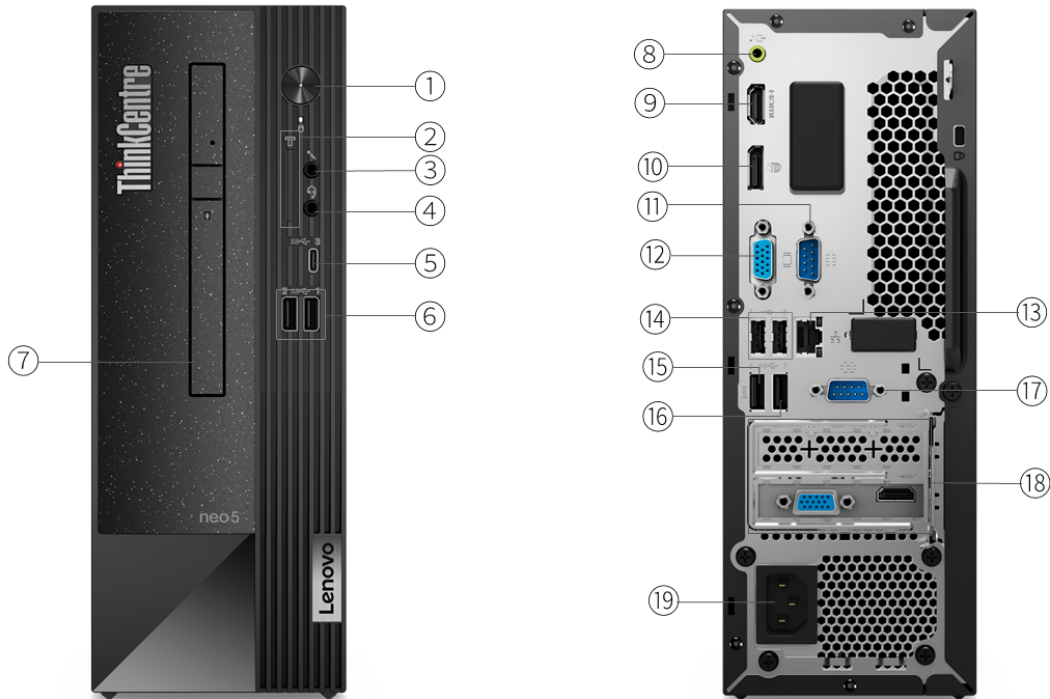


**OVERVIEW**



1. Power button	11. Serial *
2. Card reader *	12. VGA
3. Microphone (3.5mm)	13. Ethernet (RJ-45)
4. Headphone / microphone combo jack (3.5mm)	14. 2x USB 2.0
5. USB-C 3.2 Gen 1 (support data transfer and 5V@3A charging)	15. USB 3.2 Gen 1 (with Smart Power On feature)
6. 2x USB 3.2 Gen 1	16. USB 3.2 Gen 1
7. Optical drive *	17. Serial *
8. Line-out (3.5mm)	18. Optional ports on expansion cards *
9. HDMI	19. Power connector
10. DisplayPort 1.4	

Notes:

- Items with \* are only available on selected models
- Onboard video ports are only available for the models with integrated graphics

## PERFORMANCE

### Processor

#### Processor Family

Intel® Celeron®, Intel Pentium®, or 12th Generation Intel Core™ i3 / i5 / i7 / i9 Processor

#### Processor\*\*

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
Celeron G6900	2	2	3.4GHz	-	4MB	Intel UHD Graphics 710
Pentium Gold G7400	2	4	3.7GHz	-	6MB	Intel UHD Graphics 710
Core i3-12100	4 (4 P-core + 0 E-core)	8	P-core 3.3GHz	P-core 4.3GHz <sup>[1]</sup>	12MB	Intel UHD Graphics 730
Core i3-12300	4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.4GHz <sup>[2]</sup>	12MB	Intel UHD Graphics 730
Core i5-12400	6 (6 P-core + 0 E-core)	12	P-core 2.5GHz	P-core 4.4GHz <sup>[3]</sup>	18MB	Intel UHD Graphics 730
Core i5-12400F	6 (6 P-core + 0 E-core)	12	P-core 2.5GHz	P-core 4.4GHz <sup>[4]</sup>	18MB	-
Core i5-12500	6 (6 P-core + 0 E-core)	12	P-core 3.0GHz	P-core 4.6GHz <sup>[5]</sup>	18MB	Intel UHD Graphics 770
Core i5-12600	6 (6 P-core + 0 E-core)	12	P-core 3.3GHz	P-core 4.8GHz <sup>[6]</sup>	18MB	Intel UHD Graphics 770
Core i7-12700	12 (8 P-core + 4 E-core)	20	P-core 2.1GHz / E-core 1.6GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz <sup>[7]</sup>	25MB	Intel UHD Graphics 770
Core i7-12700F	12 (8 P-core + 4 E-core)	20	P-core 2.1GHz / E-core 1.6GHz	Max Turbo up to 4.9GHz / P-core 4.8GHz / E-core 3.6GHz <sup>[8]</sup>	25MB	-
Core i9-12900	16 (8 P-core + 8 E-core)	24	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.1GHz / P-core 5.0GHz / E-core 3.8GHz <sup>[9]</sup>	30MB	Intel UHD Graphics 770
Core i9-12900F	16 (8 P-core + 8 E-core)	24	P-core 2.4GHz / E-core 1.8GHz	Max Turbo up to 5.1GHz / P-core 5.0GHz / E-core 3.8GHz <sup>[10]</sup>	30MB	-

#### Notes:

[1], [2], [3], [4], [5], [6], [7], [8], [9], [10] Intel Max Turbo frequency will vary depending on application workload and the hardware and software configurations, see <http://www.intel.com/technology/turboboost/> for more information.

### Operating System

#### Operating System\*\*

- Ubuntu Linux<sup>[1]</sup>
- Windows® 11 DG Windows 10 Pro 64
- Windows 11 Home
- Windows 11 Home Single Language
- Windows 11 Pro
- No operating system

#### Notes:

[1] Some features may not be supported on the system with Linux preload, including but not limited to Intel RST RAID, Human Presence Detection, etc.

### Graphics

#### Graphics\*\*\*<sup>[1]</sup>

Graphics	Type	Memory	Connector	Max Resolution	Key Features
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Intel UHD graphics 710	Integrated	Shared	1x HDMI® 2.1 TMDS, 1x VGA, 1x DP 1.4 HBR2	3840×2160@60Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2304@60Hz(DP)	DirectX® 12
Intel UHD graphics 730	Integrated	Shared	1x HDMI 2.1 TMDS, 1x VGA, 1x DP 1.4 HBR2	3840×2160@60Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2304@60Hz(DP)	DirectX 12
Intel UHD graphics 770	Integrated	Shared	1x HDMI 2.1 TMDS, 1x VGA, 1x DP 1.4 HBR2	3840×2160@60Hz(HDMI), 1920x1200@60Hz(VGA), 4096x2304@60Hz(DP)	DirectX 12
Intel Iris® Xe MAX 100 Graphics <sup>[2]</sup>	Discrete	2GB LPDDR4X	1x VGA, 1x HDMI 1.4	3840x2160@30Hz(HDMI), 1920x1080@60Hz(VGA)	DirectX 12, OpenGL 4.6

## Notes:

[1] The information of integrated graphics are not applicable for the models with processor which has no integrated graphics inside (for the details, please refer to processor section).

[2] Onboard video ports are only available for the models with integrated graphics.

## Monitor Support

### Monitor Support

Supports up to 3 independent displays via (HDMI, DP and VGA), more displays support via discrete graphics

## Chipset

### Chipset

Intel B660 chipset

## Memory

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

Up to 64GB DDR4-3200

### Memory Slots

Two DDR4 UDIMM slots, dual-channel capable

### Memory Type

DDR4-3200

## Notes:

[1] The max memory is based on the test results with current Lenovo® memory offerings.

## Storage

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

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

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

### Storage Type<sup>\*\*\*</sup>

Disk Type	Interface	RPM	Security
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 x4	-	-
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	Opal 2.0
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4	-	Opal 2.0

### RAID

No support

## Notes:

[1] The max capacity of each disk type is based on the test results with current Lenovo storage offerings.

## Removable Storage

### Optical\*\*

- DVD-ROM, SATA 1.5Gb/s, slim (9.0mm)
- 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, XD)
- No card reader

## Multi-Media

### Audio Chip

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

### Speakers

- No speakers
- Single speaker, 1W x1

## Power Supply

### Power Supply\*\*

Power	Type	Efficiency	Key Features
180W	Fixed	85%	Autosensing
260W	Fixed	90%	Autosensing

## DESIGN

## Input Device

### Keyboard\*\*

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

## Mechanical

### Form Factor

SFF (7.4L)

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

100 x 308 x 274.8 mm (3.9 x 12.1 x 10.8 inches)

### Packaging Dimensions (WxDxH)

195 x 390 x 500 mm (7.67 x 15.35 x 19.69 inches)

### Weight<sup>[2]</sup>

Around 4.5 kg (9.9 lbs)

### Packaging Weight

Around 6.35 kg (14 lbs)

### Case Color

Raven black

### Bays

- 1x 2.5"/3.5" disk bay
- 1x slim ODD bay

**Expansion Slots**

- One PCIe 4.0 x16, low-profile (length < 167.65mm, height < 68.90mm)
- One PCIe 3.0 x1, low-profile (length < 167.65mm, height < 68.90mm)
- Two M.2 slots (one for WLAN, one for SSD)

**EOU**

No support

**Stand**

- Vertical stand
- No stand

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****Onboard Ethernet**

Gigabit Ethernet, Realtek RTL8111HN, 1x RJ-45, supports Wake-on-LAN

**WLAN + Bluetooth<sup>®</sup>\*\***

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi<sup>®</sup> + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.0, Intel vPro<sup>®</sup> technology support, M.2 card
- Realtek Wi-Fi 6 RTL8852AE, 802.11ax Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card<sup>[1]</sup>
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card<sup>[2]</sup>
- No WLAN and Bluetooth

Notes:

[1], [2] 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-C<sup>®</sup> 3.2 Gen 1 (support data transfer and 5V@3A charging)
- 2x USB 3.2 Gen 1
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

**Optional Front Ports**

1x card reader

**Rear Ports<sup>[2][3]</sup>**

- 2x USB 2.0
- 2x USB 3.2 Gen 1 (one supports Smart Power On)
- 1x HDMI 2.1 TMDS
- 1x DisplayPort<sup>™</sup> 1.4
- 1x VGA
- 1x Ethernet (RJ-45)
- 1x line-out (3.5mm)

**Optional Rear Ports<sup>\*\*</sup>**

- 2x USB 2.0 (via 2-port adapter)
- 1x parallel
- 1x serial
- 1x 2nd serial
- 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.

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

[3] Onboard video ports are only available for the models with integrated graphics.

## Monitor Cable

### Monitor Cable\*\*\*

- HDMI to HDMI cable
- HDMI to VGA dongle
- DP 1.2 to VGA dongle
- DP 1.2 to DVI-D dongle
- DP 1.2 to HDMI dongle
- DP 1.2 to dual DP 1.2 dongle
- No monitor cable
- Smart Cable (USB A-C)

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified

#### Physical Locks

- (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

No fingerprint reader

#### BIOS Security

- Secure Wipe
- Power-on password
- Supervisor password
- Hard disk password
- Cover presence switch
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- Intel BIOS guard

## MANAGEABILITY

### System Management

#### System Management

Non-vPro

## SERVICE

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

#### Base Warranty\*\*

- 1-year courier or carry-in service
- 1-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

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

#### Green Certifications

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Gold Registered<sup>[2]</sup>
- (Optional) EPEAT Silver Registered<sup>[3]</sup>
- ErP Lot 3
- RoHS compliant
- TCO Certified

#### Notes:

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

[2], [3] EPEAT is registered where applicable, please see <https://www.epeat.net> for registration status by country.

### Other Certifications

#### Other Certifications

- (Optional) TÜV Rheinland® Low Noise
- (Optional) TÜV Rheinland Ultra 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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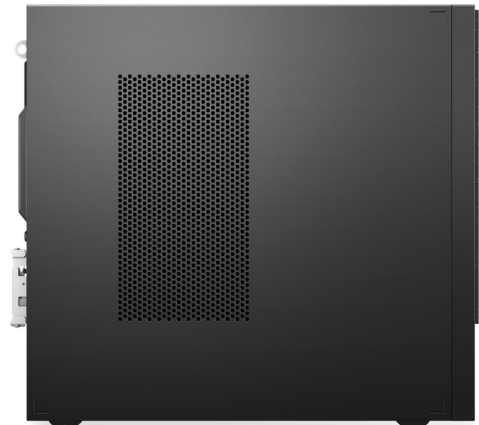
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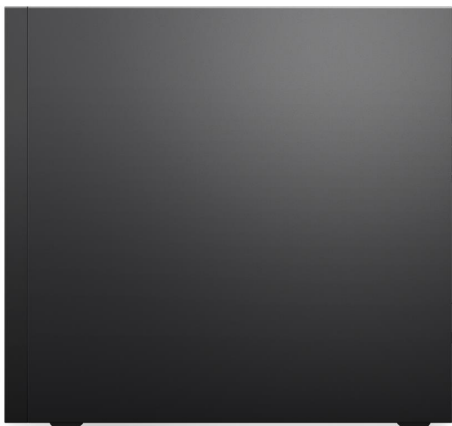
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