optical drive * | 11. Serial |
| 3. Card reader * | 12. 2x DisplayPort |
| 4. Microphone (3.5mm) | 13. 2x PS/2 ports (keyboard / mouse) * |
| 5. Headphone / microphone combo jack (3.5mm) | 14. 4x USB 3.1 Gen 1 |
| 6. USB-C 3.1 Gen 1 | 15. Ethernet (RJ-45) |
| 7. 2x USB 3.1 Gen 1 | 16. Optional ports on expansion cards * |
| 8. 2x USB 3.1 Gen 2 | 17. Kensington Security Slot |
| 9. Line-out (3.5mm) | 18. Power connector |

Notes:

- Ports with * are only available on selected models

PERFORMANCE

Processor

Processor Family

Intel® Celeron®, Intel Pentium®, 8th Generation Intel Core™ i3 / i5 / i7, or 9th Generation Intel Core i3 / i5 / i7 / i9 Processor

Processor**

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Memory Support | Processor Graphics |
|--------------------|-------|---------|----------------|---------------|-------|----------------|------------------------|
| Celeron G4900 | 2 | 2 | 3.1GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4920 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4930 | 2 | 2 | 3.2GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Celeron G4950 | 2 | 2 | 3.3GHz | - | 2MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5400 | 2 | 4 | 3.7GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5420 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 610 |
| Pentium Gold G5500 | 2 | 4 | 3.8GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5600 | 2 | 4 | 3.9GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Pentium Gold G5620 | 2 | 4 | 4.0GHz | - | 4MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8100 | 4 | 4 | 3.6GHz | - | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-8300 | 4 | 4 | 3.7GHz | - | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100 | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9100F | 4 | 4 | 3.6GHz | 4.2GHz | 6MB | DDR4-2400 | - |
| Core i3-9300 | 4 | 4 | 3.7GHz | 4.3GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i3-9320 | 4 | 4 | 3.7GHz | 4.4GHz | 8MB | DDR4-2400 | Intel UHD Graphics 630 |
| Core i5-8400 | 6 | 6 | 2.8GHz | 4.0GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8500 | 6 | 6 | 3.0GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-8600 | 6 | 6 | 3.1GHz | 4.3GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400 | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9400F | 6 | 6 | 2.9GHz | 4.1GHz | 9MB | DDR4-2666 | - |
| Core i5-9500 | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i5-9500F | 6 | 6 | 3.0GHz | 4.4GHz | 9MB | DDR4-2666 | - |
| Core i5-9600 | 6 | 6 | 3.1GHz | 4.6GHz | 9MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-8700 | 6 | 12 | 3.2GHz | 4.6GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i7-9700 | 8 | 8 | 3.0GHz | 4.7GHz | 12MB | DDR4-2666 | Intel UHD Graphics 630 |
| Core i9-9900 | 8 | 16 | 3.1GHz | 5.0GHz | 16MB | DDR4-2666 | Intel UHD Graphics 630 |

Operating System

Operating System**

- Windows® 10 Pro 64
- Windows 10 Home 64
- Ubuntu Linux
- No operating system

Graphics

Graphics***[]

| Graphics | Type | Memory | Connector | Max Resolution | Key Features |
|------------------------|------------|--------|---------------|--|--------------|
| Intel UHD graphics 610 | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), 4096x2304@60Hz(DP) | DirectX® 12 |
| Intel UHD | Integrated | Shared | 1x VGA, 2x DP | 2048x1536@50Hz(VGA), | DirectX 12 |

| | | | | | |
|-------------------------|----------|-----------|---------------------------------|---|---|
| graphics 630 | | | | 4096x2304@60Hz(DP) | |
| AMD Radeon™ 520 | Discrete | 2GB GDDR5 | 2x DP 1.2 | 4096x2160@60Hz(DP) | DirectX 12 |
| AMD Radeon RX 550X | Discrete | 4GB GDDR5 | 1x HDMI® 2.0, 1x VGA, 1x DP 1.4 | 4096x2160@60Hz(HDMI), 2048x1536@85Hz(VGA), 3840x2160@60Hz(DP) | DirectX 12 |
| NVIDIA® GeForce® GT 730 | Discrete | 2GB GDDR5 | 2x DP | 3840x2160@60Hz(DP) | DirectX 12, PCIe® 2.0 x16, 35 watts |
| NVIDIA GeForce GTX 1060 | Discrete | 6GB GDDR5 | 1x HDMI, 3x DP, 1x DVI-D | 4096x2160@60Hz(HDMI), 5120x3200@60Hz(DP), 2560x1600@60Hz(DVI-D) | DirectX 12, PCIe 3.0 x16, 120 watts, occupies two slots |

Notes:

- The information of integrated graphics are not applicable for the models without integrated graphics (for the details, please refer to processor section)

Monitor Support

Monitor Support^[1]

Supports up to 3 independent displays via onboard ports (VGA and 2x DisplayPort™), more displays support via discrete graphics

Notes:

- Onboard video ports are only available for the models with integrated graphics

Chipset

Chipset

Intel Q370 chipset

Memory

Max Memory^[1]

Up to 64GB DDR4-2666

Memory Slots

Four DDR4 DIMM slots, dual-channel capable

Memory Type

DDR4-2666

Notes:

- 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^[1]

Up to four drives, 2x 2.5"/3.5" HDD/SSD + 1x 2.5" HDD + 1x M.2 SSD

- 2.5" HDD up to 1TB each
- 3.5" HDD up to 2TB each
- 2.5" SSD up to 256GB each
- M.2 SSD up to 1TB
- Optional Intel Optane™ Memory, M.2

Storage Type^{***}

| Disk Type | Interface | RPM | Security |
|---------------|------------|------|----------|
| 2.5" SATA SSD | SATA 6Gb/s | - | - |
| 2.5" SATA SSD | SATA 6Gb/s | - | Opal |
| 2.5" SATA HDD | SATA 6Gb/s | 7.2K | - |
| 3.5" SATA HDD | SATA 6Gb/s | 7.2K | - |

| | | | |
|-------------------------|-------------------------|---|------|
| 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 3.0 x4 | - | - |
| Intel Optane Memory M10 | PCIe NVMe, PCIe 3.0 x2 | - | - |

RAID

RAID 0/1 support for HDDs (RAID preset only available via special bid model)

Notes:

- 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****

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)

Card Reader

- 7-in-1 card reader (SD, SDHC, SDXC, MMC, MS, MS-Pro, XD)
- No card reader

Multi-Media**Audio Chip**

High Definition (HD) Audio, Realtek® ALC233VB2 codec

Speakers

Single speaker, 2W x1

Power Supply**Power Supply****

| Power | Type | Efficiency | Key Features |
|-------|-------|------------|-------------------|
| 180W | Fixed | 85% | 100V - 240V |
| 250W | Fixed | 85% | 100-240V, 50-60Hz |
| 400W | Fixed | 92% | 100V - 240V |

DESIGN**Input Device****Keyboard****

- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black
- Lenovo Keyboard (PS/2 connector), 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 Mouse (PS/2 connector), black (only available via special bid)
- Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black
- No mouse

Mechanical**Form Factor**

Tower (18L)

Dimensions (WxDxH)

165 x 321.35 x 410.25 mm (6.5 x 12.65 x 16.15 inches)

Weight

Around 7 kg (15.45 lbs)

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, or bay comes with disk)
- 1x 3.5" disk bay
- 1x 3.5" disk bay (optional, or bay comes with disk)
- 1x slim ODD bay
- 1x 5.25" ODD / optional front access HDD

Expansion Slots

- One PCIe 3.0 x1, full-length (< 268mm) full-height (< 112mm)
- One PCIe 3.0 x16 (x4 signal), full-length (< 268mm) full-height (< 112mm)
- One PCIe 3.0 x16, full-length (< 268mm) full-height (< 112mm)
- One dummy slot, only bracket for optional port extension

EOU

Toolless cover, disk, optical, extension card assembly / removal

Others

- (Optional) Carry handle
- (Optional) Dust filter
- (Optional) Front access HDD

CONNECTIVITY

Network

Onboard Ethernet

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

Optional Ethernet**

- Gigabit Ethernet, Bitland BN8E88, 1x RJ-45, PCIe x1
- Gigabit Ethernet, Intel Ethernet Server Adapter I350-T4, 4x RJ-45, PCIe x4
- No optional Ethernet

WLAN + Bluetooth®^[1]**

- 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
- 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 5.0, Intel vPro technology support, 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^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C® 3.1 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

- 1x card reader
- None

Rear Ports^[2]

- 4x USB 3.1 Gen 1
- 1x VGA
- 2x DisplayPort
- 1x serial (9-pin)

- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

Optional Rear Ports***

- 2x USB 2.0 (via 2-port adapter)
- 2x USB 3.1 Gen 1 (via 2-port USB expansion card, PCIe x1)
- 2x USB-C 3.1 Gen 2 (via 2-port USB-C expansion card, PCIe x4)
- 1x Thunderbolt™ 3 (combo USB-C 3.1 Gen 2 / DisplayPort, via Thunderbolt expansion card, PCIe x4)
- 1x serial
- 4x serial (via 4-port serial expansion card, PCIe x1)
- 1x parallel
- 2x PS/2

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

Monitor Cable**Monitor Cable*****

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA cable (1.5M)
- DP to VGA dongle
- No monitor cable

SECURITY & PRIVACY**Security****Security Chip**

Discrete TPM 2.0, TCG certified

Physical Locks

- (Optional) E-lock
- (Optional) Smart Cable Clip
- Kensington® Security Slot, 3 x 7 mm
- Padlock Loop

Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

- Touch style fingerprint reader on mouse
- No fingerprint reader

BIOS Security

- Administrator password
- Power-on password
- Hard disk password
- Boot sequence control
- Boot without keyboard and mouse
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Individual USB port disablement

MANAGEABILITY**System Management**

System Management^{[1][2]}

- Intel vPro with Intel AMT 12.0
- Non-vPro

Notes:

1. Intel vPro offers a superset of DASH's defined capabilities.
2. Require choosing a vPro-support Wi-Fi adapter to enable vPro function through wireless connection

SERVICE**Warranty****Base Warranty**^{**[1]}

- 1-year depot service
- 1-year limited onsite service
- 3-year depot service
- 3-year limited onsite service
- 3-year split limited onsite service

Notes:

1. More information of warranty policy, please access <https://pcsupport.lenovo.com/warranty>

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**

- EPEAT™ Silver
- ENERGY STAR® 8.0 (only available for MT 10U0/10U1 models with i3/i5/i7/i9 processor)
- ErP Lot 3
- TCO Certified
- RoHS compliant

Other Certifications**Other Certifications**

(Optional) TÜV Rheinland® Low Noise

- 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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