Documentation

MacBook Pro (14-inch, M3, Nov 2023) - Technical Specifications

Year introduced: 2023

Finish

- Space Gray
- Silver

Chip

Apple M3 chip

- 8-core CPU with 4 performance cores and 4 efficiency cores
- 10-core GPU
- Hardware-accelerated ray tracing
- 16-core Neural Engine
- 100GB/s memory bandwidth
- Media Engine
  - Hardware-accelerated H.264, HEVC, ProRes, and ProRes RAW
  - Video decode engine
  - Video encode engine
  - ProRes encode and decode engine
  - AV1 decode

Display

Liquid Retina XDR display

- 14.2-inch (diagonal) Liquid Retina XDR display;[1] 3024-by-1964 native resolution at 254 pixels per inch

XDR (Extreme Dynamic Range)

- 1,000,000:1 contrast ratio
- XDR brightness: 1000 nits sustained full-screen, 1600 nits peak[2] (HDR content only)
- SDR brightness: 600 nits

Color

- 1 billion colors
- Wide color (P3)
- True Tone technology

Refresh rates

- ProMotion technology for adaptive refresh rates up to 120Hz
- Fixed refresh rates: 47.95Hz, 48.00Hz, 50.00Hz, 59.94Hz, 60.00Hz

Memory	• 8GB or 16GB unified memory ○ *Configurable to 16GB or 24GB*
Battery and Power[3]	• Up to 22 hours Apple TV app movie playback • Up to 15 hours wireless web • 70-watt-hour lithium-polymer battery[3] • 70W USB-C Power Adapter • USB-C to MagSafe 3 Cable • Fast-charge capable with 96W USB-C Power Adapter
Storage[4]	• 512GB or 1TB SSD[5] ○ *Configurable to 1TB or 2TB*

Charging and Expansion	• SDXC card slot
	• HDMI port
	• 3.5 mm headphone jack
	• MagSafe 3 port
	• Two Thunderbolt / USB 4 ports with support for:
	  ○ Charging
	  ○ DisplayPort
	  ○ Thunderbolt 3 (up to 40Gb/s)
	  ○ USB 4 (up to 40Gb/s)

Display Support	Simultaneously supports full native resolution on the built-in display at 1 billion colors and: • One external display with up to 6K resolution at 60Hz HDMI digital video output • Support for one display with up to 4K resolution at 120Hz (M3)
Video Playback	• Supported formats include HEVC, H.264, AV1, and ProRes • HDR with Dolby Vision, HDR10, and HLG
Audio Playback	• Supported formats include AAC, MP3, Apple Lossless, FLAC, Dolby Digital, Dolby Digital Plus, and Dolby Atmos
Keyboard and Trackpad	Backlit Magic Keyboard with:

- 78 (U.S.) or 79 (ISO) keys including 12 full-height function keys and 4 arrow keys in an inverted-T arrangement
- Touch ID
- Ambient light sensor
- Force Touch trackpad for precise cursor control and pressure-sensing capabilities; enables Force clicks, accelerators, pressure-sensitive drawing, and Multi-Touch gestures

Wireless

Wi-Fi

- Wi-Fi 6E (802.11ax)[6]

Bluetooth

- Bluetooth 5.3

Camera

- 1080p FaceTime HD camera
- Advanced image signal processor with computational video

Audio

- High-fidelity six-speaker sound system with force-cancelling woofers
- Wide stereo sound
- Support for Spatial Audio when playing music or video with Dolby Atmos on built-in speakers
- Spatial Audio with dynamic head tracking when using AirPods (3rd generation), AirPods Pro, and AirPods Max
- Studio-quality three-mic array with high signal-to-noise ratio and directional beamforming
- 3.5 mm headphone jack with advanced support for high-impedance headphones
- HDMI port supports multichannel audio output

Operating Requirements

- Line voltage: 100V to 240V AC
- Frequency: 50Hz to 60Hz
- Operating temperature: 50° to 95° F (10° to 35° C)
- Storage temperature: –13° to 113° F (–25° to 45° C)
- Relative humidity: 0% to 90% noncondensing
- Operating altitude: tested up to 10,000 feet (3000 meters)
- Maximum storage altitude: 15,000 feet
- Maximum shipping altitude: 35,000 feet

Size and Weight

- Height: 0.61 inch (1.55 cm)
- Width: 12.31 inches (31.26 cm)
- Depth: 8.71 inches (22.12 cm)
- Weight: 3.4 pounds (1.55 kg)[7]

Operating System

macOS

macOS is the most advanced desktop operating system in the world. And with macOS Sonoma, work and play on your Mac are even more powerful — with new ways to elevate your video presentations, boost your gaming performance, and personalize your device.

Learn more about latest operating system

Accessibility

Accessibility features help people with disabilities get the most out of their new MacBook Pro. 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
- Closed Captions
- Text to Speech

Built-in Apps[8]	- App Store - Books - Calendar - Contacts - FaceTime - Find My - Freeform - GarageBand - Home - iMovie - Keynote - Mail - Maps - Messages - Music - News - Notes - Numbers - Pages - Photo Booth - Photos - Podcasts - Preview - QuickTime Player - Reminders - Safari - Shortcuts - Siri - Stocks - Time Machine - TV - Voice Memos
In the Box	14-inch MacBook Pro 70W USB-C Power Adapter (M3 or M3 Pro with 11-core CPU) - USB-C to MagSafe 3 Cable (2 m)
Configure to Order	- Configure your MacBook Pro with these options at apple.com: 16GB or 24GB unified memory 1TB or 2TB SSD 96W USB-C Power Adapter
MacBook Pro and the Environment	The 14-inch MacBook Pro is designed with the following features to reduce its environmental impact:[9]

See the 14-inch MacBook Pro Product Environmental Report (PDF)

Made with better materials

- 32% recycled or renewable content in the device,[10] including:
  - 100% recycled aluminum in the enclosure
  - 100% recycled gold in the plating of multiple printed circuit boards
  - 100% recycled rare earth elements in all magnets, representing 98% of the rare earth elements in the device
  - 100% recycled tin in the solder of multiple printed circuit boards
  - 35% or more recycled plastic in multiple components

Energy efficient

- ENERGY STAR® certified[11]

Smarter chemistry[12]

- Arsenic-free display glass
- Mercury-, BFR-, PVC-, and beryllium-free

Green manufacturing

- Over 27% manufacturing electricity sourced from supplier clean energy projects[13]
- Apple's Zero Waste Program helps suppliers eliminate waste sent to landfill

Responsible packaging

- 100% of virgin wood fiber comes from responsibly managed forests
- 99% fiber-based packaging

Progress toward our 2030 goal

- Over 40% emissions reduction against baseline[14]

Apple and the Environment

Today, Apple is carbon neutral for global corporate operations, and we are focused on our Apple 2030 goal to make every product carbon neutral.

See Apple's commitment

Acoustic Performance

Declared noise emission values in accordance with ECMA-109

	Sound Power Level $L_{WA,m}$ (B)	Sound Pressure Level Operator Position $L_{pA,m}$ (dB)
Idle	1.3 (K_V = 0.3)	3
Wireless web	1.3 (K_V = 0.3)	4

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

2. $L_{p\text{A,m}}$ 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, $L_{W\text{A,c}}$ (formerly called $L_{W\text{Ad}}$) may be computed from the sum of $L_{W\text{A,m}}$ and K_v.

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

7. Configuration tested: M3, 8-core CPU, 10-core GPU, 16GB unified memory, 1TB storage.

1. The displays on the 14-inch and 16-inch MacBook Pro have rounded corners at the top. When measured as a standard rectangular shape, the screens are 14.2 inches and 16.2 inches diagonally (actual viewable area is less).

2. In temperatures less than 25° C.

3. Actual rating of 69.6 watt-hours (14-inch model) or 99.6 watt-hours (16-inch model). Testing conducted by Apple in September and October 2023 using preproduction 14-inch MacBook Pro systems with Apple M3, 8-core CPU, 10-core GPU, 8GB of RAM, and 512GB SSD; preproduction 14-inch MacBook Pro systems with Apple M3 Pro, 12-core CPU, 18-core GPU, 18GB of RAM, and 1TB SSD; and preproduction 16-inch MacBook Pro systems with Apple M3 Pro, 12-core CPU, 18-core GPU, 36GB of RAM, and 512GB SSD. The wireless web test measures battery life by wirelessly browsing 25 popular websites with display brightness set to 8 clicks from bottom. The Apple TV app movie playback test measures battery life by playing back HD 1080p content with display brightness set to 8 clicks from bottom. Battery life varies by use and configuration. See apple.com/batteries for more information.

4. 1GB = 1 billion bytes and 1TB = 1 trillion bytes; actual formatted capacity less.

5. Price varies depending on storage capacity.

6. Wi-Fi 6E available in countries and regions where supported.

7. Weight varies by configuration and manufacturing process.

8. iMovie, GarageBand, Pages, Numbers, and Keynote are available on the Mac App Store. Downloading apps requires an Apple ID and a device that is compatible with the OS version required for each app.

9. Data accurate as of product launch.

10. 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.

11. ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the U.S. Environmental Protection Agency.

12. 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 cords in India, Thailand (for two-prong AC power cords), and South 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.

13. We estimate emissions savings from supplier clean electricity by allocating to our carbon model clean electricity generated by our suppliers in the prior fiscal year, based on the supplier manufacturing allocations at time of product launch.

14. Carbon reductions are calculated against a baseline scenario: 1) No use of clean electricity for manufacturing or product use, beyond what is already available on the 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 transportation modes (air, rail, ocean, ground) by product line across three years (fiscal years 2017 to 2019) to best capture the baseline transportation emissions of our products.

Helpful?   Yes   No

Support   MacBook Pro (14-inch, M3, Nov 2023) - Technical Specifications