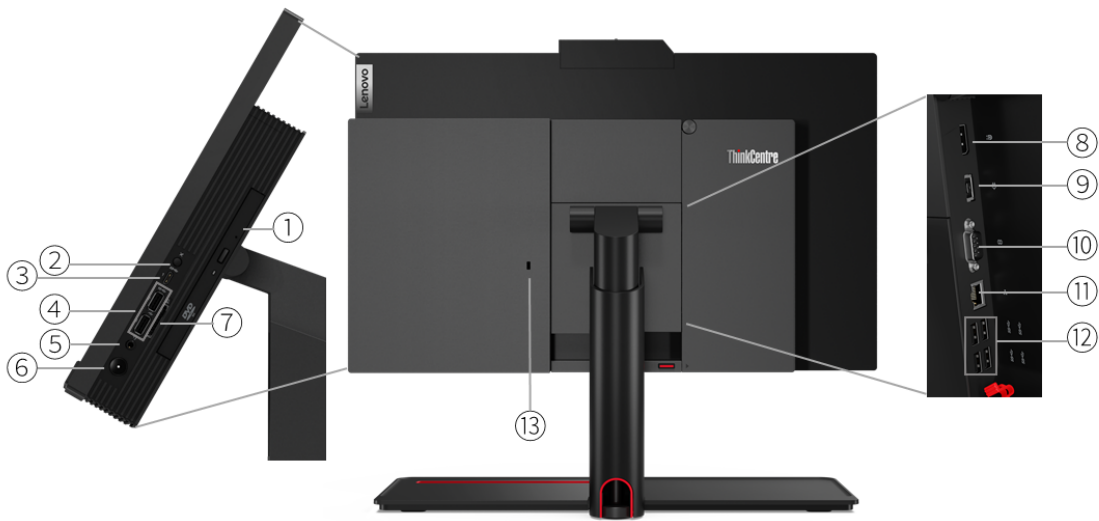


## OVERVIEW



1. Optical drive *	8. DisplayPort (DP in/out combo port)
2. Microphone mute button	9. Power connector
3. USB-C 3.2 Gen 2	10. Serial or HDMI *
4. 2x USB 3.2 Gen 2	11. Ethernet (RJ-45)
5. Headphone / microphone combo jack (3.5mm)	12. 4x USB 3.2 Gen 1
6. Power button	13. Kensington Security Slot
7. Card reader *	

Notes:

- Ports with \* are only available on selected models

## PERFORMANCE

### Processor

#### Processor Family

Intel® Celeron®, Intel Pentium®, 10th Generation Intel Core™ i3, or 11th Generation Intel Core i5 / i7 / i9 Processor

#### Processor\*\*

Processor Name	Cores	Threads	Base Frequency	Max Frequency	Cache	Memory Support	Processor Graphics
Celeron G5905	2	2	3.5GHz	-	4MB	DDR4-2666	Intel UHD Graphics 610
Celeron G5925	2	2	3.6GHz	-	4MB	DDR4-2666	Intel UHD Graphics 610
Pentium Gold G6405	2	4	4.1GHz	-	4MB	DDR4-2666	Intel UHD Graphics 610
Pentium Gold G6505	2	4	4.2GHz	-	4MB	DDR4-2666	Intel UHD Graphics 630
Pentium Gold G6605	2	4	4.3GHz	-	4MB	DDR4-2666	Intel UHD Graphics 630
Core i3-10105	4	8	3.7GHz	4.4GHz	6MB	DDR4-2666	Intel UHD Graphics 630
Core i3-10305	4	8	3.8GHz	4.5GHz	8MB	DDR4-2666	Intel UHD Graphics 630
Core i3-10325	4	8	3.9GHz	4.7GHz	8MB	DDR4-2666	Intel UHD Graphics 630
Core i5-11400	6	12	2.6GHz	4.4GHz	12MB	DDR4-3200	Intel UHD Graphics 730
Core i5-11500	6	12	2.7GHz	4.6GHz	12MB	DDR4-3200	Intel UHD Graphics 750
Core i5-11600	6	12	2.8GHz	4.8GHz	12MB	DDR4-3200	Intel UHD Graphics 750
Core i7-11700	8	16	2.5GHz	4.9GHz	16MB	DDR4-3200	Intel UHD Graphics 750
Core i9-11900	8	16	2.5GHz	5.2GHz	16MB	DDR4-3200	Intel UHD Graphics 750

### Operating System

#### Operating System\*\*

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

### Monitor Support

#### Monitor Support

Supports up to 3 independent displays via native display and 2 external monitor; supports external monitors via DisplayPort™ and optional HDMI®; work as standalone monitor via DisplayPort (DP in / out combo)

### Chipset

#### Chipset

Intel Q570 Chipset

### Memory

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

Up to 64GB DDR4-3200

#### Memory Slots

Two DDR4 SO-DIMM slots, dual-channel capable

#### Memory Type\*\*<sup>[2]</sup>

- DDR4-2666
- DDR4-3200

#### 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 3200MHz, but may run at 2666MHz or 3200MHz depending on the memory support capability of processor

# ThinkCentre M90a Gen 2

## Storage

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

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

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

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

Disk Type	Interface	RPM	Offering	Security
2.5" SATA HDD	SATA 6Gb/s	5.4K	-	-
2.5" SATA HDD	SATA 6Gb/s	7.2K	-	-
M.2 2242 SSD	PCIe <sup>®</sup> NVMe <sup>®</sup> , PCIe 3.0 x2	-	-	-
M.2 2242 SSD	PCIe NVMe, PCIe 3.0 x4	-	-	-
M.2 2280 SSD	PCIe NVMe, PCIe 3.0 x4	-	-	Opal
M.2 2280 SSD	PCIe NVMe, PCIe 4.0 x4	-	-	Opal

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

RAID 0/1 support for HDDs

Notes:

1. 2nd 2.5" HDD occupies ODD bay
2. RAID is not preset by default, user can config RAID 0/1 according to the demand.

## Removable Storage

### Optical<sup>\*\*</sup>

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

### Card Reader

- 3-in-1 card reader
- No card reader

## Multi-Media

### Audio Chip

High Definition (HD) Audio, Realtek<sup>®</sup> ALC233 codec

### Speakers

Stereo speakers, 3W x2, Dolby<sup>®</sup> Atmos<sup>®</sup>

### Microphone

- Dual array microphone
- No microphone

### Camera<sup>\*\*</sup>

- 5.0-megapixel, with ThinkShutter (physical switch on/off), Windows Hello support
- 5.0-megapixel, IR & RGB hybrid, with ThinkShutter (physical switch on/off), Windows Hello support
- No camera

## Power Supply

### Power Supply<sup>\*\*</sup>

Power	Type	Efficiency	Key Features
150W	Adapter	89%	Autosensing
170W	Adapter	89%	Autosensing

## DESIGN

### Display

**Display\*\*[1]**

Size	Resolution	Touch	Type	Brightness	Surface	Aspect Ratio	Contrast Ratio	Color Gamut	Viewing Angle	Key Features
23.8"	FHD (1920x1080)	None	IPS	250 nits	Anti-glare	16:9	1000:1	72% NTSC	horizontal: +/- 89°, vertical: +/- 89°	Borderless design, low blue light
23.8"	FHD (1920x1080)	None	IPS	350 nits	Anti-glare	16:9	1000:1	72% NTSC	horizontal: +/- 89°, vertical: +/- 89°	Borderless design, low blue light, PrivacyGuard
23.8"	FHD (1920x1080)	Multi-touch	IPS	250 nits	Anti-glare	16:9	1000:1	72% NTSC	horizontal: +/- 89°, vertical: +/- 89°	Borderless design, low blue light

**Touchscreen**

- Advanced In-cell Touch (AIT), supports 10-point touch
- Non-touch

**Notes:**

1. California Electronic Waste Recycling Fee  
In California, per state law, Lenovo charges an electronic waste recycling fee on this covered device at the time of sale of the product. For more information, go to <https://www.calrecycle.ca.gov/Electronics/Consumer>

**Input Device**

**Keyboard\*\***

- Lenovo Calliope Keyboard (USB connector), black
- Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), 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**

**Buttons**

- Power button
- PrivacyGuard on/off button (PrivacyGuard model only)
- Microphone mute button

**Form Factor**

AIO (23.8 inches)

**Dimensions (WxDxH)**

Models	Dimensions
Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera)	541 x 200 x 414.2-494.2 mm (21.3 x 7.9 x 16.3-19.5 inches)
Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera)	Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches) Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches)
Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera)	Lowest in flat mode: 541 x 312.8 x 227.4 mm (21.3 x 12.3 x 9.0 inches)

	Highest in vertical mode: 541 x 232.7 x 467.7 mm (21.3 x 9.2 x 18.4 inches)
Models (without stand, with ODD, with PrivacyGuard, with camera)	541 x 61.3 x 340.5 mm (21.3 x 2.4 x 13.4 inches)
Models (without stand, with ODD, without PrivacyGuard, with camera)	541 x 57.8 x 340.5 mm (21.3 x 2.3 x 13.4 inches)
Models (without stand, without ODD, with PrivacyGuard, with camera)	541 x 49.5 x 340.5 mm (21.3 x 1.9 x 13.4 inches)
Models (without stand, without ODD, without PrivacyGuard, with camera)	541 x 46 x 340.5 mm (21.3 x 1.8 x 13.4 inches)

### Weight

Models	Weight
Models (with full function monitor stand, with ODD, with PrivacyGuard, with camera)	8.71 kg (19.2 lbs)
Models (with full function monitor stand, with ODD, without PrivacyGuard, with camera)	7.84 kg (17.3 lbs)
Models (with full function monitor stand, without ODD, with PrivacyGuard, with camera)	8.39 kg (18.5 lbs)
Models (with full function monitor stand, without ODD, without PrivacyGuard, with camera)	7.51 kg (16.6 lbs)
Models (with UltraFlex IV stand, with ODD, without PrivacyGuard, with camera)	8.58 kg (18.9 lbs)
Models (with UltraFlex IV stand, without ODD, without PrivacyGuard, with camera)	8.26 kg (18.2 lbs)
Models (without stand, with ODD, with PrivacyGuard, with camera)	6.45 kg (14.2 lbs)
Models (without stand, with ODD, without PrivacyGuard, with camera)	5.57 kg (12.3 lbs)
Models (without stand, without ODD, with PrivacyGuard, with camera)	6.13 kg (13.5 lbs)
Models (without stand, without ODD, without PrivacyGuard, with camera)	5.25 kg (11.6 lbs)

### Case Color

Black

### Bays

- 2x 2.5" disk bay (2nd 2.5" HDD occupies ODD bay)
- 1x slim ODD bay

### Expansion Slots

Two M.2 slots (one for WLAN, one for SSD)

### EOU

Toolless cover and stand assembly / removal

### Mounting

Supports VESA mount 100mm

### Others

Supports Smart Power On

## CONNECTIVITY

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

#### Onboard Ethernet

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

#### Optional Ethernet

No optional Ethernet

#### WLAN + Bluetooth<sup>\*\*</sup>

- Realtek RTL8822CE, 802.11ac Dual Band 2x2 Wi-Fi® + Bluetooth 5.0, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, Intel vPro technology support, M.2 card
- Intel Wireless-AC 9560, 802.11ac Dual Band 2x2 Wi-Fi + Bluetooth 5.1, M.2 card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, Intel vPro technology support, M.2 Card
- Intel Wi-Fi 6 AX201, 802.11ax 2x2 Wi-Fi + Bluetooth 5.2, M.2 Card
- No WLAN and Bluetooth

# ThinkCentre M90a Gen 2

## Notes:

1. This system does not support Power Over Ethernet (PoE). If the system is used in a PoE environment, then a Network Isolator is required to prevent possible damage to the system, PoE equipment, or both.

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

### Rear Ports<sup>[2]</sup>

- 4x USB 3.2 Gen 1
- 1x DisplayPort
- 1x Ethernet (RJ-45)

### Right Ports

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

### Optional Right Ports

1x card reader

## 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

## Monitor Cable

### Monitor Cable\*\*\*

- DP to dual DP dongle
- DP to DVI-D dongle
- DP to HDMI 1.4 dongle
- DP to VGA dongle
- No monitor cable

## SECURITY & PRIVACY

### Security

#### Security Chip

Discrete TPM 2.0, TCG certified

#### Physical Locks

Kensington® Security Slot

#### Chassis Intrusion Switch

- Chassis intrusion switch
- No chassis intrusion switch

#### Other Security

(Optional) ThinkShutter camera cover

#### BIOS Security

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

## SERVICE

## Warranty

### Base Warranty\*\*<sup>[1]</sup>

- 1-year limited onsite service
- 3-year limited onsite service
- No base warranty

#### 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: -20°C (-4°F) to 60°C (140°F)

#### Humidity

Operating: 20% to 80%

#### 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
- ErP Lot 3
- TCO Certified 8.0
- TCO edge
- RoHS compliant

### Other Certifications

#### Other Certifications

TÜV Rheinland® Low Blue Light

#### Mil-Spec Test

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

- 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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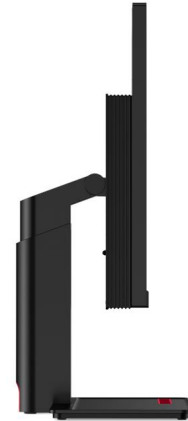
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