



## Mac Studio (2025) - Tech Specs

Year introduced: 2025

### Finish

Silver

### Chip

Apple M4 Max chip

14-core CPU with 10 performance cores and 4 efficiency cores

32-core GPU

Hardware-accelerated ray tracing

16-core Neural Engine

410GB/s memory bandwidth

### Media Engine

Hardware-accelerated H.264, HEVC, ProRes and ProRes RAW

Video decode engine

Two video encode engines

Two ProRes encode and decode engines

AV1 decode

**Configurable to:**

M4 Max with 16-core CPU, 40-core GPU and 16-core Neural Engine (546GB/s memory bandwidth)

**Apple M3 Ultra chip**

28-core CPU with 20 performance cores and 8 efficiency cores

60-core GPU

Hardware-accelerated ray tracing

32-core Neural Engine

819GB/s memory bandwidth

**Media Engine**

Hardware-accelerated H.264, HEVC, ProRes and ProRes RAW

Two video decode engines

Four video encode engines

Four ProRes encode and decode engines

AV1 decode

**Configurable to:**

M3 Ultra with 32-core CPU, 80-core GPU and 32-core Neural Engine (819GB/s memory bandwidth)

**Apple Intelligence<sup>1</sup>**

Apple Intelligence is the personal intelligence system that helps you write, express yourself and get things done effortlessly. With groundbreaking privacy protections, it gives you peace of mind that no one else can access your data — not even Apple.

[Learn more about Apple Intelligence](#)

**Memory**

**Apple M4 Max chip**

36GB unified memory

**Configurable to:**

48GB, 64GB or 128GB (M4 Max with 16-core CPU and 40-core GPU)

**Apple M3 Ultra chip**

96GB unified memory

**Configurable to:**

256GB or 512GB (M3 Ultra with 32-core CPU and 80-core GPU)

**Storage<sup>2</sup>**

**Apple M4 Max chip**

512GB SSD

**Configurable to:**

1TB, 2TB, 4TB or 8TB

**Apple M3 Ultra chip**

1TB SSD

**Configurable to:**

2TB, 4TB, 8TB or 16TB

**Display Support****Apple M4 Max chip**

Simultaneous support for up to five displays:

Up to four displays with 6K resolution at 60Hz over Thunderbolt and one display with 4K resolution at 144Hz over HDMI

Up to two displays with 6K resolution at 60Hz over Thunderbolt and one display with 8K resolution at 60Hz or 4K resolution at up to 240Hz over HDMI

**Apple M3 Ultra chip**

Simultaneous support for up to eight displays:

Eight displays with up to 6K resolution at 60Hz or 4K resolution at up to 144Hz

Four displays with up to 8K resolution at 60Hz or 4K resolution at up to 240Hz

**Thunderbolt 5 digital video output**

Support for native DisplayPort 2.1 output over USB-C

**HDMI display video output**

Support for one display with up to 8K resolution at 60Hz or 4K resolution at 240Hz

Support for variable refresh rate (VRR), HDR and multi-channel audio

**Audio**

Built-in speaker

3.5mm headphone jack with advanced support for high-impedance headphones

HDMI port supports multi-channel audio output

**Connections and Expansion****Four Thunderbolt 5 (USB-C) ports with support for:**

Thunderbolt 5 (up to 120Gb/s)

USB 4 (up to 120Gb/s)

USB 3 (up to 10Gb/s)

DisplayPort 2.1

Two USB 3 (USB-A) ports (up to 5Gb/s)

HDMI 2.1 port

10Gb Ethernet

3.5mm headphone jack

**On front (M4 Max):**

Two USB-C ports (up to 10Gb/s)

SDXC card slot (UHS-II)

**On front (M3 Ultra):**

Two Thunderbolt 5 ports (up to 120Gb/s)

SDXC card slot (UHS-II)

**Communications**

## Wi-Fi

Wi-Fi 6E (802.11ax)<sup>3</sup>

## Bluetooth

Bluetooth 5.3

## Ethernet

10Gb Ethernet (Nbase-T Ethernet with support for 1Gb, 2.5Gb, 5Gb and 10Gb Ethernet using RJ-45 connector)

## Size and Weight

**Height:** 9.5 cm (3.7 inches)

**Width:** 19.7 cm (7.7 inches)

**Depth:** 19.7 cm (7.7 inches)

**Weight (M4 Max):** 2.74 kg (6.1 pounds)<sup>4</sup>

**Weight (M3 Ultra):** 3.64 kg (8.0 pounds)<sup>4</sup>

## Electrical and Operating Requirements

**Line voltage:** 100–240V AC

**Frequency:** 50Hz to 60Hz, single phase

**Maximum continuous power:** 480W

**Operating temperature:** 10° to 35° C (50° to 95° F)

**Storage temperature:** –40° to 47° C (–40° to 116° F)

**Relative humidity:** 5% to 95% non-condensing

**Operating altitude:** tested up to 5,000 metres (16,400 feet)

## In the Box

Mac Studio

Power lead

## Operating System

### macOS

macOS is the most advanced desktop operating system in the world. macOS Sequoia helps you be productive and creative in new ways — with Apple Intelligence,<sup>1</sup> iPhone Mirroring,<sup>5</sup> window tiling, major updates to Safari and more.

[Learn more about latest operating system](#)

## Accessibility

Accessibility features help people with disabilities get the most out of their new Mac Studio. With built-in support for vision, hearing, mobility and learning, you can create and do amazing things.

[Learn more about Accessibility](#)

### Features include:

Voice Control

VoiceOver

Zoom

Increase Contrast

Reduce Motion

Siri and Dictation

Switch Control

## Built-in Apps<sup>6</sup>

App Store  
Books  
Calendar  
Contacts  
FaceTime  
Find My  
Freeform  
GarageBand  
Home  
iMovie  
iPhone Mirroring  
Keynote  
Mail  
Maps  
Messages  
Music  
News  
Notes  
Numbers  
Pages  
Passwords  
Photo Booth  
Photos  
Podcasts  
Preview  
QuickTime Player  
Reminders  
Safari  
Shortcuts  
Stocks  
Time Machine  
Tips  
TV  
Voice Memos  
Weather

## Configure to Order

Configure your Mac Studio with these options at [apple.com](https://apple.com):

### Apple M4 Max chip

M4 Max with 16-core CPU, 40-core GPU and 16-core Neural Engine  
48GB, 64GB or 128GB unified memory (M4 Max with 16-core CPU and 40-core GPU)  
1TB, 2TB, 4TB or 8TB SSD

### Apple M3 Ultra chip

M3 Ultra with 32-core CPU, 80-core GPU and 32-core Neural Engine  
256GB unified memory  
512GB unified memory (M3 Ultra with 32-core CPU and 80-core GPU)  
2TB, 4TB, 8TB or 16TB SSD

## Mac Studio and the Environment

Mac Studio is designed to reduce environmental impact:<sup>7</sup>

[See the Mac Studio Product Environmental Report \(PDF\).](#)

**Progress towards Apple 2030**

- More than 30% recycled content<sup>8</sup>
- Over 35% of manufacturing electricity sourced from low-carbon electricity<sup>9</sup>
- Over 30% emissions reduction against business-as-usual scenario as modelled by Apple<sup>10</sup>

[See Apple's commitment](#)

**Materials**

- 100% recycled aluminium in the enclosure and thermal module chassis
- 100% recycled copper in multiple printed circuit boards
- 100% recycled gold in the plating of all Apple-designed printed circuit boards and multiple connectors
- 100% recycled rare earth elements in all magnets
- 100% recycled tin in the solder of multiple printed circuit boards
- 100% recycled copper and zinc in the pins of the power lead plug and AC inlet
- At least 25% recycled plastic in three components
- 100% fibre-based packaging<sup>11</sup>
- 59% recycled content in fibre-based packaging

**Energy**

- Over 35% of manufacturing electricity for Mac Studio is sourced from low-carbon electricity
- ENERGY STAR® certified<sup>12</sup>

**Waste**

No established final assembly sites generate waste sent to landfill as part of Apple’s Zero Waste Programme

**Smarter chemistry<sup>13</sup>**

Mercury-, BFR- and PVC-free

**Acoustic Performance**

Declared noise emission values in accordance with ECMA-109

Acoustic Performance

	Sound Power Level $L_{WA,m}$ (B)	Sound Pressure Level Operator Position $L_{pA,m}$ (dB)
Idle	1.6 ( $K_v = 0.3$ )	7
Wireless web	1.6 ( $K_v = 0.3$ )	7

1.  $L_{WA,m}$  is the mean A-weighted sound power level, rounded to the nearest 0.1 B.

2.  $L_{pA,m}$  is the mean A-weighted sound pressure level measured at operator position (rounded to the nearest 1 dB).

3. 1 B (bel) = 10 dB (decibel)

4.  $K_v$  is the statistical adder for computing upper-limit of A-weighted sound power level.

5. The quantity,  $L_{WA,c}$  (formerly called  $L_{WA,d}$ ) may be computed from the sum of  $L_{WA,m}$  and  $K_v$ .

6. The wireless web test browses 6 tabs with a mix of content including media.

7. Configuration tested: M3 Ultra, 28-core CPU / 60-core GPU, 96GB unified memory, 1TB storage.

1. Apple Intelligence is available in beta on all Mac models with M1 and later, with Siri and device language set to English (Australia, Canada, Ireland, New Zealand, South Africa, UK or US), as a macOS Sequoia update. Additional features and Chinese (Simplified), English (India, Singapore), French, German, Italian, Japanese, Korean, Portuguese (Brazil) and Spanish language support available in early April, with

more languages coming over the course of the year, including Vietnamese. Some features may not be available in all regions or languages.

2. 1GB = 1 billion bytes and 1TB = 1 trillion bytes; actual formatted capacity less.
3. Wi-Fi 6E available in countries and regions where supported.
4. Weight varies by configuration and manufacturing process.
5. iPhone Mirroring is not available in all countries and regions. Some iPhone features (e.g. camera and microphone) are not compatible with iPhone Mirroring.
6. iMovie, GarageBand, Pages, Numbers and Keynote are available on the Mac App Store. Downloading apps requires an Apple Account and a device that is compatible with the OS version required for each app.
7. Data accurate as of product launch.
8. Product recycled or renewable content is the mass of certified recycled material relative to the overall mass of the device, not including packaging or in-box accessories.
9. We estimate the percentage of electricity-related emissions in our manufacturing that is sourced from low-carbon electricity by attributing to our carbon model low-carbon energy procured by our suppliers in the prior fiscal year, based on the supplier manufacturing allocations at time of product launch. This calculation assesses the suppliers for Mac Studio. Included in this number is only low-carbon electricity that Apple or its suppliers have procured as part of Apple's Supplier Clean Energy Programme.
10. Carbon reductions are calculated against a product-specific business-as-usual scenario as modelled by Apple: 1) No use of clean electricity for manufacturing or product use, beyond what is already available on the latest modelled grid (based on regional emissions factors). 2) Apple's carbon intensity of key materials as of 2015 (our baseline year for our 2030 product carbon-neutrality goal). Carbon intensity of materials reflects use of recycled content and production technology. 3) Apple's average mix of transport modes (air, rail, sea, land) by product line and by region across three years (fiscal years 2017 to 2019) to best capture the baseline transport emissions of our products.
11. Based on retail packaging as shipped by Apple. Breakdown of US retail packaging by weight. Adhesives, inks and coatings are excluded from our calculations of plastic content and packaging weight.
12. ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the US Environmental Protection Agency.
13. Apple's Regulated Substances Specification describes Apple's restrictions on the use of certain chemical substances in materials in Apple products, accessories, manufacturing processes, and packaging used for shipping products to Apple's end customers. Restrictions are derived from international laws or directives, regulatory agencies, eco-label requirements, environmental standards and Apple policies. Every Apple product is free of PVC and phthalates except for AC power leads in India, Thailand (for 2-pin AC power leads) and the Republic of Korea, where we continue to seek government approval for our PVC and phthalates replacement. Apple products comply with the European Union Directive 2011/65/EU and its amendments, including exemptions for the use of lead such as high-temperature solder. Apple is working to phase out the use of these exempted substances for new products where technically possible.

---

Helpful?

[Yes](#)

[No](#)

Support

Mac Studio (2025) - Tech Specs