Overview

HP PRO X360 FORTIS 11 INCH G10



Left

1.	Internal microphones (2)	**7.**	World-facing Webcam LED (Optional)
2.	Webcam and HP Privacy Camera	**8.**	SuperSpeed USB Type-C® 5 Gbps signaling rate port
3.	Webcam LED	**9.**	SuperSpeed USB Type-A 5 Gbps signaling rate port (USB 3.2 Gen 1)
4.	Pen garage (optional)	**10.**	HDMI port (Cable not included)
5	Clickpad	**11.**	Ethernet (RJ-45) port
6.	World-facing 5 Megapixels Webcam (Optional)	**12.**	Power Connector

Overview



Right

1. Power Button Key
2. Security lock slot (nano lock sold separately)
3. SuperSpeed USB Type-A 5 Gbps signaling rate port (USB 3.2 Gen 1)
4. Audio combo jack

Overview

AT A GLANCE

- Windows 11 Pro, other Windows OS, or FreeDOS preinstalled
- Weight starting at 3.33 lbs (1.51 kgs)
- At 21.2 mm (0.84”), this flexible 360° hinge converts to laptop, tablet, tent, stand or book mode easily
- Undergoes 19 MIL-STD 810H tests, with rugged features such as co-molded rubber trim, spill- and pick-resistant keyboard, and Corning® Gorilla® Glass 3 touch screen
- Optional dual camera system for project-based learning
- Optional HP Slim Rechargeable Pen can be safely charged and housed on the keyboard in an optional spill-resistant garage
- Choice of 12th generation Intel® Core™ i5 and i3 processors
- Choice of 29.5cm (11.6") diagonal HD IPS slim LED touch screen (1366 x 768) or 29.5 cm (11.6") diagonal HD SVA slim LED touch screen (1366 x 768) displays
- Up to 256 GB PCIe® NVMe™ M.2 Solid State Drive storage options
- Up to 8 GB total system memory
- Reliable connectivity with choice of Intel® Wi-Fi 6E AX211 and Bluetooth® 5.3 Combo WLAN or Intel® 9560 802.11b/g/n/a/ac (2x2) and Bluetooth® 5 Combo WLAN for learning and collaboration beyond the classroom
- Built-in ports include: Ethernet (RJ-45), USB 3.1 Gen 1, USB Type-C®, and HDMI 1.4b port for connecting to high-resolution displays
- Enhanced security TPM 2.0 discrete chip
- Battery life up to 9 hours and 30 minutes

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

Technical Specifications

PRODUCT NAME

HP Pro x360 Fortis 11inch G10

OPERATING SYSTEM

Preinstalled

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

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 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
2. This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

PROCESSORS

Processor [3,4,5,6]	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency		Base Frequency	
						P-cores	E-cores	P-cores	E-cores
Intel® Core™ i5-1230U	10	2	8	12	12MB	4.4 GHz	3.3 GHz	1.0 GHz	0.7 GHz
Intel® Core™ i3-1210U	6	2	4	8	10MB	4.4 GHz	3.3 GHz	1.0 GHz	0.7 GHz

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. 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.
6. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.

Technical Specifications

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® UMA Graphics

Intel® Iris® Xe Graphics [7]

Supports

Support HD decode, DX12, HDMI 1.4b. [8]

7. 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.
8. HD content required to view HD images.

DISPLAY

Touch

29.5 cm (11.6") diagonal, HD (1366x768), touch, SVA, BrightView Glass, Corning® Gorilla® Glass 3, eDP, 250 nits, 45% NTSC [8,9,10,11,12]

29.5 cm (11.6") diagonal, HD (1366x768), touch, IPS, BrightView Glass, Corning® Gorilla® Glass 3, eDP, 250 nits, 50% NTSC [8,9,10,11,12]

Display Size

11.6" diagonal

29.46 cm (11.6") diagonal

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. Actual brightness will be lower with touchscreen or HP Sure View.
12. Touchscreen support 10 finger touches & SPT (Simultaneous Pen and Touch)

Technical Specifications

DOCKING (Sold Separately)

Docking station model #1	HP Thunderbolt 4 100W G6 Dock
Docking station model #2	HP USB-C Dock G5
Docking station model #3	HP USB-C Mini Dock
Docking station model #4	HP USB-C/A Universal Dock G2
Docking station model #5	HP USB-C Travel Dock G2

For additional aftermarket options and docking specs please see page 32.

STORAGE AND DRIVES

Primary Storage
128 GB PCIe® NVMe™ Value M.2 SSD [13]
256 GB PCIe® NVMe™ Value M.2 SSD [13]

13. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

MEMORY

Maximum Memory
8 GB LPDDR4X-4266 MT/s RAM (on-board) [14,15]

Memory
8 GB LPDDR4X-4266 MT/s RAM (on-board) (2 x 4 GB) [14,15]
4 GB LPDRR4X-4266 MT/s RAM (on-board) (1 x 4 GB) [14,15]

Memory Slots
On-board LPDDR4x; system runs at 4266 MT/s [14,15]
Supports Dual Channel Memory

14. All slots are non-accessible / non-upgradeable.
15. 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.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN
Intel® Wi-Fi CERTIFIED 6E™ AX211 and Bluetooth® 5.3non-vPro® Wireless Card [16]
Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 non-vPro® Wireless Card[17]

Miracast
Native Miracast Support [18]

Ethernet
Realtek RTL8111HSH-CG 10/100/1000 GbE NIC [19]

16. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
17. 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.
18. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
19. 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

Audio
HP HD Audio
2 Integrated stereo speakers
Integrated dual array microphone

Speaker Power
2W/4ohm per speaker

Camera
720p HD camera [8,17]
World-facing Wide Field of View 80° 5MP auto-focus secondary camera (Optional) [8,9,20]

8. HD content required to view HD images.
9. Sold separately or as an optional feature.
17. 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.
20. Internet access required.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full-sized keyboard, spill and pick resistant keyboard
Optional pen garage

Pointing Device
Clickpad with multi-touch gesture support, taps enabled as default

Function Keys
F1 - Display Switching
F2 – Brightness Down
F3 - Brightness Up
F4 - Speaker Mute
F5 - Volume Down
F6 - Volume Up
F7 - Mic Mute
F8 - Blank
F9 - Blank
F10 - Insert
F11 – Wi-Fi Toggle
F12 - HP Programmable Key

Pen
Passive Targus Slim Stylus (Optional)
HP Slim Rechargeable Pen (Optional)

Sensors
Combo Chip
Accelerometer
Magnetometer
Gyroscope
Hall Sensor

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Software

HP Quick Touch
HP Quick Drop [21]
HP PC Hardware Diagnostics Windows
HSA Fusion for Commercial
HSA Telemetry for Commercial
Touchpoint Customizer for Commercial
myHP
HP Smart Support [22]
HP Connection Optimizer
HP Mac Address Manager
HP Hotkey Support
HP Support Assistant [23]
HP Notifications
HP Privacy Settings
Buy Microsoft Office (Sold separately)
AI Noise Reduction Gen 2
HP School Pack 4.5

Manageability Features

HP Manageability Integration Kit Gen4 (download) [24]
HP Power Manager
HP Driver Packs (download)
HP Client Catalog (download)
HP Client Management Script Library (download)
HP Image Assistant (download)

NOTE: To enhance brightness, level go to the Intel® Graphics Command Center app, click on System and turn off the Display Power Savings function.

Security Management

HP Sure Click [25]
HP Sure Sense 2 [26]
HP Sure Start Gen7 [27]

BIOS

HP BIOSphere Gen6 [28]
HP Secure Erase [29]
Absolute Persistence Module [30]
HP DriveLock & Automatic DriveLock
BIOS Update via Network
HP Wake on WLAN
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)
HP Fingerprint Sensor [31]

IPv6 Support

No

21. HP Quick Drop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
22. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit http://www.hp.com/smart-support.
23. Requires Windows and Internet Access
24. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
25. HP Sure Click requires Windows 10 Pro or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
26. HP Sure Sense is available on select HP PCs and is not available with Windows10 Home.
27. HP Sure Start Gen6 is available on select HP PCs.
28. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
29. 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™.
30. 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/.
31. Fingerprint Reader is an optional feature that must be configured at purchase.

POWER

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

Battery
HP Long Life 3-cell, 42 Wh Polymer [33,34]
Supports HP Fast Charge (90% in 90 minutes) [35]

Power Cord
2-wire plug - 1m
3-wire plug - 1m

Battery life
Up to 9 hours and 30 minutes with 42whr battery (HP Long Life 3-Cell, 42Whr Polymer, UMA graphic, Intel U9, 250 nits display, 8GB dual-channel memory, 128GB SSD) [36]

Battery Weight
HP Long Life 3-cell - 42 Wh Polymer - .49 lb
HP Long Life 3-cell - 42 Wh Polymer - 225g

32. Availability may vary by country.
33. Battery is internal and not replaceable by customer. Serviceable by warranty.

Technical Specifications

34. 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.
35. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.
36. 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
Starting at 3.33 lb [37]
Starting at 1.51 kg [37]

Product Dimensions (W x D x H)
11.7 x 8.02 x 0.84 in
29.7 x 20.37 x 2.12 cm

37. Weight will vary by configuration. Does not include power adapter.

PORTS/SLOTS

2 Super Speed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
1 SuperSpeed USB Type-C® 5 Gbps signaling rate port (USB Power Delivery, Alt-mode DisplayPort™ 1.4)
1 HDMI 1.4b [38]
1 RJ-45
1 AC power
1 headphone/microphone combo jack

38. HDMI cable sold separately.

Technical Specifications

SERVICE AND SUPPORT

HP Services offers 1-year or 3-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. 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 [39]

39. 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

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	19V
Average Operating Power	5.5 W
Integrated graphics	Yes
Discrete Graphics	N/A
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	240 G, 2 ms, half-sine
Random Vibration	
Operating	0.75 grams
Non-operating	1.50 grams
Altitude (unpressurized)	
Operating	-50 to 10,000 ft (-15 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15 to 12,192 m)
Planned Industry Standard Certifications	
Regulatory Model Number	HSN-I47C
UL	Yes
CSA	Yes
FCC Compliance	Yes
ENERGY STAR®	Yes[40]
EPEAT®	Registered Gold in United States [41]
ICES	Yes
Australia /	Yes
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 (EAC)	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	Yes

40. Configurations of the HP Pro x360 Fortis 11 inch G10 that are ENERGY STAR® certified are identified HP Pro x360 Fortis 11 inch G10 ENERGY STAR on HP websites and on http://www.energystar.gov.

Technical Specifications

41. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.

DISPLAYS

NOTE: All specifications represent the typical specifications provided by hp's component manufacturers; actual performance may vary either higher or lower.

1. Actual brightness will be lower with touchscreen or HP Sure View. Touchscreen support 10 finger touches & SPT (Simultaneous Pen and Touch)

11.6 in HD (1366x768) Bright-View SVA NTSC 250 eDP 45 flat LCD Panel	**Outline Dimensions (W x H)**	268.5 x 168.5 max. (w/ PCB)
	Active Area	256.125 x 144.0 mm
	Weight	210g max.
	Diagonal Size	11.6 inch
	Thickness	3.0mm max
	Interface	eDP1.2
	Surface Treatment	Bright View glass
	Touch Enabled	Yes[1]
	Contrast Ratio	400:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nits[1]
	Pixel Resolution - Format	RGB
	Backlight	WLED
	Pixel Resolution	1366 x 768 (HD)
	Color Gamut Coverage	45%NTSC
	Color Depth	6bits
	Viewing Angle	40/40/15/30
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	<2.08W max@150nits

11.6 in HD (1366x768) Bright-View IPS NTSC 250 eDP 50 flat LCD Panel	**Outline Dimensions (W x H)**	278.5 x 168.5 max (w/ PCB)
	Active Area	256.125 x 144.0 mm
	Weight	200g max.
	Diagonal Size	11.6”
	Thickness	3.0mm max
	Interface	eDP1.2
	Surface Treatment	Bright View glass
	Touch Enabled	Yes[1]
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nits[1]
	Pixel Resolution - Format	RGB
	Backlight	WLED
	Pixel Resolution	1366 x 768 (HD)

Technical Specifications

Color Gamut Coverage	50%NTSC
Color Depth	6bits + Hi FRC
Viewing Angle	85/85/85/85
Low Blue Light	No
Power Consumption (W, EBL@ 150nits max/ 200nits max)	<1.94W max@150nits

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 and 11) is reserved for system recovery software.

SSD 128GB 2230 PCIe NVMe Value	**Form Factor**	M.2 2230
	Capacity	128GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.01 lb (5 g)
	Interface	PCIe NVMe Gen3X4 or Gen3X2
	Maximum Sequential Read	Up To 2100 MB/s
	Maximum Sequential Write	Up To 1200 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite; TRIM; L1.2

SSD 256GB 2230 PCIe NVMe Value	**Form Factor**	M.2 2230
	Capacity	256GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4 or Gen3X2
	Maximum Sequential Read	Up To 2500 MB/s
	Maximum Sequential Write	Up To 1300 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite; TRIM; L1.2

Technical Specifications

NETWORKING

Intel® AX211 Wi-Fi 6E[1] and Bluetooth® 5.3 M.2 160MHz CNVi WW WLAN non-vPro® Wireless Card	**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
	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 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 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 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

Technical Specifications

	• 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 • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	•Transmit mode2.0 W •Receive mode1.6 W •Idle mode (PSP)180 mW (WLAN Associated) •Idle mode50 mW (WLAN unassociated) •Connected Standby 10mW •Radio disabled8 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 • 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
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 1216: 1.3g
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)

Technical Specifications

	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 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card		
	Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 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 + 9.5 dBm for BR and EDR.

1. Wi-Fi 6E 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. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
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

Intel® 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5.1 Combo [1] non-vPro® Wireless Card	**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
	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	Ad-hoc (Peer to Peer)
	Models	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

Technical Specifications

	• 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 •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: 2.8g 2. Type 1216: 1.3g
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 Card

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)
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

Technical Specifications

	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.

1. Wi-Fi 5 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. 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.
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).

Realtek RTL8111HSH 10/100/1000 Integrated NIC	**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) 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
	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 Jumbo Frame 9K
	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	PCIe + SMBus
	NIC Device Driver Name	Realtek PCIe GBE Ethernet Family Controller

Technical Specifications

POWER

HP 45W Smart AC adapter	**Dimensions**	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	90 to 265 VAC
	Input Efficiency	87.74% at 115Vac and 88.4% at 230Vac
	Input frequency range	47 to 63 Hz
	Input AC current	1.4 A at 90 VAC
	Output	
	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 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg. *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.

HP 65W EM Smart AC adapter	**Dimensions**	102x55x30mm
	Weight	270g +/- 10g
	Input	
	Input Efficiency	87% min at 115V/230V
	Input frequency range	47 to 63 Hz
	Input AC current	1.7 A at 90 VAC and maximum load
	Output	
	Output power	65W
	DC output	65W (19.5V/3.33A)
	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 95° F (0° to 35° C)

Technical Specifications

	Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	0% to 95%
	Storage Humidity	0% to 95%
	EMI and Safety Certifications	*CE Mark - 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; Reliability - failure rate of less than 0.1% annually within the first three years of operation.
HP 45W USB Type-C Straight 1.8m AC Adapter	**Dimensions**	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 ~ 63Hz
	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	5ms at 115 Vac input
	Output current limit	<5.0A
	Connector	USB Type-C
	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 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *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.

Technical Specifications

AN 42Whr Long Life Polymer Fast Charge 3 cell Battery	**Dimensions (H x W x L)**	H6.6mm Max; W67.8mm ±0.15; L249.5mm ±0.2
	Weight	225g Max
	Cells/Type	3 cell; Polymer
	Energy	
	Voltage	11.4V
	Amp-hour capacity	3.75Ah
	Watt-hour capacity	42.75Wh
	Temperature	5˚ to 40˚ C
	Operating (Charging)	0˚ to 45˚ C
	Operating (Discharging)	-10˚ to 60 ˚ C
	Fuel Gauge LED	NA
	Warranty	1000 cycles
	Optional Travel Battery Available	No

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC3247
Audio I/O Ports	CTIA only
Internal Speaker Amplifier	2W class D stereo amplifier for the internal speaker only
Multi-streaming Capable	Yes, follow Microsoft policy
Sampling	spk/headphone - 16/24bit, 48kHz microphone - 16bit/48kHz external - 16/24bit, 48kHz/44.1kHz
Wavetable Syntheses	2w/4ohm per speaker
Analog Audio	CTIA only
# of Channels on Line-Out	N/A
Internal Speaker	YES

Technical Specifications

ENVIRONMENTAL DATA

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® • US Federal Energy Management Program (FEMP) • EPEAT Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	• Ocean-bound plastic in Speaker • 20% post-consumer recycled plastic • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available		
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 (Sort idle)	3.87 W	3.8 W	3.63 W
Normal Operation (Long idle)	1.57 W	1.6 W	1.5 W
Sleep	1.57 W	1.6 W	1.5 W
Off	0.35 W	0.37 W	0.35 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.		
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	13.2 BTU/hr	13 BTU/hr	12.4 BTU/hr
Normal Operation (Long idle)	5.4 BTU/hr	5.5 BTU/hr	5.1 BTU/hr
Sleep	5.4 BTU/hr	5.5 BTU/hr	5.1 BTU/hr
Off	1.2 BTU/hr	1.3 BTU/hr	1.2 BTU/hr
	*__NOTE:__ Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Technical Specifications

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.2	14.3
Fixed Disk – Random writes	2.2	14.1
Optical Drive – Sequential reads	2.2	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		
	Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.		
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 is 97.1% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Corrugated	191 g
		PAPER/Paperboard	44 g
		PAPER/Molded Pulp	84 g
		PAPER/Paper	4 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	13 g
		PLASTIC/Polypropylene - PP	3 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 59.1% recycled content.		
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.		

Technical Specifications

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/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • 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)
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.

Technical Specifications

End-of-life Management and Recycling	HP 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://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials.

COUNTRY OF ORIGIN

China

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

DOCKING (Sold Separately)

Docking station model #1	HP Thunderbolt 4 100W G6 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	(4) 4K @60Hz* (2) 4K @ 120Hz* (3) QHD @ 120Hz* (1) QHD @ 360Hz*
Dock Connectors	1x HDMI 2.1, 2x DisplayPort 1.4, 1x Thunderbolt 4
HP Quick Connect Support	No
Technical limitations	HP Quick Connect not supported on this platform. *Requires DisplayPort 1.4 support with Display Stream Compression (DSC). Bluetooth required for HP Quick Connect. HP Quick Connect available on select HP notebooks. Maximum resolution and display support is dependent on the maximum capability of the notebook. Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
Docking station model #2	HP USB-C Dock G5
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 5K@ 30Hz + (1) 4K UHD (multi-function mode) 5120 x 2880 [1]
Dock Connectors	1xHDMI, 2xDP
Technical limitations	Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.

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

	Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in multi-function mode The highest resolution for a non-Thunderbolt host in multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.
Docking station model #3	HP USB-C Mini Dock
Total number of supported displays (incl. the notebook display)	1
Max. resolutions supported	Single 4K@30Hz (HDMI) or 2K@60Hz (VGA) [1]
Dock Connectors	1xHDMI, 1xVGA
Technical limitations	One display supported at a time
Docking station model #4	HP USB-C/A Universal Dock G2
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Triple 4K UHD@ 60Hz 3840 x 2160 [1]
Dock Connectors	1xHDMI, 2xDP
Technical limitations	The best resolution for dual or triple displays is 4K UHD@ 60Hz. For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the host. Best single display is with High Resolution mode using HDMI port.
Docking station model #5	HP USB-C Travel Dock G2
Total number of supported displays (incl. the notebook display)	1
Max. resolutions supported	Single 4K@ 30 Hz 4960 x 2160 (via HDMI) or 1920 x 1200@ 60Hz via VGA [1]
Dock Connectors	1xHDMI, 1xVGA
Technical limitations	Single external display using either HDMI or VGA.

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

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

Category	Description	Part Number
Audio/Video	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
Cases	HP Always On 11.6 Black Case	1D3D0AA
	HP Business 13.3 Sleeve	2UW00AA
	HP Business 14.1 Sleeve	2UW01AA
	HP Business 15.6 Top Load	2SC66AA
	HP Business Slim 14.1 Top Load	2SC65AA
	HP Business Slim 17.3 Top Load	2UW02AA
	HP Executive 14.1 Tote	6KD10AA
	HP Executive 15.6 Backpack	6KD07AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Executive 17.3 Backpack	6KD05AA
	HP Executive 17.3 Top Load	6KD08AA
	HP Executive Leather 15.6 Top Load	6KD09AA
	HP Executive Slim 14.1 Top Load	6KD04AA
	HP Prelude G2 15.6 Backpack	1E7D6AA
	HP Prelude G2 15.6 Top Load	1E7D7AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew 14 Laptop Sleeve	2E6U9AA, 2E6V0AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Reversible 11.6 Sleeve	7ZE81AA
	HP Reversible 13.3 Sleeve	7ZE82AA
	HP Mobility 11.6 Laptop	4U9G8AA
Docking	HP Thunderbolt 4 100W G6 Dock	9X472UT
	HP Thunderbolt 4 Ultra 180W G6 Dock	9X481UT
	HP Thunderbolt 4 Ultra 280W G6 Dock	AW5M5UT
	HP USB-C 120W G5 Dock	5TW10AA
	HP USB-C/A 120W G2 Universal Dock	5TW13AA
Hub	HP USB-C Mini Dock	1PM64AA
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C Travel Dock G2	7PJ38AA
	HP USB-C to USB-A Hub	Z6A00AA
Adapter	HP HDMI to DVI Adapter	F5A28AA
	HP HDMI to VGA Adapter	H4F02AA

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

	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter	N9K76AA
Keyboard/Combo	HP 975 USB+Bluetooth Dual-Mode Wireless Keyboard	3Z726AA
	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 125 WD USB Keyboard	266C9AA
	HP 320K WD USB Keyboard	9SR37AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
	HP Slim Wireless Keyboard and Mouse	T6L04AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
Mouse	HP USB Premium Wireless Mouse	1JR31AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA
	HP 125 USB-A Wired Mouse	265A9AA
	HP 128 USB Laser Wired Mouse	265D9AA
	HP 320M USB-A Wired Mouse	9VA80AA
	HP Creator USB-A+Bluetooth 935 Wireless Mouse Black	1D0K8AA
	HP USB-A+Bluetooth Multi-Device 635 Wireless Mouse Black	1D0K2AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA
Digital Pen	HP Slim RECHBL Pen	630W7AA
Pen Accessory	HP Rechargeable Slim Pen Charger	4X491AA
Power	HP 65W USB-C Auto Chevy AC Power Adapter	5TQ76AA
	HP 45W 4.5 mm Smart AC Power Adapter	H6Y88AA
	HP 45W USB-C G2 Zeus AC Power Adapter	1HE07AA
	HP 45W USB-C LC Dali AC Power Adapter	1MZ01AA
	HP 65W 4.5 mm Smart AC Power Adapter	H6Y89AA
	HP 65W 4.5 mm wDongle 7.4 mm Slim AC Power Adapter	H6Y82AA
	HP 65W USB-C Hades AC Power Adapter	1HE08AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
Commodity	HP USB DVD-Writer EXT ODD	F2B56AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA

Summary of Changes

Date of change:	Version History:	Updated	Description of change:
January 26, 2022	V1 to V2	Added	AI Noise Reduction Gen 2 in Software and Security section
February 15, 2022	V2 to V3	Updated	Displays
February 28, 2022	V3 to V4	Removed	HP 955 4K Webcam from Accessories section
March 4, 2022	V4 to V5	Added	Fast Charge in Battery section
April 11, 2022	V5 to V6	Added	Reference for USB ports
April 21, 2022	V6 to V7	Added	Battery Life and removed eMMC
May 16, 2022	V7 to V8	Updated	Average Operating Power
May 26, 2022	V8 to V9	Added	Environmental Data
June 15, 2022	V9 to V10	Added	Added note in Manageability Feature
August 19, 2022	V10 to V11	Updated	Integrated Graphics section and Bluetooth
November 9, 2022	V11 to V12	Updated	Options and accessories section
November 18, 2022	V12 to V13	Added	Disclaimer for Touch Feature in Display section
December 8, 2022	V13 to V14	Updated	Windows OS; Added HP School Pack
January 20, 2023	V14 to V15	Updated	Operating System
February 16, 2023	V15 to V16	Updated	Battery life section
March 2, 2023	V16 to V17	Updated	Networking and communications section
April 26, 2024	V17 to V18	Update	MT/s units to memory speeds
July 12, 2024	V18 to V19	Removed	HP Sure Admin
May 26, 2015	V19 to V20	Updated	Docking Section

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