MacBook Pro (13-inch, M2, 2022) – Technical Specifications

Languages English

Year introduced: 2022
Identify your Macbook Pro model

Finish

- Silver
- Space Gray

Chip
Apple M2 chip

- 8-core CPU with 4 performance cores and 4 efficiency cores
- 10-core GPU
- 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

Display
Retina display

- 13.3-inch (diagonal) LED-backlit display with IPS technology; 2560-by-1600 native resolution at 227 pixels per inch with support for millions of colors
- 500 nits brightness
- Wide color (P3)
- True Tone technology

Battery and Power[1]

- Up to 20 hours Apple TV app movie playback
- Up to 17 hours wireless web
- 58.2-watt-hour lithium-polymer battery
- 67W USB-C Power Adapter

Memory
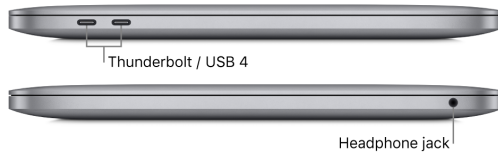
- 8GB unified memory
  Configurable to 16GB or 24GB

Storage[2]

- 256GB SSD
  Configurable to 512GB, 1TB, or 2TB

Charging and Expansion

Two Thunderbolt / USB 4 ports with support for:

- Charging
- DisplayPort
- Thunderbolt 3 (up to 40Gb/s)
- USB 4 (up to 40Gb/s)
- USB 3.1 Gen 2 (up to 10Gb/s)
- 3.5 mm headphone jack

Thunderbolt / USB 4

Headphone jack

Keyboard and Trackpad
Backlit Magic Keyboard with:

- 65 (U.S.) or 66 (ISO) keys including 4 arrow keys in an inverted-T arrangement
- Touch Bar
- 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

- 802.11ax Wi-Fi 6 wireless networking
- IEEE 802.11a/b/g/n/ac compatible

Bluetooth

- Bluetooth 5.0 wireless technology

Camera

- 720p FaceTime HD camera
- Advanced image signal processor with computational video

Audio

- Stereo speakers with high dynamic range
- 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

Display Support
Simultaneously supports full native resolution on the built-in display at millions of colors and:

- One external display with up to 6K resolution at 60Hz

Thunderbolt 3 digital video output

- Native DisplayPort output over USB-C
- VGA, HDMI, DVI, and Thunderbolt 2 output supported using adapters (sold separately)

Video Playback

- Supported formats include HEVC, H.264, 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

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
- Maximum storage altitude: 15,000 feet
- Maximum shipping altitude: 35,000 feet

Size and Weight

- Height: 0.61 inch (1.56 cm)
- Width: 11.97 inches (30.41 cm)
- Depth: 8.36 inches (21.24 cm)
- Weight: 3.0 pounds (1.4 kg)[3]

Operating System
macOS

macOS is the most advanced desktop operating system in the world. macOS Ventura makes the things you do most on Mac even better, so you can work smarter, play harder, and go further.
Learn more about latest operating system
macOS User Guide

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
- Live Captionss

Built-in Apps[4]

- 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

- 13-inch MacBook Pro
- 67W USB-C Power Adapter
- USB-C Charge Cable (2 m)

Configure to Order

- Configure your MacBook Pro with these options at apple.com:

    - 16GB or 24GB unified memory
    - 512GB, 1TB, or 2TB SSD

MacBook Pro and the Environment

The 13-inch MacBook Pro is designed with the following features to reduce its environmental impact:[5]

See the 13-inch MacBook Pro Product Environmental Report

Made with better materials

- 100% recycled rare earth elements in the enclosure magnets, representing 46% of the rare earth elements in the device
- 100% recycled tin in the solder of the main logic board
- Low-carbon aluminum in the enclosure
- 35% or more recycled plastic in multiple components

Energy efficient

- ENERGY STAR® certified[6]

Smarter chemistry[7]

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

Green manufacturing

- Apple's Zero Waste Program helps suppliers eliminate waste sent to landfill
- All final assembly supplier sites are transitioning to 100% renewable energy for Apple production

Responsible packaging

- 100% of virgin wood fiber comes from responsibly managed forests
- 90% or more fiber-based packaging

Apple and the Environment

We're committed to making our products without taking from the earth, and to become carbon neutral across our entire business, including products, by 2030.

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)	4
Wireless web	1.3 (K_V = 0.3)	4

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_{WAd}) 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: M2, 8-core CPU, 10-core GPU, 8GB unified memory, 512GB storage.

1. Testing conducted by Apple in May 2022 using preproduction 13-inch MacBook Pro systems with Apple M2, 8-core CPU, 10-core GPU, 8GB of RAM, and 256GB 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.
2. 1GB = 1 billion bytes and 1TB = 1 trillion bytes; actual formatted capacity less.
3. Weight varies by configuration and manufacturing process.
4. 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.
5. Data accurate as of product launch.
6. ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the U.S. Environmental Protection Agency.
7. Apple defines its restrictions on harmful substances, including definitions for what Apple considers to be "free of," in the Apple Regulated Substances Specification   . Every Apple product is free of PVC and phthalates with the exception of 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.

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Support