Overview

HP EliteBook x360 1040 G6 Notebook PC

Left

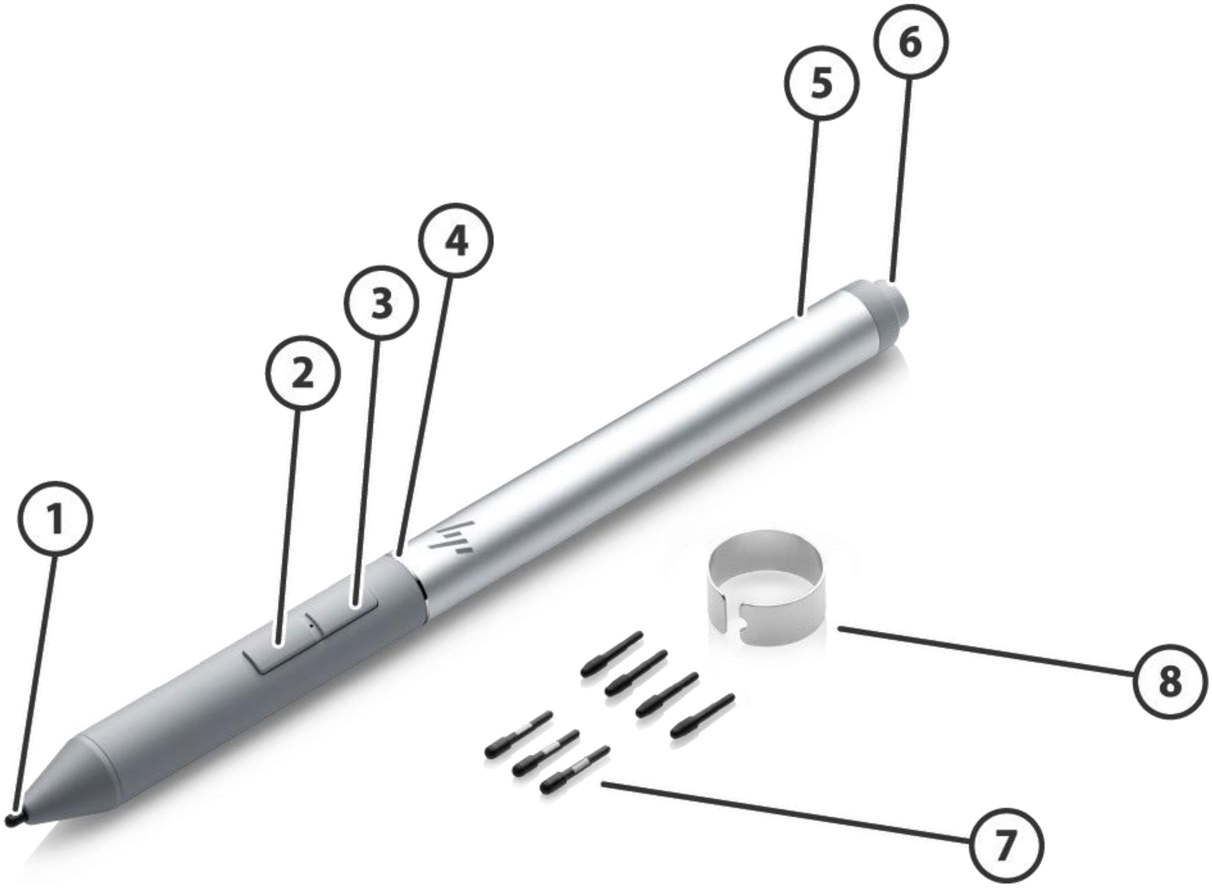
1. Webcam and IR Camera
2. IR Camera LEDs
3. Internal microphones
4. Privacy Camera Shutter
5. Webcam LED
6. Glass clickpad
7. WWAN SIM (Nano)
8. Nano Security lock slot (Lock sold separately)
9. Power button
10. Audio combo jack
11. USB 3.1 Gen 1 charging port

Overview

Right

1.	USB 3.1 Gen 1 charging port	4.	USB Type-C™ with Thunderbolt™
2.	HDMI port (Cable not included)	5.	Volume up/down
3.	USB Type-C™ with Thunderbolt™	6.	Touch fingerprint sensor

Overview



Pen

1.	Tip	5.	USB-C Charging Port (System AC adapter may be used to charge the pen)
2.	Erase	6.	BT Pairing / Application Launch
3.	Select	7.	Spare Pen Tips (3 elastomer tips, 4 POM tips. POM tips are recommended for use with anti-glare panels)
4.	Diamond-cut ring	8.	Pen tip removal tool

At a Glance

- All metal CNC Aluminum chassis that is .67 inches (1.69 cm) thin and with a starting weight of 2.99 lbs (1.36 kg)
- A 360° convertible notebook with 4 usage modes
- Choice of 8th Generation Intel® Core™ i5, i7 Processors with integrated Intel® UHD 630 Graphics
- Display choices include 35.56 cm (14.0") diagonal IPS FHD touch screen or UHD HDR400 touch screen. Brightness choices up to 1000 Nits. Optional Anti-glare screen available. Get added protection in open or public places with the optional HP Sure View integrated privacy screen. Ambient Light Sensor (ALS) standard. Privacy shutter (standard) for the integrated camera.
- Ultimate connectivity with 4G/LTE WWAN (up to Cat16), WLAN, USB Type-C™, USB Type-A (2), HDMI, and Thunderbolt™ Docking
- Innovative world-facing third mic improves inbound ambient noise cancellation
- Engage teams, clients, and vendors with the crystal-clear audio by Bang & Olufsen and the high-performance HP Premium Collaboration Keyboard
- The updated HP Rechargeable Active Pen (Optional)
- Never forget your password with your choice of simple authentication methods, including the IR camera for face recognition and Touch Fingerprint Sensor for Windows Hello
- Choice of solid state drives up to 2 TB
- DDR4 Memory up to 32 GB
- Up to 24 hours of battery life[1]
- Preinstalled with Windows 10 versions or FreeDOS
- Pending MIL-STD 810g testing[2]
- Instant on/instant off with Modern Connected Standby

1. Up to 24 hours on a properly configured HP EliteBook x360 1040 G6 with Intel® Core™ i5 processor, 8GB RAM, no WWAN, 128 GB SSD, FHD low power panel, and Intel® Wi-Fi 6 ZX200 + BT5 (802.11 ax 2x2, non-vPro™). Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See http://www.bapco.com for additional details.
2. MIL-STD 810G testing is pending and is conducted on select HP products. Testing is not intended to demonstrate fitness of 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.

PRODUCT NAME

HP EliteBook x360 1040 G6 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows® 10 Pro 64[1]
Windows® 10 Pro 64 (National Academic License)[2]
Windows® 10 Home 64[1]
Windows® 10 Home Single Language 64[1]
Windows® 10 Enterprise 64 (Web Support)[1]
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 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com/.
2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.

PROCESSORS

Intel® Core™ i7-8665U vPro™ processor with Intel® UHD Graphics 620 (1.8 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores)[3,4,5,6,7]
Intel® Core™ i7-8565U with Intel® UHD Graphics 620 (1.8 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4,5,6]
Intel® Core™ i5-8365U vPro™ processor with Intel® UHD Graphics 620 Graphics (1.6 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores) [3,4,5,6,7]
Intel® Core™ i5-8265U with Intel® UHD Graphics 620 Graphics (1.6 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores) [3,4,5,6]

Processor Family
8th Generation Intel® Core™ i7 processor (i7-8565U, i7-8665U)[6]
8th Generation Intel® Core™ i5 processor (i5-8265U, i5-8365U)[6]

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. 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.
7. For full Intel® vPro™ functionality, Windows, a vPro supported processor, vPro enabled chipset, vPro enabled WLAN card and discrete TPM 2.0 are required. See https://www.intel.com/content/www/us/en/architecture-and-technology/vpro/vpro-platform-general.html

Technical Specifications

CHIPSET

Integrated with processor

GRAPHICS

Integrated
Intel® UHD graphics 620

Supports
Support HD decode, DX12, and HDMI 1.4b[8]

[8] HD content required to view HD images.

DISPLAY

Touch UHD (4K)
35.56 cm (14") diagonal 4K HDR 400 IPS eDP + PSR BrightView WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 550 nits, 72% NTSC for WWAN (3840 x 2160)[7,9,10] (Planned to be available Fall 2019)

Touch FHD Privacy Panel
HP Sure View Integrated Privacy Screen 35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC for WWAN (1920 x 1080)[8,9,10,11]
HP Sure View Integrated Privacy Screen 35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC (1920 x 1080)[8,9,10,11]
HP Sure View Integrated Privacy Screen 35.56 cm (14") diagonal FHD IPS eDP + PSR WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC for WWAN (1920 x 1080)[8,9,10,11]
HP Sure View Integrated Privacy Screen 35.56 cm (14") diagonal FHD IPS eDP + PSR WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC (1920 x 1080)[8,9,10,11]

Touch FHD
35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for WWAN, Low Power (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for WWAN (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for Low Power (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR anti-glare WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR BrightView WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for WWAN, Low Power (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR BrightView WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for WWAN (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR BrightView WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC for Low Power (1920 x 1080)[8,10,11]
35.56 cm (14") diagonal FHD IPS eDP + PSR BrightView WLED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC (1920 x 1080)[8,10,11]

[8] HD content required to view HD images.
[9] HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.

Technical Specifications

10. Sold separately or as an optional feature.
11. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Primary M.2 Storage
2 TB PCIe® Gen3x4 NVMe™ SS TLC[12]
1 TB PCIe® Gen3x4 NVMe™ SS TLC[12]
512 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 32 GB Intel® Optane™ memory H10[12,13,14]
512 GB PCIe® Gen3x4 NVMe™ SS TLC Opal 2[12]
512 GB PCIe® Gen3x4 NVMe™ SS TLC[12]
512 GB PCIe® NVMe™ SS Value[12]
256 GB SATA-3 SED TLC Opal 2[12]
256 GB PCIe® Gen3x4 NVMe™ SS TLC[12]
256 GB PCIe® NVMe™ SS Value[12]
256 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 16 GB Intel® Optane™ memory H10[12,13,14]
128 GB SATA-3 SS TLC[12,15]

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.
13. 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.
14. Intel® Optane™ memory H10 only for Intel® PCIe® NVMe™ QLC M.2 SSD.
15. Not available with eMMC Base Units.

MEMORY

Maximum Memory
32 GB DDR4-2666 SDRAM

Memory
32 GB DDR4-2666 SDRAM (2 X 16 GB)
16 GB DDR4-2666 SDRAM (2 X 8 GB)
8 GB DDR4-2666 SDRAM (2 X 4 GB)

Memory Slots
Memory soldered down
Supports Dual Channel Memory
DDR4 PC4 SODIMMS, system runs at 2400

NETWORKING/COMMUNICATIONS

WLAN
Intel® AX200 (2x2) + BT5 Wi-Fi 6* and Bluetooth® 5 Combo, vPro™[9,16,20]
Intel® AX200 (2x2) + BT5 Wi-Fi 6* and Bluetooth® 5 Combo, non-vPro™[9,16,20]

WWAN
Intel® XMM™ 7360 LTE-Advanced Cat 9[10,17]

Technical Specifications

Intel® XMM™ 7560 LTE-Advanced Cat 16[10,19]

NFC
NXP NPC300 Near Field Communication module

Miracast
Native Miracast Support[18]
Ethernet
No Direct Ethernet Support - Ethernet via HP accessories

10. Sold separately or as an optional feature.
16. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.
17. WWAN module is optional, must be configured at the factory and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
18. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
19. Gigabit class 4G LTE module is optional and must be configured at the factory. The full utilization of this module's Gigabit functionality is dependent on network providers' technical ability to support this network and speed. Backwards compatible to HSPA 3G technologies. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
20. For full Intel® vPro™ functionality, Windows, a vPro supported processor, vPro enabled chipset, vPro enabled WLAN card and discrete TPM 2.0 are required. See https://www.intel.com/content/www/us/en/architecture-and-technology/vpro/vpro-platform-general.html.

* 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.

AUDIO/MULTIMEDIA

Audio
Bang & Olufsen
4 Premium Stereo Speakers; 1609 x 2pcs, 4013 x 2pcs
Microphones (Multi Array including World-Facing 3rd Mic)
4 Discrete Amplifiers

Camera
1080p FHD camera[8]

Webcam
IR Camera[21]

Sensors
Accelerometer
Magnetometer
Gyroscope
Ambient light sensor
Hall Sensor

8. HD content required to view HD images.
21. Internet access required.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Collaboration Keyboard
Backlit, Spill-resistant, with HP Dura Keys - Flint Opaque

Pointing Device
Glass ClickPpad
Microsoft Precision Touchpad Default Gestures Support

Function Keys
F1 - Display Switching
F2 - Sure View (blank if not supported)
F3 - Brightness Down
F4 - Brightness up
F5 - Audio Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Kybd Backlight
F10 - NumLock
F11 - Wireless
F12 - Calendar
> Share/Present
> Pick Up/Accept/ Answer/Hold
> Hang Up/Decline/ Reject
> Delete
> FN key lock

Hidden Function Keys
Fn+R = Break
Fn+S = Sys Rq
Fn+C = Scroll Lock
Fn+E = Insert
Fn+W = Pause

Clickpad Requirements
Glass Clickpad
Microsoft Precision Touchpad Default Gestures Support
FW PTP with Filter Driver
Hybrid Mode Support

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

BIOS
HP BIOSphere Gen5[22]
HP Drive Lock & Automatic Drive Lock[23]
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Secure Erase[24]
Absolute Persistence Module[25]
Pre-boot Authentication

Software
HP Native Miracast Support[26]
HP Connection Optimizer
HP Image Assistant
HP Hotkey Support
HP JumpStart
HP Support Assistant[27]
HP Noise Cancellation Software
Buy Office (Sold separately)

Manageability Features
HP Driver Packs[28]
HP System Software Manager (SSM)
HP BIOS Config Utility (BCU)
HP Client Catalog
HP Manageability Integration Kit Gen3[29]
HP Cloud Recovery[30]

Client Security Software
HP Client Security Manager Gen5[31]
HP Fingerprint Sensor
HP Power On Authentication
Windows Defender[32]

Security Management
Pre-boot Authentication
TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)[33]
SATA 0,1 port disablement (via BIOS)
Serial, USB enable/disable (via BIOS)
Power-on password (via BIOS)
Setup password (via BIOS)
Support for chassis padlocks and cable lock devices
HP Sure Click[34]
HP Sure Start Gen5[35]
HP Sure Run Gen2[36]
HP Sure Recover Gen2[37]
HP Sure Sense[38]

22. 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.

Technical Specifications

23. HP Automatic Drive Lock is not supported on NVMe drives.
24. 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™.
25. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/company/legal/agreements/ computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
26. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
27. HP Support Assistant requires Windows and Internet access.
28. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
29. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
30. HP Cloud Recovery is available for HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/document/c05115630
31. HP Client Security Manager Gen5 requires Windows and is available on the select HP Pro and Elite PCs. See product specifications for details.
32. Windows Defender Opt in and internet connection required for updates.
33. Firmware TPM is version 2.0. Hardware TPM is v1.2, which is a subset of the TPM 2.0 specification version v0.89 as implemented by Intel Platform Trust Technology (PTT).re TPM is version 2.0. Hardware TPM is v1.2, which is a subset of the TPM 2.0 specification version v0.89 as implemented by Intel Platform Trust Technology (PTT).
34. HP Sure Click is available on select HP platforms and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.
35. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
36. HP Sure Run Gen2: See product specifications for availability.
37. HP Sure Recover Gen2: See product specifications for availability. Requires an open, wired network connection. Not available on platforms with multiple internal storage drives. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. HP Sure Recover (Gen1) does not support platforms with Intel® Optane™.
38. HP Sure Sense requires Windows 10. See product specifications for availability.

POWER

Power Supply
65 W USB Type-C™ adapter[39]
Supports HP Fast Charging (Up to 50% in 30 minutes)[40]

Primary Battery
HP Long Life 4-cell, 56.2 Wh Li-ion polymer
100%; Supports HP Fast Charging (Up to 50% in 30 minutes)[40]

Power Cord
Duckhead power cord (C5NS), 1.0m, Sticker, Premium Black (For Hades+)[39]
Power Cord C5 Sticker, Premium 1.0m[39]

Technical Specifications

Battery life
Up to 24 hours[41,42]

Battery Weight
Starting at 0.54 lb
Starting at 0.24 kg

39. Availability may vary by country.
40. Recharges the battery 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.
41. Up to 24 hours on a properly configured HP EliteBook x360 1040 G6 with Intel® Core™ i5 processor, 8GB RAM, no WWAN, 128GB SSD, FHD low power panel, and Intel® Wi-Fi 6 ZX200 + BT5 (802.11 ax 2x2, non-vPro™). Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See http://www.bapco.com for additional details.
42. Battery is internal and not replaceable by customer. Serviceable by warranty.

WEIGHTS & DIMENSIONS

Product Weight
Starting at 2.99 lb[43]
Starting at 1.35 kg[43]

Product Dimensions (w x d x h)
12.65 x 8.46 x 0.67 in
32.14 x 21.5 x 1.69 cm

43. Weight will vary by configuration.

PORTS/SLOTS

2 Thunderbolt™ (USB Type-C™ connector, support Power Delivery 3.0)
2 USB 3.1 Gen 1 (1 charging)
1 HDMI 1.4[44]
1 External Nano SIM slot for WWAN[45]
1 Headphone/microphone combo

44. HDMI cable sold separately.
45. SIM slot is not user accessible without WWAN configuration.

Technical Specifications

SERVICE AND SUPPORT

HP Services offers 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.[46]

[46] 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.

ENVIRONMENTAL & INDUSTRY

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®
- EPEAT® 2019 Silver registered in the United States. Based on EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. See http://www.epeat.net for registration status in your country.
- TCO Certified 8.0

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)	5.95 W	6.59 W	5.86 W
Normal Operation (Long idle)	2.44 W	2.81 W	2.53 W
Sleep	0.82 W	0.89 W	0.84 W
Off	0.38 W	0.46 W	0.38 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.

Technical Specifications

Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	20 BTU/hr	23 BTU/hr	20 BTU/hr
Normal Operation (Long idle)	8 BTU/hr	10 BTU/hr	9 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	1 BTU/hr	2 BTU/hr	1 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.5	18
Fixed Disk – Random writes	2.9	23

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:
- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots
- Optional expansion base docking station
- 1 multi-bay II storage port
- Interchangeable HDD

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

Batteries

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

Batteries used in the product do not contain:
Mercury greater the1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: Not Applicable
Battery type: Not Applicable

Technical Specifications

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <Silver> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 4.8% post-consumer recycled plastic (by wt.)
- This product is 93.2% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Paper	261 g
Internal:	PLASTIC/Polypropylene - PP	37 g
	PLASTIC/Polyethylene Expanded - EPE	51 g
	PLASTIC/Polyethylene low density - LDPE	15 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)
- 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://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	AC 15 V
	Average Operating Power	Win 10
	Integrated Graphics	Yes
	Discrete Graphics	N/A
	Max Operating Power	UMA<65 W
Temperature	**Operating**	32° to 95° F (0° to 35° C) (not writing optical)
	Non-operating	41° to 95° F (5° to 35° C) (writing optical)
Relative Humidity	**Operating**	32° to 95° F (0° to 35° C) (not writing optical)
	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**	1.043 grms
	Non-operating	3.5 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®	Yes[47]
	EPEAT®	EPEAT 2019 Gold in U.S.[48]
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes
	UKRSERTCOMPUTER	Yes

47. Configurations of the HP EliteBook x360 1040 G6 that are ENERGY STAR® certified are identified as HP EliteBook x360 1040 G6 ENERGY STAR® on HP websites and on http://www.energystar.gov.

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

Technical Specifications

DISPLAYS

Panel LCD 14 inch diagonal FHD (1920 x 1080) Anti-Glare WLED UWVA 72% NTSC 400 nits eDP 1.3+PSR Ultraslim Narrow Bezel bent	**Outline Dimensions (W x H x D)**	315.31 x 185.43 max. (FPC folding included)
	Active Area	309.37 X 174.02
	Weight	200 g max.
	Diagonal Size	14 (inch)
	Thickness	2.0 mm / 4.0 mm (PCB) max.
	Interface	eDP 1.3 + PSR (2 lane)
	Surface Treatment	Anti-Glare (AG)
	Touch Enabled	Yes
	Contrast Ratio	1200:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	400 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format of LCD Pixel Arrangement	nits
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	6 bits
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 14 inch diagonal FHD (1920 x 1080) BrightView WLED UWVA 72% NTSC 400 nits eDP 1.4+PSR2 bent LP	**Outline Dimensions (W x H x D)**	315.37 x 186.9 mm (max)
	Active Area	309.37 x 174.02 mm (typ.)
	Weight	200 g (max)
	Diagonal Size	14.0 inch
	Thickness	2.0 mm (panel side)/ 4.0 mm (PCBA side) (max)
	Interface	eDP 1.4 + PSR2 (2 lane)
	Surface Treatment	Bright-View (BV)
	Touch Enabled	Yes
	Contrast Ratio	1200:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	400 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format of LCD Pixel Arrangement	nits
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	6 bits
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

Panel LCD 14 inch diagonal UHD (3840 x 2160) BrightView WLED UWVA HDR-400 nits 72% NTSC 550 nits eDP 1.4+PSR2 bent	**Outline Dimensions (W x H x D)**	322.82 x 201.25 mm (max.)
	Active Area	309.31 x 173.99
	Weight	280g max.
	Diagonal Size	14 (inch)
	Thickness	3 mm max.
	Interface	eDP 1.3 + PSR (supportive @ 8bit)
	Surface Treatment	Bright-View (BV)
	Touch Enabled	Yes
	Contrast Ratio	1050:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	550 nits
	Pixel Resolution	3840 x 2160 (UHD)
	Format of LCD Pixel Arrangement	nits
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Planned to be available Fall of 2019

Panel LCD 13 inch diagonal FHD (1920 x 1080) Anti-Glare WLED UWVA 72% NTSC 1000 nits eDP 1.4+PSR2 bent Privacy Narrow Bezel	**Outline Dimensions (W x H x D)**	277.748 x 193.2 mm (max)
	Active Area	272.448 x 191.632 mm (typ.)
	Weight	190 g (max)
	Diagonal Size	13.0 inch
	Thickness	3.9 mm (max)
	Interface	eDP 1.4 + PSR2 (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 of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 13 inch diagonal FHD (1920 x 1080)	**Outline Dimensions (W x H x D)**	277.748 x 193.2 mm (max)
	Active Area	272.448 x 191.632 mm (typ.)

Technical Specifications

BrightView WLED UWVA 72% NTSC 1000 nits eDP 1.4+PSR2 bent Privacy Narrow Bezel	**Weight**	190 g (max)
	Diagonal Size	13.0 inch
	Thickness	3.9 mm (max)
	Interface	eDP 1.4 + PSR2 (4 lane)
	Surface Treatment	Bright-view (BV)
	Touch Enabled	No
	Contrast Ratio	2000:1 (typ.)
	Refresh Rate	60 Hz
	Brightness	1000 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

STORAGE AND DRIVES

SSD 128 GB 2280 M2 SATA-3 TLC	**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	ATA-8, SATA 3.0
	Maximum Sequential Read	540 MB/s～ 560 MB/s
	Maximum Sequential Write	500 MB/s～ 530 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	DIPM; TRIM; DEVSLP

SSD 1 TB 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	Up To 2800 MB/s
	Maximum Sequential Write	Up To 1600 MB/s
	Logical Blocks	2,000,409,264
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (Option); TRIM; L1.2

SSD 256 GB 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	2580 MB/s～ 2600 MB/s
	Maximum Sequential Write	900 MB/s～ 1000 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (Option); TRIM; L1.2

Technical Specifications

SSD 256 GB 2280 M2 SATA-3 Self Encrypted OPAL2 Three Layer Cell	**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	ATA-8, SATA 3.0
	Maximum Sequential Read	530 MB/s～ 560 MB/s
	Maximum Sequential Write	500 MB/s～ 530 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TCG OPAL 2.0; DIPM; TRIM; DEVSLP

SSD 2 TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided	**Form Factor**	M.2 2280
	Capacity	2 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	Up To 3000 MB/s
	Maximum Sequential Write	Up To 2100 MB/s
	Logical Blocks	3,907,029,168
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TCG OPAL 2.0; DIPM; TRIM; DEVSLP

SSD 512 GB 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	2800 MB/s～ 2900 MB/s
	Maximum Sequential Write	1000 MB/s～ 1800 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (Option); TRIM; L1.2

Technical Specifications

SSD 512 GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer Cell	**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	2800 MB/s～ 2900 MB/s
	Maximum Sequential Write	1000 MB/s～ 1800 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2

SSD 512 GB 2280 PCIe NVMe Value	**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	Up To 1700 MB/s
	Maximum Sequential Write	Up To 1500 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

SSD 256 GB 2280 PCIe NVMe Value	**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	Up To 1700 MB/s
	Maximum Sequential Write	Up to 1300 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

Technical Specifications

512 GB 2280 PCIe-3x2x2 NVMe+SSD 32 GB 3D Xpoint	**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	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® AX200 (2x2) + BT5 802.11a/b/g/n/ac/ax Wi-Fi 6* and Bluetooth® 5 Combo[1], 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	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
	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: MCS 0 ~ MCS 15, (20MHz, and 40MHz) •802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, 80MHz & 160MHz) • 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM , 1024-QAM
	Security	•IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only •AES-CCMP: 128 bit in hardware •802.1x authentication •WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. •WPA2 certification •IEEE 802.11i •Cisco Certified Extensions, all versions through CCX4 and CCX Lite •WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output 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 • 802.11ac VHT160(5GHz): +11.5dBm minimum • 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax 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 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: -84dBm maximum 802.11ac, MCS9: -59dBm maximum 802.11ax, MCS11(HT40): -59dBm maximum 802.11ax, MCS11(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
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)

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

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

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

Technical Specifications

Channels	BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps signaling data rate[1] 2.17 Mbps BLE: 1 Mbps signaling data rate[1] 0.2 Mbps 1. 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 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	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)
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

*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.

Technical Specifications

Intel® AX200 (2x2) + BT5 802.11a/b/g/n/ac/ax Wi-Fi 6* and Bluetooth® 5 Combo[1] 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	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
	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: MCS 0 ~ MCS 15, (20MHz, and 40MHz) •802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, 80MHz & 160MHz) • 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM , 1024-QAM
	Security	•IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only •AES-CCMP: 128 bit in hardware •802.1x authentication •WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. •WPA2 certification •IEEE 802.11i •Cisco Certified Extensions, all versions through CCX4 and CCX Lite •WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output 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 • 802.11ac VHT160(5GHz): +11.5dBm minimum • 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax 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 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: -84dBm maximum 802.11ac, MCS9: -59dBm maximum 802.11ax, MCS11(HT40): -59dBm maximum 802.11ax, MCS11(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	
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)

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 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)

Signaling Data Rate	Legacy: 3 Mbps signaling data rate[1] 2.17 Mbps BLE: 1 Mbps signaling data rate[1] 0.2 Mbps 1. 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 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	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)

*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.

Technical Specifications

Intel® XMM™ 7360 LTE-Advanced CAT9[1]	**Technology/Operating bands**	FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 1400 (Band 11), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1400 (Band 21), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66). TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 11 LTE Specification CAT.9, DL 60MHz BW throughput up to 450Mbps; UL 20MHz throughput up to 50Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone, A-GPS (MS-A, MS-B)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
	Maximum data rates	LTE: 450 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm
	Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	5.8 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

Intel® XMM™ 7560 LTE-Advanced Pro DL CAT16[1]	**Technology/Operating bands**	FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 14 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1900 (Band 25), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66). TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41), 3500 (Band 42), 5200 (Band 46 RX only) HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 12 LTE Specification DL-CAT.16, DL 100MHz BW throughput up to 978Mbps; UL-CAT.7 20MHz throughput up to 75Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone, A-GPS (MS-A, MS-B)

GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
Maximum data rates	LTE: 978 Mbps (Download), 75 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
Maximum output power	LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm HSPA+: 23.5 dBm
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	6 g
Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

Near Field Communications Controller (Optional)	**Dimensions (L x W x H)**	Module 25 mm by 10 mm by 2.0 mm
	Chipset	NPC300
	System interface	I2C
	NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	Reader (PCD-VCD) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz cards
	Card Emulation (PICC-VICC) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa
	Frequency	13.56 MHz
	NFC Modes Supported	Reader/Writer, Peer-to-Peer
	Raw RF Data Rates	106, 212, 424, 848 kbps
	Operating temperature	0°C to 70°C

Storage temperature	-20°C to 125°C
Humidity	10-90% operating 5-95% non-operating
Supply Operating voltage	4.35 to 5.25 Volts
I/O Voltage	1.8V or 3.3V
Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)	Power Consumption, Typical
Polling	7.3 mA
Detected Test Tag Type 1	Total 283.8 mA Net Module 236.8 mA
Detected Test Tag Type 2	Total 288.8 mA Net Module 241.8 mA
Detected Test Tag Type 3	Total 287.7 mA Net Module 240.7 mA
Detected Test Tag Type 4	Total 282.3 mA Net Module 235.3 mA
Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

POWER

AC Adapter 65 Watt nPFC Slim USB type C Straight 1.8 m	**Dimensions (H x W x D)**	88.0 x 53.5 x 21.0 mm	
	Weight	220 g +/- 10 g	
	Input	100 to 240 VAC	
		Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 88.0% 15V: 89.0% 20V: 89.0%
		Input frequency range	48 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 VAC
	Output	**Output power**	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		DC output	5V / 9V / 12V / 15V / 20V
		Hold-up time	5 ms at 115 Vac input
		Output current limit	<8.0A
	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, 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.	

AC Adapter 65 Watt nPFC USB type C Straight 1.8 m C6NS (Hades+)	**Dimensions (H x W x D)**	74 x 74 x 28.5 mm	
	Weight	245 g +/- 10 g	
	Input	100 to 240 VAC	
		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 @ 10V/5A 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	1.7 A at 90 VAC and maximum load
	Output	**Output power**	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		Output power	65W
		DC output	5V/9V/10V/12V/15V/20V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<8.0A
	Connector	Non-Standard C6	
	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	5% to 95%
		Storage Humidity	5% to 95%

Technical Specifications

	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. MTBF - over 100,000 hours at 25°C ambient condition.	

Battery BL 4 Cell WHr 56 Long Life -PL Fast Charge	**Dimensions** (H x W x L)	5.55 x 280.4 x 84.12 mm (0.219 x 11.039 x 3.312 inch)	
	Weight	0.247 kg (0.545 lb)	
	Cells/Type	4 cell Lithium-Ion Polymer cell / 446872	
	Energy	**Voltage**	7.7 V
		Amp-hour capacity	7.3 Ah
		Watt-hour capacity	56 Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Fuel Gauge LED	NA	
	Warranty	3-year	
	Optional Travel Battery Available	No	

Technical Specifications

Country of Origin

China

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

Type	Description	Part Number
Docking	HP Thunderbolt Dock 120W G2	2UK37AA
	HP Thunderbolt Dock w/Combo Cable G2	3TR87AA
	HP Thunderbolt Dock w/Audio Module	3YE87AA
	HP Audio Module	3AQ21AA
	HP Thunderbolt Dock 120W Cable	3XB94AA
	HP Thunderbolt Dock Combo Cable	3XB96AA
	HP USB-C Dock G4	3FF69AA
	HP USB-C Universal Dock	1MK33AA
	HP USB-C Universal Dock Non Flash	3DV65AA
	HP USB-C Mini Dock	1PM64AA
	HP USB-C Dock G5	5TW10AA
	HP USB-C/A Universal Dock G2	5TW13AA
Input/Output	HP Slim Wireless Keyboard and Mouse	T6L04AA
	HP Slim USB Keyboard and Mouse	T6T83AA
	HP Wireless (Link-5) Keyboard	T6U20AA
	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Conferencing Keyboard	K8P74AA
	HP USB Collaboration Keyboard	Z9N38AA
	HP Wireless Collaboration Keyboard	Z9N39AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP X4000b Bluetooth Mouse	H3T50AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP Slim Bluetooth Mouse	F3J92AA
	HP Wireless Premium Mouse	1JR31AA
	HP USB Premium Mouse	1JR32AA
	HP Elite Presenter Mouse	2CE30AA
	Moonracer 2.0	TBD
	HP Elite USB-C Hub	4WX89AA
	HP USB-C to 4.5mm Adapter	4ST73AA
	HP USB-C to USB-A Hub	Z6A00AA
	HP USB-C to DP	N9K78AA
	HP USB-C to VGA	N9K76AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP HDMI to DVI	F5A28AA
	HP HDMI to VGA	H4F02AA
	HP USB 3.0 to Gigabit Adapter	N7P47AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA

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

Power	HP 65W USB-C Power Adapter	1HE08AA
	HP 65W USB-C Slim Power Adapter	3PN48AA
	HP Notebook Power Bank	N9F71AA
	HP USB-C Notebook Power Bank	1TZ86AA
Security	HP Nano Dual-Head Keyed Cable Lock	1AJ41AA
	HP Nano Keyed Cable Lock	1AJ39AA
UCC	HP UC Speaker Phone	4VW02AA
	HP Stereo 3.5mm Headset	T1A66AA
	HP Stereo USB Headset	T1A67AA
	HP UC Wireless Mono Headset	W3K08AA
	HP UC Wireless Duo Headset	W3K09AA

Change Log

Date of change:	**Version History:**		**Description of change:**
July 2, 2019	From V1 to V2	Added	Environmental Section
July 3, 2019	From V2 to V3	Updated	Color Gamut
July 11, 2019	From V3 to V4	Updated	Touch fingerprint sensor and vPro™
July 23, 2019	From V4 to V5	Updated	UHD Panel
August 19, 2019	From V5 to V6	Updated	Battery Life and Storage and Drives section
September 3, 2019	From V6 to v7	Updated	Intel® Optane™