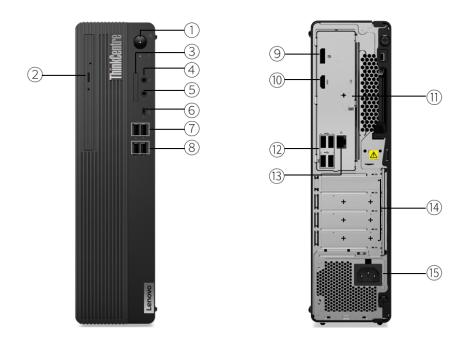


# **OVERVIEW**



1. Power button	9. DisplayPort 1.4a
2. Optical drive *	10. HDMI 2.1 TMDS
3. Microphone jack (3.5mm)	11. 2x PS/2 ports (keyboard / mouse) *
4. Card reader *	12. 4x USB-A (Hi-Speed USB)
5. Headphone / microphone combo jack (3.5mm)	13. Ethernet (RJ-45)
6. USB-C (USB 5Gbps), data transfer only	14. Optional ports on expansion cards *
7. 2x USB-A (USB 5Gbps)	15. Power connector
8. 2x USB-A (USB 5Gbps)	

# Notes:

- Items 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**

13th / 14th Generation Intel® Core™ i3 / i5 / i7 Processor

### Processor\*\*

Cores	Threads	Base Frequency	Max Frequency	Cache	Processor Graphics
4 (4 P-core + 0 E-core)	8	P-core 3.4GHz	P-core 4.5GHz	12MB	Intel® UHD Graphics 730
10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E- core 1.8GHz	P-core 4.6GHz / E-core 3.3GHz	20MB	Intel® UHD Graphics 730
14 (6 P-core + 8 E-core)	20	P-core 2.5GHz / E- core 1.8GHz	P-core 4.8GHz / E-core 3.5GHz	24MB	Intel® UHD Graphics 770
16 (8 P-core + 8 E-core)	24	P-core 2.1GHz / E- core 1.5GHz	Max Turbo up to 5.2GHz / P-core 5.1GHz / E-core 4.1GHz	30MB	Intel® UHD Graphics 770
4 (4 P-core + 0 E-core)	8	P-core 3.5GHz	P-core 4.7GHz	12MB	Intel® UHD Graphics 730
10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E- core 1.8GHz	P-core 4.7GHz / E-core 3.5GHz	20MB	Intel® UHD Graphics 730
10 (6 P-core + 4 E-core)	16	P-core 2.5GHz / E- core 1.8GHz	P-core 4.7GHz / E-core 3.5GHz	20MB	-
14 (6 P-core + 8 E-core)	20	P-core 2.6GHz / E- core 1.9GHz	P-core 5.0GHz / E-core 3.7GHz	24MB	Intel® UHD Graphics 770
14 (6 P-core + 8 E-core)	20	P-core 2.7GHz / E- core 2.0GHz	P-core 5.2GHz / E-core 3.9GHz	24MB	Intel® UHD Graphics 770
20 (8 P-core + 12 E-core)	28	P-core 2.1GHz / E- core 1.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	33MB	Intel® UHD Graphics 770
20 (8 P-core + 12 E-core)	28	P-core 2.1GHz / E- core 1.5GHz	Max Turbo up to 5.4GHz / P-core 5.3GHz / E-core 4.2GHz	33MB	-
2 (2 P-core + 0 E-core)	4	P-core 3.9GHz	-	6МВ	Intel® UHD Graphics 710
	4 (4 P-core + 0 E-core) 10 (6 P-core + 4 E-core) 14 (6 P-core + 8 E-core) 16 (8 P-core + 8 E-core) 4 (4 P-core + 0 E-core) 10 (6 P-core + 4 E-core) 10 (6 P-core + 4 E-core) 14 (6 P-core + 8 E-core) 14 (6 P-core + 8 E-core) 20 (8 P-core + 12 E-core) 20 (8 P-core + 12 E-core) 2 (2 P-core + 0	4 (4 P-core + 0 E-core)  10 (6 P-core + 4 E-core)  14 (6 P-core + 20 E-core)  16 (8 P-core + 24 E-core)  4 (4 P-core + 0 E-core)  10 (6 P-core + 4 E-core)  10 (6 P-core + 4 E-core)  10 (6 P-core + 4 E-core)  14 (6 P-core + 20 E-core)  14 (6 P-core + 20 E-core)  20 (8 P-core + 28 E-core)  20 (8 P-core + 28 E-core)  20 (8 P-core + 28 E-core)	4 (4 P-core + O E-core)       8       P-core 3.4GHz         10 (6 P-core + 4 E-core)       16       P-core 2.5GHz / E-core 1.8GHz         14 (6 P-core + 8 E-core)       20       P-core 2.5GHz / E-core 1.8GHz         16 (8 P-core + 8 E-core)       24       P-core 2.1GHz / E-core 1.5GHz         4 (4 P-core + 0 E-core)       8       P-core 3.5GHz         10 (6 P-core + 4 E-core)       16       P-core 2.5GHz / E-core 1.8GHz         10 (6 P-core + 4 E-core)       16       P-core 2.5GHz / E-core 1.8GHz         14 (6 P-core + 8 E-core)       20       P-core 2.6GHz / E-core 1.9GHz         14 (6 P-core + 8 E-core)       20       P-core 2.7GHz / E-core 2.0GHz         20 (8 P-core + 12 E-core)       28       P-core 2.1GHz / E-core 1.5GHz         20 (8 P-core + 12 E-core)       28       P-core 2.1GHz / E-core 1.5GHz         20 (2 P-core + 0       4       P-core 3.9GHz	4 (4 P-core + 0 E-core)  8 P-core 3.4GHz P-core 4.5GHz  P-core 4.5GHz P-core 4.6GHz / E-core 3.3GHz  14 (6 P-core + 8 E-core)  16 P-core 2.5GHz / E-core 4.8GHz / E-core 3.5GHz  16 (8 P-core + 8 E-core)  20 P-core 2.5GHz / E-core 4.8GHz / E-core 3.5GHz  16 (8 P-core + 8 E-core)  24 P-core 2.1GHz / E-core 4.1GHz  4 (4 P-core + 0 E-core)  8 P-core 3.5GHz P-core 4.7GHz P-core 4.7GHz  P-core 4.7GHz / E-core 3.5GHz  10 (6 P-core + 4 E-core)  11 (6 P-core + 8 E-core)  12 P-core 2.5GHz / E-core 4.7GHz / E-core 3.5GHz  14 (6 P-core + 8 E-core)  15 P-core 2.6GHz / E-core 5.0GHz / E-core 3.7GHz  16 P-core 2.7GHz / E-core 5.2GHz / E-core 3.9GHz  17 (6 P-core + 8 E-core)  20 P-core 2.1GHz / E-core 5.3GHz / E-core 4.2GHz  20 (8 P-core + 12 E-core)  20 (8 P-core + 12 E-core)  20 P-core 3.9GHz  20 (2 P-core + 0  4 P-core 3.9GHz	4 (4 P-core + 0 E-core) 8 P-core 3.4GHz P-core 4.5GHz 12MB  10 (6 P-core + 4 E-core) 16 P-core 2.5GHz / E-core 1.8GHz P-core 4.6GHz / E-core 3.3GHz 20MB  14 (6 P-core + 8 E-core) 20 P-core 2.5GHz / E-core 4.8GHz / E-core 3.5GHz 24MB  16 (8 P-core + 8 E-core) 24 P-core 2.1GHz / E-core 4.7GHz P-core 4.7GHz 12MB  4 (4 P-core + 0 E-core) 16 P-core 2.5GHz / E-core 4.7GHz P-core 3.5GHz 20MB  10 (6 P-core + 4 E-core) 16 P-core 2.5GHz / E-core 4.7GHz P-core 3.5GHz 20MB  10 (6 P-core + 4 E-core) 16 P-core 2.5GHz / E-core 4.7GHz / E-core 3.5GHz 20MB  10 (6 P-core + 4 E-core) 16 P-core 2.5GHz / E-core 4.7GHz / E-core 3.5GHz 20MB  11 (6 P-core + 8 E-core) 20 P-core 2.5GHz / E-core 4.7GHz / E-core 3.5GHz 20MB  12 (6 P-core + 8 E-core) 20 P-core 2.5GHz / E-core 5.0GHz / E-core 3.7GHz 24MB  13 (6 P-core + 8 E-core) 20 P-core 2.7GHz / E-core 5.0GHz / E-core 3.7GHz 24MB  14 (6 P-core + 8 E-core) 20 P-core 2.7GHz / E-core 5.2GHz / E-core 3.9GHz 24MB  20 (8 P-core + 28 P-core 2.1GHz / E-core 5.3GHz / E-core 4.2GHz 33MB  20 (8 P-core + 28 P-core 2.1GHz / E-core 4.2GHz 33MB  20 (8 P-core + 0 A P-core 3.9GHz - 5.3GHz / E-core 4.2GHz 33MB

# **Operating System**

# Operating System\*\*

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 IoT Enterprise LTSC 2024
- Windows® 11 DG Windows® 10 Pro 64
- Ubuntu Linux
- No preload operating system

# **Graphics**

# Graphics\*\*\*[1]

Graphics	Туре	Memory	Max Resolution	Connector	Key Features
Intel® UHD graphics 710	Integrated	Shared	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI*)	1x DP 1.4a (HBR2, DSC), 1x HDMI® 2.1 TMDS	DirectX® 12
Intel® UHD graphics 730	Integrated	Shared	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI*)	1x DP 1.4a (HBR2, DSC), 1x HDMI® 2.1 TMDS	DirectX® 12
Intel® UHD graphics 770	Integrated	Shared	4096x2304@60Hz(DP), 4096x2160@60Hz(HDMI*)	1x DP 1.4a (HBR2, DSC), 1x HDMI® 2.1 TMDS	DirectX® 12
Intel® Arc™ A310	Discrete	4GB	7680x4320@60Hz(DP)	2x DisplayPort™ 2.0	DirectX® 12,

## ThinkCentre M70s Gen 5



LP Graph	cs	GDDR6			OpenGL 4.6	
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#### 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).

## **Monitor Support**

### **Monitor Support**

Supports up to 2 independent displays via onboard ports (1x DP and 1x HDMI®), more displays support via discrete graphics

### Chipset

# Chipset

Intel® Q670 chipset

### **Memory**

### Max Memory[1]

Up to 64GB DDR5

#### **Memory Slots**

Two DDR5 UDIMM slots, dual-channel capable

#### **Memory Type**

- DDR5-4800<sup>[2]</sup>
- DDR5-5200<sup>[3]</sup>
- DDR5-5600

#### Notes:

- [1] The max memory is based on the test results with current Lenovo® memory offerings.
- [2] Installed memory is actually DDR5-5600 but may run as DDR5-4800 depending on the memory support capability of Intel®.
- [3] Installed memory is actually DDR5-5600 but may run as DDR5-5200 depending on the memory support capability of Intel®.

### **Storage**

### Storage Support[1]

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

- 3.5" HDD up to 2TB
- 2.5" HDD bay is only for customer self upgrade
- $\bullet$  M.2 SSD up to 2TB each [2]

### Storage Type\*\*\*

Disk Type	Interface	RPM	Security
3.5" SATA HDD	SATA 6Gb/s	7.2K	_
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.
- [2] 2.5" HDD bay is optional part, only for customer self upgrade purpose and the hard drive is sold separately. Two onboard SATA ports support up to two drives of 2.5" HDD, 3.5" HDD and ODD.

## **Removable Storage**

### Optical\*\*

- DVD-ROM, SATA connector, slim (9.0mm)
- DVD burner (DVD±RW), SATA connector, slim (9.0mm)
- None

#### **Card Reader**



- 3-in-1 card reader (SD, SDHC, SDXC)
- · No card reader

# Multi-Media

#### **Audio Chip**

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

#### **Speakers**

Single speaker, 1W x1

# **Power Supply**

### Power Supply\*\*

Power	Туре	Efficiency	Key Features
180W	Fixed	85%	100-240V, 50-60Hz
260W	Fixed	90%	100-240V, 50-60Hz
310W	Fixed	92%	100-240V, 50-60Hz

## **DESIGN**

## **Input Device**

# Keyboard\*\*

- Lenovo® Calliope Keyboard (USB connector), black
- Lenovo® Traditional Keyboard (USB connector), black
- Wireless EOS Keyboard, black
- No keyboard

## Mouse\*\*

- Wireless EOS Mouse, black
- Lenovo® Calliope Mouse (USB connector), black
- · No mouse

#### Mechanical

### **Form Factor**

SFF (8.2L)

# Dimensions (WxDxH)[1]

92.5 x 297.7 x 339.5 mm (3.6 x 11.7 x 13.4 inches)

### Packaging Dimensions (WxDxH)

195 x 395 x 530 mm (7.68 x 15.55 x 20.87 inches)

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

Around 5.3 kg (11.7 lbs)

### **Packaging Weight**

Around 7.6 kg (16.76 lbs)

#### **Case Color**

Black

#### Bays<sup>[3]</sup>

- 1x 2.5" disk bay (optional)
- 1x 3.5" disk bay
- 1x slim ODD bay

### **Expansion Slots**

- One PCle<sup>®</sup> 3.0 x16, low-profile, length ≤ 155mm, height ≤ 70mm
- One PCle® 3.0 x1, low-profile, length ≤ 155mm, height ≤ 70mm
- Two M.2 slots (one for WLAN, one for SSD)

#### FOL

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

#### Stand



- Vertical stand
- No stand

#### **Others**

- · (Optional) Dust filter
- Supports Smart Power On

#### 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.

[3] 2.5" HDD bay is optional part, only for customer self upgrade purpose and the hard drive is sold separately. Two onboard SATA ports support up to two drives of 2.5" HDD, 3.5" HDD and ODD.

# CONNECTIVITY

### **Network**

#### **Onboard Ethernet**

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

#### **Optional Ethernet**

- 2.5 Gigabit Ethernet, Realtek® RTL8125BGS, 1x RJ-45, PCle® x1
- No optional Ethernet

#### WLAN + Bluetooth®\*\*

- Realtek® Wi-Fi® 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.2, M.2 Card
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support, M.2 Card
- No WLAN and Bluetooth®

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

#### **Front Ports**

- 1x USB-C® (USB 5Gbps / USB 3.2 Gen 1), with 15W charging
- 4x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 1x headphone / microphone combo jack (3.5mm)
- 1x microphone (3.5mm)

### **Optional Front Ports**

1x card reader

### Rear Ports[2]

- 4x USB-A (Hi-Speed USB / USB 2.0)
- 1x HDMI® 2.1 TMDS
- 1x DisplayPort™ 1.4a (HBR2, DSC)
- 1x Ethernet (RJ-45)

### Optional Rear Ports\*\*\*

- 2x USB-A (USB 5Gbps / USB 3.2 Gen 1), via 2-port USB expansion card, PCIe® x1
- 1x parallel
- 1x serial
- 1x 2nd serial
- 4x serial (via 4-port serial expansion card, PCle® x1)
- 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;

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.

## **SECURITY & PRIVACY**

# **Security**

### **Security Chip**

Discrete TPM 2.0, TCG certified, FIPS 140-2 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**

No fingerprint reader

#### **BIOS Security**

- · Administrator password
- · Hard disk password
- · Power-on password
- Boot sequence control
- · Boot without keyboard and mouse
- Certificate based BIOS authentication
- Individual USB port disablement
- Self-healing BIOS
- Smart USB protection (allows keyboard / mouse only, blocks all storage devices)
- More BIOS security features, please visit BIOS Simulator[1]

#### Notes

[1] The BIOS simulator is just for reference. Default settings and some options may vary depending on the hardware, operating system and BIOS version.

### **MANAGEABILITY**

### **System Management**

# System Management[1]

- Intel® vPro® Enterprise
- Non-vPro®

#### Notes:

[1] Intel® vPro® offers a superset of DASH's defined capabilities.

## **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 <a href="https://smartfind.lenovo.com/">https://smartfind.lenovo.com/</a>. To learn more details of warranty policy, please access <a href="https://support.lenovo.com/warrantylookup/warrantypolicy">https://support.lenovo.com/warrantylookup/warrantypolicy</a>.

## **ACCESSORIES**

### **Bundled Accessories**

#### **Bundled Accessories\*\*\***

- DP to DVI dongle
- DP to HDMI® dongle
- HDMI® to HDMI® cable (1.5m)
- HDMI® to VGA dongle
- Smart Cable (USB-A to USB-C®)
- None

## OPERATING REQUIREMENTS

# **Operating Environment**

### **Temperature**

Operating: 5°C (41°F) to 35°C (95°F)
 Storage: -40°C (-40°F) to 60°C (140°F)

#### **Relative 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

- (Optional) ENERGY STAR® 8.0
- (Optional) EPEAT™ Silver Registered
- (Optional) EPEAT™ Gold Registered
- ErP Lot 3
- GREENGUARD®
- RoHS compliant
- TCO Certified 9.0

#### Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit <a href="https://compliance.lenovo.com">https://compliance.lenovo.com</a>.

#### Other Certifications

#### **Other Certifications**

(Optional) TÜV Rheinland® Ultra Low Noise

### Mil-Spec Test

MIL-STD-810H military test passed (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Solar Radiation, Contamination by Fluids, Salt Fog)

- Feature with \*\* means that only one option listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
- Feature with \*\*\* means that one or more options listed under the feature can be configured on selected models. Please refer to the model configuration for specific information.
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# ThinkCentre M70s Gen 5



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