Overview

HP ProBook 430 G8 Notebook PC

Left

1. Internal Microphones (2)
2. Webcam LED (Optional)
3. HD and IR Camera (Optional)
4. Camera Shutter (Only available with webcam)
5. IR Camera LED (Optional)
6. Clickpad
7. Micro SD Card Reader (Select Models)
8. Audio Combo Jack
9. SuperSpeed USB Type-A 5Gbps signaling rate port (USB 3.2 Gen 1)
10. Nano Security Lock Slot (Lock sold separately)

Overview

Right

1. Power Button Key
2. Power Connector
3. SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) (Select models)
4. SuperSpeed USB Type-A 5Gbps signaling rate charging port (USB 3.2 Gen 1)
5. HDMI Port (Cable not included)
6. Touch Fingerprint Sensor (select models)

Overview

At a Glance

- Windows 11 Pro, other Windows OS, or FreeDOS preinstalled
- A new compact design with lift-anywhere edge
- Choice of 11th generation Intel® Core™ i7, i5 and i3 processors
- Fast and upgradeable dual channel DDR4 SODIMM memory up to 32 GB
- Choice of 33.8 cm (13.3") diagonal HD, Ultra Wide Viewing Angle FHD, Touch or Non-Touch screen, and Privacy Panel option
- Features redesigned quiet and responsive HP Keyboard with the HP Programmable key and backlit options
- Choice of solid state drives up to 1 TB
- Multi-layered security with HP SureStart Gen6, HP Privacy Camera, HP Sure View Gen3[1], HP Sure Sense, HP Sure Click and Touch Fingerprint reader[2]
- Supports wireless options for connectivity on the go including gigabit-speed Wi-Fi® 6
- Supports fast charging (50% in 30 minutes) with no impact on battery recharge cycles[3]
- Designed to support HP docking options
- Passed MIL-STD 810H tests[4]
- Battery life up to 12 hours and 45 minutes

1. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
2. Sold separately or as an optional feature
3.HP notebooks up to 50% within 30 minutes when the system is off or in standby mode. Power adapter with a minimum capacity of 65 watts is required. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
4. MIL STD 810H testing is 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. 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.

Technical Specifications

PRODUCT NAME

HP ProBook 430 G8 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows 11 Pro [2]
Windows 11 Pro Education [2]
Windows 11 Home – HP recommends Windows 11 Pro for business [2]
Windows 11 Home Single Language – HP recommends Windows 11 Pro for business [2]
Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement) [2]
Windows 10 Pro [1,2]
Windows 10 Pro Education [1,2]
Windows 10 Home – HP recommends Windows 11 Pro for business [1,2]
Windows 10 Home Single Language – HP recommends Windows 11 Pro for business [1,2]
Windows 10 Pro (Windows 10 Enterprise available with a Volume Licensing Agreement) [1,2]
FreeDOS

1. Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).
2. 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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

NOTE: HP tested Windows 10, version 1909 on this platform. For testing information on newer versions of Windows 10, please see https://support.hp.com/document/c05195282.

PROCESSORS

Intel® Core™ i7-1185G7 (3.0 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i7-1165G7 (2.8 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i5-1145G7 (2.6 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i5-1135G7 (2.4 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i3-1125G4 with Intel® UHD Graphics (2.0 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache,4 cores) [3,4 5,6]
Intel® Core™ i3-1115G4 with Intel® UHD Graphics (3.0 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 2 cores) [3,4 5,6]
Intel® Pentium® Gold 7505 with Intel® UHD Graphics (2.0 GHz base frequency, up to 3.5 GHz with Intel® Turbo Boost Technology, 4 MB L3 cache, 2 cores) [3,4 5,6]
Intel® Celeron® 6305 with Intel® UHD Graphics (1.8 GHz base frequency, 4 MB L3 cache, 2 cores) [3,4 5,6]

Processors Family
11th Generation Intel® Core™ i7 processor (i7-1165G7)[7]
11th Generation Intel® Core™ i5 processor (i5-1135G7)[7]
11th Generation Intel® Core™ i3 processor (i3-1115G4)[7]

3. 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, branding and/or naming is not a measurement of higher performance.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.
6. Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
7. 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.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
Intel® Iris® Xᵉ Graphics (Core i5 and Core i7)[35]
Intel® UHD Graphics (Core i3) [8]

Supports
Support HD decode, DX12, HDMI 1.4b

8. HD content required to view HD images.
35. Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

DISPLAYS

Internal
Non-Touch
33.8 cm (13.3") diagonal HD SVA eDP anti-glare, narrow bezel, 250 nits, 4 5% NTSC (1366 x 768) [8,10]
33.8 cm (13.3") diagonal HD SVA eDP anti-glare, narrow bezel, 250 nits, 45% NTSC for HD camera (1366 x 768) [8,10]
33.8 cm (13.3") diagonal HD SVA eDP anti-glare, narrow bezel, 250 nits, 45% NTSC for HD+IR camera (1366 x 768) [8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare, narrow bezel flat, 250 nits, 45% NTSC for HD camera (1920 x 1080)[8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare, narrow bezel flat, 250 nits, 45% NTSC for HD+IR camera (1920 x 1080) [8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP+PSR anti-glare, low power narrow bezel flat, 400 nits, 72% NTSC for HD camera (1920 x 1080) [8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP+PSR anti-glare, low power narrow bezel flat, 400 nits, 72% NTSC for HD+IR camera (1920 x 1080) [8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP+PSR anti-glare, narrow bezel flat with HP Sure View Gen3 Integrated Privacy Screen, 1000 nits, 100% sRGB for HD camera (1920 x 1080) [8,10,11]
33.8 cm (13.3") diagonal FHD UWVA eDP+PSR anti-glare narrow bezel flat with HP Sure View Gen3 Integrated Privacy Screen, 1000 nits, 100% sRGB for HD+IR camera (1920 x 1080) [8,10,11]
33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare, narrow bezel flat, 300 nits, 100% sRGB for HD camera (1920 x 1080)[8,10]
33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare, narrow bezel flat, 300 nits, 100% sRGB for HD+IR camera

(1920 x 1080)[8,10]

Touch
33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare, narrow bezel flat, touch-on-panel screen, 250 nits, 45% NTSC for HD camera (1920 x 1080) [8, 9, 10]
33.8 cm (13.3") diagonal FHD Bright View UWVA eDP, narrow bezel flat, touch-on-panel screen, 250nits, 45% NTSC for HD camera (1920 x 1080) [8, 9, 10]
33.8 cm (13.3") diagonal FHD Bright View UWVA eDP, narrow bezel flat, touch-on-panel screen, 250nits, 45% NTSC for HD+IR camera (1920 x 1080) [8, 9, 10]
HDMI
Supports resolutions up to 4K 30Hz

8. HD content required to view HD images.
9. Sold separately or as an optional feature.
10. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
11. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.

NOTE: Actual brightness will be lower with touchscreen or Sure View.

STORAGE AND DRIVES

Primary M.2 Storage
128 GB PCIe® NVMe™ M.2 TLC Solid State Drive [12]
256 GB PCIe® NVMe™ M.2 Value Solid State Drive [12]
256 GB PCIe® NVMe™ M.2 TLC Solid State Drive[12]
512 GB PCIe® NVMe™ M.2 Value Solid State Drive [12]
512 GB PCIe® NVMe™ M.2 TLC Solid State Drive[12]
512 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 32 GB Intel® Optane™ memory H10 [12, 38,39]
1 TB PCIe® NVMe™ M.2 TLC Solid State Drive [12]

12. For storage 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.
38. Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. Requires 8th Gen or higher Intel® Core™ processor, BIOS version with Intel® Optane™ supported, Windows 10 64-bit, and an Intel® Rapid Storage Technology (Intel® RST) driver.
39. Intel® Optane™ memory H10 only for Intel® PCIe® NVMe™ QLC M.2 SSD.

Technical Specifications

MEMORY

Maximum Memory
32 GB DDR4-3200 SDRAM [13]

Memory
32 GB DDR4-3200 SDRAM (2 x 16 GB) [13]
16 GB DDR4-3200 SDRAM (1 x 16 GB) [13]
12 GB DDR4- 3200 SDRAM (4 GB and 8 GB (1 x 8 GB)) [13]
8 GB DDR4-3200 SDRAM (1 x 8 GB) [13]
8 GB DDR4-3200 SDRAM (2 x 4 GB) [13]
4 GB DDR4-3200 SDRAM (1 x 4 GB) [13]

Memory Slots
2 SODIMM
Both slots are accessible/upgradeable by IT or self-maintainers only
DDR4 PC4 SODIMMS, system runs at 3200
Supports Dual Channel Memory

13. 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.

NETWORKING/COMMUNICATIONS

WLAN
Realtek RTL8822CE 802.11ac 2x2 Wi-Fi and Bluetooth® 5.0 Combo [14]
Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) WLAN and Bluetooth® 5.0 Combo, non-vPro® [14]
Intel® Dual Band Wi-Fi® 6 AX201 802.11a/b/g/n/ac/ax (2x2) WLAN and Bluetooth® 5.1 Combo, non-vPro® [15]
Realtek RTL8852AE 802.11ax 2x2 Wi-Fi and Bluetooth® 5.2 [15]

Miracast
Native Miracast Support [47]

Wake on WLAN
Support on S3 AC mode only

14. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
15. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs
47. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

Technical Specifications

AUDIO/MULTIMEDIA

Audio
2 Integrated stereo speakers
Integrated microphone (Dual Array)

Speaker Power
2W/4ohm Per speaker

Camera
720p HD Camera[8]
720p HD Camera+IR Camera [8,9]

8. HD content required to view HD images.
9. Sold separately or as an optional feature.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Keyboard, spill resistant and optional Durakeys and backlit

Pointing Device
Clickpad with multi-touch gesture support

Function Keys
F1 - Display Switching
F2 - Blank or SureView On/Off
F3 - Brightness Down
F4 - Brightness Up
F5 - Audio Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Blank or Backlit Toggle
F10 - Insert
F11 - Airplane Mode
F12 - Programmable Key
Print Screen
Power Button (with LED)

Hidden Function Keys
Fn+R - Break
Fn+S - Sys Rq
Fn+C - Scroll Lock

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

BIOS

HP BIOSphere Gen5 [16]
HP Drive Lock & Automatic Drive Lock
BIOS Update via Network
Power On Authentication
HP Secure Erase [18]
Absolute Persistence Module [19]
HP LAN-Wireless Protection
Pre-boot Authentication

Software

Xerox® DocuShare® 30 day free trial offer[42]
HP Connection Optimizer [17]
HP Image Assistant
HP Hotkey Support
myHP
HP Noise Cancellation Software
HSA Fusion for Commercial
HSA Telemetry for Commercial
Touchpoint Customizer for Commercial
HP Notifications
HP Privacy Settings
HP System Information
HP Wireless Button Driver
HP Power Manager
HP Work Well
Buy Office (sold separately)
HP Smart Support [43]

Manageability Features

HP Driver Packs (download) [20]
HP Manageability Integration Kit Gen3 (download) [21]
HP System Software Manager (SSM) (download)
HP BIOS Config Utility (BCU) (download)
HP Client Catalog (download)
HP Client Management Script Library (download)

Client Security Software

HP Client Security Manager Gen7 [22]
Windows Defender [23]

Security Management

Pre-boot Authentication
USB enable/disable (via BIOS)
Power-on password (via BIOS)
Setup password (via BIOS)
HP Fingerprint Sensor [24]
Support for chassis padlocks and cable lock devices
HP Sure Click [26]
HP Sure Sense [27]
HP Sure Start Gen6 [28]
HP Sure Admin [29]
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified) [30]

Technical Specifications

HP Wolf Pro Security Edition[44]

16. HP BIOSphere Gen5 is available on select HP Pro and Elite PCs. See product specifications for details. Features may vary depending on the platform and configurations.
17. HP Connection Optimizer requires Windows 10.
18. HP Secure Erase For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
19. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/
20. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
21. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
22. HP Client Security Manager Gen6 requires Windows and is available on the select HP Pro and Elite PCs.
23. Windows Defender Opt in and internet connection required for updates.
24. HP Fingerprint sensor is an optional feature that must be configured at purchase.
25. Windows Defender Opt in and internet connection required for updates.
26. HP Sure Click requires Windows 10 Pro or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
27. HP Sure Sense requires Windows 10. Pro or Enterprise
28. HP Sure Start Gen6 is available on select HP PCs.
29. HP Sure Admin requires Windows 10, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
30. Firmware TPM is version 2.0.
42. Simply sign up and start using Xerox® DocuShare® Go. No credit card. No obligation. Data will become unavailable unless a subscription is entered before the end of the 30-day free trial period. See visit http://www.xerox.com/docusharego for details.
43. HP Smart Support is available to commercial customers through your HP Service Representative and HP Factory Configuration Services; or it can be downloaded at: http://www.hp.com/smart-support. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights.
44. HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support.

Technical Specifications

POWER

Power Supply [16]
HP Smart 65 W External AC power adapter [32]
HP Smart 65 W EM External AC power adapter [32]
HP Smart 65 W USB Type-C® adapter [32]
HP Smart 45 W External AC power adapter [32]
HP Smart 45 W USB Type-C® adapter [32]

Primary Battery
HP Long Life 3-cell, 45 Wh Polymer [33, 45]

Power Cord
3-wire plug - 1m [32]
2-wire plug - 1m [32]

Battery life
Up to 12 hours and 45 minutes (UMA graphics, Intel® 11th generation CPU and 3-cell 45 Wh battery)[46]

Battery Weight
190 g

32. Availability may vary by country.
33. Battery is internal and not replaceable by customer. Serviceable by warranty.
45. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
46. Windows 10 MM18 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 http://www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Product Weight [34]
Starting at 2.81 lb
Starting at 1.28kg (400nits panel only)

Product Dimensions (w x d x h)
Metal bottom cover:
12.08 x 8.2 x 0.62 in
30.69 x 20.84 x 1.59 cm

Plastic bottom cover:
12.08 x 8.2 x 0.69 in
30.69 x 20.84 x 1.77 cm

34. Weight will vary by configuration.

Technical Specifications

PORTS/SLOTS

Ports

1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
2 SuperSpeed USB Type-A 5Gbps signaling rate [35] includes 1 charging, 1 powered port (USB 3.2 Gen 1)
1 HDMI 1.4b [36]
1 Headphone/microphone combo jack
1 AC power

Expansion Slots

1 Micro SD Card Reader
Supports SD, SDHC, SDXC

36. HDMI cable sold separately.

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. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services 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.[37]

37. HP Care Packs are sold separately. 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. For details, visit http://www.hp.com/go/cpc. 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.

Technical Specifications

ENVIRONMENTAL & INDUSTRY

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® 2019 Gold in U.S. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.		
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, 50Hz**
Normal Operation (Short idle)	4.14 W	4.164 W	4.056 W
Normal Operation (Long idle)	2.112 W	2.184 W	2.076 W
Sleep	0.372 W	0.384 W	0.372 W
Off	0.192 W	0.228 W	0.192 W
	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.		
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	14 BTU/hr	14 BTU/hr	14 BTU/hr
Normal Operation (Long idle)	7 BTU/hr	7 BTU/hr	7 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 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)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)	
Typically Configured – Idle	2.6	14.4	
Fixed Disk – Random writes	2.6	14.4	
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		

Technical Specifications

	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 the1ppm by weight Cadmium greater than 20ppm by weight Battery size: Not Applicable Battery type: Not Applicable		
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 1680.1 (EPEAT) standard at the <Gold> level, see http://www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 2.4% post-consumer recycled plastic (by wt.) • This product is 96.2% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Paper	51 g
		PAPER/Corrugated	230 g
	Internal:	PLASTIC/Polyethylene Expanded - EPE	31 g
		PLASTIC/Polyethylene low density - LDPE	9 g
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)		

Technical Specifications

	• 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)
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	HP Inc. 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.
HP Inc. 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://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	19 V
Average Operating Power	4.62 W
Integrated graphics	Yes
Max Operating Power	UMA < 45W
Temperature	
Operating	32° to 95° F (0° to 35° C)
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®	Select models [38]
EPEAT®	EPEAT® 2019 Gold in U.S. [39]
ICES	Yes
Australia /	Yes
NZ A – Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marketing Compliance	Yes
BNCI or BELUS	Yes
CIT	Yes
GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes

38.Configurations of the HP ProBook 430 G8 that are ENERGY STAR® certified are identified as HP ProBook 430 G8 ENERGY STAR on HP websites and on http://www.energystar.gov.
39. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.

Technical Specifications

DISPLAYS

Note: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
Actual brightness will be lower with touchscreen or Sure View.

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 45% NTSC 250nits eDP 1.2 w/o PSR slim NWBZ	**Outline Dimensions (W x H x D)**	300.56 x 187.77 mm (max) (w/ PCB & w/o bracket)
	Active Area	293.76 x 165.24 mm (typ.)
	Weight	260 g (max)
	Diagonal Size	13.3 inch
	Thickness	3.0 mm (max)
	Interface	eDP 1.2 (2 lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	600:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	250nits (typ.)
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 bits
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 45% NTSC 250nits eDP slim Touch on Panel NWBZ	**Outline Dimensions (W x H x D)**	300.56 x 177.77 mm (max)
	Active Area	293.76 x 165.24 mm (typ.)
	Weight	260 g (max)
	Diagonal Size	13.3 inch
	Thickness	3.2 mm/ 5.0 mm (PCB) (max)
	Interface	eDP 1.2
	Surface Treatment	Anti-Glare On-cell
	Touch Enabled	Yes
	Contrast Ratio	600:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	250 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB Stripe
	Backlight	LED
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 bits (Hi FRC supportive w/ condition to enable)
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% NTSC 1000nits eDP 1.4+PSR2 flat Privacy NWBZ Gen3	**Outline Dimensions (W x H x D)**	299.06 x 186.54 mm (max)
	Active Area	293.76 x 165.24 mm (typ.)
	Weight	255 g (max)
	Diagonal Size	13.3 inch
	Thickness	3.0 mm (max)
	Interface	eDP 1.4 + PSR (4 lane)
	Surface Treatment	Anti-Glare (AG)
	Touch Enabled	No
	Contrast Ratio	2000:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	1000 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	sRGB 100%
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% NTSC 400nits eDP 1.4+PSR2 ultraslim LP NWBZ	**Outline Dimensions (W x H x D)**	299.06 x 185.54 mm (max)
	Active Area	293.76 x 165.24 mm (typ.)
	Weight	170 g (max)
	Diagonal Size	13.3 inch
	Thickness	2.0 mm (max)
	Interface	eDP 1.4 + PSR2 (2 lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1200:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	400 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	NTSC 72%
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

Panel LCD 13.3 inch HD (1366x768) Anti-Glare WLED SVA 45% NTSC 250nits eDP NWBZ ultraslim	**Outline Dimensions (W x H x D)**	300.56 x 187.77 max. (w/ PCB & w/o bracket)
	Active Area	293.83 x 165.20 typ
	Weight	260g Max
	Diagonal Size	13.3 inch
	Thickness	3.0 mm max.
	Interface	eDP 1.2 (1 lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 (typ)
	Refresh Rate	60 Hz
	Brightness	250 nits
	Pixel Resolution	1366 x 768 (HD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 bits
	Viewing Angle	SVA 45/45/15/35

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare UWVA 100% sRGB 300nits eDP 1.2 w/o PSR slim NWBZ	**Outline Dimensions (W x H x D)**	300.56 x 186.19 (max)
	Active Area	293.76 x 165.24 (typ.)
	Weight	210 (max)
	Diagonal Size	13.3 (inch)
	Thickness	2.4/ 2.4 (max)
	Interface	eDP1.2
	Surface Treatment	AG
	Touch Enabled	NA
	Contrast Ratio	1000:1(typ.)
	Refresh Rate	60Hz
	Brightness	300nits
	Pixel Resolution - Format	1920 x1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8bit
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.9 (max)/ 2.5 (max)

Technical Specifications

Panel LCD 13.3 inch FHD (1920x1080) BrightView WLED UWVA 45% NTSC 250nits eDP slim Touch on Panel NWBZ	**Outline Dimensions (W x H x D)**	300.56 x 187.77 (max)
	Active Area	293.76 x 165.24 (typ.)
	Weight	268 (max)
	Diagonal Size	13.3 (inch)
	Thickness	3.0/ 3.2 (max)
	Interface	eDP1.2
	Surface Treatment	BrightView
	Touch Enabled	Yes
	Contrast Ratio	800:1(typ.)
	Refresh Rate	60Hz
	Brightness	250nits
	Pixel Resolution - Format	1920 x1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6bit
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	N/A

Technical Specifications

STORAGE AND DRIVES*

*For storage 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.

SSD 128GB 2280 PCIe-3x2 Three Layer Cell	Form Factor	M.2 2280
	Capacity	128 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe
	Maximum Sequential Read	1400 ~ 2100 MB/s
	Maximum Sequential Write	800 ~ 1200 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; DIPM; TRIM; DEVSLP
SSD 1TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided	Form Factor	M.2 2280
	Capacity	1 TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	3100 ~ 3500 MB/s
	Maximum Sequential Write	2770 ~ 3037 MB/s
	Logical Blocks	2,000,409,264
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2
SSD 256GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3
	Maximum Sequential Read	2100 ~ 2200 MB/s
	Maximum Sequential Write	900 ~ 1400 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (optional); TRIM; L1.2

Technical Specifications

SSD 256GB 2280 M2 PCIe-3x4 SS NVMe TLC	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	2800 ~ 3500 MB/s
	Maximum Sequential Write	1400 ~ 2200 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2
SSD 512GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3
	Maximum Sequential Read	2200 ~ 2300 MB/s
	Maximum Sequential Write	1000 ~ 1600 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (optional); TRIM; L1.2
SSD 512GB 2280 M2 PCIe-3x4 SS NVMe TLC	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	3100 ~ 3500 MB/s
	Maximum Sequential Write	2400 ~ 2956 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2

Technical Specifications

SSD 512GB 2280 PCIe-3x2x2 NVMe+SSD 32GB 3D Xpoint	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	QLC+3D XPoint
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X2X2
	Maximum Sequential Read	Up to 2400 MB/s
	Maximum Sequential Write	Up to 1300 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel Wi-Fi® 6[1] AX201 + Bluetooth® 5.1 (802.11ax 2x2, non-vPro®, supporting gigabit file transfer speeds)[5] non-vPro®	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Features Wi-Fi®® 6 technology
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 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
	Data Rates	• 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: max 300Mbps • 802.11ac : 1733Mbps • 802.11ax : max 2.4Gbps
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	• IEEE 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum

Technical Specifications

	• 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	•802.11b, 1Mbps : -93.5dBm maximum •802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm maximum •802.11ax, MCS11(HE160): -53.5dBm 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 with CNVi Interface
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230: 2.8 g 2. Type 126: 1.3 g
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 Off – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)

Technical Specifications

Signaling Data Rate	Legacy: 3 Mbps signaling data rate* 2.17 Mbps BLE: 1 Mbps signaling data rate* 0.2 Mbps * Actual throughput may vary. 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 + 9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mWPeak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs
2. 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).
5. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

Technical Specifications

Intel Jefferson Peak2 9560 802.11a/b/g/n/ac (2x2) WiFi® and Bluetooth® 5.0 Combo[1] non-vPro®	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi®® CERTIFIED modules
	Frequency Band	• 802.11b/g/n 2.402 – 2.482 GHz • 802.11a/n/ac 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
	Data Rates	• 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: max 300Mbps • 802.11ac :max 1733Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[3]	• 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum
	Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW

Technical Specifications

	• Radio disabled: 8 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm 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 with CNVi Interface	
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230: 2.8 g 2. Type 126: 1.3 g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps signaling data rate* throughput up to 2.17 Mbps BLE: 1 Mbps signaling data rate* throughput up to 0.2 Mbps * Actual throughput may vary. 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.
Power Consumption	Peak (Tx) 330 mWPeak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	

Technical Specifications

Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi® 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi® 6 (802.11ax) are draft 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 802.11ax devices. Only available in countries where 802.11ax is supported. Wi-Fi®® supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160 MHz channels.
2. 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).

Technical Specifications

Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + Bluetooth® 5.0	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi®® CERTIFIED modules
	Frequency Band	• 802.11b/g/n 2.402 – 2.482 GHz • 802.11a/n/ac 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
	Data Rates	• 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: max 300Mbps • 802.11ac : max 866.7Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[3]	• 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum
	Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW

Technical Specifications

Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 802.11b, 1Mbps: -93.5dBm maximum • 802.11b, 11Mbps: -84dBm maximum • 802.11a/g, 6Mbps: -86dBm maximum • 802.11a/g, 54Mbps: -72dBm maximum • 802.11n, MCS07: -67dBm maximum • 802.11n, MCS15: -64dBm maximum • 802.11ac, MCS0: -84dBm maximum • 802.11ac, MCS9: -59dBm 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	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230: 2.8 g 2. Type 126: 1.3 g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps signaling data rate* throughput up to2.17 Mbps BLE: 1 Mbps signaling data rate* throughput up to 0.2 Mbps * Actual throughput may vary. 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.
Power Consumption	Peak (Tx) 330 mWPeak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support

Technical Specifications

Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi® 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi® 6 (802.11ax) are draft 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 802.11ax devices. Only available in countries where 802.11ax is supported. Wi-Fi®® supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160 MHz channels.
2. 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).

Technical Specifications

Realtek RTL8852AE 802.11ax[1] 2x2 Wi-Fi® + Bluetooth®5.2 (802.11ax 2x2, supporting gigabit data rate) [5]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi® certified modules
	Frequency Band	•802.11b/g/n/ax 2.402 – 2.482 GHz •802.11a/n/ac/ax 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
	Data Rates	• 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: max 300Mbps • 802.11ac : max 866.7Mbps • 802.11ax : max 1201Mbps
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	• IEEE and WiFi certified 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture **Models**	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ax HE40(2.4GHz) : +10dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum
	Power Consumption	• Transmit mode :2.5 W • Receive mode :2 W • Idle mode (PSP) 180 mW (WLAN Associated)

Technical Specifications

	• Idle mode :50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	•802.11b, 1Mbps : -93.5dBm maximum •802.11b, 11Mbps : -84dBm maximum •802.11a/g, 6Mbps : -86dBm maximum •802.11a/g, 54Mbps : -72dBm maximum •802.11n, MCS07 : -67dBm maximum •802.11n, MCS15 : -64dBm maximum •802.11ac, MCS0 : -84dBm maximum •802.11ac, MCS9 : -59dBm maximum •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm 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	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230: 2.8g 2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant/5.2 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.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW

Technical Specifications

Bluetooth Software Supported Link Topology	Microsoft Windows Bluetooth Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) BT5.1 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
2. 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).
5. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

Technical Specifications

POWER

AC Adapter 45 Watt nPFC Standard USB Type-C® Straight 1.8m	**Dimensions (H x W x D)**	94.0mm x 40.0mm x 26.5mm	
	Weight	192.5g +/-10%	
	Input	**Input Efficiency**	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 87.41% 15V: 87.8%
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 Vac
	Output	**Output power**	5V/15W 9V/27W 12V/36W 15V/45W
		DC output	5V/9V/12V/15V
		Hold-up time	5 ms at 115 Vac input
	Connector	USB Type-C®	
	Environmental Design	**Operating temperature**	32°F to 95°F (0° to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
		Altitude	0 to 16,400 ft (0 to 5,000 m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

AC Adapter 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m	**Dimensions**	95 x 45 x 26.8 mm	
	Weight	200 g +/- 10 g	
	Input	**Input Efficiency**	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 Vac
	Output	**Output power**	45 W
		DC output	19.5 V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<8.0A
	Connector	4.5mm Barrel Type	

Technical Specifications

	Environmental Design	**Operating temperature**	32°F to 95°F (0°to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

AC Adapter 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m 2prong	**Dimensions**	95 x 45 x 26.8 mm	
	Weight	200 g +/- 10 g	
	Input	**Input Efficiency**	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 VAC
	Output	**Output power**	45 W
		DC output	19.5 V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<8.0A
	Connector	4.5mm Barrel Type	
	Environmental Design	**Operating temperature**	32°F to 95°F (0°to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

Dimensions	90.0 x 51 x 28.5mm	
Weight	250 g +/- 10 g	

Technical Specifications

AC Adapter 65 Watt nPFC Standard USB type C® Straight 1.8m	**Input**	**Input Efficiency**	81.5% min at 115 Vac/ 230Vac @ 5V/3A 86.7% min at 115 Vac/ 230Vac @ 9V/3A 88% min at 115 Vac/ 230Vac @ 12V/5A 89% min at 115 Vac/ 230Vac @ 15V/4.33A 89% min at 115 Vac/ 230Vac @ 20V/3.25A
		Input frequency range	47 ~ 63 Hz
		Input AC current	1.6 A at 90 VAC and maximum load
	Output	**Output power**	65 W
		DC output	5V/9V/12V/15V/20V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	8.0A Max.
	Connector		USB Type C®
	Environmental Design	**Operating temperature**	32°F to 95°F (0°to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications		* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

AC Adapter 65 Watt Smart nPFC EM Barrel 4.5mm New EM	**Dimensions (H x W x D)**	102 x 55 x 30mm	
	Weight	250g +/-10%	
	Input	**Input Efficiency**	88.0 % at 115 Vac and 89.0 % at 230 Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output	**Output power**	65W
		DC output	19.5V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<11.0A
	Connector	4.5mm Barrel Type	
	Environmental Design	**Operating temperature**	32°F to 95°F (0° to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
		Altitude	0 to 16,400 ft (0 to 5,000 m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

AC Adapter 65 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m	**Dimensions (H x W x D)**	90 x 51 x 28.5mm	
	Weight	230g +/-10%	
	Input	**Input Efficiency**	88.0 % at 115 Vac and 89.0 % at 230 Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output	**Output power**	65W
		DC output	19.5V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<11.0A
	Connector	4.5mm Barrel Type	
	Environmental Design	**Operating temperature**	32°F to 95°F (0° to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
		Altitude	0 to 16,400 ft (0 to 5,000 m)

Technical Specifications

	Humidity	20% to 95%
	Storage Humidity	10% to 95%
EMI and Safety Certifications	* CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

Battery RH 3 Cell WHr 45 Long Life -PL Fast Charge	**Dimensions (H x W x L)**	6.2 x 68.7 x 249.6mm
	Weight	190g
	Cells/Type	3cell Lithium-Ion Polymer cell/ 545974
	Voltage	11.4 V
	Amp-hour capacity	3.950Ah
	Watt-hour capacity	45 Wh
	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
	Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Optional Travel Battery Available	No
	Warranty	Based on system offering

Country of Origin

China

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

Type	Description	Part Number
Cases	HP Business Backpack (up to 17.3")	2SC67AA
	HP Business Slim Top Load (up to 14.1")	2SC65AA
	HP Prelude Pro Recycle Backpack	1X644AA
	HP Prelude Pro Recycle Top Load	1X645AA
	HP Recycled Top Load	5KN29AA
	HP Recycled Backpack	5KN28AA
Docking	HP USB-C® Mini Dock	1PM64AA
	HP Thunderbolt Dock 120W G2	2UK37AA
	HP TB Dock G2 w/ Combo Cable	3TR87AA
	HP TB Dock 120W G2 w/Audio	3YE87AA
	HP TB Dock 120W G2 Cable	3XB94AA
	HP TB Dock G2 Combo Cable	3XB96AA
	HP TB Dock G2 Audio Module	3AQ21AA
	HP USB-C/A Universal Dock G2	5TW13AA
	HP USB-C Dock G5	5TW10AA
Input/Output	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Wired Desktop 320MK Mouse & Keyboard	9SR36AA
	HP Bluetooth Travel Mouse	6SP30AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Wired Desktop 320M Mouse	9VA80AA
	HP USB Travel Mouse	G1K28AA
	HP Elite USB-C Hub	4WX89AA
	HP USB-C Travel Hub G2	7PJ38AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP Stereo USB Headset	T1A67AA
	HP Stereo 3.5mm Headset	T1A66AA
Power	HP 45W Smart AC Adapter 4.5mm	H6Y88AA
	45W Smart Power Adapter 2 prong -4.5mm (Japan only)	L6F60AA
	65W Smart Power Adapter (w/ 4.5mm to 7.5mm DC dongle)	H6Y89AA
	HP 65W Slim AC Adapter	H6Y82AA
	HP 65W USB-C Slim Power Adapter	3PN48AA
	HP 45W LC USB-C Power Adapter	1MZ01AA
	HP 65W USB-C LC Power Adapter	TBD
	HP Power Bank	N9F71AA
	HP USB-C Notebook Power Bank	3TB55AA
Memory	HP 4GB DDR4 3200 Memory	286H5AA
	HP 8GB DDR4 3200 Memory	286H8AA

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

	HP 16GB DDR4 3200 Memory	286J1AA
Storage	HP External USB Optical Drive	F2B56AA
Security	HP Sure Key Cable Lock	6UW42AA
	HP Nano Keyed Cable Lock	1AJ39AA

Summary of Changes

Date of change:	Version History:		Description of change:
December 14, 2020	V1 to V2	Update	USB Information
January 17, 2021	V2 to V3	Update	Environmental Data
January 21, 2021	V3 to V4	Added	WPA3 certification in Security, Networking section
January 26, 2021	V4 to V5	Added	New processors and USB Ports
February 2, 2021	V5 to V6	Update	Noise Emissions Data
February 25, 2021	V6 to V7	Update	Xerox DocuShare offer value
April 6, 2021	V7 to V8	Removed	Interchangeable HDD
April 20, 2021	V8 to V9	Updated	Memory Section Updated
April 29, 2021	V9 to V10	Added	Realtek WLAN/Updated TPM 2.0
May 6, 2021	V10 to V11	Removed	Processors base frequency/Added HP Smart Support
May 27, 2021	V11 to V12	Updated	Micro SD Card Reader/Add HP Wolf Pro Security Edition
June 17, 2021	V12 to V13	Updated	WLAN specs from Networking/Communications section
July 6, 2021	V13 to V14	Added	Battery disclaimer
July 15, 2021	V14 to V15	Update	Networking WLAN; Storage and Drives section
August 11, 2021	V15 to V16	Update	EMI and Safety Certification in Power section
October 18, 2021	V16 to V17	Added	Touch and Non-Touch Displays
October 29, 2021	V17 to V18	Updated	Windows 10 with Free upgrade to Windows 11 when available in OS section and footnote
December 8, 2021	V18 to V19	Updated	OS footnotes and callouts in Overall section
December 9, 2021	V19 to V20	Updated	Wi-Fi 6 footnotes
December 14, 2021	V20 to V21	Updated	Windows OS section
February 28, 2022	V21 to V22	Added	Base frequency in Processors; Wake on WLAN
April 20, 2022	V22 to V23	Added	Reference for USB Ports
June 24, 2022	V23 to V24	Added	Miracast section and footnote under NETWORKING/COMMUNICATIONS