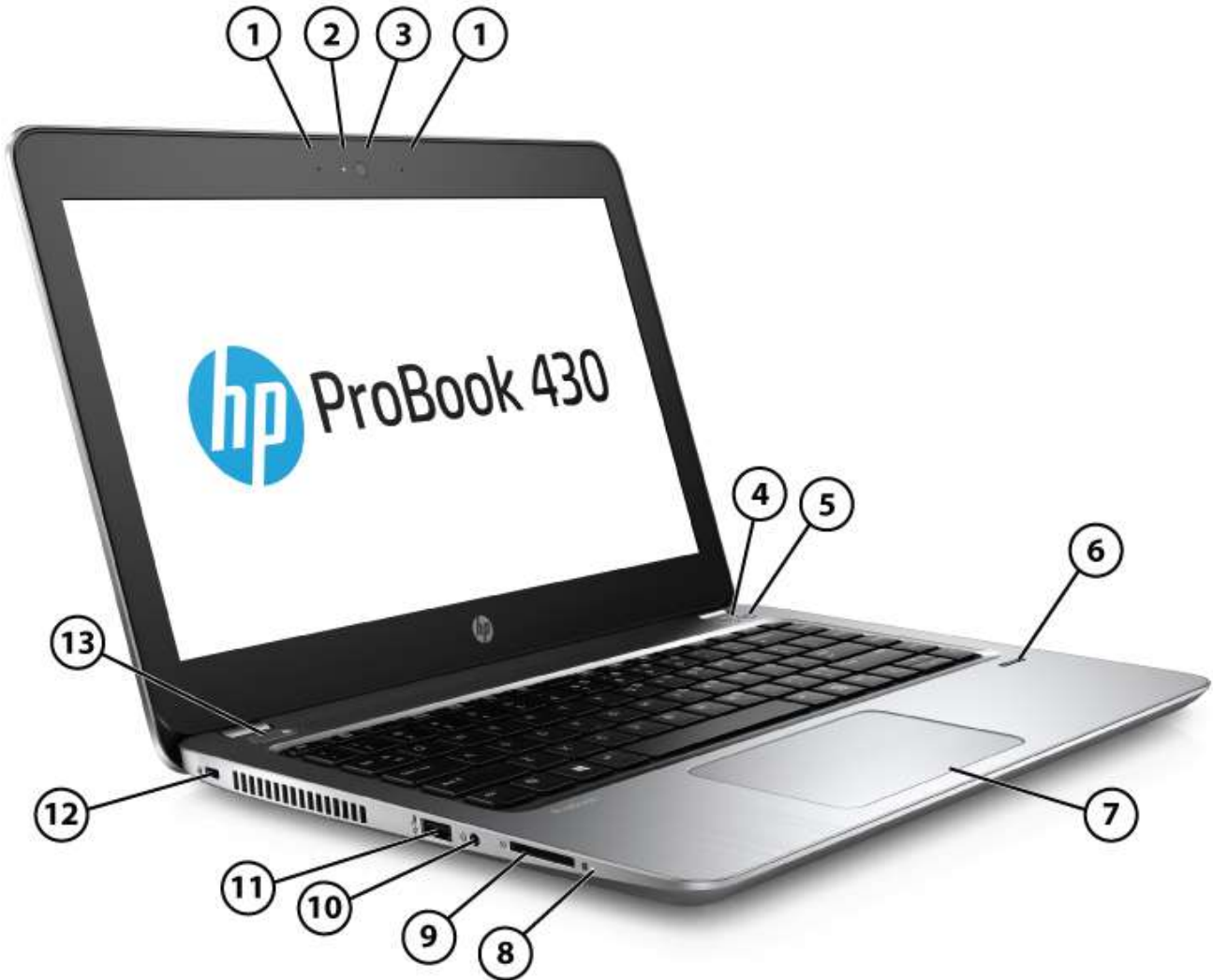


QuickSpecs

Overview

HP ProBook 430 G4 Notebook PC



Front

- | | |
|---------------------------|-------------------------------------|
| 1. Microphones (2) | 8. Hard drive LED |
| 2. Webcam light | 9. SD Card reader |
| 3. Webcam | 10. Headphone/Microphone combo jack |
| 4. Wireless on/off button | 11. USB 2.0 port (power port) |
| 5. Speaker mute button | 12. Security lock slot |
| 6. Fingerprint reader | 13. Power button |
| 7. Touchpad | |



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Overview



Rear

- | | |
|-----------------|------------------------------|
| 1. USB-C port | 4. External VGA monitor port |
| 2. USB 3.0 port | 5. Ethernet port (RJ-45) |
| 3. HDMI port | 6. Power connector |



QuickSpecs

Overview

HP ProBook 440 G4 Notebook PC



Front

- | | |
|---------------------------|-------------------------------------|
| 1. Microphones (2) | 8. Hard drive LED |
| 2. Webcam light | 9. SD Card reader |
| 3. Webcam | 10. Headphone/Microphone combo jack |
| 4. Wireless on/off button | 11. USB 2.0 port (power port) |
| 5. Speaker mute button | 12. Security lock slot |
| 6. Fingerprint reader | 13. Power button |
| 7. Touchpad | |



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Overview



Rear

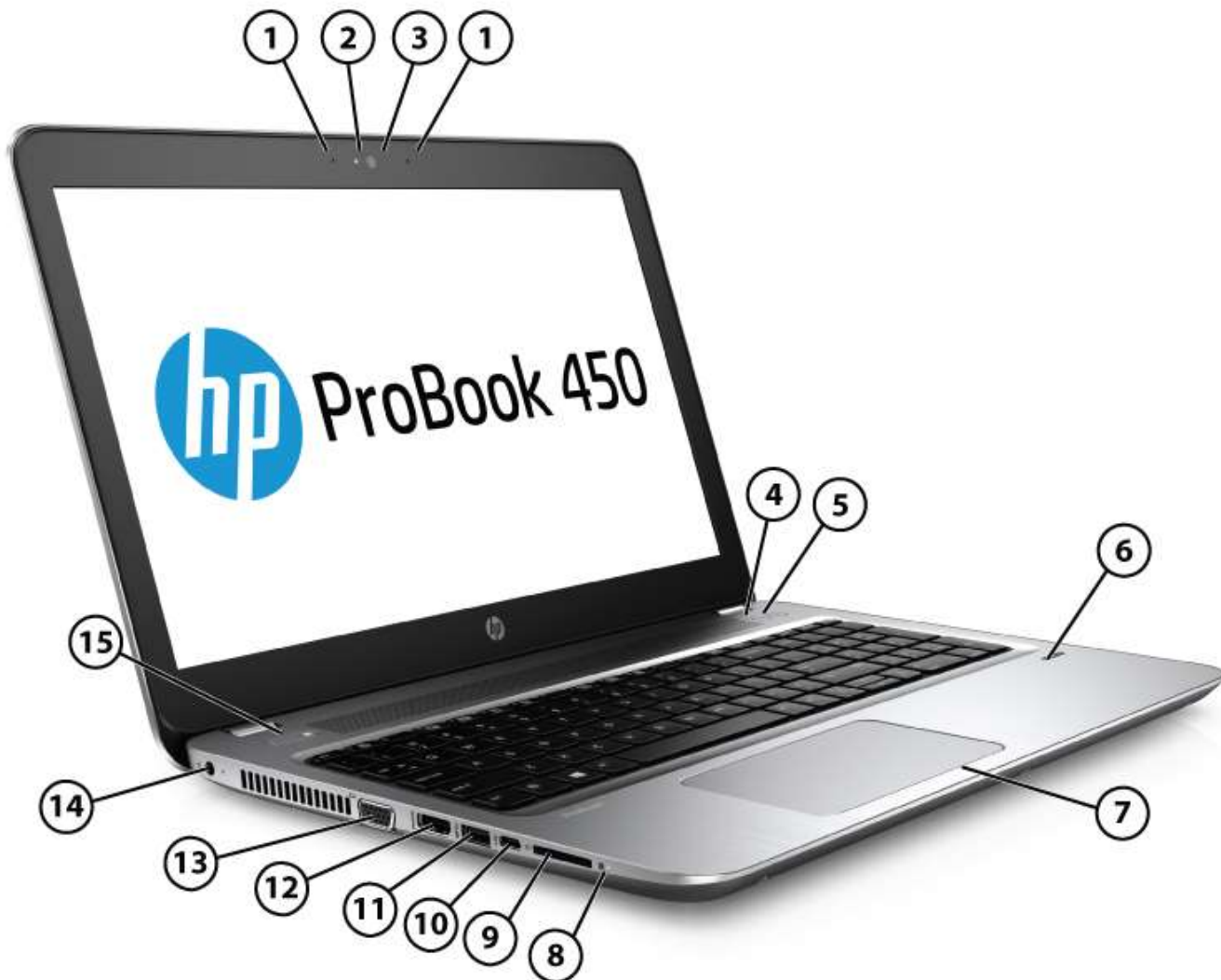
1. USB Type-C™ port
2. USB 3.0 port
3. HDMI port
4. External VGA monitor port
5. Ethernet port (RJ-45)
6. Power connector



QuickSpecs

Overview

HP ProBook 450 G4 Notebook PC



Front

- | | |
|---------------------------|-------------------------------|
| 1. Microphones (2) | 9. SD Card reader |
| 2. Webcam light | 10. USB-C port |
| 3. Webcam | 11. USB 3.0 port |
| 4. Wireless on/off button | 12. HDMI port |
| 5. Speaker mute button | 13. External VGA monitor port |
| 6. Fingerprint reader | 14. Power connector |
| 7. Touchpad | 15. Power button |
| 8. Hard drive LED | |



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Overview



Rear

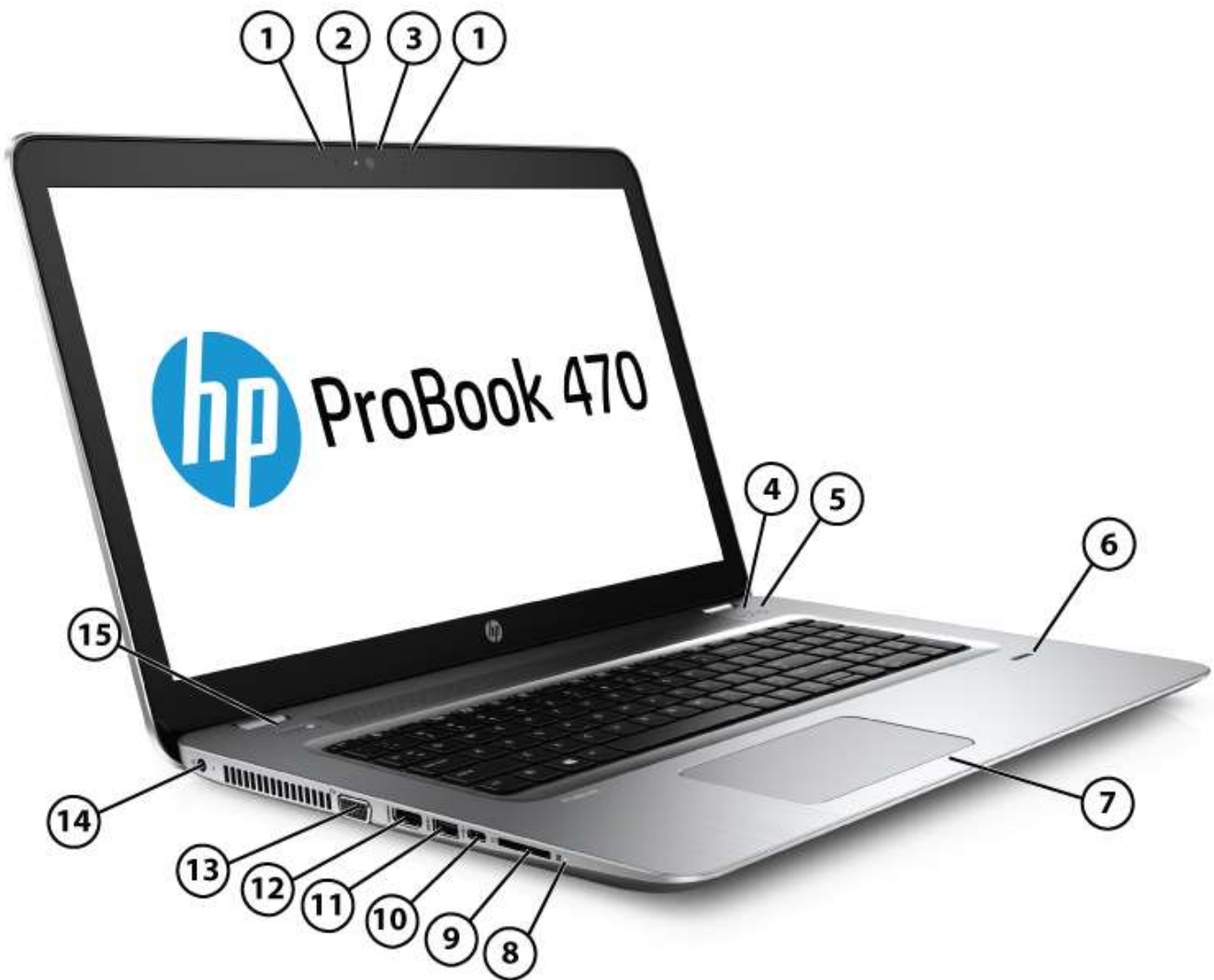
1. Optical drive
2. Headphone/Microphone combo jack
3. USB 2.0 ports (2)
4. Ethernet port (RJ-45)
5. Security lock slot

HP ProBook 470 G4 Notebook PC



QuickSpecs

Overview



Front

- | | |
|---------------------------|-------------------------------|
| 1. Microphones (2) | 9. SD Card reader |
| 2. Webcam light | 10. USB-C port |
| 3. Webcam | 11. USB 3.0 port |
| 4. Wireless on/off button | 12. HDMI port |
| 5. Speaker mute button | 13. External VGA monitor port |
| 6. Fingerprint reader | 14. Power connector |
| 7. Touchpad | 15. Power button |
| 8. Hard drive LED | |



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Overview



Right

- | | |
|------------------------------------|--------------------------|
| 1. Optical drive | 4. Ethernet port (RJ-45) |
| 2. Headphone/Microphone combo jack | 5. Security lock slot |
| 3. USB 2.0 ports (2) | |



QuickSpecs

Overview

At a Glance

1. Windows 10 or FreeDOS 2.0
2. Choice of Intel® Core™ processors
3. Full size HP Premium Keyboard, spill-resistant keyboard with a thin layer of Mylar film to prevent minor spills; full separate numeric keypad (on 450/470 only)
4. Separate launch buttons provide easy access to wireless on/off and speaker mute.
5. Function keys provide control of features including: standby mode, display brightness, external display, microphone mute, volume down, volume up, and backlight toggle for backlit keyboard (select models only).
6. Large Clickpad with gestures support
7. Enhanced security features with preinstalled software and hardware options
8. Optional HD webcam with dual-microphone array for video conferencing
9. HDMI port for connecting to high-resolution displays
10. Choice of displays
 - **HP ProBook 430 G4**
 - 13.3" diagonal Full HD anti-glare Ultraslim LED-backlit (1920 x 1080) Non-Touch
 - 13.3" diagonal HD anti-glare Slim LED-backlit (1366 x 768) Non-Touch
 - 13.3" diagonal HD Slim LED-backlit (1366 x 768) Touch
 - **HP ProBook 440 G4**
 - 14" diagonal Full HD anti-glare slim LED-backlit (1920 x 1080) Non-Touch
 - 14" diagonal HD anti-glare Slim LED-backlit (1366 x 768) Non-Touch
 - 14" diagonal HD Slim LED-backlit (1366 x 768) Touch
 - **HP ProBook 450 G4**
 - 15.6" diagonal Full HD anti-glare slim LED-backlit (1920 x 1080) Non-Touch
 - 15.6" diagonal HD anti-glare Slim LED-backlit (1366 x 768) Non-Touch
 - 15.6" diagonal HD Slim LED-backlit touch screen (1366 x 768) Touch
 - **HP ProBook 470 G4**
 - 17.3" diagonal Full HD anti-glare flat LED backlit (1920 x 1080) Non-Touch
 - 17.3" diagonal HD+ anti-glare flat LED backlit (1600 x 900) Non-Touch
11. Flexible wireless connectivity options
12. Battery life
 - **HP ProBook 430 G4** up to 16hrs (SSD), or 13hrs (HDD)
 - **HP ProBook 440 G4** up to 15hrs 30mins (SSD), or 12hrs 30mins (HDD)
 - **HP ProBook 450 G4** up to 14hrs 15mins (SSD), or 12hrs (HDD)
 - **HP ProBook 470 G4** up to 12hrs 45mins (SSD), or 11hrs (HDD)
13. HP 3-cell, 48 WHr Li-ion battery
14. Passed MIL-STD testing¹

1. MIL STD 810G testing was not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Damage under the MIL STD test conditions or any accidental damage requires an optional HP Accidental Damage Protection Care Pack.

NOTE: See important legal disclosures for all listed specs in their respective features sections.



QuickSpecs

Features

PRODUCT NAMES

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

OPERATING SYSTEMS

Preinstalled	Windows 10 Pro 64 ¹ Windows 10 Pro (National Academic only) ¹ Windows 10 Home 64 ¹ Windows 10 Home Single Language 64 ¹ Windows 10 Home 64 (National Academic only) ¹ FreeDOS 2.0
Web only support	Windows 10 Pro 64 ¹ Windows 10 Home 64 ¹ Windows 10 Enterprise 64 ¹

NOTE: In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>.

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.microsoft.com>.



QuickSpecs

Features

PROCESSORS

HP ProBook 430 G4

Intel® Core™ i3-7100U Intel® HD Graphics 620 (2.4GHz, 3MB L3 Cache, 2 core)^{1,2}

Intel® Core™ i5-7200U Intel® HD Graphics 620 (2.5GHz, up to 3.1 GHz with Intel Turbo Boost Technology, 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i5-7300U Intel® HD Graphics 620 (2.6GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i7-7500U Intel® HD graphics 620 (2.7GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 4MB L3 Cache, 2 core) ^{1,2}

Intel® Pentium® Gold 4415U with Intel® HD Graphics (2.3 GHz, 2 MB cache, 2 cores) ^{1,2}

Intel® Celeron® 3865U with Intel® HD Graphics (1.8 GHz, 2 MB cache, 2 cores) ^{1,2}

HP ProBook 440 G4

Intel® Core™ i3-7100U Intel® HD Graphics 620 (2.4GHz, 3MB L3 Cache, 2 core)^{1,2}

Intel® Core™ i5-7200U Intel® HD Graphics 620 (2.5GHz, up to 3.1 GHz with Intel Turbo Boost Technology 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i5-7300U Intel® HD Graphics 620 (2.6GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i7-7500U Intel® HD graphics 620 (2.7GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 4MB L3 Cache, 2 core) ^{1,2}

Intel® Pentium® Gold 4415U with Intel® HD Graphics (2.3 GHz, 2 MB cache, 2 cores) ^{1,2}

Intel® Celeron® 3865U with Intel® HD Graphics (1.8 GHz, 2 MB cache, 2 cores) ^{1,2}

HP ProBook 450 G4

Intel® Core™ i3-6006U Intel® HD Graphics 520 (2.0GHz, 3MB L3 Cache, 2 core)^{1,2}

Intel® Core™ i3-7100U Intel® HD Graphics 620 (2.4GHz, 3MB L3 Cache, 2 core)^{1,2}

Intel® Core™ i5-7200U Intel® HD Graphics 620 (2.5GHz, up to 3.1 GHz with Intel Turbo Boost Technology, 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i7-7500U Intel® HD graphics 620 (2.7GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 4MB L3 Cache, 2 core) ^{1,2}

Intel® Pentium® Gold 4415U with Intel® HD Graphics (2.3 GHz, 2 MB cache, 2 cores) ^{1,2}

Intel® Celeron® 3865U with Intel® HD Graphics (1.8 GHz, 2 MB cache, 2 cores) ^{1,2}

HP ProBook 470 G4

Intel® Core™ i3-7100U Intel® HD Graphics 620 (2.4GHz, 3MB L3 Cache, 2 core)^{1,2}

Intel® Core™ i5-7200U Intel® HD Graphics 620 (2.5GHz, up to 3.1 GHz with Intel Turbo Boost Technology, 3MB L3 Cache, 2 core) ^{1,2}

Intel® Core™ i7-7500U Intel® HD graphics 620 (2.7GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 4MB L3 Cache, 2 core) ^{1,2}

NOTE: In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>.

Processors Family

7th Generation Intel® Core™ i3 processor (i3-6006U, i3-7100U, models)

7th Generation Intel® Core™ i5 processor (i5-7200U, i5-7300U models)

7th Generation Intel® Core™ i7 processor (i7-7500U model)

7th Generation Intel® Pentium® processor (4415U model)

7th Generation Intel® Celeron® processor (3864U model)



QuickSpecs

Features

NOTE: In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>.

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

1. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
 2. HD content required to view HD images.
-



QuickSpecs

Features

CHIPSET

Integrated with processor

GRAPHICS

Integrated

HP ProBook 430/440/450

Intel® HD Graphics 620¹

Note: [View processor section for details.](#)

Discrete²

HP ProBook 450/470

NVIDIA® GeForce® 930MX (2GB DDR3 dedicated, switchable)

1. HD content required to view HD images.

2. NVIDIA® Optimus™ technology requires an Intel processor, plus an NVIDIA® GeForce® discrete graphics configuration and is available on Windows 10 Professional OS. With NVIDIA® Optimus™ technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

DISPLAYS

HP ProBook 430 G4

Internal

Non-Touch

33.7 cm (13.3") diagonal HD¹ anti-glare LED-backlit (1366 x 768)

33.7 cm (13.3") diagonal FHD¹ anti-glare LED-backlit (1920 x 1080)

Touch

33.78 cm (13.3") diagonal HD¹ touch screen (1366 x 768)

NOTE: Only available with Windows 10.

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048 x 1536 external resolution @60 Hz

HDMI

Supports direct connection to high-definition displays with up to 4096 x 2160 @24 Hz resolution and 7-channel audio with one convenient cable (Cable not included)

HP ProBook 440 G4

Internal

Non-Touch

35.5 cm (14") diagonal HD¹ anti-glare LED-backlit (1366 x 768)

35.5 cm (14") diagonal FHD¹ anti-glare LED-backlit (1920 x 1080)

Touch

35.56 cm (14") diagonal HD¹ touch screen (1366 x 768)



QuickSpecs

Features

NOTE: Only available with Windows 10.

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048 x 1536 external resolution @60 Hz

HDMI

Supports direct connection to high-definition displays with up to 4096 x 2160 @24 Hz resolution and 7-channel audio with one convenient cable (Cable not included.)

HP ProBook 450 G4

Internal

Non-Touch

39.6 cm (15.6") diagonal HD¹ anti-glare LED-backlit (1366 x 768)

39.6 cm (15.6") diagonal FHD¹ anti-glare LED-backlit (1920 x 1080)

Touch

39.6 cm (15.6") diagonal HD¹ touch screen (1366 x 768)

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048 x 1536 external resolution @ 60 Hz

HDMI

Supports direct connection to high-definition displays with up to 4096 x 2160 @24 Hz resolution and 7-channel audio with one convenient cable (not included)

HP ProBook 470 G4

Internal

Non-Touch

43.9 cm (17.3") diagonal HD+¹ anti-glare LED-backlit (1600 x 900)

43.9 cm (17.3") diagonal FHD¹ anti-glare LED-backlit (1920 x 1080)

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048x1536 external resolution @ 60 Hz

HDMI

Supports direct connection to high-definition displays with up to 4096 x 2160 @24 Hz resolution and 7-channel audio with one convenient cable (not included)

1. HD content required to view HD images.

NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.



QuickSpecs

Features

STORAGE AND DRIVES

HP ProBook 430 and 440 G4

Hard Drives

Supports SATA, 7mm, 2.5" Hard Drives

500 GB - 7200 RPM Hard Drive

500 GB – SSHD (hybrid) (8 GB Cache)

1 TB - 5400 RPM Hard Drive

Mini Card Solid State Drive

M.2 (NGFF) 2280 Solid State Drive

128 GB SATA-3 Value Solid State Drive

256 GB SATA-3 Value Solid State Drive

HP ProBook 450 and 470 G4

Hard Drives

Supports SATA, 7mm/9.5mm, 2.5" Hard Drives

500 GB (5400 rpm) SSHD (Hybrid) (8 GB Cache)

500 GB (7200) rpm Hard Drive

1 TB (5400 rpm) Hard Drive

2 TB (5400 rpm) Hard Drive

Mini Card Solid State Drive

M.2 (NGFF) 2280 Solid State Drive

128 GB SATA-3 Value Solid State Drive

256 GB SATA-3 Value Solid State Drive

Dual Solid State Drive

256 GB + 256 GB SATA-3 Value Solid State Drive

HP 3D DriveGuard (Windows only)

The hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive

NOTE: For Solid State Drives or Hard Drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.



QuickSpecs

Features

OPTICAL DRIVES

HP ProBook 430 and 440

External

Support Optional¹ External USB Drive CD/DVD R/RW

HP ProBook 450³ and 470³

Fixed Optional¹ Optical Drive

9.0 mm SATA:

DVD-ROM¹

DVD+/-RW SuperMulti DL Drive^{1,2}

Weight saver³

1. Sold separately as an optional feature,
2. For Blu-ray drives, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require an HDMI digital connection and your display may require HDCP support. HD-DVD disks cannot be played on this drive. Note that DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided – Version 1.0 media. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer discs can store more data than single layer discs; discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.
3. No Optical option (weight saver) supported

MEMORY

Two SODIMM slots:

Both slots are customer accessible / upgradeable

DDR4 PC4 SODIMMS, system runs at 2133

Supports Dual Channel Memory

Standard

4 GB Total System Memory (4 GB x 1)

8 GB Total System Memory (4 GB x 2) (Dual Channel)

8 GB Total System Memory (8 GB x 1)

16 GB Total System Memory (8 GB x 2) (Dual Channel)

Maximum

Up to 16 GB (8GBx2)

Dual-channel

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. With Windows Starter 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.



QuickSpecs

Features

NETWORKING/COMMUNICATIONS

HP ProBook 430

Wireless LAN (WLAN)^{1,2}

Realtek 802.11b/g/n (1x1) and Bluetooth® 4.0 Combo

Intel® Dual Band Wireless-AC 3168 802.11a/b/g/n/ac (1x1) WiFi and Bluetooth® 4.2 Combo

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

HP ProBook 440 G4

Wireless LAN (WLAN)^{1,2}

Realtek 802.11b/g/n (1x1) and Bluetooth® 4.0 Combo

Intel® Dual Band Wireless-AC 3168 802.11a/b/g/n/ac (1x1) WiFi and Bluetooth® 4.2 Combo

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

HP ProBook 450 G4

Wireless LAN (WLAN)¹

Realtek 802.11b/g/n (1x1) and Bluetooth® 4.0 Combo

Intel® Dual Band Wireless-AC 3168 802.11a/b/g/n/ac (1x1) WiFi and Bluetooth® 4.2 Combo

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

HP ProBook 470 G4

Wireless LAN (WLAN)^{1,2}

Realtek 802.11b/g/n (1x1) and Bluetooth® 4.0 Combo

Intel® Dual Band Wireless-AC 3168 802.11a/b/g/n/ac (1x1) WiFi and Bluetooth® 4.2 Combo

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo (non-vPro)

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.
2. Sold separately or as an optional feature.

Communications

Realtek RTL8111HSH (10/100/1000)

NOTE: 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.

AUDIO/MULTIMEDIA



QuickSpecs

Features

Audio

Two stereo speakers

Integrated microphone (dual-microphone array when equipped with optional webcam)

Headphone/microphone combo jack

Webcam

Optional¹ 720p HD² webcam³

1. Sold separately as an optional feature.
2. HD content required to view HD images.
3. Internet access required.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

HP Premium Keyboard

The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard. 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, and function keys. US and International key layouts are available.

NOTE 1: Includes a separate numeric keypad (HP ProBook 450 and 470 only.)

NOTE 2: Backlit keyboard available as an option.

Buttons and Function Keys

Separate launch buttons provide easy access to wireless on/off and speaker mute. Function keys provide control of features including: standby mode, display brightness, external display, microphone mute, volume down, volume up, and backlight toggle for backlit keyboard (select models only).

Function Keys

ESC: system information

F1 - Sleep

F2 - Blank

F3 - Backlight Toggle (for backlit keyboard) or Blank

F4 - Display Switching

F5 - Brightness Down

F6 - Brightness Up

F7 - Blank

F8 - Volume Down

F9 - Volume Up

F10 - Mic Mute

F11 - Blank

F12 - NumLock (430/440); Blank (450/470)

Hidden Functions

o Fn+R = Break

o Fn+S = Sys Rq

o Fn+C = Scroll Lock

Pointing Devices

Clickpad with gestures support, two-way scroll



QuickSpecs

Features

Touchpad

Taps enabled as default

Gestures

Enabled by default Win 10

2 Finger Scrolling
2 Finger Zoom (Pinch)
OSD (enable/disable)
3 finger tap = Cortana
3 finger flick = App switch
4 finger tap = Action Center

Disabled by default Win 10

3 Finger Flick
2 Finger Rotate
Momentum Motion
1 Finger Vertical Scroll

SOFTWARE AND SECURITY

BIOS

HP BIOSphere¹
HP DriveLock | HP Automatic DriveLock
HP BIOS Protection²
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Pre-Boot Security
Secure Erase³
Hybrid Boot
Measure Boot
Secure Boot
Absolute Persistence Module⁴

Multi Media

Cyberlink Power Media Player¹²
Native Miracast Support⁵

Communication

HP Mobile Connect^{6,11}

HP Value Add Software

HP 3D DriveGuard
HP ePrint Driver⁷
HP Hotkey Support



QuickSpecs

Features

HP Recovery Manager
HP Support Assistant

Microsoft Products

Buy Office
Bing Search
Certified for Skype for Business⁸

Manageability

HP Driver Packs⁹
HP SoftPaq Download Manager (SDM)
HP System Software Manager (SSM)⁹
HP BIOS Config Utility (BCU)⁹
HP Client Catalog⁹
HP CIK for Microsoft SCCM⁹
LANDESK Management¹⁰

For more information on HP Client Management Solutions, refer to: www.hp.com/go/clientmanagement.

Client Security Software

HP Security Manager
Microsoft Defender

Standard

TPM 2.0 (1.2 optional)
HP Fingerprint Reader
Security lock slot
Pre-boot Authentication

For more information on HP Client Security Software Suite, refer to www.hp.com/go/clientsecurity.

1 Available only on business PCs with HP BIOS. HP BIOSphere features may vary depending on the PC platform & configuration.

2 May require a manual recovery step if all copies of BIOS are compromised or deleted. BIOS adheres to NIST SP800-147.

3 For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

4 Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

5 Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: <http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast>

6 HP Mobile Connect is only available on preconfigured devices with WWAN. For geographic availability refer to www.hp.com/go/mobileconnect

7 Requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see www.hp.com/go/eprintcenter). Requires optional broadband



Features

module. Broadband use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

8 Skype is not offered in China.

9 Not preinstalled, however available on manageability website.

10 Subscription required.

11 Not supported in HP ProBook 470 G4

12 Not supported in HP ProBook 430 and 440 G4. Only available with optical drive.



QuickSpecs

Features

POWER

Power Supply

HP ProBook 430

45 W Smart AC adapter

HP ProBook 440 /450 G4

45 W Smart AC adapter

65 W Smart AC adapter

HP ProBook 470 G4

65 W Smart AC adapter

Battery

HP 3-cell, Long Life 48 WHr Li-ion

NOTE: Battery is internal and not replaceable by customer.

Battery life¹

Platform	Other HW Details	Battery	SSD	HDD
HP Probook 430 G4	Optimal SKU	3 cell (48Whr)	Up to 16 hrs	Up to 13 hrs and 15 mins
HP Probook 440 G4	Optimal SKU	3 cell (48Whr)	Up to 15 hrs and 30 mins	Up to 12 hrs and 30 mins
HP Probook 450 G4	Optimal SKU	3 cell (48Whr)	Up to 14 hrs and 15 mins	Up to 12 hrs
HP Probook 470 G4	Optimal SKU	3 cell (48Whr)	Up to 12 hrs and 45 mins	Up to 11 hrs

1. Windows 10/MM14 battery life will vary depending on various factors including 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 www.bapco.com for additional details

WEIGHTS & DIMENSIONS

HP ProBook 430 G4

Weight

Starting at 1.49 kg (3.28 lbs)

Dimensions (w x d x h)

Non-Touch

33 x 23.35 x 1.98 cm (front to rear)

12.99 x 9.19 x 0.78 in (front to rear)

Touch

33.02 x 23.38 x 2.13 cm

13 x 9.20 x 0.84 in

HP ProBook 440 G4

Weight

Starting at 1.64 kg (3.61 lbs)



QuickSpecs

Features

Dimensions (w x d x h)

Non-Touch

34.32 x 23.90 x 2.03 cm

13.51 x 9.41 x 0.80 in

Touch

34.34 x 23.94 x 2.19 cm

13.52 x 9.43 x 0.86 in

HP ProBook 450 G4

Weight

Starting at 2.04 kg (4.49 lbs)

Dimensions (w x d x h)

Non-Touch

38.20 x 26.30 x 2.44 cm

15.04 x 10.35 x 0.96 in

Touch

38.22 x 26.35 x 2.61 cm

15.05 x 10.37 x 1.03 in

HP ProBook 470 G4

Weight

Starting at 2.63 kg (5.79 lbs)

Dimensions (w x d x h)

Non-Touch

41.68 x 28 x 2.58 cm

16.41 x 11.02 x 1.02 in

NOTE: Height varies depending upon where on the notebook the measurement is made.
Weight varies by configuration and components.

PORTS/SLOTS

Ports

430/440

1 USB 3.0

1 USB 2.0 (power port)

1 USB Type-C™

1 HDMI

1 headphone/microphone combo

1 AC power

1 RJ-45

1 VGA

450/470

1 USB 3.0

2 USB 2.0

1 USB Type-C™

1 HDMI

1 headphone/microphone combo



QuickSpecs

Features

1 AC power
1 RJ-45
1 VGA

NOTE: All cables are not included and sold separately.

Digital Media Slots

Multi Media Reader Slot
Supports SD, SDHC, SDXC

SERVICE AND SUPPORT

HP Services offers 3-year and 1-year limited warranties and 90-day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. On-site service and extended coverage is also available. HP Care Pack Services ^{1,2} are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at <http://www.hp.com/go/cpc>.

1. Sold separately or as an optional feature.
 2. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/cpc>.
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QuickSpecs

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	19 V
	Average Operating Power	Win 10
	ProBook 430 Integrated graphics	6.78W
	ProBook 440 Integrated graphics	6.78W
	Discrete graphics	4.49W
	ProBook 450 Integrated graphics	8.89W
	Discrete graphics	6.79W
	ProBook 470 Discrete graphics	5.71W
	Max Operating Power	Discrete < 65W UMA < 45W
	Temperature	Operating
Non-operating		-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	Operating	40 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 Industry Standard Certifications	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR 6.0®	Select models ¹
	EPEAT	Registered Gold in United States ²
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes	
SABS	Yes	



QuickSpecs

Technical Specifications

UKRSERTCOMPUTER Yes

1. Configurations of the HP ProBook 430 G4, HP ProBook 440 G4, HP ProBook 450 G4 and HP ProBook 470 G4 that are ENERGY STAR® qualified are identified as HP ProBook 430 G4 ENERGY STAR, HP ProBook 440 G4 ENERGY STAR, HP ProBook 450 G4 ENERGY STAR and HP ProBook 470 G4 ENERGY STAR on HP websites and on <http://www.energystar.gov>.
2. EPEAT® registration varies by country. See <http://www.epeat.net> for registration status by country. EPEAT status listed above applies to U.S. For accessibility information on HP products, please visit: <http://www.hp.com/accessibility>.

DISPLAYS

Panel LCD 13.3 FHD AG WLED UWVA 45%cg 220nits eDP Ultraslim 2.85mm	Active Area (W x H)	293.47 x 165.08 mm
	Dimensions (W x H)	306.8x195.7
	Diagonal Size	13.3 (inch)
	Thickness	2.85mm max.
	Weight	260 g max
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	600:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	UWVA 85/85/85/85
Touch Point Supported	N/A	
Other Features	N/A	
Pen Enabled	No	

Panel LCD 13.3 HD AG WLED SVA 45%cg 220nits eDP Slim Touch	Active Area (W x H)	293.42 x 164.97 (mm)
	Dimensions (W x H)	314.6 x 189.2 (mm) max
	Diagonal Size	13.3 (inch)
	Thickness	3.0 (mm) max
	Weight	260 g max
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1366 x 768 (HD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED



QuickSpecs

Technical Specifications

Color Gamut Coverage	45%
Color Depth	6 bits + Hi FRC
Viewing Angle	SVA 45/45/25/35
Touch Point Supported	10-point multi-touch
Other Features	AS
Pen Enabled	No

**Panel LCD 14.0 FHD AG
 WLED SVA 45%cg 220nits
 eDP Slim**

Active Area (W x H)	309.40 x 173.89 (mm)
Dimensions (W x H)	320.9 x 205.6 (mm) max
Diagonal Size	14 (inch)
Thickness	3.0 (mm) max
Weight	290 g max
Interface	eDP 1.2
Surface Treatment	Anti-Glare (AG)
Contrast Ratio	300:1 (typical)
Refresh Rate	60 Hz
Brightness	220 nits
Pixel Resolution - Format	1920 x 1080 (FHD)
Pixel Resolution - Configuration	RGB
Backlight	LED
Color Gamut Coverage	45%
Color Depth	6 bits + Hi FRC
Viewing Angle	SVA 45/45/25/35
Touch Point Supported	N/A
Other Features	N/A
Pen Enabled	No



QuickSpecs

Technical Specifications

Panel LCD 14.0 HD AG WLED SVA 45%cg 220nits eDP Slim Touch	Active Area (W x H)	309.40 x 173.95 (mm)
	Dimensions (W x H)	320.9 x 205.6 (mm) max
	Diagonal Size	14 (inch)
	Thickness	3.0 (mm) max
	Weight	290 g max
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1366 x 768 (HD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	SVA 40/40/15/30
	Touch Point Supported	10-point multi-touch
	Other Features	AS
	Pen Enabled	No

Panel LCD 15.6 FHD AG WLED SVA 45%cg 220nits eDP Slim	Active Area (W x H)	344.2 x 193.5 (mm)
	Dimensions (W x H)	360 x 224.3 (mm) max
	Diagonal Size	15.6 (inch)
	Thickness	3.2 (mm) max
	Weight	370 g max
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	SVA 45/45/25/35
	Touch Point Supported	N/A
	Other Features	N/A



QuickSpecs

Technical Specifications

	Pen Enabled	No
Panel LCD 15.6 HD AG WLED SVA 45%cg 220nits eDP Slim Touch	Active Area (W x H)	344.2 x 193.5 (mm)
	Dimensions (W x H)	360 x 224.3 (mm) max
	Diagonal Size	15.6 (inch)
	Thickness	3.2 (mm) max
	Weight	370 g max
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1366 x 768 (HD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	SVA 45/45/25/35
	Touch Point Supported	10-point multi-touch
Other Features	AS	
Pen Enabled	No	

Panel LCD 17.3 FHD AG WLED UWVA 72%cg 300nits eDP Flat 4.0mm	Active Area (W x H)	381.89 x 214.81 (mm)
	Dimensions (W x H)	400 x 233.3 (mm) max
	Diagonal Size	17.3 (inch)
	Thickness	4.0 (mm) max
	Weight	550 g max
	Interface	eDP 1.3
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	600:1 (typical)
	Refresh Rate	60 Hz
	Brightness	300 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	72%
Color Depth	6 bits + Hi FRC	
Viewing Angle	UWVA 85/85/85/85	



QuickSpecs

Technical Specifications

Touch Point Supported	N/A
Other Features	N/A
Pen Enabled	No

Panel LCD 17.3 HD+ AG WLED SVA 60%cg 220nits eDP Flat	Active Area (W x H)	382.08 x 214.92 (mm)
	Dimensions (W x H)	398.6 x 251 (mm) max
	Diagonal Size	17.3 (inch)
	Thickness	4.0 (mm) max
	Weight	550 g max
	Interface	eDP 1.3
	Surface Treatment	Anti-Glare (AG)
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nits
	Pixel Resolution - Format	1600 x 900 (HD+)
	Pixel Resolution - Configuration	RGB
	Backlight	LED
	Color Gamut Coverage	60%
	Color Depth	6 bits + Hi FRC
	Viewing Angle	SVA 45/45/25/35
	Touch Point Supported	N/A
Other Features	N/A	
Pen Enabled	No	



QuickSpecs

Technical Specifications

STORAGE AND DRIVES

HARD DRIVES

500 GB* 5400 rpm SMART SATA Hybrid HDD/SSHD

Drive Weight	0.20 lbs (92 g) ~ 0.21 lbs (95 g)						
Rotation Speed	5400 rpm						
Cache Buffer	64 MB						
NAND Type/Size	TLC/8GB						
Height	0.28 in (7 mm)						
Width	2.75 in (69.85 mm)						
Interface	ATA-8, SATA 3.0						
Interface Transfer Rate	600 MB/s						
Seek Time	<table> <tr> <td>Single Track</td> <td>2 ms</td> </tr> <tr> <td>Average</td> <td>12 ms</td> </tr> <tr> <td>Maximum</td> <td>22 ms</td> </tr> </table>	Single Track	2 ms	Average	12 ms	Maximum	22 ms
Single Track	2 ms						
Average	12 ms						
Maximum	22 ms						
Logical Blocks	976,773,168						
Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]						
Security Features	ATA Security						
Other Features	S.M.A.R.T., NCQ, Ultra DMA						

500 GB* 7200 rpm SATA Hard Drive

Drive Weight	0.20 lbs (92 g) ~ 0.21 lbs (95 g)						
Rotation Speed	7200 rpm						
Cache Buffer	Up to 32 MB						
NAND Type/Size	N/A						
Height	0.28 in (7 mm)						
Width	2.75 in (69.85 mm)						
Interface	ATA-8, SATA 3.0						
Interface Transfer Rate	600 MB/s						
Seek Time	<table> <tr> <td>Single Track</td> <td>2 ~ 1.5 ms</td> </tr> <tr> <td>Average</td> <td>11 ~ 13 ms</td> </tr> <tr> <td>Maximum</td> <td>18 ~ 22 ms</td> </tr> </table>	Single Track	2 ~ 1.5 ms	Average	11 ~ 13 ms	Maximum	18 ~ 22 ms
Single Track	2 ~ 1.5 ms						
Average	11 ~ 13 ms						
Maximum	18 ~ 22 ms						
Logical Blocks	976,773,168						
Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]						
Security Features	ATA Security						
Other Features	S.M.A.R.T., NCQ, Ultra DMA						

1TB* 5400 rpm 9.5mm SATA Hard Drive

Drive Weight	0.25 lbs (115 g) ~ 0.22 lbs (102 g)
Rotation Speed	5400 rpm
Cache Buffer	8 MB
NAND Type/Size	N/A



QuickSpecs

Technical Specifications

Height	0.37 in (9.5 mm)						
Width	2.75 in (69.85 mm)						
Interface	ATA-8, SATA 3.0						
Interface Transfer Rate	600 MB/s						
Seek Time	<table> <tr> <td>Single Track</td> <td>2 ms</td> </tr> <tr> <td>Average</td> <td>13 ms</td> </tr> <tr> <td>Maximum</td> <td>15 ~ 22 ms</td> </tr> </table>	Single Track	2 ms	Average	13 ms	Maximum	15 ~ 22 ms
Single Track	2 ms						
Average	13 ms						
Maximum	15 ~ 22 ms						
Logical Blocks	1,953,525,168						
Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]						
Security Features	ATA Security						
Other Features	S.M.A.R.T., NCQ, Ultra DMA						

1TB* 5400 rpm 7mm SATA Hard Drive

Drive Weight	0.21 lbs (94 g)						
Rotation Speed	5400 rpm						
Cache Buffer	Up to 32 MB						
NAND Type/Size	N/A						
Height	0.28 in (7.2 mm)						
Width	2.75 in (69.85 mm)						
Interface	ATA-8, SATA 3.0						
Interface Transfer Rate	600 MB/s						
Seek Time	<table> <tr> <td>Single Track</td> <td>2 ms</td> </tr> <tr> <td>Average</td> <td>12 ~ 13 ms</td> </tr> <tr> <td>Maximum</td> <td>18 ~ 22 ms</td> </tr> </table>	Single Track	2 ms	Average	12 ~ 13 ms	Maximum	18 ~ 22 ms
Single Track	2 ms						
Average	12 ~ 13 ms						
Maximum	18 ~ 22 ms						
Logical Blocks	1,953,525,168						
Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]						
Security Features	ATA Security						
Other Features	S.M.A.R.T., NCQ, Ultra DMA						

2TB 5400 rpm 9.5mm SATA Hard Drive

Drive Weight	0.29lbs (130 g)						
Rotation Speed	5400 rpm						
Cache Buffer	32 MB						
NAND Type/Size	N/A						
Height	0.37 in (9.5 mm)						
Width	2.75 in (69.85 mm)						
Interface	ATA-8, SATA 3.0						
Interface Transfer Rate	600 MB/s						
Seek Time	<table> <tr> <td>Single Track</td> <td>2 ms</td> </tr> <tr> <td>Average</td> <td>12 ms</td> </tr> <tr> <td>Maximum</td> <td>22 ms</td> </tr> </table>	Single Track	2 ms	Average	12 ms	Maximum	22 ms
Single Track	2 ms						
Average	12 ms						
Maximum	22 ms						



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Technical Specifications

Logical Blocks	3,907,029,168
Operating Temperature	32° to 140° F (0° to 60° C) [top cover temp]
Security Features	ATA Security
Other Features	S.M.A.R.T., NCQ, Ultra DMA

SOLID STATE DRIVES



QuickSpecs

Technical Specifications

SOLID STATE DRIVES

SSD 128GB 2280 M2 SATA-3	Form-Factor (I/O)	M.2 2280
Value	Capacity	128 GB
	NAND Type	TLC
	Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	ATA-8, SATA 3.0
	Sequential Read (Up to MB/s)	530 ~ 535
	Sequential Write (Up to MB/s)	185 ~ 515
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Other Features	DIPM; TRIM; DEVSLP

SSD 256GB 2280 M2 SATA-3	Form-Factor (I/O)	M.2 2280
Value	Capacity	256 GB
	NAND Type	TLC
	Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	ATA-8, SATA 3.0
	Sequential Read (Up to MB/s)	530 ~ 535
	Sequential Write (Up to MB/s)	330 ~ 515
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Security Features	ATA Security
	Other Features	DIPM; TRIM; DEVSLP



QuickSpecs

Technical Specifications

OPTICAL DRIVES

DVD+/-RW SuperMulti DL Drive	Access Times	Random	<140ms CD (typical) < 160ms DVD (typical)	
	Weight		150g max.	
	Max Data Transfer Rate			24X CD-ROM
				8X DVD-ROM
				24X CD-R
				10X 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		
DVD-ROM Drive	Access Times	Random	< 140ms CD (typical) < 160ms 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	



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Technical Specifications

Transport

Tray Loading



QuickSpecs

Technical Specifications

SECURITY

HP Synaptics Fingerprint Reader (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	200 pixel wide fingerprint image 16.5 mm x 3 mm sensor area 508 dpi resolution, 256 levels of grayscale

NETWORKING/COMMUNICATIONS

WLAN

Realtek 802.11 b/g/n (1x1) + Bluetooth® Combo	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz
		Note: The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 07, (20MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM,
	Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
	Network Architecture	Ad-hoc (Peer to Peer)



Technical Specifications

Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +13dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +12dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	<p>Transmit: 2.0 W (max)</p> <p>Receive: 1.6 W (max)</p> <p>Idle mode (PSP): 180 mW (WLAN Associated)</p> <p>Idle mode: 60 mW (WLAN unassociated)</p> <p>Radio disabled: 30 mW</p>
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	<p>802.11b, 1Mbps : -94dBm maximum</p> <p>802.11b, 11Mbps : -86dBm maximum</p> <p>802.11g, 6Mbps : -88dBm maximum</p> <p>802.11g, 54Mbps : -74dBm maximum</p> <p>802.11a, 6Mbps : -86dBm maximum</p> <p>802.11a, 54Mbps : -72dBm maximum</p> <p>802.11n, MCS07 : -69dBm maximum</p> <p>802.11n, MCS15 : -66dBm maximum</p>
Antenna type	<p>High efficiency antenna with spatial diversity, mounted in the display enclosure</p> <p>Two embedded 2.4 GHz antennas are provided to the card to support WLAN and Bluetooth communications (Support Dual antenna or Single antenna, depend on platform requirement)</p>
Form Factor	PCI-Express M.2 MiniCard
Dimensions	<p>Type 2230 : 2.3 x 22.0 x 30.0 mm</p> <p>Or</p> <p>Type 1630 : 2.3 x 16.0 x 30.0 mm</p>
Weight	Type 2230 : 2.8g



QuickSpecs

Technical Specifications

Or

Operating Voltage	Type 1630 : 2g	
Temperature	3.3v +/- 9%	
Humidity	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Altitude	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
LED Activity	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – 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 (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Intel 802.11 a/b/g/n/AC (1x1) Bluetooth® Combo	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz <p>Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.</p> 802.11a/n <ul style="list-style-type: none"> • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz <p>Note: Indonesia only supports 5.725 - 5.825 GHz (CH149 - CH161)</p>
	Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS7, (1SS) (20MHz, 40MHz, and 80MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM



Technical Specifications

Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum • 802.11ac 80MHz(5GHz) : +11dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

Technical Specifications

Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%
Temperature	Operating 14° to 158° F (–10° to 70° 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 Amber – Radio OFF; LED White – Radio ON
	<ol style="list-style-type: none">4. Check latest software/driver release for updates on supported security features.5. Maximum output power may vary by country according to local regulations.6. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Intel 802.11 a/b/g/n/AC (2x2) Bluetooth® 4.2 Combo	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n <ul style="list-style-type: none">• 2.402 – 2.482 GHz Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
		802.11a/n <ul style="list-style-type: none">• 4.9 – 4.95 GHz (Japan)• 5.15 – 5.25 GHz• 5.25 – 5.35 GHz• 5.47 – 5.725 GHz• 5.825 – 5.850 GHz Note: Indonesia only supports 5.725 - 5.825 GHz (CH149 - CH161)
	Data Rates	<ul style="list-style-type: none">• 802.11b: 1, 2, 5.5, 11 Mbps• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)• 802.11ac : MCS0 ~ MCS7, (1SS) (20MHz, 40MHz, and 80MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security¹	<ul style="list-style-type: none">• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g



Technical Specifications

	<ul style="list-style-type: none"> mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b : +16dBm minimum • 802.11g : +14dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +12dBm minimum • 802.11ac 80MHz(5GHz) : +11dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g



QuickSpecs

Technical Specifications

	Or Type 1630 : 2g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (–10° to 70° 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 Amber – Radio OFF; LED White – 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 (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation). 	

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

Intel® 802.11 a/b/g/n/ac (2x2) +Bluetooth® 4.2 Combo	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz <p>Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.</p> 802.11a/n <ul style="list-style-type: none"> • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz



Technical Specifications

	<ul style="list-style-type: none">• 5.47 – 5.725 GHz• 5.825 – 5.850 GHz <p>Note: Indonesia no support this band</p>
Data Rates	<ul style="list-style-type: none">• 802.11b: 1, 2, 5.5, 11 Mbps• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	<ul style="list-style-type: none">• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only• AES-CCMP: 128 bit in hardware• 802.1x authentication• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.• WPA2 certification• IEEE 802.11i• Cisco Certified Extensions, all versions through CCX4 and CCX Lite• WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none">• 802.11b : +16dBm minimum• 802.11g : +14dBm minimum• 802.11a : +14dBm minimum• 802.11n HT20(2.4GHz) : +14dBm minimum• 802.11n HT40(2.4GHz) : +12dBm minimum• 802.11n HT20(5GHz) : +14dBm minimum• 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum



QuickSpecs

Technical Specifications

	802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight	Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage	3.3v +/- 9%
Temperature	Operating 14° to 158° F (-10° to 70° 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 Amber – Radio OFF; LED White – 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 (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

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Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

COMMUNICATIONS

Realtek Ethernet (10/100/1000)	Ethernet Features	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)
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QuickSpecs

Technical Specifications

	1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 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) Jumbo Frame 9K Auto MDI/MDIX Crossover cable detection
Power Management	ACPI compliant - multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Performance Features	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling
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 to fully support ASPM L0s/L1 and CLKREQ
NIC Device Driver Name	Realtek PCIe GBE Ethernet Family Controller



QuickSpecs

Technical Specifications

AUDIO/MULTIMEDIA

Hardware	Implementation	Conexant CX7700	
	Function Key Volume Controls	Volume up, volume down, and mute	
	Full Duplex	Yes	
	Microphone In	Stereo	
	Headphone/Line Out	Stereo	
	Integrated Microphone	Yes, dual digital microphone array	
	Audio Output Quality	Frequency Response	20Hz – 20kHz
		Signal to Noise Ratio	106 dB (DAC), 102dB (ADC)
		Total Harmonic Distortion	91dB THD+n on Line Out/HP (0.003%)
		Play Sampling Rate(s)	Up to 192kHz
Record Sampling Rate(s)		Up to 96Khz	
Integrated Stereo Speakers	DAC	16, 20 or 24-bit	
	ADC	16, 20 or 24-bit	
	Power Rating	2 Watts	
	Impedance	4 Ohms	

POWER

HP 45W Smart AC Adapter	Dimensions (H x W x D)	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)	
	Weight	0.386 lb (175g) max	
	Input	Input	90 to 265 VAC
		Input Efficiency	87.74% at 115Vac and 88.4% at 230Vac
	Output	Input frequency range	47 to 63 Hz
		Input AC current	1.4 A at 90 VAC
		Output power	45W
		DC output	19.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<8.0A
		Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature	32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
		Altitude	0 to 16,400 ft (0 to 5,000 m)
		Humidity	20% to 95%



QuickSpecs

Technical Specifications

	EMI and Safety Certifications	Storage Humidity	10% to 95%	
		*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.		
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HP 65W AC Adapter, nPFC 3Pin RC 4.5mm	Dimensions	4.25 x 1.85 x 1.47 in (10.8 x 4.7 x 3.74 cm)		
	Weight	1.81 lb (250g) max		
	Input	100 to 240 VAC		
		Input Efficiency	88% min at 115 VAC and 89% min at 230 VAC	
		Input frequency range	47 to 63 Hz	
		Input AC current	1.7 A at 90 VAC	
	Output	Output power	65W	
		DC output	19.5V	
		Hold-up time	5 msec at 115 VAC input	
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown	
	Connector	4.5mm Barrel Type, 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.		
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HP 3-cell, Long Life 48 WHr Li-ion HP ProBook 430 /440/450/470 G4	Dimensions (H x W x L)	7.0. x180.48x88.95 mm (0.273 x 7.09 x 3.49 inch)	
	Weight	0.22 kg (0.48lb)	
	Cells/Type	3cell Lithium-Ion	
	Energy	Voltage	11.4V/ 10.95V



QuickSpecs

Technical Specifications

	Amp-hour capacity	4.212Ah /4.385Ah
	Watt-hour capacity	48Wh
Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
	Operating (Discharging)	14° to 122° F (-10° to 60° C)
	Non-operating	-4° to 122° F (-20° to 60° C)
Battery Re-Charge Time	System in OFF or Standby Mode	<3 hours
Fuel Gauge LED	No	
Warranty	1-year*	
Optional Travel Battery Available	No	

*Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform.

Country of Origin

China

ENVIRONMENTAL

ProBook 430 G4

Eco-Label Certifications & declarations

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:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

Energy Consumption

(in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	6.85 W	6.99 W	6.85 W
Normal Operation (Long idle)	3.22 W	3.42 W	3.31 W
Sleep	0.51 W	0.55 W	0.52 W
Off	0.31 W	0.42 W	0.30 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY



QuickSpecs

Technical Specifications

STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	23 BTU/hr	24 BTU/hr	23 BTU/hr
Normal Operation (Long idle)	11 BTU/hr	12 BTU/hr	11 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	2 BTU/hr	1 BTU/hr	1 BTU/hr

*NOTE: 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)

	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)
Typically Configured – Idle	2.8	15
Fixed Disk – Random writes	2.8	15

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots
- Optional expansion base docking station
- 1 multi-bay II storage port
- Interchangeable HDD??

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

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 1ppm by weight
- Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium



Technical Specifications

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/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 ISO11469 and ISO1043.
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is 94.7% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	340.5 g
Internal:	PLASTIC/EPE-Expanded Polyethylene	49 g
	PLASTIC/Polyethylene low density	9.1 g

The plastic packaging material contains at least 0% recycled content.

The corrugated paper packaging materials contains at least 80.0% recycled content.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- 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
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- 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)



Technical Specifications

Packaging Usage

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 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.

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. 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.

Hewlett-Packard Corporate Environmental Information

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

Global Citizenship Report

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

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

ProBook 440 G4

Eco-Label Certifications & declarations

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:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".



QuickSpecs

Technical Specifications

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	4.92 W	4.93 W	4.91 W
Normal Operation (Long idle)	2.33 W	2.25 W	2.29 W
Sleep	0.38 W	0.40 W	0.34 W
Off	0.19 W	0.24 W	0.190 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

ProBook 450 G4

Eco-Label Certifications & declarations

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:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	5.57 W	5.82 W	5.72 W
Normal Operation (Long idle)	3.07 W	3.12 W	2.92 W
Sleep	0.50 W	0.53 W	0.50 W
Off	0.17 W	0.25 W	0.17 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

ProBook 470 G4



QuickSpecs

Technical Specifications

Eco-Label Certifications & declarations

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:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	8.12 W	8.16 W	8.09 W
Normal Operation (Long idle)	3.12 W	3.14 W	3.11 W
Sleep	0.34 W	0.40 W	0.33 W
Off	0.18 W	0.27 W	0.17 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.



QuickSpecs

Options and Accessories (sold separately and availability may vary by country)

Type	Description	Part Number
Docking	HP 3001pr USB 3 Port Replicator	F3S42AA
	HP 3005pr USB 3.0 Port Replicator	Y4H06AA
Input/Output	HP Stylish USB Keyboard and Mouse	H4B80AA#xxx
	HP Stylish Wireless Keyboard and Mouse	H4B79AA#xxx
	HP Slim BT Keyboard	H4Q44AA#xxx
	HP USB Essential Keyboard and Mouse	H6L29AA
	HP 2.4 GHz Keyboard and Mouse	G1K29AA#xxx
	HP Ultra Mobile Wireless Mouse	H6F25AA#xxx
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
	HP Ultrathin Wireless Mouse SE	L9V77AA
	HP Ultrathin Wireless Mouse	L9V78AA
	HP HDMI to DVI Adapter	F5A28AA
	HP Wireless Display Adapter	J1V25AA#xxx
	HP UC Wireless Mono Headset	W3K08AA
	HP UC Wireless Duo Headset	W3K09AA
	Power	HP 65W Smart AC Adapter
HP 90W Smart AC Adapter		H6Y90AA#xxx
HP 65W Slim AC Adapter		H6Y82AA#xxx
HP Power Bank		N9F71AA#xxx
Storage	HP External USB Optical Drive	F2B56AA
	HP 500GB 7200rpm HDD	F3B97AA
Security	HP UltraSlim Keyed Cable Lock	H4D73AA
	HP Essential Combination Lock	T0Y16AA
	HP Combination Lock	T0Y15AA
	HP Keyed Cable lock	T0Y14AA
	HP Keyed Cable Lock 10mm	T1A62AA
UCC	HP Conferencing Keyboard	K8P74AA#xxx
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA



QuickSpecs

HP ProBook 430 G4 Notebook PC
HP ProBook 440 G4 Notebook PC
HP ProBook 450 G4 Notebook PC
HP ProBook 470 G4 Notebook PC

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