

# MacBook (13-inch, Late 2009) - Technical Specifications

## Size and weight

Height:

1.08 inches (2.74 cm)

Width:

13.00 inches (33.03 cm)

Depth:

9.12 inches (23.17 cm)

Weight:

4.7 pounds (2.13 kg)<sup>1</sup>

## Processor and memory

- 2.26GHz Intel Core 2 Duo processor with 3MB on-chip shared L2 cache running 1:1 with processor speed
- 1066MHz frontside bus
- 2GB (two 1GB SO-DIMMs) of 1066MHz DDR3 SDRAM; two SO-DIMM slots support up to 4GB

## Communications

Built-in AirPort Extreme Wi-Fi wireless networking<sup>2</sup> (based on IEEE 802.11n 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)

## Environmental Status Report

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

- BFR-free
- PVC-free system
- Mercury-free

- Arsenic-free display
- Recyclable polycarbonate enclosure
- 20% smaller packaging
- Meets ENERGY STAR Version 5.0 requirements
- Rated EPEAT Gold

## Acoustic Performance

DECLARED NOISE EMISSIONS in accordance with ISO 9296

	<b>Sound Power Level <math>L_{WAd}</math> (B) 1 B = 10 dB</b>	<b>Sound Pressure Level Operator Position <math>L_{pAm}</math> (dB)</b>
<b>Idle</b>	2.6	13
<b>Hard drive accessing</b>	2.6	14
<b>CD drive accessing</b>	3.3	28

1.  $L_{WAd}$  is the statistical upper-limit A-weighted sound power level (rounded to the nearest 0.1 B).
2.  $L_{pAm}$  is the mean A-weighted sound pressure level measured at the operator position (rounded to the nearest dB).
3. 1 B (bel) = 10 dB (decibel).

## Display

13.3-inch (diagonal) LED-backlit glossy widescreen display with support for millions of colors

**Supported resolutions:** 1280 by 800 (native), 1152 by 720, 1024 by 768, 1024 by 640, 800 by 600, 800 by 500, 720 by 480, and 640 by 480 pixels at 16:10 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

## Graphics and video support

NVIDIA GeForce 9400M graphics processor with 256MB of DDR3 SDRAM shared with main memory<sup>3</sup>

Extended desktop 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

**VGA output** using Mini DisplayPort to VGA Adapter

**Dual-link DVI output** using Mini DisplayPort to Dual-Link DVI Adapter supports 30-inch Apple Cinema HD Display (optional)

## **Input**

- Built-in full-size 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, swipe, three-finger swipe, four-finger swipe, tap, double-tap, and drag capabilities

## **Audio**

- Built-in stereo speakers
- Built-in omnidirectional microphone
- Combined optical digital output/headphone out (user-selectable analog audio line in)
- Supports Apple Stereo Headset with microphone

## **Connections and expansion**

- MagSafe power port
- Gigabit Ethernet port
- Mini DisplayPort

- Two USB 2.0 ports (up to 480 Mbps)
- Audio in/out
- Kensington lock slot

## **Storage**

- 250GB 5400-rpm Serial ATA hard disk drive; optional 320GB or 500GB 5400-rpm drive<sup>4</sup>
- 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; 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, and DVD+RW; 24x CD

## **Battery and power<sup>5</sup>**

Built-in 60-watt-hour lithium-polymer battery

60W 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

## **Installed software**

- Mac OS X v10.6 Snow 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 '09 (includes iPhoto, iMovie, GarageBand, iWeb, iDVD)

## **What's in the box**

- MacBook
- 60W MagSafe Power Adapter, AC wall plug, and power cord
- Install/restore DVDs
- Printed and electronic documentation

## **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.

- 1TB or 2TB Serial ATA server-grade hard disk drive
- 802.11n Wi-Fi
- USB port for connecting a printer or external hard drive

### **Configure to order**

- 320GB (5400-rpm) hard drive
- 500GB (5400-rpm) hard drive
- Up to 4GB of 1066MHz DDR3 SDRAM
- Apple Mini DisplayPort to DVI Adapter
- Apple Mini DisplayPort to VGA Adapter
- Apple Mini DisplayPort to Dual-Link DVI Adapter
- MagSafe Airline Adapter
- AppleCare Protection Plan
- Aperture
- Final Cut Express

- Logic Express
- iWork '09

## **Accessories**

- Apple LED Cinema Display
- AirPort Extreme Base Station
- AirPort Express Base Station
- Apple Wireless Keyboard
- Apple Magic Mouse
- Apple Keyboard

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.
4. 1GB = 1 billion bytes; actual formatted capacity less.
5. Testing conducted by Apple in October 2009 using preproduction 2.26GHz Intel Core 2 Duo-based MacBook units. Battery life depends on configuration and use. See [www.apple.com/batteries](http://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%.