

MacBook Pro (15-inch, 2019) – Technical Specifications



Touch Bar

- Touch Bar with integrated Touch ID sensor

Finish

- Silver
- Space Gray

Display

- Retina display
- 15.4-inch (diagonal) LED-backlit display with IPS technology; 2880-by-1800 native resolution at 220 pixels per inch with support for millions of colors
- Supported scaled resolutions:
 - 1920 by 1200
 - 1680 by 1050
 - 1280 by 800
 - 1024 by 640
- 500 nits brightness
- Wide color (P3)
- True Tone technology

Processor

- 2.6GHz
2.6GHz 6-core Intel Core i7, Turbo Boost up to 4.5GHz, with 12MB shared L3 cache
Configurable to 2.4GHz 8-core Intel Core i9, Turbo Boost up to 5.0GHz, with 16MB shared L3 cache
- 2.3GHz
2.3GHz 8-core Intel Core i9, Turbo Boost up to 4.8GHz, with 16MB shared L3 cache
Configurable to 2.4GHz 8-core Intel Core i9, Turbo Boost up to 5.0GHz, with 16MB shared L3 cache

Storage

- **256GB**
256GB SSD
Configurable to 512GB, 1TB, 2TB, or 4TB SSD
- **512GB**
512GB SSD
Configurable to 1TB, 2TB, or 4TB SSD

Memory

- 16GB of 2400MHz DDR4 onboard memory
Configurable to 32GB of memory

Graphics

- **2.6GHz**
Radeon Pro 555X with 4GB of GDDR5 memory and automatic graphics switching
Intel UHD Graphics 630
Configurable to Radeon Pro 560X with 4GB of GDDR5 memory
- **2.3GHz**
Radeon Pro 560X with 4GB of GDDR5 memory and automatic graphics switching
Intel UHD Graphics 630
Configurable to Radeon Pro Vega 16 with 4GB of HBM2 memory or Radeon Pro Vega 20 with 4GB of HBM2 memory

Charging and Expansion

Four Thunderbolt 3 (USB-C) ports with support for:

- Charging
- DisplayPort
- Thunderbolt (up to 40Gb/s)
- USB 3.1 Gen 2 (up to 10Gb/s)

Keyboard and Trackpad

- **Full-size backlit keyboard with:**
 - 64 (U.S.) or 65 (ISO) keys including 4 arrow keys
 - Touch Bar with integrated Touch ID sensor
 - 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**
802.11ac Wi-Fi wireless networking; IEEE 802.11a/b/g/n compatible
- **Bluetooth**
Bluetooth 5.0 wireless technology

Camera

- 720p FaceTime HD camera

Video Support

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

- Up to two displays with 5120-by-2880 resolution at 60Hz at over a billion colors
- Up to four displays with 4096-by-2304 resolution at 60Hz at over a billion colors

Thunderbolt 3 digital video output

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

Audio

- Stereo speakers with high dynamic range
- Three microphones
- 3.5 mm headphone jack

Battery and Power

- Up to 10 hours wireless web
- Up to 10 hours iTunes movie playback
- Up to 30 days of standby time
- Built-in 83.6-watt-hour lithium-polymer battery
- 87W USB-C Power Adapter

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 (1.55 cm)
- Width: 13.75 inches (34.93 cm)
- Depth: 9.48 inches (24.07 cm)
- Weight: 4.02 pounds (1.83 kg)

Operating System

macOS

macOS is the operating system that powers everything you do on a Mac. macOS Mojave brings new features inspired by its most powerful users but designed for everyone. So you can get more out of every click.

Accessibility

Accessibility features help people with disabilities get the most out of their new MacBook Pro. With built-in support for vision, hearing, physical and motor skills, and learning and literacy, you can create and do amazing things.

Features include:

- VoiceOver
- Zoom
- Increase Contrast
- Reduce Motion
- Siri and Dictation
- Switch Control
- Closed Captions
- Text to Speech

Built-in Apps

- Photos
- iMovie
- GarageBand
- Pages
- Numbers
- Keynote
- Siri
- Safari
- Mail
- FaceTime
- Messages
- Maps
- News
- Stocks
- Home
- Voice Memos
- Notes
- Calendar
- Contacts
- Reminders
- Photo Booth
- Preview
- iTunes
- Books
- App Store
- Time Machine

What's in the Box

- 15-inch MacBook Pro
- 87W USB-C Power Adapter

- USB-C Charge Cable (2 m)
- ## Configure to Order

Configure your MacBook Pro with these options:

- 2.4GHz 8-core Intel Core i9, Turbo Boost up to 5.0GHz, with 16MB shared L3 cache
- 32GB of 2400MHz DDR4 memory
- Radeon Pro 560X with 4GB of GDDR5 memory
- Radeon Pro Vega 16 with 4GB of HBM2 memory
- Radeon Pro Vega 20 with 4GB of HBM2 memory
- 512GB, 1TB, 2TB, or 4TB SSD

MacBook Pro and the Environment

Apple takes a complete product life cycle approach to determining our environmental impact.

MacBook Pro is designed with the following features to reduce its environmental impact:

- Mercury-free LED-backlit display
- Arsenic-free display glass
- BFR-free
- PVC-free
- Beryllium-free
- Highly recyclable aluminum enclosure
- Meets ENERGY STAR requirements
- Rated EPEAT Gold

Apple and the Environment

Read our Product Environmental Reports for detailed information on the environmental performance of every Apple product.

Accessories

Mac Software

- Final Cut Pro X
- Logic Pro X

Displays and Adapters

- LG UltraFine 4K Display
- LG UltraFine 5K Display
- Thunderbolt 3 (USB-C) to Thunderbolt 2 Adapter
- USB-C to USB Adapter
- USB-C to SD Card Reader
- USB-C Digital AV Multiport Adapter
- USB-C VGA Multiport Adapter
- USB-C to Gigabit Ethernet Adapter

Other Accessories

- USB-C to Lightning Cable
- USB-C Charge Cable
- 87W USB-C Power Adapter
- 15-inch MacBook Pro Leather Sleeve
- Blackmagic eGPU
- Blackmagic eGPU Pro
- Magic Keyboard
- Magic Keyboard with Numeric Keypad
- Magic Trackpad 2
- Magic Mouse 2
- AppleCare+ for Mac

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	1.7 ($K_V = 0.3$)	8
Wireless web	1.7 ($K_V = 0.3$)	8