

MacBook Pro (14-inch, M4 Pro or M4 Max, 2024)- Tech Specs

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SupportGet HelpCommunityCheck CoverageRepairHelpful TopicsGet AppleCare+Apple Account and PasswordBilling & SubscriptionsAccessibility

Switch from PC to Mac

Explore All Apple Watch

Apple Watch Series 10

Apple Watch Ultra 2

Apple Watch For Your Kids

Explore TV & Home

Explore TV & Home

Shop TV & Home

Shop Apple TV 4K

TV & Home Accessories

More from TV & Home

Beats by Dr. Dre

Apple Account and Password

5 total resultsQuick LinksIf you forgot your Apple ID passwordIf you forgot the passcode for your iPhone, iPad, or iPod touchView, change, or cancel your subscriptionsUpdate iOS on your deviceContact Apple Support

If you forgot your Apple ID password

If you forgot the passcode for your iPhone, iPad, or iPod touch

View, change, or cancel your subscriptions

Update iOS on your device

Identify your MacBook Pro model

Apple M4 Pro chip

12?core CPU with 8 perform-ance cores and 4 efficiency cores, 14?core CPU with 10 perform-ance cores and 4 efficiency cores

12?core CPU with 8 perform-ance cores and 4 efficiency cores, 14?core CPU with 10 perform-ance

cores and 4 efficiency cores

16-core GPU, 20-core GPU

16-core GPU, 20-core GPU

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

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

ProRes encode and decode engine

ProRes encode and decode engine

M4 Pro with 14-core CPU and 20-core GPU or M4 Max with 14-core CPU and 32-core GPU (410GB/s memory bandwidth) or M4 Max with 16-core CPU and 40-core GPU (546GB/s memory bandwidth)

M4 Pro with 14-core CPU and 20-core GPU or M4 Max with 14-core CPU and 32-core GPU (410GB/s memory bandwidth) or M4 Max with 16-core CPU and 40-core GPU (546GB/s memory bandwidth)

Apple M4 Max chip

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

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

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

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

Two video encode engines

Two video encode engines

Two ProRes encode and decode engines

Two ProRes encode and decode engines

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

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

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

Liquid Retina XDR display

14.2-inch (diagonal) Liquid Retina XDR display; 23024x1964 native resolution at 254 pixels per inch

14.2-inch (diagonal) Liquid Retina XDR display; 23024x1964 native resolution at 254 pixels per inch

XDR (Extreme Dynamic Range)

XDR brightness: 1,000 nits sustained full-screen, 1,600 nits peak³(HDR content only)

XDR brightness: 1,000 nits sustained full-screen, 1,600 nits peak³(HDR content only)

SDR brightness: up to 1,000 nits (outdoor)

SDR brightness: up to 1,000 nits (outdoor)

ProMotion technology for adaptive refresh rates up to 120Hz

ProMotion technology for adaptive refresh rates up to 120Hz

Fixed refresh rates: 47.95Hz, 48.00Hz, 50.00Hz, 59.94Hz, 60.00Hz

Fixed refresh rates: 47.95Hz, 48.00Hz, 50.00Hz, 59.94Hz, 60.00Hz

Apple M4 Pro chip

36GB (M4 Max with 14-core CPU) or 48GB (M4 Pro and M4 Max with 16-core CPU) or 64GB or 128GB (M4 Max with 16-core CPU)

36GB (M4 Max with 14-core CPU) or 48GB (M4 Pro and M4 Max with 16-core CPU) or 64GB or 128GB (M4 Max with 16-core CPU)

Apple M4 Max chip

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

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

Up to 22 hours video streaming

Up to 22 hours video streaming

Up to 14 hours wireless web

Up to 14 hours wireless web

70W USB-C Power Adapter (included with M4 Pro with 12-core CPU)

70W USB-C Power Adapter (included with M4 Pro with 12-core CPU)

96W USB-C Power Adapter (included with M4 Pro with 14?core CPU, configurable with M4 Pro with 12?core CPU)

96W USB-C Power Adapter (included with M4 Pro with 14?core CPU, configurable with M4 Pro with 12?core CPU)

USB-C to MagSafe 3 Cable

USB-C to MagSafe 3 Cable

Fast-charge capable with 96W USB-C Power Adapter

Fast-charge capable with 96W USB-C Power Adapter

Up to 18 hours video streaming

Up to 18 hours video streaming

Up to 13 hours wireless web

Up to 13 hours wireless web

96W USB-C Power Adapter

96W USB-C Power Adapter

USB-C to MagSafe 3 Cable

USB-C to MagSafe 3 Cable

Fast-charge capable with 96W USB-C Power Adapter

Fast-charge capable with 96W USB-C Power Adapter

Apple M4 Pro chip

1TB, 2TB or 4TB

1TB, 2TB or 4TB

Apple M4 Max chip

2TB, 4TB or 8TB

2TB, 4TB or 8TB

Three Thunderbolt 5 (USB-C) ports with support for:

Three Thunderbolt 5 (USB-C) ports with support for:

Thunderbolt 5 (up to 120Gb/s)

Thunderbolt 5 (up to 120Gb/s)

Thunderbolt 4 (up to 40Gb/s)

Thunderbolt 4 (up to 40Gb/s)

USB 4 (up to 40Gb/s)

USB 4 (up to 40Gb/s)

Simultaneously supports full native resolution on the built-in display at 1 billion colours and:

Simultaneously supports full native resolution on the built-in display at 1 billion colours and:

Up to two external displays with up to 6K resolution at 60Hz over Thunderbolt, or one external display with up to 6K resolution at 60Hz over Thunderbolt and one external display with up to 4K resolution at 144Hz over HDMI

Up to two external displays with up to 6K resolution at 60Hz over Thunderbolt, or one external display with up to 6K resolution at 60Hz over Thunderbolt and one external display with up to 4K resolution at 144Hz over HDMI

One external display supported at 8K resolution at 60Hz or one external display at 4K resolution at 240Hz over HDMI

One external display supported at 8K resolution at 60Hz or one external display at 4K resolution at 240Hz over HDMI

Simultaneously supports full native resolution on the built-in display at 1 billion colours and:

Simultaneously supports full native resolution on the built-in display at 1 billion colours and:

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

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

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

Up to three external displays: up to two external displays with 6K resolution at 60Hz over

Thunderbolt and one external display with up to 8K resolution at 60Hz or one external display with 4K resolution at 240Hz over HDMI

Thunderbolt 4 digital video output

Support for native DisplayPort 1.4 output over USB-C

Support for native DisplayPort 1.4 output over USB-C

Thunderbolt 5 digital video output

Support for native DisplayPort 2.1 output over USB-C

Support for native DisplayPort 2.1 output over USB-C

HDMI digital video output

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

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

Supported formats include HEVC, H.264, AV1 and ProRes

Supported formats include HEVC, H.264, AV1 and ProRes

HDR with Dolby Vision, HDR10+/HDR10 and HLG

HDR with Dolby Vision, HDR10+/HDR10 and HLG

Supported formats include AAC, MP3, Apple Lossless, FLAC, Dolby Digital, Dolby Digital Plus and Dolby Atmos

Backlit Magic Key-board with:

78 (US) or 79 (ISO) keys including 12 full-height function keys and 4 arrow keys in an inverted T arrangement

78 (US) or 79 (ISO) keys including 12 full-height function keys and 4 arrow keys in an inverted T arrangement

Force Touch trackpad for precise cursor control and pressure-sensing capabilities; enables Force clicks, accelerators, pressure-sensitive drawing and Multi-Touch gestures

Force Touch trackpad for precise cursor control and pressure-sensing capabilities; enables Force clicks, accelerators, pressure-sensitive drawing and Multi-Touch gestures

12MP Center Stage camera with support for Desk View

12MP Center Stage camera with support for Desk View

1080p HD video recording

1080p HD video recording

Advanced image signal processor with computational video

Advanced image signal processor with computational video

High-fidelity six-speaker sound system with force-cancelling woofers

High-fidelity six-speaker sound system with force-cancelling woofers

Support for Spatial Audio when playing music or video with Dolby Atmos on built-in speakers

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 4, AirPods Pro, AirPods Pro 2 and AirPods Max

Spatial Audio with dynamic head tracking when using AirPods (3rd generation), AirPods 4, AirPods Pro, AirPods Pro 2 and AirPods Max

Studio-quality three-mic array with high signal-to-noise ratio and directional beamforming

Studio-quality three-mic array with high signal-to-noise ratio and directional beamforming

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

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

HDMI port supports multi-channel audio output

HDMI port supports multi-channel audio output

Line voltage:100V to 240V AC

Line voltage:100V to 240V AC

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

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

Storage temperature:25° to 45° C (77° to 113° F)

Storage temperature:25° to 45° C (77° to 113° F)

Relative humidity:0% to 90% non-condensing

Relative humidity:0% to 90% non-condensing

Operating altitude:tested up to 3,000 metres (10,000 feet)

Operating altitude:tested up to 3,000 metres (10,000 feet)

Maximum storage altitude:4,500 metres (15,000 feet)

Maximum storage altitude:4,500 metres (15,000 feet)

Maximum shipping altitude:10,500 metres (35,000 feet)

Maximum shipping altitude:10,500 metres (35,000 feet)

Height:1.55 cm (0.61 inches)

Height:1.55 cm (0.61 inches)

Width:31.26 cm (12.31 inches)

Width:31.26 cm (12.31 inches)

Depth:22.12 cm (8.71 inches)

Depth:22.12 cm (8.71 inches)

Weight (M4 Pro):1.60 kg (3.5 pounds)⁷

Weight (M4 Pro):1.60 kg (3.5 pounds)⁷

Weight (M4 Max):1.62 kg (3.6 pounds)⁷

Weight (M4 Max):1.62 kg (3.6 pounds)⁷

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,¹ iPhone Mirroring, window tiling, major updates to Safari and more.

[Learn more about latest operating system](#)

Accessi-bility 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](#)

70W USB-C Power Adapter (M4 or M4 Pro with 12?core CPU) or 96W USB-C Power Adapter (M4 Pro with 14?core CPU and M4 Max)

70W USB-C Power Adapter (M4 or M4 Pro with 12?core CPU) or 96W USB-C Power Adapter (M4 Pro with 14?core CPU and M4 Max)

USB-C to MagSafe 3 Cable (2m)

USB-C to MagSafe 3 Cable (2m)

Polishing cloth (only with nano-texture display option)

Polishing cloth (only with nano-texture display option)

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

M4 Pro with 14-core CPU, 20-core GPU and 16-core Neural Engine

M4 Pro with 14-core CPU, 20-core GPU and 16-core Neural Engine

M4 Max with 14-core CPU, 32-core GPU and 16-core Neural Engine

M4 Max with 14-core CPU, 32-core GPU and 16-core Neural Engine

M4 Max with 16-core CPU, 40-core GPU and 16-core Neural Engine

M4 Max with 16-core CPU, 40-core GPU and 16-core Neural Engine

36GB unified memory (M4 Max with 14-core CPU)

36GB unified memory (M4 Max with 14-core CPU)

48GB unified memory (M4 Pro and M4 Max with 16-core CPU)

48GB unified memory (M4 Pro and M4 Max with 16-core CPU)

64GB unified memory (M4 Max with 16-core CPU)

64GB unified memory (M4 Max with 16-core CPU)

128GB unified memory (M4 Max with 16-core CPU)

128GB unified memory (M4 Max with 16-core CPU)

1TB, 2TB or 4TB SSD (M4 Pro and M4 Max)

1TB, 2TB or 4TB SSD (M4 Pro and M4 Max)

8TB SSD (M4 Max)

8TB SSD (M4 Max)

96W USB-C Power Adapter (included with M4 Pro with 14-core CPU and M4 Max)

96W USB-C Power Adapter (included with M4 Pro with 14-core CPU and M4 Max)

MacBook Pro and the Environment

The 14-inch MacBook Pro is designed to reduce environmental impact:9

See the 14-inch MacBook Pro Product En-viron-men-tal Report (PDF)

Progress towards Apple 2030

More than 35% recycled content¹⁰

More than 35% recycled content¹⁰

45% of manufacturing electricity sourced from low-carbon electricity¹¹

45% of manufacturing electricity sourced from low-carbon electricity¹¹

More than 45% emissions reduction against business-as-usual scenario as modelled by Apple¹²

More than 45% emissions reduction against business-as-usual scenario as modelled by Apple¹²

100% recycled aluminium in the enclosure

100% recycled aluminium in the enclosure

100% recycled rare earth elements in all magnets

100% recycled rare earth elements in all magnets

100% recycled tin in the solder of multiple printed circuit boards

100% recycled tin in the solder of multiple printed circuit boards

100% recycled copper in multiple printed circuit boards and a thermal module component

100% recycled copper in multiple printed circuit boards and a thermal module component

100% recycled gold in the plating of multiple printed circuit boards

100% recycled gold in the plating of multiple printed circuit boards

90% recycled steel in the keyboard feature plate

90% recycled steel in the keyboard feature plate

35% or more recycled plastic in 15 components

35% or more recycled plastic in 15 components

45% of manufacturing electricity for the 14-inch MacBook Pro is sourced from low-carbon electricity¹¹

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51% recycled content in fibre packaging

51% recycled content in fibre packaging

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

Mercury-, BFR- and PVC-free

Mercury-, BFR- and PVC-free

Declared noise emission values in accordance with ECMA-109

LWA, is the mean A-weighted sound power level, rounded to the nearest 0.1 B.

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LpA, is the mean A-weighted sound pressure level measured at operator position (rounded to the nearest 1 dB).

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

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

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The quantity, LWA,c (formerly called LWAd) may be computed from the sum of LWA,mand K_v.

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

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Configuration tested: M4 Max, 14-core CPU / 32-core GPU, 36GB unified memory, 2TB storage.

Configuration tested: M4 Max, 14-core CPU / 32-core GPU, 36GB unified memory, 2TB storage.

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 software update. Additional features and languages will be available in April, with more languages coming over the course of the year. Languages supported in 2025 include Chinese, English (India, Singapore), French, German, Italian, Japanese, Korean, Portuguese, Spanish

and Vietnamese.

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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).

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In temperatures less than 25° C.

In temperatures less than 25° C.

Testing conducted by Apple August to October 2024 using pre-production 14-inch MacBook Pro systems with Apple M4 Pro, 14-core CPU, 20-core GPU, 24GB of RAM and 1TB SSD; and pre-production 14-inch MacBook Pro systems with Apple M4 Max, 14-core CPU, 32-core GPU, 36GB of RAM and 2TB SSD. Wireless web battery life tested by browsing 25 popular websites while connected to Wi-Fi. Video streaming battery life tested with 1080p content in Safari while connected to Wi-Fi. Display brightness set to 8 clicks from the bottom and keyboard backlight was off. Battery life varies by use and configuration. See apple.com/uk/batteries for more information.

Testing conducted by Apple August to October 2024 using pre-production 14-inch MacBook Pro systems with Apple M4 Pro, 14-core CPU, 20-core GPU, 24GB of RAM and 1TB SSD; and pre-production 14-inch MacBook Pro systems with Apple M4 Max, 14-core CPU, 32-core GPU, 36GB of RAM and 2TB SSD. Wireless web battery life tested by browsing 25 popular websites while connected to Wi-Fi. Video streaming battery life tested with 1080p content in Safari while connected

to Wi-Fi. Display brightness set to 8 clicks from the bottom and keyboard backlight was off. Battery life varies by use and configuration. See apple.com/uk/batteries for more information.

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

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

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

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

Weight varies by configuration and manufacturing process.

Weight varies by configuration and manufacturing process.

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. iPhone Mirroring is not available in all countries and regions. Some iPhone features (e.g., camera and microphone) are not compatible with iPhone Mirroring.

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Data accurate as of product launch.

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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.

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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. 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.

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Carbon reductions are calculated against a 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 across three years (fiscal years 2017 to 2019) to best capture the baseline transport emissions of our products.

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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.

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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 two-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.

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