

OVERVIEW



| 1. 3x USB-A (USB 5Gbps) | 8. Microphone mute button |
|---|---|
| 2. USB-C (USB 10Gbps), with 15W charging | 9. PC / monitor mode switch |
| 3. Ethernet (RJ-45) | 10. 3x USB-A (USB 10Gbps) |
| 4. HDMI (HDMI in 1.4 / HDMI out 2.1 TMDS combo) | 11. Headphone / microphone combo jack (3.5mm) |
| 5. DisplayPort 1.4 | 12. Card reader * |
| 6. Serial * | 13. Power button |
| 7. Power connector | |

Notes:

• Items with * are only available on selected models



PERFORMANCE

Processor

Processor Family

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

Processor**

| Processor Name | Cores | Threads | Base Frequency | Max Frequency | Cache | Processor Graphics |
|--------------------|------------------------------|---------|-----------------------------------|--|-------|----------------------------|
| Core™ i3- 13100 | 4 (4 P-core + 0 E-core) | 8 | P-core 3.4GHz | P-core 4.5GHz | 12MB | Intel® UHD Graphics 730 |
| Core™ i5- 13400 | 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 |
| Core™ i5- 13500 | 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 |
| Core™ i7- 13700 | 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 |
| Core™ i3- 14100 | 4 (4 P-core + 0 E-core) | 8 | P-core 3.5GHz | P-core 4.7GHz | 12MB | Intel® UHD Graphics 730 |
| Core™ i5- 14400 | 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 |
| Core™ i5- 14500 | 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 |
| Core™ i7- 14700 | 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 |

Operating System

Operating System**

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 DG Windows® 10 Pro 64
- No preload operating system

Graphics

Graphics**

| Graphics | Туре | Memory | Connector | Max Resolution | Key Features |
|---------------------------|------------|--------------|---------------------------------|--|-----------------|
| Intel® UHD graphics 730 | Integrated | Shared | 1x HDMI® 2.1 TMDS, 1x DP 1.4 | 4096x2160@60Hz(HDMI®), 4096x2160@60Hz(DP) | DirectX® 12 |
| Intel® UHD graphics 770 | Integrated | Shared | 1x HDMI® 2.1 TMDS, 1x DP 1.4 | 4096x2160@60Hz(HDMI®), 4096x2160@60Hz(DP) | DirectX® 12 |
| NVIDIA® GeForce MX570A | Discrete | 4GB GDDR6 | 1x HDMI® 2.1 TMDS, 1x DP 1.4 | 4096x2160@60Hz(HDMI*), 4096x2160@60Hz(DP) | DirectX® 12 |

Monitor Support

Monitor Support

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

Chipset

Chipset

Intel® Q670 chipset

Memory



Max Memory[1]

- Models with Core™ i3/i5: Up to 64GB DDR5-4800
- Models with Core[™] i7: Up to 64GB DDR5-5200

Memory Slots

Two DDR5 SO-DIMM slots, dual-channel capable

Memory Type**[2]

- DDR5-4800
- DDR5-5200
- DDR5-5600

Memory Protection

Non-ECC

Notes:

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

[2] Installed memory is actually 5600MHz, but may run at 4800MHz, 5200MHz, or 5600MHz depending on the memory support capability of processor.

Storage

Storage Support[1]

• Models with Intel® UHD graphics:

Up to two drives, 2x M.2 SSD

- M.2 SSD up to 2TB each
- Models with NVIDIA® GeForce MX570A:

Up to one drives, 1x M.2 SSD

• M.2 SSD up to 2TB each

Storage Type

| Disk Type | Interface | Security |
|--------------|---------------------------|----------|
| M.2 2280 SSD | PCle® NVMe®, PCle® 4.0 x4 | Opal 2.0 |

RAID^[2]

- RAID 0/1 support for SSDs
- No support

Notes:

- [1] The max capacity of each disk type is based on the test results with current Lenovo® storage offerings.
- [2] Only available for models with integrated graphics

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® ALC233NL-VB2-CG codec

Speakers

Stereo speakers, 3W x2, Dolby® Atmos®

Microphone

- Dual-microphone array
- No microphone

Camera*



- 5.0-megapixel, IR + RGB hybrid, with ThinkShutter (physical switch on/off) and Human Presence Detection (Radar Sensor), ±20° view angle adjustable, Windows® Hello support
- 5.0-megapixel, IR + RGB hybrid, with ThinkShutter (physical switch on/off), ±20° view angle adjustable, Windows® Hello support
- 5.0-megapixel, with ThinkShutter (physical switch on/off)
- No camera

Power Supply

Power Supply**

| Power | Туре | Efficiency | Key Features | | |
|-------|-------|------------|----------------------|--|--|
| 180W | Fixed | 90% | 100V - 240V, 50-60H | | |
| 230W | Fixed | 92% | 100V - 240V, 50-60Hz | | |

DESIGN

Display

Display**[1]

| | • | | | | | | | | | | |
|-------|--------------------|-----------------|------|------------|----------------|-----------------|-------------------|----------------|-----------------|----------------------------|---|
| Size | Resolution | Touch | Туре | Brightness | Surface | Aspect Ratio | Contrast Ratio | Color Gamut | Refresh Rate | Viewing Angle (L/R/U/D) | Key Features |
| 23.8" | FHD (1920×1080) | None | IPS | 250nits | Anti- glare | 16:9 | 1300:1 | 99% sRGB | 60Hz | 89°/89°/89°/89° | 14ms response Time, borderless design, TÜV Rheinland® Low Blue Light (Hardware Solution), TÜV Rheinland® Flicker Free, Eyesafe® Certified 2.0 |
| 23.8" | FHD (1920x1080) | Multi- touch | IPS | 250nits | Anti- glare | 16:9 | 1000:1 | 72% NTSC | 60Hz | 89°/89°/89°/89° | 14ms response Time, borderless design, TÜV Rheinland® Low Blue Light (Sotware Solution), TÜV Rheinland® Flicker Free |

Touchscreen

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

Notes:

[1] IPS (in-plane switching) technology may refer to IPS, PLS, ADS, AHVA, AAS.

Input Device

Keyboard**

- EOS Wireless Keyboard, black
- Lenovo® Calliope Keyboard (USB connector), black

ThinkCentre M90a Gen 5



- Lenovo® Traditional Keyboard (USB connector), black
- · No keyboard

Mouse**

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

Mechanical

Buttons

- Microphone mute button
- Monitor / PC mode switch button
- Power button

Form Factor

AIO (23.8 inches)

Dimensions (WxDxH)[1]

| Models | Dimensions |
|---|--|
| Models (with UltraFlex V stand, with camera) | Lowest in flat mode: 539.6 x 344.19 x 227.54 mm (21.24 x 13.55 x 8.96 inches) Highest in vertical mode: 539.6 x 252.60 x 472.00 mm (21.24 x 9.94 x 18.58 inches) |
| Models (with UltraFlex V stand, without camera) | Lowest in flat mode: 539.6 x 341.42 x 219.50 mm (21.24 x 13.44 x 8.64 inches) Highest in vertical mode: 539.6 x 252.60 x 451.51 mm (21.24 x 9.94 x 17.78 inches) |
| Models (with full function monitor stand, with camera) | 539.6 x 217.31 x 393.66-501.85 mm (21.24 x 8.56 x 15.50-19.76 inches) |
| Models (with full function monitor stand, without camera) | 539.6 x 217.31 x 374.15-483.16 mm (21.24 x 8.56 x 14.73-19.02 inches) |
| Models (with tilt only stand, with camera) | 539.6 x 213.38 x 453.39 mm (21.24 x 8.40 x 17.85 inches) |
| Models (with tilt only stand, without camera) | 539.6 x 213.38 x 434.39 mm (21.24 x 8.40 x 17.10 inches) |
| Models (without stand, with camera) | 539.6 x 49.6 x 371 mm (21.24 x 1.95 x 14.61 inches) |
| Models (without stand, without camera) | 539.6 x 49.6 x 352 mm (21.24 x 1.95 x 13.86 inches) |

Packaging Dimensions (WxDxH)**

- Models (with UltraFlex V stand): 690 x 545 x 238 mm (27.17 x 21.46 x 9.37 inches)
- Models (with full function monitor stand): 660 x 575 x 228 mm (25.98 x 22.64 x 8.98 inches)
- Models (with tilt only stand): 660 x 550 x 216 mm (25.98 x 21.65 x 8.50 inches)

Weight^[2]

| Models | Weight |
|---|---------------------------|
| Models (with UltraFlex V stand) | Around 7.83 kg (17.3 lbs) |
| Models (with full function monitor stand) | Around 8.13 kg (17.9 lbs) |
| Models (with tilt only stand) | Around 7.61 kg (16.8 lbs) |
| Models (without stand) | Around 5.53 kg (12.2 lbs) |

Packaging Weight

- Models (with UltraFlex V stand): 2.94 kg (6.5 lbs), packaging only
- Models (with full function monitor stand): 2.96 kg (6.5 lbs), packaging only
- Models (with tilt only stand): 2.73 kg (6.0 lbs), packaging only

Case Color

Black

Bays

- 1x 2.5" disk bay (optional, only available via special bid)
- 1x slim ODD bay

Expansion Slots

ThinkCentre M90a Gen 5



- Models with NVIDIA® GeForce MX570A: Two M.2 slots (one for WLAN, one for SSD)
- Models with Intel® UHD graphics: Three M.2 slots (one for WLAN, two for SSD)

FOLL

Toolless cover, stand, motherboard shielding, and memory assembly / removal

Stand**

- UltraFlex V stand, supports -5° to +70° tilt, up to 70°±2° lift (up to 179.96mm lift in flat mode / up to 84.37mm lift in vertical mode)
- Full function monitor stand, supports -5° to +20° tilt, left & right 45° swivel, 90° pivot, up to 110mm lift
- Tilt only stand, supports -5° to +20° tilt.
- No stand

Mounting

Supports VESA mount 100mm

Others

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.

CONNECTIVITY

Network

Onboard Ethernet

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

Optional Ethernet

No optional Ethernet

WLAN + Bluetooth®**

- Realtek® Wi-Fi® 6 RTL8852BE, 802.11ax Dual Band 2x2 Wi-Fi® + Bluetooth® 5.3, M.2 card[1]
- Intel® Wi-Fi® 6 AX201, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.2, M.2 Card[2]
- Intel® Wi-Fi® 6E AX211, 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3, Intel® vPro® technology support, M.2 Card^[3]
- No WLAN and Bluetooth®

Notes:

[1], [3] Bluetooth® 5.3 requires Windows® 11.

[2] Bluetooth® 5.2 requires Windows® 11.

Ports^[1]

Rear Ports

- 1x USB-C® (USB 10Gbps / USB 3.2 Gen 2), with 15W charging
- 3x USB-A (USB 5Gbps / USB 3.2 Gen 1)
- 1x HDMI® (HDMI® in 1.4 / HDMI® out 2.1 TMDS combo port)
- 1x DisplayPort[™] 1.4
- 1x Ethernet (RJ-45)

Optional Rear Ports

1x serial

Right Ports

- 3x USB-A (USB 10Gbps / USB 3.2 Gen 2)
- 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;

 ${\sf USB4}^{\sf g}$ 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.

Monitor Cable

Monitor Cable**

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

SECURITY & PRIVACY

Security

Security Chip

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

Physical Locks

Kensington® Security Slot™, 3 x 7 mm

Chassis Intrusion Switch

- · Chassis intrusion switch
- No chassis intrusion switch

Fingerprint Reader

No fingerprint reader

Other Security

- (Optional) Smart Human Presence Detection (Camera with Radar Sensor)
- · (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

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^[1]

Base Warranty**

- · 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 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: -20°C (-4°F) to 60°C (140°F)

Relative 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

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

Notes:

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

Other Certifications

Other Certifications

- (Optional) TÜV Rheinland® Low Blue Light (Hardware Solution)
- (Optional) TÜV Rheinland® Low Blue Light (Software Solution)
- (Optional) TÜV Rheinland® Ultra Low Noise
- Eyesafe® Certified 2.0
- TÜV Rheinland® Flicker Free
- UL Anti-dust

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, Contamination by Fluids, Salt Fog)

- Feature with ** means that only one offering listed under the feature is configured on selected models.
- Lenovo reserves the right to change specifications or other product information without notice. Lenovo is not

ThinkCentre M90a Gen 5



responsible for photographic or typographical errors. LENOVO PROVIDES THIS PUBLICATION "AS IS," WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore this disclaimer may not apply to you.

• The specifications on this page may not be available in all regions, and may be changed or updated without notice













