Overview

HP EliteBook x360 1030 G4

1. IR Camera LEDs
2. Internal Microphones
3. Webcam and IR Camera
4. Webcam LED
5. Glass Clickpad

Left

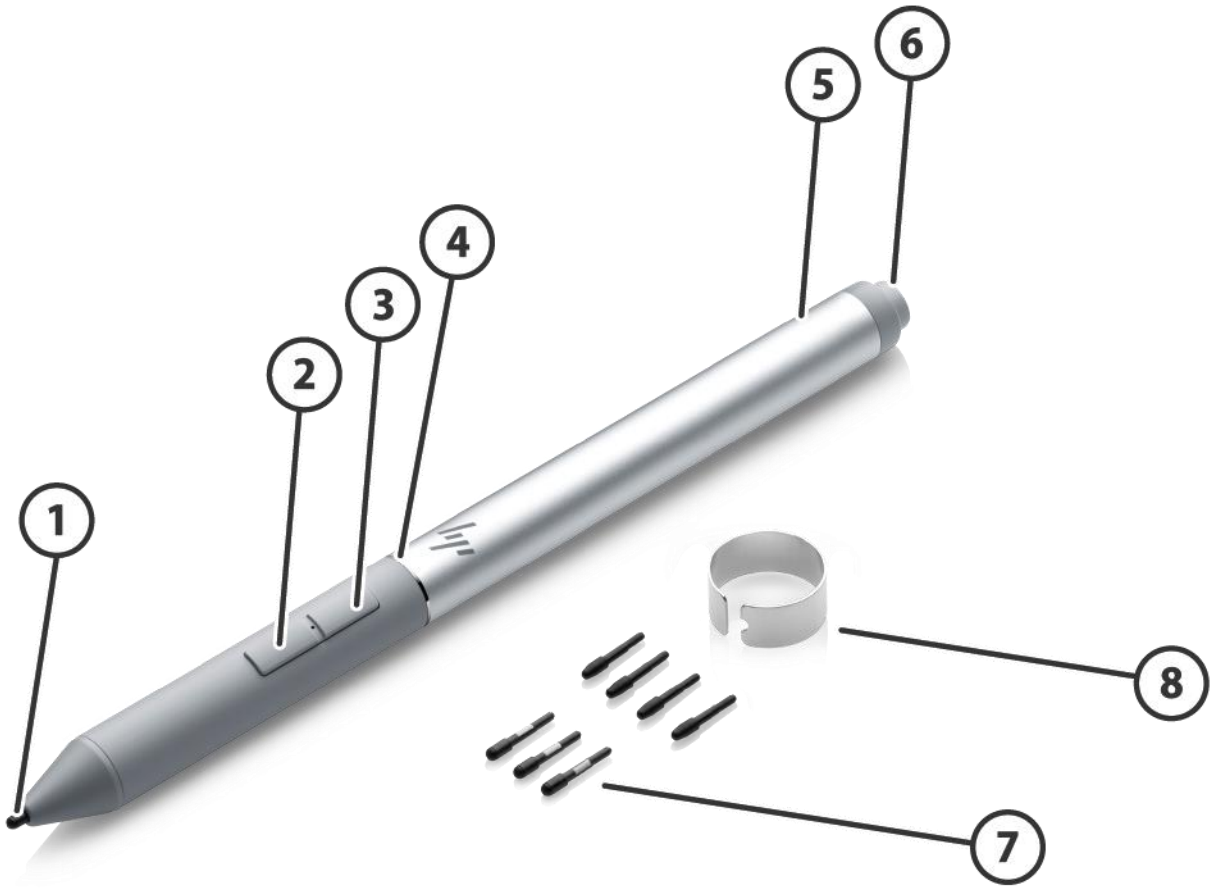
6. WWAN SIM (Nano)
7. Power Button
8. Audio Combo Jack
9. USB 3.1 Gen 1 Charging Port

Overview

Right

1. HDMI port (Cable not included)
2. Nano Security Lock Slot (Lock sold separately)
3. USB Type-C™ with Thunderbolt™
4. USB Type-C™ with Thunderbolt™
5. Volume Up/Down
6. Touch Fingerprint Sensor

Overview



Pen

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

Overview

AT A GLANCE

- All metal CNC Aluminum chassis that is .62 inches (1.58 cm) thin and with a starting weight of 2.78 lbs. (1.26 Kg)
- A 360° convertible notebook with 4 usage modes
- Choice of 8th Generation Intel® Core™ i7, i5 processors
- Display choices include 33.78 cm (13.3") diagonal IPS FHD touch screen or UHD 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 Gen3 integrated privacy screen*
- Connectivity with 4G/LTE WWAN, WLAN, USB Type-C™, USB Type-A, HDMI and Thunderbolt™ Docking
- Engage teams, clients, and vendors with the crystal-clear audio by Bang & Olufsen and the high-performance HP Premium Collaboration Keyboard
- The updated optional HP Rechargeable Active Pen
- 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
- LPDDR3 Memory up to 16 GB
- Battery Life Up to 18 hours[1]
- Preinstalled with Windows 10 versions or FreeDOS
- Passed 19 MIL-STD 810g tests[2]
- Instant on/instant off with Modern Connected Standby

1. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See http://www.bapco.com for additional details.
2. MIL-STD-810G is conducted on select HP products. Testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) 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.
*Touch-enabled display and Sure View privacy panel will lower actual brightness.

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

Technical Specifications

PRODUCT NAME

HP EliteBook x360 1030 G4

OPERATING SYSTEM

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 (1.9 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores)[3,4,5,6,7,8]
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)[3,4,5,6,7,8]
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. NOTE: In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.
7. Some functionality of vPro, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependent on 3rd party software providers. Compatibility with future "virtual appliances" is yet to be determined.
8. 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 http://Intel.com/vpro.

Technical Specifications

CHIPSET

Chipset is integrated with processor.

GRAPHICS

Integrated
Intel® UHD Graphics 620[9]

Supports
Support HD decode, DX12, HDMI 1.4b

9. HD content required to view HD images.

DISPLAY

Touch FHD
33.8 cm (13.3") diagonal FHD IPS eDP + PSR BrightView LED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC (1920 x 1080)[9,10,11]
33.8 cm (13.3") diagonal FHD IPS eDP + PSR anti-glare LED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 400 nits, 72% NTSC (1920 x 1080)[9,10,11]

Touch UHD
33.8 cm (13.3") diagonal 4K IPS eDP + PSR BrightView LED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 500 nits, 72% NTSC (3840 x 2160)[9,10,11]

Touch FHD Privacy Panel
HP Sure View Integrated Privacy Screen 33.8 cm (13.3") diagonal FHD IPS eDP + PSR BrightView LED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC (1920 x 1080)[9,10,11,12,13*]
HP Sure View Integrated Privacy Screen 33.8 cm (13.3") diagonal FHD IPS eDP + PSR anti-glare LED-backlit touch screen direct bonded with Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC (1920 x 1080) [9,10,11,12,13*]

Displays Support
Supports dual display through the dock

9. HD content required to view HD images.
10. Sold separately or as an optional feature.
11. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
12. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and functions in landscape orientation.
13. Planned to be available in September 2019
*Touch-enabled display and Sure View privacy panel will lower actual brightness.

Technical Specifications

STORAGE AND DRIVES

Primary M.2 Storage
2 TB PCIe® Gen3x4 NVMe™ SS TLC[15]
1 TB PCIe® Gen3x4 NVMe™ SS TLC[15]
512 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 32 GB Intel® Optane™ memory H10[14,15,16,17]
512 GB PCIe® Gen3x4 NVMe™ SS TLC Opal 2[15]
512 GB PCIe® Gen3x4 NVMe™ SS TLC[15]
512 GB PCIe® NVMe™ SS Value[15]
256 GB SATA-3 SED TLC Opal 2[15]
256 GB PCIe® Gen3x4 NVMe™ SS TLC[15]
256 GB PCIe® NVMe™ SS Value[15]
256 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 16 GB Intel® Optane™ memory H10[15,16,17]
128 GB SATA-3 SS TLC[15]

14. Planned to be available in November 2019
15. 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.
16. 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.
17. Intel® Optane™ memory H10 only for Intel® PCIe® NVMe™ QLC M.2 SSD.

MEMORY

Maximum Memory
16 GB LPDDR3-2133 SDRAM[18]

Memory
16 GB LPDDR3-2133 SDRAM[18]
8 GB LPDDR3-2133 SDRAM[18]

Memory Slots
Memory soldered down (Non accessible by customer)
Supports Dual Channel Memory
System runs at 2133

18. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

NETWORKING/COMMUNICATIONS

WLAN
Intel® AX200 (2x2) + BT5 Wi-Fi 6* and Bluetooth® 5 Combo, vPro™[10,19*]
Intel® AX200 (2x2) + BT5 Wi-Fi 6* and Bluetooth® 5 Combo, non-vPro™[10,19]

WWAN
Intel® XMM™ 7360 LTE-Advanced[20]
Intel® XMM™ 7560 LTE-Advanced[22]

NFC
NXP NPC300 Near Field Communication module

Technical Specifications

Miracast
Native Miracast Support[21]

Ethernet
No direct Ethernet Support - Ethernet via accessories

10. Sold separately or as an optional feature.
19. 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.
20. WWAN is an optional feature, requires factory configuration and separately purchased service contract. Check with service provider for coverage and availability in your area. 4G LTE not available on all products, in all regions.
21. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
22. 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.
*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 http://Intel.com/vpro

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AUDIO/MULTIMEDIA

Audio
Bang & Olufsen
4 Premium Stereo Speakers; 1609 x 2pcs, 1338 x 2pcs
Microphones (Multi Array including World-Facing 3rd Mic)
4 Discrete Amplifiers

Camera
1080p FHD camera[9]

Webcam
IR Camera[23]

Sensors
Accelerometer
Magnetometer
Gyroscope
Ambient light sensor
Hall Sensor

9. HD content required to view HD images.
23. Internet access required.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

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

Pointing Device
Glass Clickpad
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+E - Insert
Fn+W - Pause

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

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

BIOS

HP BIOSphere Gen5[24]

HP Drive Lock & Automatic Drive Lock[25]

BIOS Update via Network

Master Boot Record Security

Power On Authentication

Secure Erase[26]

Absolute Persistence Module[27]

Pre-boot Authentication

Software

HP Native Miracast Support[28]

HP Connection Optimizer

HP Image Assistant

HP Hotkey Support

HP JumpStart

HP Support Assistant[29]

HP Noise Cancellation Software

Buy Office (Sold separately)

Manageability Features

HP Driver Packs[30]

HP System Software Manager (SSM)

HP BIOS Config Utility (BCU)

HP Client Catalog

HP Manageability Integration Kit Gen3[31]

HP Cloud Recovery[32]

Client Security Software

HP Client Security Manager Gen5[33]

HP Fingerprint Sensor

HP Power On Authentication

Windows Defender[34]

Security Management

Pre-boot Authentication

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)[35]

USB enable/disable (via BIOS)

Power-on password (via BIOS)

Setup password (via BIOS)

Support for chassis padlocks and cable lock devices

Technical Specifications

HP Sure Click[36]

HP Sure Start Gen5[37]

HP Sure Run Gen2[38]

HP Sure Recover Gen2[39]

HP Sure Sense[40]

24. 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.
25. HP Drive Lock & Automatic Drive Lock is not supported on NVMe drives
26. 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™.
27. 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.
28. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
29. HP Support Assistant requires Windows and Internet access.
30. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
31. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
32. 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
33. HP Client Security Manager Gen5 requires Windows and is available on the select HP Pro and Elite PCs. See product specifications for details.
34. Windows Defender Opt in and internet connection required for updates.
35. 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).
36. 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.
37. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
38. HP Sure Run Gen2: See product specifications for availability.
39. 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™.
40. HP Sure Sense requires Windows 10. See product specifications for availability.

Technical Specifications

POWER

Power Supply
65 W USB Type-C™ adapter[41]
Supports HP Fast Charging (Up to 50% in 30 minutes)

Primary Battery
HP Long Life 4-cell, 56.2 Wh Li-ion polymer[42]
HP Fast Charging Up to 50% in 30 minutes[43]

Battery Life
Up to 18 hours (With FHD panel)[44]
Up to 13 hours 30 mins (With 4K/UHD panel)

Power Cord
Duckhead power cord (C5NS), 1.0m, Sticker, Premium Black (For Hades+)[41]
Power Cord C5 Sticker, Premium 1.0m[41]

41. Availability may vary by country.
42. Battery is internal and not replaceable by customer. Serviceable by warranty.
43. 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.
44. 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.

WEIGHTS & DIMENSIONS

Weight
Starting at 2.78 lbs[45]
Starting at 1.27 kg[45]

Dimensions (w x d x h)
12.04 x 8.07 x 0.62 in
30.58 x 20.5 x 1.58 cm

45. Weight will vary by configuration.

PORTS/SLOTS

Ports
2 Thunderbolt™ (USB Type-C™ Connector, Support Power Delivery 3.0)
1 USB 3.1 Gen 1 (Charging)
1 HDMI 1.4[46]
1 External Nano SIM slot for WWAN
1 Headphone/microphone combo

46. HDMI cable sold separately.

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.[47]

47. 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.

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)	6.02 W	6.06 W	6.08 W
Normal Operation (Long idle)	2.58 W	2.56 W	2.65 W
Sleep	0.58 W	0.62 W	0.64 W
Off	0.43 W	0.47 W	0.43 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

Technical Specifications

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)	21 BTU/hr	21 BTU/hr	21 BTU/hr
Normal Operation (Long idle)	9 BTU/hr	9 BTU/hr	9 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 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	2.8	18
Fixed Disk – Random writes	4	33

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/Corrugated	341 g
Internal:	PAPER/Molded Pulp	157 g
	PLASTIC/Polyethylene low density - LDPE	9 g

Material Usage

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

• Asbestos
• Certain Azo Colorants
• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
• Cadmium
• Chlorinated Hydrocarbons
• Chlorinated Paraffins
• Formaldehyde
• Halogenated Diphenyl Methanes
• Lead carbonates and sulfates
• Lead and Lead compounds
• Mercuric Oxide Batteries
• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
• Ozone Depleting Substances
• Polybrominated Biphenyls (PBBs)
• Polybrominated Biphenyl Ethers (PBBEs)
• Polybrominated Biphenyl Oxides (PBBOs)
• Polychlorinated Biphenyl (PCB)
• Polychlorinated Terphenyls (PCT)
• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
• Radioactive Substances
• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Technical Specifications

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	AC 15V
	Average Operating Power	Win 10
	Integrated Graphics	Yes
	Max Operating Power	UMA < 45W
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[48]
	EPEAT® 2019	Yes, Gold in U.S.[49]
	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	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes
	UKRSERTCOMPUTER	Yes

48. Configurations of the HP EliteBook x360 1030 G4 that are ENERGY STAR® qualified are identified as HP EliteBook x360 1030 G4 ENERGY STAR on HP websites and on http://www.energystar.gov.

49. 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 13.3 inch diagonal FHD (1920 x 1080) BrightView WLED UWVA 72% NTSC 400 nits eDP 1.3+PSR Ultraslim NB bent	**Outline Dimensions (W x H x D)**	299.26 x 177.54 (FPC folding included)
	Active Area	293.76 x 165.24 mm
	Weight	170 g max.
	Diagonal Size	13.3 inch
	Thickness	2.0mm / 4.0mm (PCB) max.
	Interface	eDP 1.3 w/ PSR (2 lane)
	Surface Treatment	BV
	Touch Enabled	No
	Contrast Ratio	800:1
	Refresh Rate	60Hz
	Brightness	400 nits
	Pixel Resolution	1920 x 1280
	Format of LCD Pixel Arrangement	RGB strip
	Backlight	LED
	Color Gamut Coverage	72% of NTSC
	Color Depth	6 bits
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 13.3 inch diagonal UHD (3840 x 2160) BrightView WLED UWVA 72% NTSC 500 nits eDP 1.3+PSR Ultraslim NB bent	**Outline Dimensions (W x H x D)**	299.26 x 177.54 (FPC folding included)
	Active Area	293.76 x 165.24 mm
	Weight	190 g max.
	Diagonal Size	13.3 inch
	Thickness	2.0mm / 4.0mm (PCB) max.
	Interface	eDP 1.4a PSR (4 lane)
	Surface Treatment	BV
	Touch Enabled	NO
	Contrast Ratio	1400:1
	Refresh Rate	60 Hz
	Brightness	500 nits
	Pixel Resolution	3840 x 2160 (UHD)
	Format of LCD Pixel Arrangement	RGB strip
	Backlight	LED

Technical Specifications

	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) Anti-Glare WLED UWVA 72% NTSC 1000 nits eDP 1.4+PSR2 bent Privacy NWBZ	**Outline Dimensions (W x H x D)**	299.26 x 177.54 (FPC folding included)
	Active Area	293.76 x 165.24 mm
	Weight	195 g (max)
	Diagonal Size	13.3 inch
	Thickness	3.8 mm (max)
	Interface	eDP 1.4 + PSR2 (4 lane)
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	Yes
	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) BrightView WLED UWVA 72% NTSC 1000 nits eDP 1.4+PSR2 bent Privacy NWBZ	**Outline Dimensions (W x H x D)**	299.26 x 177.54 (FPC folding included)
	Active Area	293.76 x 165.24 mm
	Weight	195 g (max)
	Diagonal Size	13.3 inch
	Thickness	3.8 mm (max)
	Interface	eDP 1.4 + PSR2 (4 lane)
	Surface Treatment	Bright-view (BV)
	Touch Enabled	No

Technical Specifications

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

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

STORAGE

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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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

Technical Specifications

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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

Technical Specifications

SSD 2TB 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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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

Technical Specifications

	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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

SSD 512 GB 2280 PCIe NVMe Value	**Form Factor**	M.2 2280
	Capacity	512GB
	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]
	Features	ATA Security; TRIM; L1.2

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

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]
	Features	ATA Security, TRIM; L1.2

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

	Form Factor	M.2 2280

Technical Specifications

512 GB 2280 PCIe-3x2x2 NVMe+SSD 32GB 3D Xpoint	**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

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

Technical Specifications

NETWORKING/COMMUNICATIONS

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 and requires configuration at time of purchase. 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™ 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

Technical Specifications

	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 and requires configuration at time of purchase. 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™ 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)

Technical Specifications

	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. Gigabit class Category 16 4G LTE module is optional and must be configured at the factory. Module designed for up to 1 Gbps download speeds as carriers deploy 5 carrier aggregation and 100Mhz channel bandwidth, requires activation and separately purchased service contract. Backwards compatible to HSPA 3G technologies. 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.

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

Technical Specifications

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.

Technical Specifications

POWER

AC Adapter 65 Watt nPFC Slim USB type C Straight 1.8 m	**Dimensions**	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	5ms at 115 Vac input
		Output current limit	< 8.0A
	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	CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, 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	**Dimensions**	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**	65W
		DC output	5V/9V/10V/12V/15V/20V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<8.0A

Technical Specifications

	Connector	Non-Standard C6	
	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	5% to 95%
		Storage Humidity	5% to 95%
	EMI and Safety Certifications	CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.	

Battery ME 4 Cell WHr 50 Long Life -PL Fast Charge	**Dimensions** (H x W x L)	4.0 x 96.62 x 231.8 mm (0.157 x 3.804 x 9.126 inch)	
	Weight	0.188kg (0.415 lb)	
	Cells/Type	4cell Lithium-Ion Polymer cell / 385784	
	Energy	ED750 platform	
		Voltage	8.8V/7.7V
		Amp-hour capacity	6.175Ah(min.)/6.5Ah(typ.)
		Watt-hour capacity	47.5Wh(min.)/50Wh(typ.)
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Optional Travel Battery Available	No	

COUNTRY OF ORIGIN

China

Summary of Changes

Type	Description	Part #
Cases	HP Slim Backpack	F3W16AA
	HP Exec 15.6 Midnight Backpack	1KM16AA
	HP 14.1 Business Slim Top Load	2SC65AA
	HP 13.3 Business Sleeve	2UW00AA
	HP Executive 15.6 Midnight Top Load	1KM15AA
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 (Mockingjay 3.0)	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
	HP Elite 90W Thunderbolt 3 Dock - Test Only	1DT93AA
Input/Output	HP Slim Wireless Keyboard and Mouse	1DT93AA
	HP Slim USB Keyboard and Mouse	T6L04AA
	HP Wireless (Link-5) Keyboard	T6T83AA
	HP USB Essential Keyboard and Mouse	T6U20AA
	HP Comfort Grip Wireless Mouse	H6L29AA
	HP Comfort Grip Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H3T50AA
	HP USB Travel Mouse	H4B81AA
	HP Ultra Mobile Wireless Mouse	G1K28AA
	HP Slim Bluetooth Mouse	H6F25AA
	HP Wireless Premium Mouse	F3J92AA
	HP USB Premium Mouse	1JR31AA
	HP Elite Presenter Mouse	1JR32AA
	HP Stereo 3.5mm Headset	2CE30AA
	HP Stereo USB Headset	T1A66AA
	HP Rechargeable Active Pen	T1A67AA
	HP Rechargeable Pen	4KL69AA
	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

Summary of Changes

	HP USB 3.0 to Gigabit Adapter	N7P47AA
Power	HP 65W USB-C Power Adapter	1HE08AA
	HP 65W USB-C Slim Power Adapter	3PN48AA
	HP USB-C Notebook Power Bank	2NA10AA
Security	HP Nano Keyed Cable Lock (Nano Lock Slot)	1AJ39AA
	HP Nano Dual-Head Keyed Cable Lock (Standard and Nano Lock slot)	1AJ41AA
	HP Sure Key Cable Lock (Standard, Nano, Wedge Lock slot)	6UW42AA
UCC	HP Conferencing Keyboard	K8P74AA
	HP USB Collaboration Keyboard	Z9N38AA
	HP Wireless Collaboration Keyboard	Z9N39AA
	HP UC Speaker Phone	4VW02AA
	HP UC Wireless Mono Headset	W3K08AA
	HP UC Wireless Duo Headset	W3K09AA

Summary of Changes

Date of change:	Version History:		Description of change:
August 28, 2019	v1 to v2	Added	Environmental Section
September 17, 2019	v2 to v3	Updated	Intel® Optane™ and disclaimer for 1000 nit Sure View panel
October 8, 2019	v3 to v4	Updated	Memory Sections
October 25, 2019	v4 to v5	Removed	Footnote of fingerprint
November 25, 2019	v5 to v6	Updated	Panels in Display Section
December 3, 2019	v6 to v7	Updated	Processor Section
December 18, 2019	v7 to v8	Updated	At a glance Section