MacBook Pro (15-inch, Late 2008) - Technical Specifications

Size and weight

Height:

0.95 inch (2.41 cm)

Width:

14.35 inches (36.4 cm)

Depth:

9.82 inches (24.9 cm)

9.62 miches (24.9 cm

Weight:

5.5 pounds (2.49 kg)¹

Connections and expansion

- MagSafe power port
- Gigabit Ethernet port
- One FireWire 800 port (up to 800 Mbps)
- Two USB 2.0 ports (up to 480 Mbps)
- Mini DisplayPort
- Audio line in
- Audio line out
- ExpressCard/34 slot
- Kensington lock slot

Communications

- Built-in AirPort Extreme Wi-Fi wireless networking² (based on IEEE 802.11n draft specification); IEEE 802.11a/b/g compatible
- Built-in Bluetooth 2.1 + EDR (Enhanced Data Rate)
- Built-in 10/100/1000BASE-T Gigabit Ethernet (RJ-45 connector)

Audio

- Built-in stereo speakers
- Built-in omnidirectional microphone (located under left speaker grille)
- Combined optical digital input/analog line in (minijack)
- Combined optical digital output/analog line out (minijack)
- Supports Apple Stereo Headset with microphone

Environmental Status Report

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

- · Highly recyclable aluminum and glass enclosure
- Mercury-free LED-backlit display
- Arsenic-free glass
- BFR-free internal components
- PVC-free internal cables
- Meets ENERGY STAR requirements
- EPEAT Gold rating

Display

- 15.4-inch (diagonal) LED-backlit glossy widescreen display with support for millions of colors
- Supported resolutions: 1440 by 900 (native), 1280 by 800, 1152 by 720, 1024 by 640, and 800 by 500 pixels at 16:10 aspect ratio; 1024 by 768, 800 by 600, and 640 by 480 pixels at 4:3 aspect ratio; 1024 by 768, 800 by 600, and 640 by 480 pixels at 4:3 aspect ratio; 720 by 480 pixels at 3:2 aspect ratio; 720 by 480 pixels at 3:2 aspect ratio stretched

Graphics and video support

- NVIDIA GeForce 9600M GT graphics processor with dual-link DVI support; 256MB of GDDR3 memory on 2.4GHz configuration; 512MB of GDDR3 memory on 2.53GHz and 2.8GHz configurations
- NVIDIA GeForce 9400M graphics processor with 256MB of DDR3 SDRAM shared with main memory
- Dual display and video mirroring: Simultaneously supports full native resolution on the built-in display and up to 2560 by 1600 pixels on an external display, both at millions of colors
- Built-in iSight camera
- Mini DisplayPort

Video output options

DVI output using Mini DisplayPort to DVI Adapter (optional)

VGA output using Mini DisplayPort to VGA Adapter (optional)







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English

Dual-link DVI output using Mini DisplayPort to Dual-Link DVI Adapter (optional)

Input

- Built-in full-size backlit keyboard with 78 (U.S.) or 79 (ISO) keys, including 12 function keys and 4 arrow keys (inverted "T" arrangement)
- Multi-Touch trackpad for precise cursor control; supports two-finger scrolling, pinch, rotate, three-finger swipe, four-finger swipe, tap, double-tap, and drag capabilities

Processor and memory

- 2.4GHz Intel Core 2 Duo processor with 3MB on-chip shared L2 cache running 1:1 with processor speed; or 2.53GHz or 2.8GHz Intel Core 2 Duo processor with 6MB shared L2 cache
- 2GB (two 1GB SO-DIMMs) or 4GB (two 2GB SO-DIMMs) of 1066MHz DDR3 SDRAM; two SO-DIMM slots support up to 4GB

Storage

- 250GB or 320GB 5400-rpm Serial ATA hard drive
- Optional 250GB or 320GB 7200-rpm hard drive
- Optional 128GB solid-state drive⁴

Optical drive

■ 8x slot-loading SuperDrive (DVD±R DL/DVD±RW/CD-RW)

Maximum write: 8x DVD-R, DVD+R; 4x DVD-R DL (double layer), DVD+R DL (double layer), DVD-RW; DVD-RW; DVD+RW; 24x CD-R; 10x CD-RW

Maximum read: 8x DVD-R, DVD+R, DVD-ROM; 6x DVD-ROM (double layer DVD-9), DVD-R DL (double layer), DVD+R DL (double layer), DVD-RW, DVD+RW; 24x CD

Battery and power 5

- 50-watt-hour lithium-polymer battery
- 85W MagSafe Power Adapter with cable management system
- MagSafe power port

Electrical and 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 (-24° to 45° C)

Relative humidity: 0% to 90% noncondensing ■ Maximum operating altitude: 10,000 feet

■ Maximum storage altitude: 15,000 feet

Maximum shipping altitude: 35,000 feet

What's in the box

- MacBook Pro
- Display cleaning cloth
- 85W MagSafe Power Adapter, AC wall plug, and power cord
- Lithium-polymer battery
- Install/restore DVDs
- Printed and electronic documentation

Installed software

- Mac OS X v10.5 Leopard (includes Time Machine, Quick Look, Spaces, Spotlight, Dashboard, Mail, iChat, Safari, Address Book, QuickTime, iCal, DVD Player, Photo Booth, Front Row, Xcode Developer Tools)
- iLife '08 (includes iTunes, iPhoto, iMovie, iDVD, iWeb, GarageBand)

Configurations

	2.4GHz MacBook Pro	2.53GHz MacBook Pro	
	(MB470LL/A)	(MB471LL/A)	
Enclosure	Precision aluminum unibody		
Processor	2.4GHz Intel Core 2 Duo	2.53GHz Intel Core 2 Duo	
L2 cache	3MB shared	6MB shared	
System bus	1066MHz		
Memory	2GB (two 1GB SO-DIMMs) of 1066MHz	4GB (two 2GB SO-DIMMs) of 1066MHz	
	DDR3 SDRAM; supports up to 4GB	DDR3 SDRAM; supports up to 4GB	
Hard drive ⁴	250GB Serial ATA; 5400 rpm	320GB Serial ATA; 5400 rpm	
Slot-loading optical drive	8x SuperDrive (DVD±R DL/DVD±RW/CD	SuperDrive (DVD±R DL/DVD±RW/CD-RW)	

Graphics	NVIDIA GeForce 9600M GT graphics processor; and NVIDIA GeForce 9400M graphics processor with 256MB of DDR3 SDRAM shared with main memory ³	
Graphics memory	256MB GDDR3	512MB GDDR3
Video	Built-in iSight camera; Mini DisplayPort output port with support for DVI, VGA, and dual-link DVI (requires adapters, sold separately)	
Display	15.4-inch (diagonal) LED-backlit glossy widescreen display, 1440-by-900 resolution	
USB	Two USB 2.0 ports (up to 480 Mbps)	
Audio	Built-in stereo speakers, built-in omnidirectional microphone, combined optical digital input/analog line in, combined optical digital output/analog line out	
Networking	Built-in 10/100/1000BASE-T (Gigabit) Ethernet	
Wireless	Built-in AirPort Extreme Wi-Fi (based on IEEE 802.11n draft specification) ² ; built-in Bluetooth 2.1 + EDR (Enhanced Data Rate) module	
Hardware accessories	85W MagSafe Power Adapter, AC wall plug, power cord, lithium-polymer battery	
Limited warranty and service	Your MacBook Pro comes with 90 days of free telephone support and a one-year limited warranty. Purchase the AppleCare Protection Plan to extend your service and support to three years from your computer's purchase date. Only the AppleCare Protection Plan provides you with direct telephone support from Apple technical experts and the assurance that repairs will be handled by Apple-authorized technicians using genuine Apple parts. For more information, visit Apple support or call 800-823-2775.	
Apple and the global environment	Learn more about Apple's dedication to reducing the environmental impact of our products and processes. The Apple Product Environmental Specification details the environmental attributes of our products.	
Recycling	Apple takes a holistic view of materials management and waste minimization. Learn more about how to recycle your Mac.	

Options

Time Capsule

Time Capsule is a full-featured AirPort Extreme base station with a built-in hard drive. Back up wirelessly and create a Wi-Fi network with one device.

- 500GB or 1TB server-grade hard drive
- Wi-Fi Certified for 802.11n draft 2.0
- USB port for connecting a USB printer or USB external hard drive

Configure to order

- 250GB (7200-rpm) hard drive
- 320GB (5400-rpm) hard drive
- 320GB (7200-rpm) hard drive
- 128GB solid-state drive
- Up to 4GB of 1066MHz DDR3 SDRAM
- Apple Remote (MA128G/B)
- Apple USB Modem (MA034Z/A)
- Apple Mini DisplayPort to DVI Adapter (MB570)
- Apple Mini DisplayPort to Dual-Link DVI Adapter (MB571)
- Apple Mini DisplayPort to VGA Adapter (MB572)
- MagSafe Airline Adapter (MB441Z/A)
- AppleCare Protection Plan (MB588LL/A)
- Aperture 2 (MB673Z/A)
- Final Cut Express (MB278Z/A)
- Logic Express (MA806LL/A)
- iWork '08 (MB624Z/A)

Accessories

- Apple LED Cinema Display (MB382LL/A)
- AirPort Extreme Base Station (MB053LL/A)
- AirPort Express Base Station (MB321LL/A)
- Apple Wireless Keyboard (MB167LL/A)
- Apple wireless Mighty Mouse (MB111LL/A)
- Apple Keyboard (MB110LL/A)
- Apple wired Mighty Mouse (MB112LL/A)
- Rechargeable Battery for MacBook Pro (MB772)
- 1. Actual weight varies by configuration and manufacturing process.
- 2. Wireless Internet access requires a base station or other wireless access point and Internet access; fees may apply. Some ISPs are not

currently compatible with AirPort.

- 3. Memory available to Mac OS X may vary depending on graphics needs. Minimum graphics memory usage is 256MB. An additional 16MB is required when using an external display.
- 4. 1GB=1 billion bytes; actual formatted capacity less.
- 5. Testing conducted by Apple in October 2008 using preproduction 2.4GHz Intel Core 2 Duo-based MacBook Pro units with a Better Battery Life setting. Battery life depends on configuration and use. See www.apple.com/batteries for more information. The wireless productivity test measures battery life by wirelessly browsing various websites and editing text in a word processing document with display brightness set to 50%.