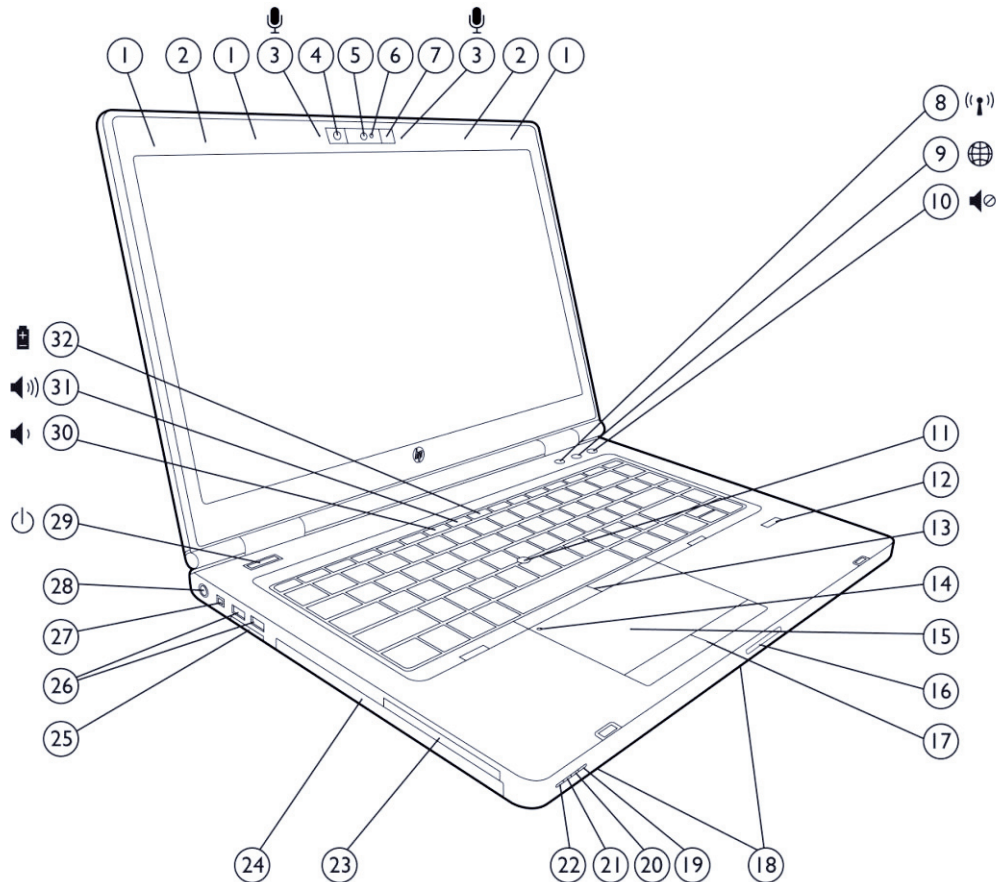


Overview

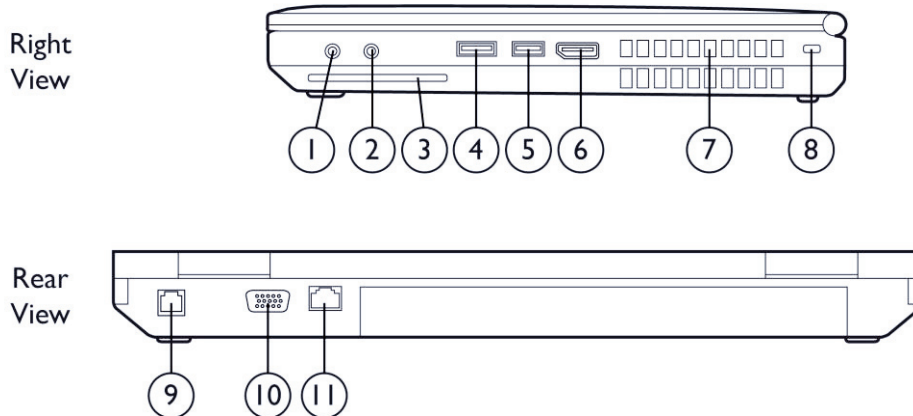
HP EliteBook 8460p Notebook PC



- | | |
|---|--|
| 1. WLAN antennas (3) | 17. Touchpad pick buttons |
| 2. WWAN antennas | 18. Stereo speakers (see bottom view) |
| 3. Dual-microphone array | 19. Hard drive activity/HP 3D DriveGuard LED indicator |
| 4. Optional 720p HD webcam | 20. Battery charging LED indicator |
| 5. Ambient Light Sensor | 21. Power/standby LED indicator |
| 6. HP Night Light on/off button | 22. Wireless on/off LED indicator |
| 7. HP Night Light | 23. ExpressCard/54 slot |
| 8. Wireless on/off button with LED indicator | 24. Upgrade Bay (optical drive, second hard drive or weight saver) |
| 9. HP QuickWeb button with LED indicator | 25. Secure Digital/MMC slot |
| 10. Volume mute button with LED indicator | 26. (2) USB 3.0 ports |
| 11. Pointstick | 27. 1394a port |
| 12. Optional HP Fingerprint Sensor | 28. Power connector |
| 13. Pointstick pick buttons | 29. Power button with LED indicator |
| 14. Touchpad on/off button with LED indicator | 30. Volume down function key |
| 15. Touchpad with scroll zone | 31. Volume up function key |
| 16. Display release latch | 32. HP Power Assistant function key |

Overview

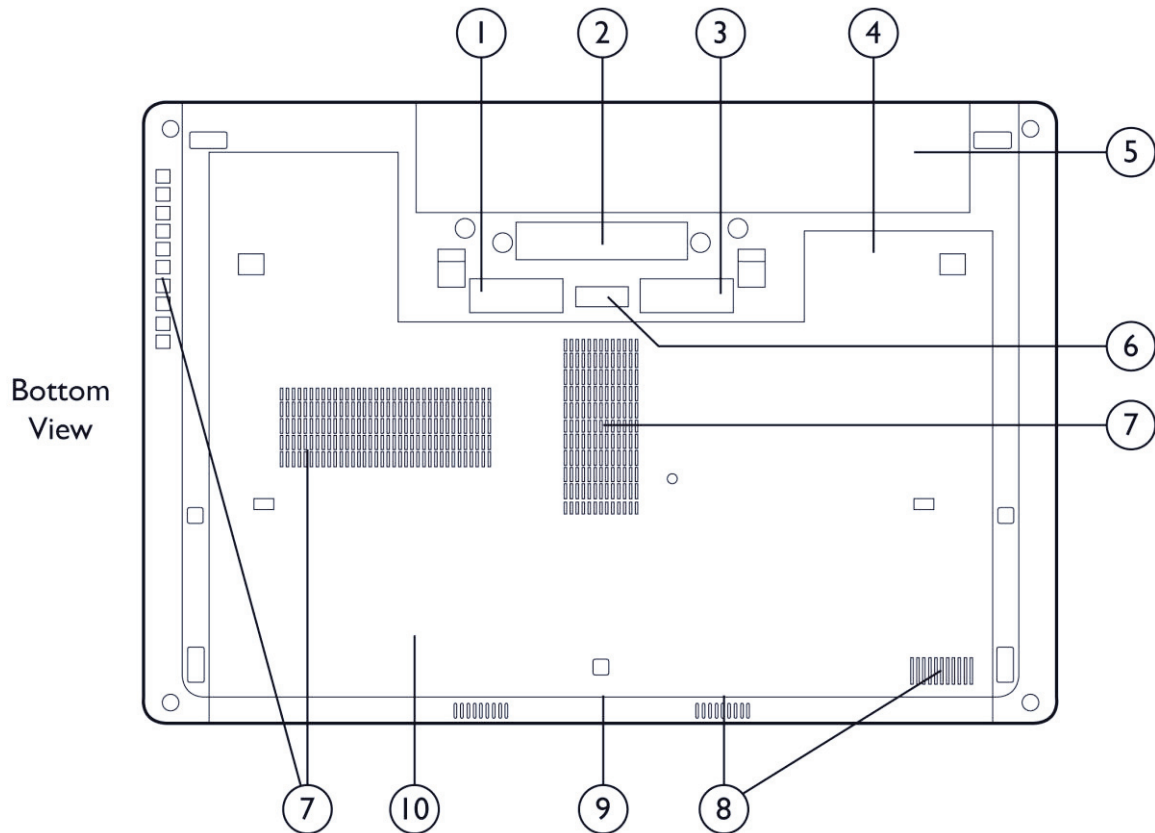
HP EliteBook 8460p Notebook PC



- | | |
|---------------------------------|------------------------------------|
| 1. Stereo headphone/line out | 7. Vents |
| 2. Stereo microphone/line in | 8. Security lock slot |
| 3. Integrated Smart Card reader | 9. RJ-11/modem port |
| 4. eSATA/USB 2.0 combo port | 10. VGA/external monitor connector |
| 5. (1) USB 2.0 charging port | 11. RJ-45/Ethernet port |
| 6. DisplayPort | |

Overview

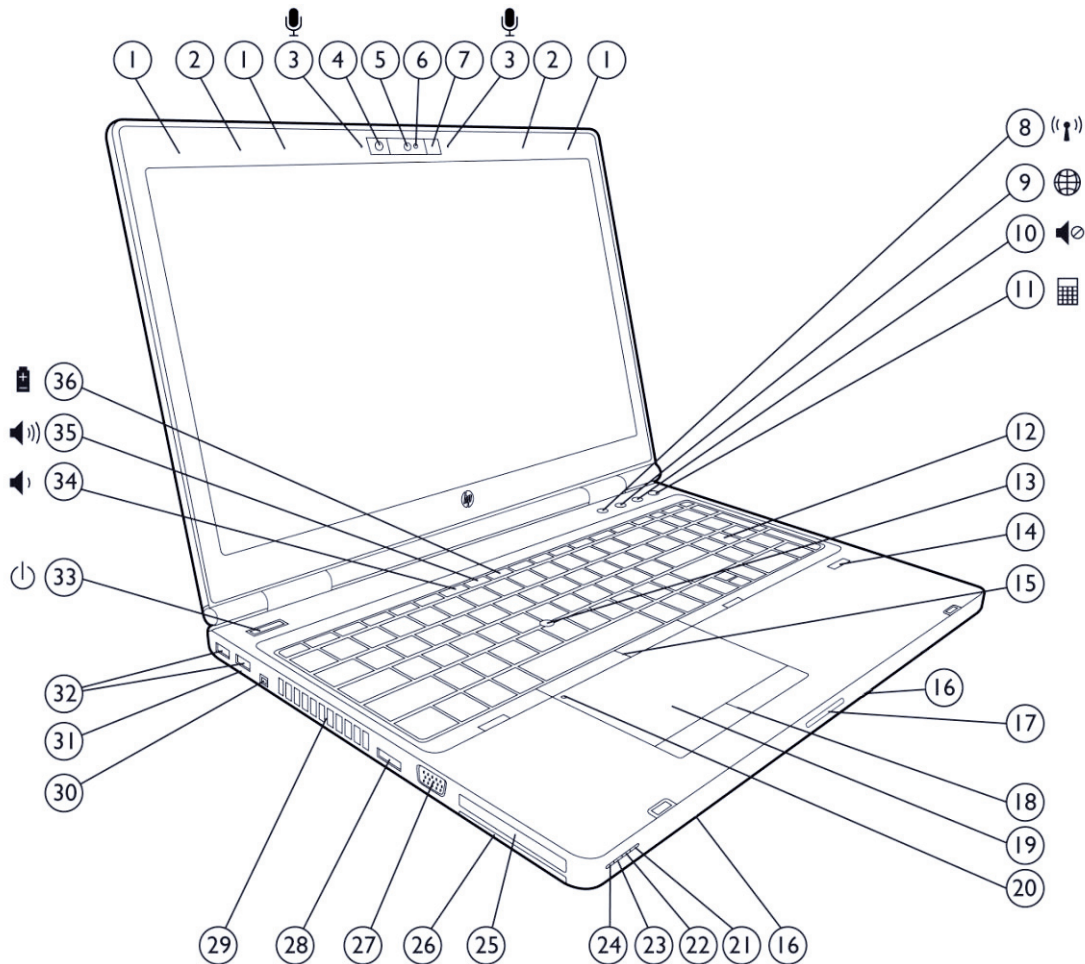
HP EliteBook 8460p Notebook PC



- | | |
|--------------------------------------|---|
| 1. Battery release latch | 7. Vents |
| 2. Docking connector | 8. Speakers |
| 3. Bottom cover release latch | 9. Bluetooth module compartment |
| 4. SIM slot for WWAN (select models) | 10. Hard drive, memory, and wireless compartments
under bottom cover |
| 5. Battery bay | |
| 6. Secondary battery connector | |

Overview

HP EliteBook 8560p Notebook PC



- | | | |
|--|--|-------------------------------------|
| 1. WLAN antennas (3) | 13. Pointstick | 25. ExpressCard/54 slot |
| 2. WWAN antennas | 14. Optional HP Fingerprint Sensor | 26. Smart Card Reader |
| 3. Dual-microphone array | 15. Pointstick pick buttons | 27. VGA/external monitor connector |
| 4. Optional 720p HD webcam | 16. Stereo speakers | 28. eSATA/USB 2.0 combo port |
| 5. Ambient Light Sensor | 17. Display release latch | 29. Vent |
| 6. HP Night Light on/off button | 18. Touchpad pick buttons | 30. 1394a port |
| 7. HP Night Light | 19. Touchpad with scroll zone | 31. Secure Digital/MMC slot |
| 8. Wireless on/off button with LED indicator | 20. Touchpad on/off light | 32. (2) USB 2.0 ports** |
| 9. HP QuickWeb button with LED indicator | 21. Hard drive activity/HP 3D DriveGuard LED indicator | 33. Power button with LED indicator |
| 10. Volume mute button with LED indicator | 22. Battery charging LED indicator | 34. Volume down function key |
| 11. Calculator button with LED indicator | 23. Power/standby LED indicator | 35. Volume up function key |
| 12. Numeric keypad | 24. Wireless on/off LED indicator | 36. HP Power Assistant function key |

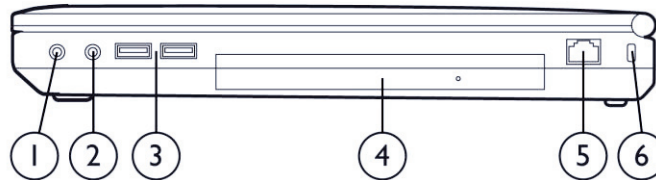
** USB 2.0 port on right is a charging port.



Overview

HP EliteBook 8560p Notebook PC

Right
View



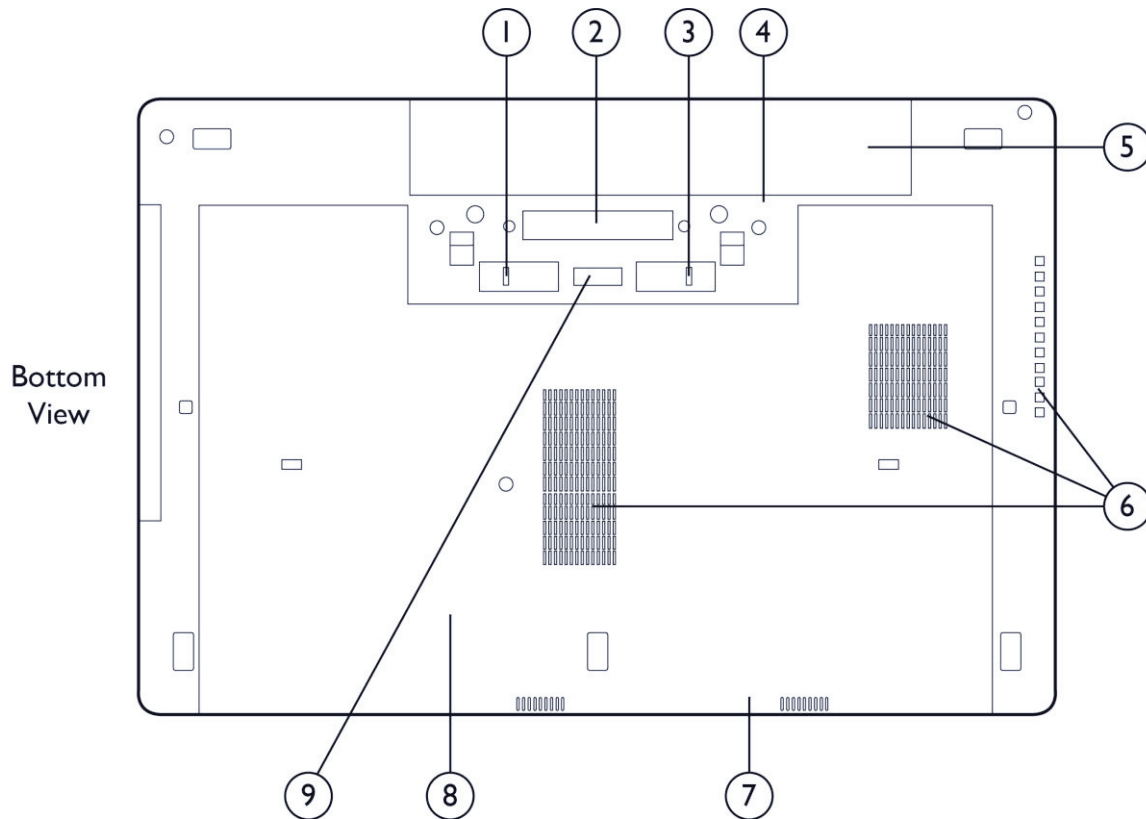
Rear
View



- | | |
|--|-----------------------|
| 1. Stereo headphone/line out | 6. Security lock slot |
| 2. Stereo microphone/line in | 7. RJ-11/modem port |
| 3. (2) USB 3.0 ports | 8. Serial port |
| 4. Upgrade Bay (optical drive, second hard drive, or weight saver) | 9. Power connector |
| 5. RJ-45/Ethernet port | 10. DisplayPort |

Overview

HP EliteBook 8560p Notebook PC



1. Battery release latch
2. Docking connector
3. Bottom cover release latch

4. SIM slot for WWAN (select models)
5. Battery bay

6. Vents
7. Bluetooth module compartment
8. Hard drive, memory, and wireless compartments under bottom cover
9. Bluetooth module compartment

Overview

At A Glance

- Genuine Windows 7 versions or FreeDOS
- Widescreen LED-backlit display
 - HP EliteBook 8460p: 14.0-inch diagonal HD or HD+
 - HP EliteBook 8560p: 15.6-inch diagonal HD, HD+ wide viewing angle, or FHD wide viewing angle
- Choice of 2nd generation Intel® Core™ i7 and i5 processors
- Intel Core i7 with vPro and Core i5 with vPro technology (optional)
- AMD Radeon™ HD 6470M discrete graphics with 1 GB dedicated video memory or integrated Intel® HD Graphics 3000 (Intel HD Graphics 3000 are available on the 8460p only)
- All new design with aluminum display enclosure, magnesium-reinforced chassis, wear-resistant platinum-colored HP DuraFinish, HP DisplaySafe frame, precision aluminum-alloy hinges, cast titanium-alloy display latches, keyboard in full aluminum deck, and chemically strengthened glass touchpad
- Easily hot dock with one of the optional HP docking stations
- AMD Eyefinity Technology for advanced multi-monitor support
- DisplayPort for high resolution support
- SRS Premium Sound optimized for high fidelity audio
- Choice of primary battery to optimize run-time or weight: 9-cell (100 WHr), 6-cell (62 WHr), or 6-cell (55 WHr) HP Long Life Battery
- Flexible wireless connectivity options:
 - Optional integrated HP un2430 EV-DO/HSDPA Mobile Broadband Module (Gobi™ 3000) provides GPS functionality
 - Integrated Intel Centrino® 802.11 a/b/g/n 2x2 or a/b/g/n 3x3, or Broadcom 802.11 a/b/g/n 2x2 or b/g/n 1x1 wireless LAN module
 - Bluetooth® v2.1+EDR
- HP Power Assistant allows you to conserve power, stretch battery run-time, accurately monitor the energy usage of the PC and up to four select HP external monitors, and report workforce power consumption.
- HP QuickWeb for convenient online access without long boot-up times
- Upgrade Bay for optical drive, optional second hard drive, or weight saver
- Choice of 5400 rpm user-removable hard drive up to 500 GB or 7200 rpm up to 750 GB with HP 3D DriveGuard protection, or 128/160/256 GB Solid State Drive
- Security features including HP ProtectTools, with central management across HP and non-HP client PCs
- BFR/PVC-free*, ENERGY STAR® qualified and EPEAT TBD registered in the U.S. EPEAT status varies by country—please see epeat.net.

* Meeting the industry definition of 'BFR/PVC-free' per the iNEMI Position Statement on "Low Halogen" Electronics. Plastic parts incorporated into the chassis generally contain < 1000 ppm (0.1%) of bromine or chlorine. Printed circuit board and substrate laminates generally contain < 1500 ppm (0.15%) of total bromine and chlorine. Service parts after purchase may not be BFR/PVC-free. External accessories, including power supplies, power cords, and peripherals are not BFR/PVC-free.



Standard Features (availability may vary by country)

Processors

2nd Generation Intel Core i7 Processors

Intel Core i7-2760QM Processor (2.40 GHz, 6 MB L3 cache, 4 cores/8 threads, 45W)*
Up to 3.50 GHz with Intel Turbo Boost Technology

Intel Core i7-2670QM Processor (2.20 GHz, 6 MB L3 cache, 4 cores/8 threads, 45W)*†
Up to 3.10 GHz with Intel Turbo Boost Technology

Intel Core i7-2640M Processor (2.80 GHz, 4 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.50 GHz with Intel Turbo Boost Technology

2nd Generation Intel Core i5 Processors

Intel Core i5-2540M Processor (2.60 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.30 GHz with Intel Turbo Boost Technology

Intel Core i5-2520M Processor (2.50 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.20 GHz with Intel Turbo Boost Technology

Intel Core i5-2450M Processor (2.50 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)*†
Up to 3.10 GHz with Intel Turbo Boost Technology

* Intel's numbering is not a measurement of higher performance.

† Not available with vPro.

NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

Operating System

Preinstalled

Genuine Windows 7 Basic 32*†
Genuine Windows 7 Professional 32*
Genuine Windows 7 Professional 64*
Genuine Windows 7 Home Premium 64*
FreeDOS

Supported

Genuine Windows 7 Enterprise 32*
Genuine Windows 7 Enterprise 64*
Genuine Windows 7 Ultimate 32*
Genuine Windows 7 Ultimate 64*
Genuine Windows Vista Enterprise 32**
Genuine Windows Vista Enterprise 64**
Genuine Windows Vista Business 32**
Genuine Windows Vista Business 64**
Genuine Windows XP Professional 32

Certified

SUSE Linux Enterprise Desktop 11

* System may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality.

Not all features are available in all editions of Windows 7.

See www.microsoft.com/windows/windows-7/ for details.

** Certain Windows Vista product features require advanced or additional hardware. See:

www.microsoft.com/windowsvista/getready/hardwarereqs.msp and

www.microsoft.com/windowsvista/getready/capable.msp for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit: www.windowsvista.com/upgradeadvisor.



Standard Features (availability may vary by country)

† Not available in all regions.

Chipset

Mobile Intel QM67 Express Chipset

Intel Core i5 with vPro/Core i7 with vPro technology capable

Intel Core i5 with vPro and Core i7 with vPro technology is a selectable feature that is available on units configured with select processors, an Intel Centrino® Advanced-N or Ultimate-N WLAN module, and a preinstalled Windows operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology 7.0 (iAMT) offers built-in manageability and proactive security for networked notebook PCs, even when they are powered off* or when the operating system is inoperable. It can help identify threats before they reach the network, isolate infected systems, and update PCs regardless of their power state.

*Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.

NOTE: Some functionality of Intel Core i5 with vPro/Core i7 with vPro technology, such as Intel Active Management technology and Intel Virtualization technology, requires additional third-party software in order to run. Availability of future "virtual appliances" applications for Intel Core i5 with vPro/Core i7 with vPro technology is dependent on third-party software providers. Compatibility with future "virtual appliances" is yet to be determined.

Graphics

Models with discrete graphics:

AMD Radeon™ HD 6470M with 1 GB dedicated DDR3 video memory
Microsoft DirectX 11 (Shader Model 5.0) and OpenGL 4.0 capable
AMD Eyefinity Technology supports up to four independent displays when using an HP Advanced Docking station

Models with integrated graphics (8460p only):

Intel HD Graphics 3000
Microsoft DirectX 10.1 (Shader Model 4.1) and OpenGL 3.0 capable

Display

Internal

HP EliteBook 8460p:
14.0-inch diagonal LED-backlit HD anti-glare (1366 x 768 resolution)
14.0-inch diagonal LED-backlit HD+ anti-glare (1600 x 900 resolution)

HP EliteBook 8560p:
15.6-inch diagonal LED-backlit HD anti-glare (1366 x 768 resolution)
15.6-inch diagonal LED-backlit HD+ WVA anti-glare (1600 x 900 resolution)
15.6-inch diagonal LED-backlit FHD WVA anti-glare (1920 x 1080 resolution)
HP Privacy Filter support

External

Up to 32-bit per pixel color depth
DisplayPort supports resolutions up to 2560 x 1600, 30-bit color depth at 60 Hz, and full HD (1920 x 1080) monitors, 24-bit color



Standard Features (availability may vary by country)

		depth at 120 Hz VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz DVI-D (single link) video signal available through DVI port in optional HP Docking Station (sold separately) supports resolutions up to 1600 x 1200 at both full and reduced blanking, and 1920 x 1200 at reduced blanking NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.
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Memory	Standard	DDR3 PC3-10600 SDRAM (1333 MHz) Two SODIMM slots supporting dual-channel memory 2 GB, 4 GB, and 8 GB SODIMMs
	Maximum Dual-channel	Upgradeable to 16 GB with 8 GB SODIMMs in slots 1 and 2 Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. Full availability of 4 GB or more of memory requires a Windows 64-bit operating system or Linux. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements.

Communications	Integrated Intel 82579LM Gigabit* Network Connection (vPro configurations) 56K V.92 modem** * The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required. ** Designed for downloads from 56K modem compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. Modem availability is subject to country regulatory approval.
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Wireless Devices	Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Broadband Wireless (WWAN) requires a Windows operating system and is available in select countries as a standard, factory configurable feature or an after-market option. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options.
Mobile Broadband options	Two 850/900/1575/1700/1800/1900/2100 MHz antennas integrated in the top of the display panel support current and future WWAN technologies. NOTE: Separately purchased mobile network operator service is required.



Standard Features (availability may vary by country)

HP un2430 EV-DO/HSDPA Mobile Broadband Module
(Gobi™ 3000)

Integrated mobile broadband module with Gobi global mobile Internet technology that provides connectivity to both CDMA (EVDO) and UMTS (HSDPA) networks. It also provides GPS functionality for various mapping applications and security applications such as Computrace LoJack Pro Premium for HP ProtectTools.

All 802.11 integrated wireless LAN options

Wi-Fi Certified*
Cisco Compatible Extensions support
Wired Equivalent Privacy (WEP) support up to 128-bit keys
Wi-Fi Protected Access (WPA) and WPA2 support
802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP
Advanced Encryption Standard (AES) support
Dual antennas integrated in the display enclosure

Intel Centrino Ultimate-N 6300 (3x3)

Integrated support for 802.11 a, b, g, and n*
3 transmit, 3 receive antennas
Up to 450 mbps data rate

Intel Centrino Advanced-N 6205 (2x2)

Integrated support for 802.11 a, b, g, and n*
2 transmit, 2 receive antennas
Up to 300 mbps data rate

Broadcom 43224AGN 802.11 a/b/g/n WiFi Adapter

Integrated support for 802.11 a, b, g, and n
Up to 300 mbps data rate

Broadcom 4313GN 802.11 b/g/n WiFi Adapter

Integrated support for 802.11 b, g, and n
Up to 72 mbps data rate

HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology

Bluetooth Specification v2.1+EDR compliant
Works with a wide range of Bluetooth devices

*Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.

Keyboard

The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard and a drain system that funnels fluid through a hole in the bottom of the notebook. This minimizes the risk of damage to sensitive components underneath. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features such as editing keys, both left and right control and alt keys, function keys, and 19.05 x 19.05 mm key pitch (center-to-center spacing). U.S. and International key layouts are available. Other features include hot keys for instant access to power conservation and brightness. The HP EliteBook 8560p includes a separate numeric keypad.



Standard Features (availability may vary by country)

Launch Buttons and Function Keys Separate launch buttons provide easy access to the following features: wireless on/off, HP QuickWeb, and volume mute. The HP EliteBook 8560p also features a calculator launch button. Function keys provide control of the following features: standby mode, external display, volume down, volume up, HP Power Assistant, and display brightness.

Pointing device Touchpad with on/off button, two-way scroll, gestures, two pick buttons
Pointstick with two additional pointstick buttons

Expansion card slots

- ExpressCard/54 slot** Supports ExpressCard/54 and ExpressCard/34
- Integrated Smart Card Reader** Compatible with ISO 7816-compliant Smart Cards
PC/SC interface support
- Secure Digital/MMC slot** Supports SD (Secure Digital), SDHC, SDXC, MMC (MultiMedia Card), and MMC+

Internal Storage

- Hard drives** 320/500 GB 5400 rpm SMART SATA II
250/320/500/750 GB 7200 rpm SMART SATA II
320 GB 7200 rpm SMART SATA II Self Encrypting Drive

NOTE: These hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 15 GB is reserved for the system recovery software.

HP 3D DriveGuard (Windows only) The hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.

Solid State Drive 128/160/256 GB

Upgrade Bay

- Fixed 12.7 mm SATA optical drive** Blu-ray R/RE DVD+/-RW SuperMulti DL Drive
DVD+/-RW SuperMulti DL Drive
DVD-ROM Drive
- Second hard drive** 500 GB 7200 rpm SMART SATA II Hard Drive
- Weight saver**

Interfaces

- ExpressCard/54 slot** One
- External monitor** Two —(1) DisplayPort, (1) VGA
- 1394a** One
- Stereo microphone in** One
- Stereo headphone/line out** One
- Power connector** One
- RJ-11/modem** One
- RJ-45/Ethernet** One
- USB 3.0** Two



Standard Features (availability may vary by country)

USB 2.0	HP 8460p: One (charging port) HP 8560p: Two (includes one charging port)
eSATA/USB 2.0 combo	One
Serial port	One (HP EliteBook 8560p only)
Docking connector	One
Secondary battery connector	One

Audio/Visual

SRS Premium Sound™
Integrated stereo speakers
Integrated microphone (dual-microphone array when equipped with optional webcam)
Button for volume mute; function keys for volume up and down
Stereo headphone/line out
Stereo microphone/line in

Optional 720p HD webcam

- HD format (widescreen)
- Supports videoconferencing and still image capture
- High quality fixed focus lens
- Video capture at various resolutions up to 1280x720 resolution (720p) and up to 30 fps
- M-JPEG compression supports higher frame rates for video capture and videoconferencing
- Improved low light sensitivity
- Improved dynamic range

Software

Preinstalled software with Windows operating system	HP Recovery Manager HP Support Assistant HP ProtectTools Security Manager HP ProtectTools for Central Management HP HotKey Support HP QuickWeb HP Power Assistant HP Connection Manager 4.0 HP DayStarter Microsoft Office 2010 preloaded (purchase of a Product Key required to activate a full Office 2010 suite)* Norton Internet Security 2011** PDF Complete Special Edition*** Intervideo WinDVD - DVD Player (select models) Roxio Burn Secure (select models) Roxio MyDVD 10 SE (select models) HP Webcam Software (select models) Skype
Additional software	HP SoftPaq Download Manager



Standard Features (availability may vary by country)

available from the web

* Microsoft Office 2010 Preloaded includes reduced functionality versions of Word and Excel. Purchase of Product Key required to activate full Office 2010 suite available at participating resellers/retailers and www.office.com.

** Norton Internet Security 2011 includes 60 days of complimentary live updates; subscription required for live updates thereafter. Internet access required to receive updates.

*** PDF Complete Special Edition 60-day trial; purchase license afterwards for full functionality.

HP Recovery Manager

Models shipped with Windows 7 or Windows Vista include HP Recovery Manager. HP Recovery Manager enables fast recovery of the factory preinstalled image if the system becomes corrupted or if important system files are accidentally deleted. Up to 20 GB of the hard drive is reserved for the system recovery software.

Security

Standard Features

HP ProtectTools Security Manager (standard modules include)

- Credential Manager
- Computrace Pro*
- Device Access Manager
- Drive Encryption
- Face Recognition (webcam configurations only)
- File Sanitizer
- Privacy Manager
- Embedded Security

Integrated Smart Card Reader

Enhanced Pre-Boot Security (Multiuser / Multifactor)

HP SpareKey

One-Step Logon

TPM 1.2 Embedded Security Chip*

HP Disk Sanitizer

Security lock slot

Support for Intel AT***

Optional Features

HP Fingerprint Sensor

Enhanced sensor scans the fingerprint to uniquely identify and authenticate a person.

HP Privacy Filter

Narrows viewing area so that screen data is visible only to persons directly in front of the monitor.

Computrace Pro** for HP ProtectTools with GPS Tracking

Subscription based security solution providing the ability to track, initiate physical recovery, conduct asset management, and perform remote data delete by utilizing GPS technology. GPS functionality requires HP Mobile Broadband Module.

* TPM module disabled where use is restricted by law, for example, Russia and China.

** The Computrace agent is shipped turned off, and must be activated by customers when they



Standard Features (availability may vary by country)

purchase a subscription with terms ranging from one to five years.

For more information on HP security solutions refer to: www.hp.com/products/security.

*** Intel AT security requires a separately purchased Absolute Computrace service subscription and must be activated and configured. Check with Absolute for availability in your country. Intel and HP assume no liability for lost or stolen data and/or systems or any other damages resulting therefrom. See www.intel.com/technology/anti-theft/

HP ProtectTools Security Manager with Central Management

HP ProtectTools Security Manager is the security platform for business notebooks and desktops. The HP ProtectTools Security Manager is an extensible client security console that delivers enhanced security capabilities through add-on software modules. The ProtectTools modules are available on the hard drive (also downloadable from the web) and can be configured in Software Setup.

HP ProtectTools is centrally manageable with the capability to manage notebooks from a single point. HP ProtectTools is management ready out of the box, in partnership with Digital Persona. Features address requirements that customers expect from a centrally managed security solution such as user provisioning, credential reset, and credential revocation.

HP ProtectTools provides two separate management solutions, targeted at the enterprise and the SMB:

- Digital Persona Pro AD: Designed for the enterprise customer. Integrates with Active Directory and gives IT Managers the ability to provision users, create login policies based on passwords, biometrics or smartcards. Management features also include remote credential recovery in case the user forgets the password, loses the smartcard or cannot use the fingerprint reader for any reason. In addition, advanced auditing capabilities are also built in. Digital Persona Pro AD is available now.
- Digital Persona Pro Workgroup: Designed for the small business customer. Provides features similar to the Active Directory version, but for workgroups. Workgroup activation is built into HP ProtectTools, and activation of up to 5 seats is completely free.

For more information on Central Management for HP ProtectTools, refer to:

www.hp.com/products/security.

Power Supply

Models with discrete graphics or quad-core processor:

External 90-watt Smart AC adapter

Models with integrated graphics and without quad-core processor:

External 65-watt Smart AC adapter

Power cord included is 6 foot (1.8 meter).

Total length including external AC adapter is 12 feet (3.66 meter).

HP Fast Charge*

*HP Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. HP Fast Charge does not apply to the 9-cell primary battery, HP ST09 Extended Life Notebook Battery, or HP BB09 Ultra Extended Life Notebook Battery.

Battery

Primary battery

HP 9-cell (100 WHr) Li-Ion battery

HP 6-cell (62 WHr) Li-Ion battery

HP Long Life 6-cell (55 WHr) Li-Ion battery



Standard Features (availability may vary by country)

Secondary battery Options	HP BB09 Ultra Extended Life Notebook Battery (9 cell, 100 WHr) HP ST09 Extended Life Notebook Battery (9 cell, 73 WHr)
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Battery Life

HP EliteBook 8460p*

6 cell (62 WHr)	Up to 8 hours and 15 minutes Up to 18 hours and 30 minutes with optional HP ST09 Extended Life Notebook Battery Up to 22 hours and 30 minutes with optional HP BB09 Ultra Extended Life Notebook Battery
9 cell (100 WHr)	Up to 13 hours and 45 minutes

HP EliteBook 8560p*

6 cell (62 WHr)	Up to 7 hours and 15 minutes Up to 16 hours and 15 minutes with optional HP ST09 Extended Life Notebook Battery Up to 20 hours with optional HP BB09 Ultra Extended Life Notebook Battery
9 cell (100 WHr)	Up to 12 hours

* Configurations with integrated graphics.

NOTE: Battery life will vary depending on the product model, configuration, loaded applications, features, use, wireless functionality and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See MobileMark07 battery benchmark www.bapco.com/products/mobilemark2007 for additional details.

System Standby Time

Up to 1 week

Power Conservation	AMD PowerPlay technology (models with discrete graphics) Hibernation Standby ACPI compliance
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Docking and Stands

HP 90W Docking Station
HP 120W Advanced Docking Station
HP USB 2.0 Docking Station
HP Essential USB 2.0 Port Replicator
HP LAN and USB Travel Hub

NOTE: Some HP Docking stations may not support every feature of some HP Notebook models. Please refer to the individual docking station documentation for specific information about supported features.



Standard Features (availability may vary by country)

Service and Support HP Services offers limited 3-year, 1-year and 90-day warranty options depending on country. On-site service and warranty upgrades are also available. HP Care Pack Services extend service contracts beyond the standard warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: www.hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at: www.hp.com/services/carepack.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

<http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>.



QuickSpecs

HP EliteBook 8460p Notebook PC HP EliteBook 8560p Notebook PC

Options (availability may vary by country)

Memory	HP 1 GB (DDR3 1333 MHz) SODIMM	AT911AA#xxx
	HP 2 GB (DDR3 1333 MHz) SODIMM	AT912AA#xxx
	HP 4 GB (DDR3 1333 MHz) SODIMM	AT913AA#xxx
	HP 8 GB (DDR3 1333 MHz) SODIMM	QP013AA#xxx
Storage	HP 250 GB Pocket Media Drive	FE477AA
	HP Mobile USB DVD	XQ543AA
	HP Mobile USB DVDRW	BU516AA
	HP Mobile Blu-ray USB DVDRW	XQ546AA
	HP Upgrade Bay SATA 500 GB 7200 rpm Hard Drive	AU097AA#xxx
	HP Primary SATA 500 GB 7200 rpm Hard Drive	AU098AA#xxx
Expansion Solutions	HP 90W Docking Station	VB041AA#xxx
	HP 120W Advanced Docking Station	NZ222AA#xxx
	HP USB 2.0 Docking Station	AY052AA#xxx
	HP Essential USB 2.0 Port Replicator	AQ731AA#xxx
	HP LAN and USB Travel Hub	BM868AA#xxx
	HP Display & Notebook Stand	AW662AA#xxx
	HP Adjustable Display Stand	AW663AA#xxx
	HP Adjustable Dual Display Stand	AW664AA#xxx
Power	HP ST09 Extended Life Notebook Battery	QK639AA
	HP BB09 Ultra Extended Life Notebook Battery	QK640AA
	HP CC06XL Long Life Notebook Battery	QK642AA
	HP CC09 Notebook Battery	QK643AA
	HP 90W Smart AC Adapter	ED495AA#xxx
	HP 90W Smart AC/Auto/Air Combo Adapter	AJ652AA#xxx
	HP 90W Smart Auto/Truck Adapter	ED493AA
	HP 65W Slim Adapter	AX727AA#xxx
	HP 90W Slim Adapter	BT796AA#xxx
Carrying Cases	HP Basic Carrying Case	AJ078AA
	HP Business Nylon Case	BP848AA
	HP Professional Slim Top Load Case	AY530AA
Security	HP Notebook Combo Lock	AY475AA#xxx
	HP Keyed Cable Lock	BV411AA
	HP 14.0-inch Display Privacy Filter	AU100AA#xxx
	HP 15.6-inch Display Privacy Filter	AU103AA#xxx
Input/Output	HP USB Optical Travel Mouse	RH304AA



QuickSpecs

HP EliteBook 8460p Notebook PC
HP EliteBook 8560p Notebook PC

Options (availability may vary by country)

Devices

HP USB/PS2 Optical 2-Button Scroll Mouse

DC369A

HP USB Keyboard & Mouse Bundle

RC465AA#xxx

HP Notebook Projection Companion

AX325AA#xxx



Technical Specifications

System Unit	Dimensions (HxWxD)	HP EliteBook 8460p: 1.25 in (at front) x 13.31 in x 9.11 in 31.8 mm (at front) x 338 mm x 231.3 mm
		HP EliteBook 8560p: 1.34 in (at front) x 14.72 in x 9.86 in 34.1 mm (at front) x 374 mm x 250.5 mm
Weight		HP EliteBook 8460p: Starting at 4.87 lb (2.21 kg) with SSD, weight saver (no optical drive), and 6-cell battery Starting at 5.18 lb (2.35 kg) with hard drive, DVD-ROM drive, and 6-cell battery Starting at 5.23 lb (2.37 kg) with SSD, weight saver (no optical drive), and 9-cell battery Starting at 5.53 lb (2.51 kg) with hard drive, DVD-ROM drive, and 9-cell battery
		HP EliteBook 8560p: Starting at 6.01 lb (2.73 kg) with hard drive and weight saver (no optical drive) Starting at 6.27 lb (2.85 kg) with hard drive and DVD-ROM drive
NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components.		
Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	18.5 V
	Average Operating Power	Integrated graphics: TBD W Discrete graphics: TBD W
	Max Operating Power	< 65 W or < 90 W
Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, noncondensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	Operating	125 G, 2 ms, half-sine
	Non-operating	200 G, 2 ms, half-sine
Random Vibration	Operating	0.75 grms
	Non-operating	1.50 grms
Altitude (unpressurized)	Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
	Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned	UL	Yes



Technical Specifications

Industry Standard Certifications	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models*
	EPEAT	Gold target**
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KCC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes

* Microsoft Windows is required for ENERGY STAR qualification. Configurations of the HP EliteBook 8460p and HP EliteBook 8560p that are ENERGY STAR qualified are identified as HP EliteBook 8460p ENERGY STAR and HP EliteBook 8560p ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT Registered TBD in U.S. EPEAT registration varies by country. See www.epeat.net for registration status by country.

NOTE: For accessibility information on HP products, please visit: www.hp.com/accessibility.

Audio **SRS Premium Sound**

Hardware	Implementation	IDT 92HD80 High Definition CODEC
	Function Key	Volume up, volume down
	Volume Controls	
	Mute Button	Volume mute button with LED indicator
	Full Duplex	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo
	Integrated Microphone	Yes, dual digital microphone array

Audio Output Quality	Frequency Response	20 Hz – 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHz – 48kHz



Technical Specifications

DAC	16, 20 or 24-bit
ADC	16 or 20-bit

Integrated Stereo Speakers	Power Rating	2 Watts
	Impedance	4 Ohms

Power

HP 90W Smart AC Adapter	Dimensions	5.00 x 1.97 x 1.1 in (12.7 x 5.0 x 2.9 cm)	
	Weight	0.82 lb (370 g)	
	Input	100 to 240 VAC	
		Input Efficiency	87% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.5 A at 90 VAC, 0.75 A at 180 VAC PFC Version 2.4 A at 90 VAC, 1.2 A at 180 VAC NON PFC Version
	Output	Output power	90W
		DC output	19.0V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature	-4° to 149° F (-20° to 65° C)
		Altitude	0 to 10,000 ft (0 to 3,048 m)
		Humidity	20% to 80%
		Storage Humidity	10% to 90%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class 1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.	

HP 65W Smart AC Adapter	Dimensions	4.17 x 1.85 x 1.1 in (10.6 x 4.7 x 2.8 cm)	
	Weight	0.62 lb (280 g)	
	Input	100 to 240 VAC	
		Input Efficiency	87% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.7 A at 90 VAC, 0.85 A at 180 VAC
	Output	Output power	65W



Technical Specifications

	DC output	18.5V
	Hold-up time	5 msec at 115 VAC input
	Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
Connector	3 pin/grounded, mates with interchangeable cords	
Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
	Non-operating (storage) temperature	-4° to 149° F (-20° to 65° C)
	Altitude	0 to 10,000 ft (0 to 3,048 m)
	Humidity	20% to 80%
	Storage Humidity	10% to 90%
EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF - over 200,000 hours at 25°C ambient condition.	

Optional HP BB09 Ultra Extended Life Notebook Battery	Dimensions (H x W x L)	1.2 x 5.9 x 11.4 in (3x15x29cm)		
	Weight (max)	1.5lb, (.682kg)		
	Cells/Type	Lithium-Ion		
	Energy	Voltage	11.25V	
		Amp-hour capacity	8.85Ah	
		Watt-hour capacity	100Wh	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 122° F(-10° to 50° C)	
		Non-operating	-4° to 122° F (-20° to 50° C)	
	Battery Re-Charge Time	System in OFF or Standby Mode	3.5 to 5 hours	
		System ON	4 to 7 hours	
	Fuel Gauge LED	Yes		
	Warranty	1 year		
Optional Travel Battery Available	NA			

Optional HP ST09 Extended Life Notebook Battery	Dimensions (H x W x L)	1.2 x 6.1 x 12 in (3x15.5x30.5cm)		
	Weight (max)	1.2lb, (.550kg)		
	Cells/Type	Lithium-Ion Polymer		
	Energy	Voltage	11.1V	
		Amp-hour capacity	6.6Ah	
		Watt-hour capacity	73Wh	
Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)		



Technical Specifications

	Operating (Discharging)	14° to 122° F (-10° to 50° C)
	Non-operating	-4° to 122° F (-20° to 50° C)
Battery Re-Charge Time	System in OFF or Standby Mode	3.5 to 5 hours
	System ON	4 to 7 hours
Fuel Gauge LED	Yes	
Warranty	1 year	
Optional Travel Battery Available	NA	

Optional HP 6-cell (55 WHr) Long Life Battery	Dimensions (H x W x L)	0.8 x 1.8 x 8.0in (2.0 x 4.7 x 20.5cm)		
	Weight (max)	.72lb, (.323kg)		
	Cells/Type	Lithium-Ion		
	Energy	Voltage	10.8V	
		Amp-hour capacity	5.1Ah	
		Watt-hour capacity	55Wh	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 122° F (-10° to 50° C)	
		Non-operating	-4° to 122° F (-20° to 50° C)	
	Battery Re-Charge Time	System in OFF or Standby Mode	2.5 hours	
System ON		3 to 5 hours		
Fuel Gauge LED	No			
Warranty	3 years			
Optional Travel Battery Available	Yes			

HP 9-cell (100 WHr) Lithium-Ion Primary battery	Dimensions (H x W x L)	0.8 x 2.4 x 8.1in (2 x 6.6 x 20.5cm)		
	Weight (max)	1.1lb, (.488kg)		
	Cells/Type	Lithium-Ion		
	Energy	Voltage	11.25V	
		Amp-hour capacity	8.85Ah	
		Watt-hour capacity	100Wh	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 122° F (-10° to 50° C)	
		Non-operating	-4° to 122° F (-20° to 50° C)	
	Battery Re-Charge Time	System in OFF or Standby Mode	3.5 to 5 hours	
System ON		4 to 7 hours		



Technical Specifications

Fuel Gauge LED	No
Warranty	1 year
Optional Travel Battery Available	Yes

6-Cell (62 WHr) Lithium-ion battery	Dimensions (HxWxL)	0.8 x 2.0 x 8.3 in (2.0 x 5.1 x 21.1 cm)		
	Weight	0.72 lb (0.325 kg)		
	Cells/Type	6-cell Lithium-Ion		
	Energy	Watt-hour Capacity	62Wh	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 140° F (-10° to 60° C)	
		Non-operating	-4° to 140° F (-20° to 60° C)	
Battery Re-Charge Time	System in OFF Mode or Standby	2.5 hours		
	System ON	3 to 5 hours (depending on system power consumption)		

Displays

15.6-inch LED HD (1366 x 768) anti-glare	Active Area (W x H)	13.54 x 7.59 in (34.4 x 19.4 cm)		
	Diagonal Size	15.6 in (39.6cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	300:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Pitch	0.252 mm	
		Format	1366 x 768	
		Configuration	RGB Stripe	
	Backlight	LED		
PPI	100 ppi			
Viewing Angle	±30° Horizontal, ±10° Vertical (minimum) 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)			

15.6-inch LED HD+ WVA (1600 x 900) anti-glare	Active Area (W x H)	13.54 x 7.59 in (34.4 x 19.4 cm)		
	Diagonal Size	15.6 in (39.6 cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	300:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Pitch	0.215 mm	
		Format	1600 x 900	



Technical Specifications

	Backlight	LED	RGB Stripe	
	PPI	118 ppi		
	Viewing Angle	±60° Horizontal, ± 50° Vertical (minimum) or ±70° Horizontal, ±60° Vertical (typical)		
15.6-inch LED FHD WVA (1920 x 1080) anti-glare	Active Area (W x H)	13.54 x 7.59 in (34.4 x 19.4 cm)		
	Diagonal Size	15.6 in (39.6 cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	300 :1 (min)		
	Refresh Rate	60 Hz		
	Brightness	220 nits (Typ)		
	Pixel Resolution	Pitch	0.179mm x 0.179mm	
		Format	1920 x 1080	
		Configuration	RGB Strip	
		Backlight	White LED	
	PPI	142 ppi		
	Viewing Angle	±60° Horizontal, ± 50° Vertical (minimum) or ±70° Horizontal, ±60° Vertical (typical)		
14.0-inch LED HD (1366 x 768) anti-glare	Active Area (W x H)	12.74 x 7.56 in (32.4 x 19.2 cm)		
	Diagonal Size	14.0 in (35.6cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	400:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Pitch	0.227 mm	
		Format	1366 x 768	
		Configuration	RGB Stripe	
		Backlight	LED	
	PPI	112 ppi		
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum) 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)		
14.0-inch LED HD+ (1600 x 900) anti-glare	Dimensions (W x H)	12.74 x 7.56 in (32.4 cm x 19.2 cm)		
	Diagonal Size	14.0 in (35.6cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	300 (min)		
	Refresh Rate	60 Hz		
	Brightness	200 nits (typ)		



Technical Specifications

Pixel Resolution	Pitch	0.1935mm
	Format	1600 x 900
	Configuration	RGB Stripe
Backlight	LED	
PPI	131 ppi	
Viewing Angle	30/30/20/10 (Left/Right/Down/Up) (minimum)	

Internal Storage

750 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)		
	Capacity	750 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	Transfer Rate	Synchronous	300 MB/s (Drive Capability) (maximum)	
	Seek Time (typical reads, including settling)	Single Track	1.5 ms	
		Average	11 ms	
		Maximum	22 ms	
	Rotational Speed	7200 rpm		
Logical Blocks	1,465,149,168			
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]			
Features	ATA Security			

500 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)		
	Capacity	500 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	Transfer Rate	Synchronous	300 MB/s (Drive Capability) (maximum)	
	Seek Time (typical reads, including settling)	Single Track	1.5 ms	
		Average	11 ms	
		Maximum	22 ms	
	Rotational Speed	7200 rpm		
Logical Blocks	976,773,168			
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]			
Features	ATA Security			



Technical Specifications

320 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115 g)
	Capacity	320 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous 300 MB/s (Drive Capability) (maximum)
	Seek Time (typical reads, including settling)	Single Track 1.5 ms Average 11 ms Maximum 22 ms
	Rotational Speed	7200 rpm
	Logical Blocks	625,142,448
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security

250 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)
	Capacity	250 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous 300 MB/s (Drive Capability) (maximum)
	Seek Time (typical reads, including settling)	Single Track 1.5 ms Average 11 ms Maximum 22 ms
	Rotational Speed	7200 rpm
	Logical Blocks	488,397,168
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security

500 GB 5400 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)
	Capacity	500 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous 150 MB/s (drive capability) (maximum)
	Seek Time (typical reads, including settling)	Single Track 3 ms Average 13 ms
	Rotational Speed	5400 rpm
	Logical Blocks	1,192,000,000
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security



Technical Specifications

settling)	Maximum	24 ms
Rotational Speed	5400 rpm	
Logical Blocks	976,773,168	
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
Features	ATA Security	

320 GB 5400 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)		
	Capacity	320 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	Transfer Rate	Synchronous	150 MB/s (drive capability)	
		(maximum)		
	Seek Time	Single Track	3 ms	
	(typical reads, including settling)	Average	13 ms	
		Maximum	24 ms	
	Rotational Speed	5400 rpm		
	Logical Blocks	625,142,448		
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]			
Features	ATA Security			

256 GB 2.5-inch SATA Solid State Drive	Drive Weight	73 Grams (max)		
	Capacity	256 GB		
	Height	0.276 in (7 mm)		
	Width	2.76 in (70 mm)		
	Interface	SATA Gen 2		
	Performance	Maximum Sequential Read	Maximum Sequential Write	
		Up to 265 MB/s	Up to 220 MB/s	
	Logical Blocks	500,118,192		
Operating Temperature	32° to 158°F (0° to 70°C) [case temp]			
Features	ATA Security; ATA-7 compliant; SATA 2.6; DIPM; TRIM			

160 GB 2.5-inch SATA Solid State Drive	Drive Weight	78 Grams	
	Capacity	160 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70 mm)	
	Interface	SATA Gen 2	
Performance	Maximum Sequential Read	Maximum Sequential Write	



Technical Specifications

		250 MB/s	100 MB/s	
	Logical Blocks	312,581,808		
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
	Features	ATA Security; ATA-7; SATA 2.6; DIPM; TRIM		
128 GB 2.5-inch SATA Solid State Drive	Drive Weight	75 Grams		
	Capacity	128 GB		
	Height	0.276 in (7 mm)		
	Width	2.76 in (70 mm)		
	Interface	SATA Gen 2		
	Performance	Maximum Sequential Read	Maximum Sequential Write	
		250 MB/s	140 MB/s	
		Logical Blocks	250,069,680	
		Operating Temperature	32° to 158°F (0° to 70°C) [case temp]	
		Features	ATA Security; ATA-7; SATA 2.6; DIPM; TRIM	

Optical Drives

DVD-ROM Drive	Access Times	Random	< 140 ms CD (typical) < 160 ms DVD (typical)
	Max Data Transfer Rate	24X CD-ROM 8X-DVD	
	Transfer Mode	UDMA Mode 5	
	Interface	Gen 1 SATA	
	Supported Media (read)	CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	None	
	Max Media Capacity (read)	8.5GB	
	Transport	Tray Loading	
DVD+/-RW SuperMulti DL Drive	Access Times	Random	<140ms CD (typical) < 160 ms DVD (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD 24X CD-R	



Technical Specifications

		24X CD-RW	
		8X DVD+R	
		8X DVD+RW	
		8X DVD-R	
		6X DVD-RW	
		6X - DVD+R Dual Layer	
		6X - DVD-R Dual Layer	
		5X DVD-RAM	
	Transfer Mode	UDMA Mode 5	
	Interface	Gen 1 SATA	
	Supported Media (read)	CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM, DVD+R DL, DVD-R DL	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	
<hr/>			
Blu-ray R/RE DVD+/-RW SuperMulti DL Drive	Access Times	Random	<165 ms CD-ROM (typical) <185 ms DVD-ROM (typical) <205 ms BD-ROM (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD-ROM 24X CD-R 16X CD-RW 8X DVD+R 8X DVD+RW 8X DVD-R 6X DVD-RW 6X DVD+R Dual Layer 6X DVD-R Dual Layer 5X DVD-RAM 6X BD-ROM 6X BD-R 2X BD-RE	
	Transfer Mode	UDMA Mode 5	



Technical Specifications

Interface	Gen 1 SATA
Supported Media (read)	CD-DA, , CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW. DVD-RAM, BD-ROM, BD-R, BD-RE
Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, DVD-RAM, BD-R, BD-RE
Max Media Capacity (read)	50.0 GB
Max Media Capacity (write)	50.0 GB
Transport	Tray Loading

Security

HP Fingerprint Sensor (optional)	Mobile Voltage Operation	3.0V-3.6V Single Supply
	Operating Temperature	32° – 158°F (0° – 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7 mm x 0.81 mm 500 ppi High-Resolution Images

Communications

Intel® 82579LM Gigabit Network Connection	Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3. Clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE(Energy Efficient Ethernet)
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Technical Specifications

Power Management	Jumbo Frame 9K Auto MDI/MDIX Crossover cable detection
Performance Features	ACPI compliant - multiple power modes Energy Detect Low Power Mode(Green Ethernet) TCP/IP/UDP Checksum Offload (configurable) Protocol Offload(ARP & NS) Large send offload and Giant send offload Receiving Side Scaling MACSec Offload (802.3ae) Intel vPro iSCSI Boot
Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Interface	PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ. NOTE: Intel 82579 PCIe interface is not PCIe compliant. It operates at half of PCIe specification V1.1 (2.5GT/S) speed.
NIC Device Driver Name	Intel 82579LM/82579V Ethernet Network Connection

V.92 56K Data/Fax Modem	Form Factor	MDC 1.5 Daughtercard
	Power Management Support	APM Revision 1.2, ACPI
	Approvals/Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
	Data Mode Capabilities	V.92 data V.8bis V.80 V44, V.42bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) Optional symbol rates: 2800, 3429 Asymmetric Symbol rates Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.34 V.32bis V.32 V.23



Technical Specifications

V.22bis
V.22
V.21
Bell 212A
Bell 103J

Fax Mode Capabilities TIA/EIA-578-B (Class 1)

T.30, T.4 (Group 3)

V.17

V.29

V.27ter

V.21 Channel 2

T.31

Command Set

V.250 (Partial)

TIA-602

Identification: +GMI, +GMM, +GMR

Port control: +IPR, +ICF, +IFC, +ILRR

Modulation: +MS, +MR, +MA

Error control: +ES, +ER, +EB, +ESR, +ETBM

Data compression: +DS, +DR

V.251

**HP un2430
EV-DO/HSDPA
Mobile
Broadband
Module (Gobi™
3000)**

**Technology/Operating
Bands**

GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM),
1800MHz(DCS), 1900MHz (PCS)

UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I),
1900MHz (UTRA FDD Band II), AWS (UTRA FDD Band IV),
900MHz(UTRA FDD Band VIII), 850MHz (UTRA FDD Band V)

1xEVDO/1xRTT with receive diversity: 850MHz (Band Class0-Cell),
1900MHz (Band Class1-PCS)

Wireless Protocol Standards

GSM/GPRS/EDGE: Class A, Multi-slot class 10 operation, coding
schemes CS1 - CS4 and MSC1 - MSC9.

UMTS/WCDMA: Release 99 and Release 6

CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856,
IS-2000

**Wireless Parametric
Standards**

Meets or exceeds TIA/EIA IS-98-D

Maximum Data Rates

UMTS (HSPA) - 14.4 Mbps (Download), 5.76Mbps (Upload)

CDMA (EVDO Release A) - 3.1 Mbps (Download), 1.8Mbps (Upload)

GPS

Standalone GPS enabled

gpsOneXTRATM™

GPS Bands

L1 - 1575.42 MHz

Maximum Output Power

GSM/GPRS/EDGE: 32dBm (+/-1)

WCDMA: 24dBm (+0.7/-2.3)

CDMA: 24dBm (+0.7/-2)

**Maximum Power
Consumption**

2750mA (peak); 1100mA (average)

Power Consumption, Idle

20 mA



Technical Specifications

Not Connected	
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	11.5 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 10%
Temperature, Operating (from TIA/EIA/IS-98-D)	-22° to 158° F (-30° to 70° C) (full RF performance) -22° to 167° F (-30° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-40° to 185° F (-40° to 85° C)
Humidity, Non-operating	95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

HP hs2340 HSPA+ Mobile Broadband Module	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), 900MHz(UTRA FDD Band VIII), 850 MHz (UTRA FDD Band V)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 7 Advanced Receiver Type 3i
	Wireless Parametric Standards	Complies with 3GPP specifications
	Maximum Data Rates	UMTS (HSPA) - 21 Mbps (Download), 5.76Mbps (Upload)
	GPS	Standalone, A-GPS (Internet- and Network assisted)
	GPS Bands	1575.42 MHz (± 1.023 MHz)
	Maximum Output Power	GSM/EDGE GSM850 & GSM900 bands GPRS: +33 dBm ± 2 dBm (class 4) EGPRS: +27 dBm ± 3 dBm (class E2) DCS1800 & PCS1900 bands GPRS: +30 dBm ± 2 dBm (class 1) EGPRS: +26 dBm +4 / -3 dBm (class E2)



Technical Specifications

	UMTS
	UTRA FDD Bands
	+24 dBm +4 / -3 dBm (class 3)
Maximum Power Consumption	2000mA (peak); 600mA (average)
Power Consumption, Sleep Mode	5 mA
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	< 12 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 9%
Temperature, Operating	14° to 149° F (-10° to 65° C) (full RF performance) 14° to 167° F (-10° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-22° to 185° F (-30° to 85° C)
Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

Intel Centrino Advanced-N 6205	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n* * In countries where 802.11n is not allowed, this capability is not enabled.
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5GHz
	Antenna Structure	2 transmit; 2 receive (2x2)
	Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 66 possible data rates, ranging from 6 Mbps to 300



Technical Specifications

	Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification
Modulation	Direct Sequence Spread Spectrum
Security ¹	DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM Authentication: WPA and WPA2, 802.1x (EAP_TLS, TTLS, PEAP, LEAP, EAP-FAST) Authentication Protocols: PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2 Encryption: 64 and 128-bit WEP, AES-CCMP, CKIP, TKIP Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between 2.4GHz band Access Points
Output Power (for CCK and OFDM) ²	17 dBm max
Power Consumption	Transmit: 2.3 Watts (max, with two spatial streams) Receive: 1 Watt (max with two spatial streams) Idle mode ³ : 35 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ⁴	54 Mbps: -76 dBm, 6 Mbps: -92 dBm
Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance
Form Factor	PCI-Express Half-MiniCard
Weight	0.0075 lb (3.4 g)
Dimensions	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
Operating Voltage	3.3V +/- 9%
Temperature	Operating 32° to 176° F (0° to 80° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 90% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)



Technical Specifications

LED Activity

LED Off - Radio OFF; Solid LED On - Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

Intel Centrino Ultimate-N 6300

Wireless LAN Standards

IEEE 802.11a
IEEE 802.11b
IEEE 802.11g
IEEE 802.11n*

* In countries where 802.11n is not allowed, this capability is not enabled.

Interoperability

Wi-Fi certified (802.11bgn only)
Cisco Compatible Extensions Program compliant (802.11bgn only) with Microsoft Windows Vista and XP (details at: <http://www.hp.com/go/notebooks/WLAN>)

Frequency Band

2.4 GHz and 5GHz

Antenna Structure

3 transmit; 3 receive (3x3)

Data Rates

802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11b: 1, 2, 5.5, 11 Mbps
802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n: many possible data rates, ranging from 6 Mbps to 450 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification

Modulation

Direct Sequence Spread Spectrum
DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM

Security¹

Authentication: WPA and WPA2, 802.1x (EAP_TLS, TTLS, PEAP, LEAP, EAP-FAST)

Authentication Protocols: PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2

Encryption: 64 and 128-bit WEP, AES-CCMP, CKIP, TKIP

Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.

Sub-channels

Multinational support with frequency bands and channels compliant to



Technical Specifications

	local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between Access Points
Output Power (for CCK and OFDM) ²	17 dBm max
Power Consumption	Transmit: 2.4 Watts (max, with three spatial streams) Receive: 1.4 Watts (max with three spatial streams) Idle mode ³ : 35 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ⁴	54 Mbps: -76 dBm, 6 Mbps: -92 dBm
Antenna Connections	3 U.FL type connectors, 50 ohm nominal impedance
Form Factor	PCI-Express Half-MiniCard
Weight	0.0075 lb (3.4 g)
Dimensions	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
Operating Voltage	3.3V +/- 9%
Temperature	Operating 32° to 176° F (0° to 80° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 90% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON
	<ol style="list-style-type: none"> 1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. In Power Save Polling mode and on battery power. 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation). 5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

**Broadcom
43224AGN
802.11a/b/g/n
WiFi Adapter**

**Wireless LAN
Standards**

IEEE 802.11a
IEEE 802.11b
IEEE 802.11g
IEEE 802.11n*

Interoperability

Wi-Fi certified (802.11abg only)
Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows Vista and XP (details at:



Technical Specifications

	http://www.hp.com/go/notebooks/WLAN
Frequency Band	2.4 GHz and 5 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6, 6.5, 9, 12, 13, 13.5, 18, 19.5, 24, 26, 27, 36, 39, 40.5, 48, 52, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270, 300 Mbps
Frequency Support	20 MHz: 2.4 GHz and 5 GHz bands 40 MHz: 2.4 GHz and 5 GHz bands
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CCK) ²	17 dBm , nominal
Output Power (for OFDM; power varies by data rate) ²	15 dBm , nominal
Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit/Receive 20 MHz channel: 2.0 W (max) Transmit/Receive 40 MHz channel: 2.0 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	270 Mbps: -61 dBm , 54 Mbps: -72 dBm, 11 Mbps: -85 dBm , 1 Mbps: -92 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 149° F (-10° to 65° C)



Technical Specifications

Humidity	Non-operating	-40° to 176° F (-40° to 80° C)
	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON	
	<ol style="list-style-type: none"> 1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation). 4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista. 	

Broadcom 4313GN 802.11b/g/n WiFi Adapter	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Win7, Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 6.5, 7.2, 13, 14.4, 19.5, 21.7, 26, 28.9, 39, 43.3, 52, 57.8, 58.5, 65, 72.2Mbps
	Frequency Support	20 MHz: 2.4 GHz bands
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power (for CCK) ²	17 dBm , nominal



Technical Specifications

Output Power (for OFDM; power varies by data rate) ²	15 dBm , nominal
Power Consumption	Idle associated: 250 mW avg (CLKREQ enabled) Idle unassociated: 425 mW avg Transmit/Receive 20 MHz channel: 5.5 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ³	72.2 Mbps: -71dBm
Antenna type	High efficiency dual band antenna with spatial diversity, usually mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 149° F (-10° to 65° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista and Win7.

HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology

Bluetooth Specification	2.1+EDR Compliant
Dimensions	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate



Technical Specifications

Power Consumption	Peak (Tx) 264 mW Peak (Rx) 231 mW Sleep <1 mW
Antenna	Internally integrated within module
Range	Up 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Certifications	All necessary regulatory approvals for supported countries, including: FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Temperature	Operating -4° to 158° F (-20° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% Non-operating 5% to 95%
Altitude	Operating 15,000 ft (4,572 m) Non-operating 40,000 ft (12,192 m)
Bluetooth Profiles Supported	Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2,3} FAX Profile (FAX) Basic Imaging Profile (BIP) ² Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)



Technical Specifications

1. indicates the profile is supported by Microsoft Windows XP SP2
2. indicates the profile is part of Windows Vista

Environmental Data

Eco-Label Certifications

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US Energy star
- IT ECO declaration
- EPEAT – Gold

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for these models are based on a "Typically Configured Notebook"

HP EliteBook 8460p Notebook PC

Energy Consumption

	115 VAC	230 VAC	100 VAC
Normal Operation	11.57 W	12.11 W	11.45 W
Sleep (Energy Star low power mode)	1.23 W	1.31 W	1.14 W
Off	0.56 W	0.62 W	0.51 W

Heat Dissipation*

	115 VAC	230 VAC	100 VAC
Normal Operation	40 BTU/hr	41 BTU/hr	390 BTU/hr
Sleep	4 BTU/hr	4 BTU/hr	4 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.3	26.7
Fixed Disk (random writes)	3.4	30.2

System fan is usually off except when charging the battery

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater than 5ppm by weight



Technical Specifications

Additional information

- Cadmium greater than 10ppm by weight

The battery type and chemistry used in the product is:

CR2032 (coin cell), Li-ion

6-cell high capacity Lithium-Ion battery (optional 8 cell available)

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see: www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.1% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - Corrugated Paper – 500 g
 - CANON bags-several layers – 5 g
- Internal:
 - Polyethylene – 15 g
 - Molded pulp – 180 g
- The Corrugated Paper packaging material is made from 80% recycled content.
- The CANON bags-several layers packaging material is made from 80% recycled content.
- The Polypropylene packaging material is made from 80% recycled content.
- The Molded Pulp packaging material is made from 80% recycled content.

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in



Technical Specifications

packaging materials.

- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

HP EliteBook 8560p Notebook PC

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	9.71 W	9.81 W	11.45 W
Sleep (Energy Star low power mode)	0.81 W	0.90 W	0.80 W
Off	0.56 W	0.64 W	0.55 W
Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	33.4 BTU/hr	33.5 BTU/hr	33 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.9	24
Fixed Disk (random writes)	3.8	32

System fan is usually off except when charging the battery

Batteries This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight



Technical Specifications

Additional information

The battery type and chemistry used in the product is:

CR2032 (coin cell), Li-ion

6-cell high capacity Lithium-Ion battery (optional 8 cell available)

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see: www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.5% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - Corrugated carton – 375 g
 - Paper/cardboard – 310 g
- Internal:
 - Polyethylene low density solid – 22 g
- The Corrugated carton packaging material is made from 80% recycled content.
- The Paper/Cardboard packaging material is made from 80% recycled content.
- The Polyethylene low density solid packaging material is made from 80% recycled content.

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and



Technical Specifications

corrugated materials.

- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment:

http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants - may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) - except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 micrograms/cm²/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities.



Technical Specifications

Hewlett-Packard Corporate Environmental Information

This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

For more information about HP's commitment to the environment:
Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Environment website

<http://www.hp.com/environment>

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

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