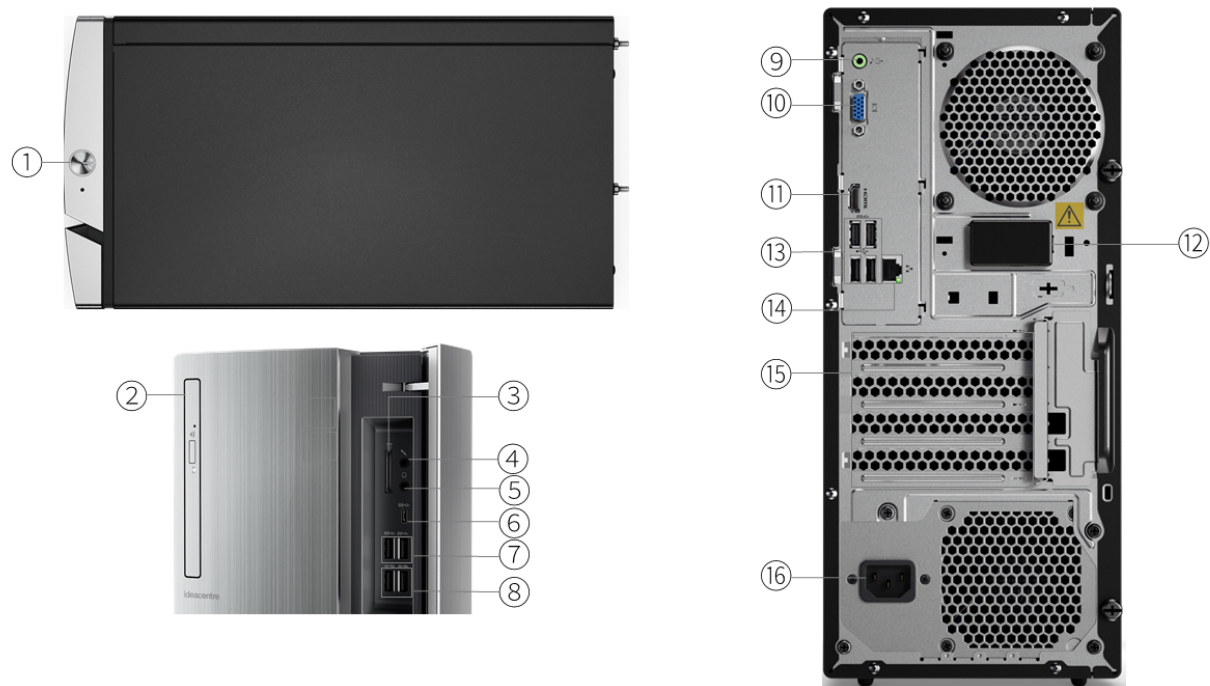


OVERVIEW



1. Power button	9. Headphone (3.5mm)
2. Optical drive *	10. VGA
3. Card reader *	11. HDMI 1.4
4. Microphone (3.5mm)	12. Wi-Fi antenna
5. Headphone / microphone combo jack (3.5mm)	13. 4x USB 2.0
6. USB-C 3.1 Gen 1	14. Ethernet (RJ-45)
7. 2x USB 3.1 Gen 1	15. Optional ports on expansion cards
8. 2x USB 3.1 Gen 2	16. Power connector

- Notes:
- Ports with * are only available on selected models
 - More ports are available through the optional expansion cards (not shown on the sample product above)

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 G4930	2	2	3.2GHz	-	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
Core i3-8100	4	4	3.6GHz	-	6MB	DDR4-2400	Intel UHD Graphics 630
Core i3-9100	4	4	3.6GHz	4.2GHz	6MB	DDR4-2400	Intel UHD Graphics 630
Core i5-8400	6	6	2.8GHz	4.0GHz	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 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 i7-9700F	8	8	3.0GHz	4.7GHz	12MB	DDR4-2666	-

Operating System

Operating System

- Windows® 10 Pro 64
- Windows 10 Home 64
- FreeDOS
- No operating system

Graphics

Graphics^[1]

Graphics	Type	Memory	Connector	Max Resolution	Key Features
Intel UHD graphics 610	Integrated	Shared	1x HDMI® 1.4, 1x VGA	-	DirectX® 12
Intel UHD graphics 630	Integrated	Shared	1x HDMI 1.4, 1x VGA	-	DirectX 12
AMD Radeon™ RX 550	Discrete	2GB GDDR5	1x HDMI 2.0, 1x VGA, 1x DP 1.4	-	DirectX 12
AMD Radeon RX 550X	Discrete	4GB GDDR5	1x HDMI 2.0, 1x VGA, 1x DP 1.4	4096x2160@60Hz(HDMI), 2048x1536@60Hz(VGA), 5120x2880@60Hz(DP)	DirectX 12
AMD Radeon RX 560	Discrete	4GB GDDR5	1x HDMI 2.0, 1x DP 1.4, 1x DVI	4096x2160@60Hz(HDMI), 5120x2880@60Hz(DP), 2560x1600@60Hz(DVI)	DirectX 12
NVIDIA® GeForce® GT 730	Discrete	2GB GDDR5	1x HDMI 1.4, 1x VGA	-	DirectX 12
NVIDIA GeForce GTX 1050	Discrete	4GB GDDR5	1x HDMI 2.0, 1x DP 1.4, 1x DVI	4096x2160@60Hz(HDMI), 7680x4320@60Hz(DP), 2560x1600@60Hz(DVI)	DirectX 12
NVIDIA GeForce GTX 1060	Discrete	6GB GDDR5	1x HDMI 2.0, 1x DVI, 3x DP 1.3	4096x2160@60Hz(HDMI), 7680x4320@60Hz(DP), 2560x1600@60Hz(DVI)	DirectX 12
NVIDIA GeForce	Discrete	4GB	1x HDMI 2.0, 1x	-	DirectX 12

GTX 1650		GDDR6	DVI, 1x DP 1.4		
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Notes:

1. 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

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

Chipset

Chipset

Intel B360 chipset

Memory

Max Memory^[1]

Up to 32GB DDR4-2666

Memory Slots

Two DDR4 UDIMM slots, dual-channel capable

Memory Type^[2]

DDR4-2666

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.

2. Installed memory is actually 2666MHz, but may run at 2400MHz or 2666MHz depending on the memory support capability of processor

Storage

Storage Support

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

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

Storage Type

Disk Type	Interface	RPM	Security
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	-	-
Intel Optane™ Memory M10	PCIe NVMe, PCIe 3.0 x2	-	-

RAID

No support

Removable Storage

Optical

- DVD burner (DVD±RW), SATA 1.5Gb/s, slim (9.0mm)
- None

Card Reader

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

Multi-Media

Audio Chip

High Definition (HD) Audio, Realtek® ALC662 codec

Speakers

No speakers

Microphone

No microphone

Camera

No camera

Power Supply

Power Supply

Power	Type	Efficiency	Key Features
180W	Fixed	-	100V - 240V
250W	Fixed	-	100V - 240V
400W	Fixed	-	100V - 240V

DESIGN

Input Device

Keyboard

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

Mouse

- Lenovo Calliope Mouse (USB connector), black
- Lenovo Calliope Mouse (USB connector), silver
- Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), silver
- No mouse

Mechanical

Buttons

- Power button
- Optical drive eject button (ODD models only)

Form Factor

Tower (18L)

Dimensions (WxDxH)

Models	Dimensions
All models	165 x 324 x 376 mm (6.5 x 12.76 x 14.8 inches)

Weight

Models	Weight
All models	8 kg (17.64 lbs)

Case Color

Black

Bays

- 1x 3.5" disk bay
- 1x slim ODD bay
- 1x 5.25" ODD / optional front access HDD

Expansion Slots

- One PCIe 3.0 x1, full height, full length
- One PCIe 3.0 x16, full height, full length
- 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 1x1 Wi-Fi® + Bluetooth 4.0, M.2 card
- 802.11ac 2x2 Wi-Fi + Bluetooth 4.0, M.2 card
- No WLAN and Bluetooth

Ports^[1]

Front Ports

- 2x USB 3.1 Gen 1
- 2x USB 3.1 Gen 2
- 1x USB-C 3.2 Gen 1 (support data transfer and 5V@3A charging)
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

Optional Front Ports

1x card reader

Rear Ports^[2]

- 4x USB 2.0
- 1x VGA
- 1x HDMI 1.4
- 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

Physical Locks

- Kensington® Security Slot
- No physical locks

BIOS Security

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

MANAGEABILITY

System Management

System Management

None

SERVICE

Warranty

Base Warranty

- 1-year depot or mail-in service
- 1-year limited onsite service
- 2-year depot service

ENVIRONMENTAL

Operating Environment

Temperature

- Operating: 5°C (41°F) to 35°C (95°F)
- Storage: -20°C (-4°F) to 60°C (140°F)

Humidity

- Operating: 20% to 80%
- Storage: 10% to 90%

Altitude

- Operating: -15.2 m (-50 ft) to 3048 m (10,000 ft)
- Storage: -15.2 m (-50 ft) to 12192 m (40,000 ft)

CERTIFICATIONS

Green Certifications

Green Certifications

- ErP Lot 3
- RoHS compliant

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