

Overview

HP ProBook x360 11 G6 EE



Left

- | | | | |
|----|---|-----|--|
| 1. | Webcam LED | 6. | World-facing Webcam LED (Optional) |
| 2. | 720p Webcam or optional HP Privacy Camera | 7. | Power Button |
| 3. | Microphone | 8. | Headphone / Microphone Combo Jack |
| 4. | ClickPad | 9. | USB 3.1 Gen 1 Port |
| 5. | World-facing 5 Megapixels Webcam (Optional) | 10. | Security Lock Slot (Nano lock sold separately) |

Overview



- 1. Power Connector
- 2. Ethernet (RJ-45) Port
- 3. HDMI Port (Cable not included)

Right

- 4. USB 3.1 Gen 1 Port
- 5. USB Type-C™ (Data and Power in-out)

Overview

AT A GLANCE

- Starting at 3.17 lbs (1.44 kg) touch (weight will vary by configuration)
 - At 21 mm (0.83"), this flexible 360° hinge converts to laptop, tablet, tent, stand or book mode easily
 - Designed to pass MIL-STD 810 H testing¹ with rugged features such as co-molded rubber trim, spill- and pick-resistant keyboard, and Corning® Gorilla® Glass 3 touch screen
 - Optional dual camera system for project-based learning
 - New optional active HP Pro Pen is engineered for the classroom – durable tips require less replacing
 - Pre-installed with Windows 10 Pro 64, Windows 10 Pro 64 (National Academic), Windows 10 Home 64, or Windows 10 Pro in S mode 64
 - Powered by 10th Generation Intel® Core™ i3-10110Y and i5-10210Y processors
 - Choice of 29.4cm (11.6") diagonal HD UWVA slim LED touch screen (1366 x 768) or 29.4 cm (11.6") diagonal HD SVA slim LED touch screen (1366 x 768) displays
 - 128GB SATA-3 TLC Solid State Drive or up to 256 GB SATA-3 Solid State Drive storage options
 - Up to 8 GB system memory for enhanced memory management
 - Reliable connectivity with choice of Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo WLAN or Intel® Dual Band Wireless-AX200 802.11a/b/g/n/ax (2x2) Wi-Fi 6 and Bluetooth® 5.0 Combo WLAN for learning and collaboration beyond the classroom
 - Built-in ports include: Ethernet (RJ-45), 2 USB 3.1 Gen 1, USB Type-C™, and HDMI 1.4b port for connecting to high-resolution displays
 - Enhanced security TPM 2.0 discrete chip
- Battery life up to 16 hours and 45 minutes²

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

2. Recharges the battery up to 90% within 90 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.

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

Technical Specifications

PRODUCT NAME

HP ProBook x360 11 G6 EE

OPERATING SYSTEM

Preinstalled

Windows 10 Pro 64 (Windows 10 Enterprise available with a Volume Licensing Agreement)¹
Windows 10 Pro 64 (National Academic only)²
Windows® 10 Home 64¹
Windows 10 Home Single Language 64¹
Windows 10 Pro in S mode 64³
Windows 10 Pro in S mode 64 (National Academic only)^{2,3}

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.
3. Windows 10 Pro in S mode 64 works exclusively with apps from the Windows store. Some accessories and apps compatible with Windows 10 may not work, and performance may vary. Certain default settings, features, and apps cannot be changed. Easily switch to Windows 10 Pro configuration (fee applies) Learn more at [Microsoft.com/Windows 10S](https://Microsoft.com/Windows10S).

PROCESSORS

Intel® Core™ i5-10210Y processor with Intel® UHD Graphics 615 (1 GHz base frequency, up to 2.7 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)^{4,5,6,7}

Intel® Core™ i3-10110Y processor with Intel® UHD Graphics 615 (1 GHz base frequency, up to 3.7 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores)^{4,5,6,7}

Processors Family

10th Generation Intel® Core™ i5 processor (i5-10210Y)⁶

10th Generation Intel® Core™ i3 processor (i3-10110Y)⁶

4. 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.

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

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



Technical Specifications

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® UHD Graphics 617⁸

8. HD content required to view HD images

DISPLAY

Internal

Touch

29.46 cm (11.6") diagonal HD SVA eDP WLED-backlit touch screen with HD camera, 220 nits, 45% NTSC (1366 x 768)^{8,9,10}

29.46 cm (11.6") diagonal HD IPS eDP WLED-backlit touch screen with HD camera, 220 nits, 50% NTSC (1366 x 768)^{8,9,10}

HDMI

Port supports resolutions up to 3840 x 2160 external resolution @30 Hz

8. HD content required to view HD images.

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

10. Sold separately or as an optional feature.

STORAGE AND DRIVES

Primary Storage M.2

128 GB SATA-3 TLC Solid State Drive¹¹

256 GB PCIe® Value SSD¹¹

11. 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.

MEMORY

Standard

Maximum Memory

8 GB DDR4-2133 SDRAM¹²

Memory

4 GB DDR4-2133 SDRAM (on-board)¹²

8 GB DDR4-2133 SDRAM (on-board)¹²



Technical Specifications

Memory Slots

on board LPDDR3; system runs at 2133MHz

12. 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® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, non-vPro™¹³

Intel® Dual Band Wireless-AX200 802.11a/b/g/n/ax (2x2) Wi-Fi 6 and Bluetooth® 5 Combo, non-vPro™ *

Realtek Dual Band Wireless- 8852AE 802.11ax (2x2) Wi-Fi 6 and Bluetooth® 5.2 Combo, non-vPro™¹³

Miracast

Native Miracast Support¹⁴

Ethernet

Realtek RTL8111HSH-CG 10/100/1000 GbE NIC¹⁵

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

14. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

15. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

*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.

Technical Specifications

AUDIO/MULTIMEDIA

Audio

HP HD Audio

2 Integrated stereo speakers

Speaker Power

2W/2ohm per speaker

Camera

User-facing 720p HD camera^{8,16}

Located on display

Webcam

World-facing 5 MP secondary camera (Optional)^{8,10,16}

8. HD content required to view HD images.

10. Sold separately or as an optional feature.

16. Internet access required.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS/PEN

Keyboard

Full-sized chiclet keyboard, pick proof

Pointing Device

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

Default on: 2-finger scroll, pinch

Support Windows 10 modern Trackpad gestures

Function Keys

F1 - Blank

F2 - Blank

F3 - Sleep

F4 - Display Switching

F5 - Audio Mute/Unmute

F6 - Volume <down>

F7 - Volume <up>

F8 - Mic Mute/Unmute

F9 - Brightness <down>

F10 - Brightness <up>

F11 - Blank

F12 - Wireless On/Off

Pen

Optional Passive Targus Slim Stylus*

Optional Active HP Pro Pen



Technical Specifications

Sensors

Combo Chip
Accelerometer
Magnetometer
Gyroscope
Hall Sensor

*Optional Passive Targus Slim Stylus

SOFTWARE AND SECURITY

BIOS

HP BIOSphere Gen5¹⁷
HP Drive Lock & Automatic Drive Lock¹⁸
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Secure Erase¹⁹
Absolute Persistence Module²⁰
Pre-boot Authentication

Software

HP Connection Optimizer
HP School Pack
HP Interactive Light
HP Image Assistant
HP Hotkey Support
HP JumpStart
HP Support Assistant²¹
HP Noise Cancellation Software
Buy Office (sold separately)

Manageability Features

HP Driver Packs²²
HP System Software Manager (SSM)
HP BIOS Config Utility (BCU)
HP Client Catalog
HP Manageability Integration Kit Gen3²³

Client Security Software

HP Client Security Manager Gen5²⁴
Windows Defender²⁵

Security Management

Pre-boot Authentication
TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)²⁶
USB enable/disable (via BIOS)



Technical Specifications

Power-on password (via BIOS)
Setup password (via BIOS)
Support for chassis padlocks and cable lock devices
HP Sure Click²⁷

17. 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.
 18. HP Drive Lock & Automatic Drive Lock is not supported on NVMe drives
 19. 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™.
 20. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>.
 21. HP Support Assistant requires Windows and Internet access.
 22. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.
 23. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.
 24. HP Client Security Manager Gen5 requires Windows and is available on the select HP Pro and Elite PCs. See product specifications for details.
 25. Windows Defender Opt in and internet connection required for updates.
 26. 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).
 27. HP Sure Click is available on most HP PCs 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.
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Technical Specifications

POWER

Power Supply

HP Smart 45 W External AC power adapter²⁸

HP Smart 65 W EM External AC power adapter²⁸

HP Smart 45 W USB Type-C™ adapter²⁸

Primary Battery

HP Long Life 3-cell, 48 Wh Li-ion (90% in 90 minutes)^{29,30}

Power Cord

3-wire plug – 1 m

Battery life

Battery life Up to 16 hours and 45 minutes³¹

28. Availability may vary by country.

29. Battery is internal and not replaceable by customer. Serviceable by warranty.

30. 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.

31. Recharges the battery up to 90% within 90 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.

WEIGHTS & DIMENSIONS

Product Weight

Starting at 3.17 lb³²

Starting at 1.44 kg³²

Product Dimensions (w x d x h)

11.8 x 8.8 x 0.83 in

30 x 20.53 x 2.12 cm

32. Weight will vary by configuration.

PORTS/SLOTS

Ports

2 USB 3.1 Gen 1

1 USB Type-C™ (Data transfer, power delivery)

1 HDMI 1.4b³³

1 AC power

1 RJ-45

1 headphone/microphone combo jack



Technical Specifications

33. HDMI cable sold separately.

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 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>.³⁴

34. 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 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>.

ENVIRONMENTAL

Environmental Data	Eco-Label Certifications & declarations	<p>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:</p> <ul style="list-style-type: none"> • IT ECO declaration • US ENERGY STAR® • EPEAT® Silver registered in the United States. Based on US EPEAT registration according to IEEE 1680.1-2018 EPEAT. Status varies by country. See http://www.epeat.net for more information.
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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”.
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**Energy Consumption
(in accordance with US ENERGY STAR® test method)**

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	2.72 W	2.83 W	2.77 W
Normal Operation (Long idle)	1.36 W	1.31 W	1.26 W
Sleep	0.42 W	0.45 W	0.41 W



Technical Specifications

Off	0.34 W	0.36 W	0.32 W
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Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	9 BTU/hr	10 BTU/hr	9 BTU/hr
Normal Operation (Long idle)	5 BTU/hr	4 BTU/hr	4 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)
Typically Configured – Idle	2.5	15
Fixed Disk – Random writes	2.5	15

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

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



Technical Specifications

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

Batteries

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

Batteries used in the product do not contain:

Mercury greater the 1ppm by weight

Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

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 2.48% post-consumer recycled plastic (by wt.)
- This product is 96.9% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	235 g
Internal:	PLASTIC/Polyethylene Expanded - EPE	27 g
	PLASTIC/Polyethylene low density - LDPE	13 g
	PLASTIC/Polypropylene - PP	3 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



Technical Specifications

- 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



Technical Specifications

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	19V
Average Operating Power	Win 10
Integrated graphics	Yes
Max Operating Power	UMA<45W

Temperature

Operating	32° to 95° F (0° to 35° C)
Non-operating	-4° to 140° F (-20° to 60° C)

Relative Humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

Shock

Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine

Random Vibration

Operating	0.75 grms
Non-operating	1.50 grms

Altitude (unpressurized)

Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)

Planned Industry Standard

Certifications

UL	Yes
CSA	Yes
FCC Compliance	Yes
ENERGY STAR®	Yes ³⁵
EPEAT® 2019	Yes, Gold in U.S. ³⁶
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



Technical Specifications

SABS Yes

UKRSERTCOMPUTER Yes

35. Configurations of the HP ProBook x360 11 G6 EE is ENERGY STAR® qualified are identified as HP ProBook x360 11 G6 EE ENERGY STAR on HP websites and on <http://www.energystar.gov>.

36. 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

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

Panel LCD 11.6 HD AG WLED SVA 45% NTSC 220 nits eDP Slim	Outline Dimensions (W x H x D)	278.5 x 168.5 mm (max)
	Active Area	256.125 x 144 mm
	Weight	210 g max
	Diagonal Size	11.6 (inches)
	Thickness	3.0 mm (max)
	Interface	eDP1.2
	Surface Treatment	BrightView Glass
	Touch Enabled	Yes
	Contrast Ratio	400:1 (typical)
	Refresh Rate	60 Hz
	Brightness	220 nit typical (panel only)
	Pixel Resolution	1366 x 768 (HD)
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	45% of NTSC
Color Depth	6 bits	
Viewing Angle	SVA 45/45/15/35	

Panel LCD 11.6 inch HD AG WLED UWVA 50% NTSC 220 nits eDP slim	Outline Dimensions (W x H x D)	278.5 x 168.5 mm (max)
	Active Area	256.125 x 144 mm
	Weight	200 g max
	Diagonal Size	11.6 (inches)
	Thickness	3.2 mm max
	Interface	eDP1.2
	Surface Treatment	BrightView Glass
	Touch Enabled	Yes
	Contrast Ratio	800:1 (typical)
	Refresh Rate	60 Hz



Technical Specifications

Brightness	220 nit typical (panel only)
Pixel Resolution	1366 x 768 (HD)
Format of LCD Pixel Arrangement	RGB
Backlight	LED
Color Gamut Coverage	50% of NTSC
Color Depth	6 bits
Viewing Angle	UWVA 85/85/85/85

STORAGE AND DRIVES*

128 GB 2280 M2 SATA-3 TLC Solid State Drive

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	
Seek Time	Sequential Read Up To 520 MB/s	Sequential Write Up To 450 MB/s
Logical Blocks	250,069,680	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	DIPM; TRIM; DEVSLP	

256 GB 2280 PCIe NVMe Value Solid State Drive

Form Factor	M.2 2280	
Capacity	256 GB	
NAND Type	TLC	
Height	0.09 in (2.3 mm)	
Width	0.87 in (22 mm)	
Interface	PCIe NVMe Gen3X4	
Seek Time	Sequential Read Up To 1700 MB/s	Sequential Write Up To 600 MB/s
Logical Blocks	500,118,192	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	



Technical Specifications

Features

TRIM; L1.2

For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 5.1 GB is not user available

NETWORKING/COMMUNICATIONS

Intel® Wi-Fi 6* AX200 + Bluetooth 5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) 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
Frequency Band**

- Wi-Fi® certified
- 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, 1024QAM



Technical Specifications

Security¹

- 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
- WAPI

Network Architecture Models

Ad-hoc (Peer to Peer)
Infrastructure (Access Point Required)

Roaming

IEEE 802.11 compliant roaming between access points

Output Power²

- 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/Modern Standby: 10mW
- Radio disabled: 8 mW

Power Management

ACPI and PCI Express compliant power management
802.11 compliant power saving mode

Receiver Sensitivity³

- 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



Technical Specifications

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)
LED Activity	LED Amber – Radio OFF LED OFF – Radio ON

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

*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.

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



Technical Specifications

channels
 Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps
 asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)

Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 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)

Intel® 9260
802.11a/b/g/n/ac (2x2)

Wireless LAN Standards

- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n



Technical Specifications

**Wi-Fi* and Bluetooth® 5.0
Combo¹ Non-vPro**

	IEEE 802.11ac
	IEEE 802.11d
	IEEE 802.11e
	IEEE 802.11h
	IEEE 802.11i
	IEEE 802.11k
	IEEE 802.11r
	IEEE 802.11v
Interoperability	Wi-Fi® certified
Frequency Band	<ul style="list-style-type: none"> •802.11b/g/n 2.402 – 2.482 GHz •802.11a/n/ac 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz
Data Rates	<ul style="list-style-type: none"> •802.11b: 1, 2, 5.5, 11 Mbps •802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps •802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps •802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) •802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	<ul style="list-style-type: none"> •IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only •AES-CCMP: 128 bit in hardware •802.1x authentication •WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. •WPA2 certification •IEEE 802.11i •WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b : +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



Technical Specifications

	<ul style="list-style-type: none"> • 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
Power Consumption	<ul style="list-style-type: none"> • 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 Sensitivity³	802.11b, 1Mbps: -93.5dBm maximum 802.11b, 11Mbps: -84dBm maximum 802.11a/g, 6Mbps: -86dBm maximum 802.11a/g, 54Mbps: -72dBm maximum 802.11n, MCS07: -67dBm maximum 802.11n, MCS15: -64dBm maximum 802.11ac, MCS0: -84dBm maximum 802.11ac, MCS9: -59dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230 : 2.8 g 2. Type 126: 1.3 g
Operating Voltage	3.3v +/- 9%
Temperature	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED OFF – Radio ON

1. [Check latest software/driver release for updates on supported security features.](#)
2. [Maximum output power may vary by country according to local regulations.](#)



Technical Specifications

- 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).
* Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

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

Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps signaling data rate 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
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 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



Technical Specifications

- 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)

Realtek Dual Band Wireless- 8852AE 802.11ax (2x2) Wi-Fi 6 and Bluetooth® 5.2 Combo, non-vPro™1	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
Interoperability Frequency Band	IEEE 802.11k	
	IEEE 802.11r	
	IEEE 802.11v	
	Wi-Fi certified modules	
	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	
Data Rates	• 5.47 – 5.725 GHz	
	• 5.825 – 5.850 GHz	
	• 802.11b: 1, 2, 5.5, 11 Mbps	
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
	• 802.11n: max 300Mbps	
	• 802.11ac : max 866.7Mbps	
	• 802.11ax : max 1201Mbps	
	Modulation	Direct Sequence Spread Spectrum
		BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM



Technical Specifications

Security³	<ul style="list-style-type: none"> • IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
Network Architecture Models	<p>Ad-hoc (Peer to Peer)</p> <p>Infrastructure (Access Point Required)</p>
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ax HE40(2.4GHz) : +10dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum
Power Consumption	<ul style="list-style-type: none"> • Transmit mode :2.5 W • Receive mode :2 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode :50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity⁴	<p>802.11b, 1Mbps : -93.5dBm maximum</p> <p>802.11b, 11Mbps : -84dBm maximum</p> <p>802.11a/g, 6Mbps : -86dBm maximum</p> <p>802.11a/g, 54Mbps : -72dBm maximum</p> <p>802.11n, MCS07 : -67dBm maximum</p> <p>802.11n, MCS15 : -64dBm maximum</p> <p>802.11ac, MCS0 : -84dBm maximum</p> <p>802.11ac, MCS9 : -59dBm maximum</p> <p>802.11ax, MCS11(HE40): -57dBm maximum</p> <p>802.11ax, MCS11(HE80): -54dBm maximum</p>



Technical Specifications

Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure	
Form Factor	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Dimensions	PCI-Express M.2 MiniCard	
	1. Type 2230 : 2.3 x 22.0 x 30.0 mm	
	2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230 : 2.8g	
	2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF	
	LED White – Radio ON	

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

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant/5.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. Check latest software/driver release for updates on supported security features.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).



Technical Specifications

POWER

HP 45 W Smart AC adapter	Dimensions (H x W x D)	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)
	Weight	0.386 lb (175 g) max Not including power cord. Power cord varies by country
	Input	90 to 265 VAC
		Input Efficiency 87.74% at 115Vac and 88.4% at 230Vac
		Input frequency range 47 to 63 Hz
		Input AC current 1.4 A at 90 VAC
	Output	Output power 45 W
		DC output 19.5 V
		Hold-up time 5ms at 115 VAC input
		Output current protection <8.0A
	Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature 32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature -4° to 185° F (-20° to 85° C)
		Altitude 0 to 16,400 ft (0 to 5000m)
	Humidity 20% to 95%	
	Storage Humidity 10% to 95%	
EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	

HP 65 W EM Smart AC adapter	Dimensions	102 x 55 x 30 mm
	Weight	270 g +/- 10 g Not including power cord. Power cord varies by country
	Input	Input Efficiency 87% min at 115V/230V
		Input frequency range 47 to 63 Hz
		Input AC current 1.7 A at 90 VAC and maximum load
	Output	DC output 65W(19.5V/3.33A)
		Hold-up time 5 msec at 115 VAC input
	Output current limit <11A, Over voltage protection- 29V max automatic shutdown	
Connector	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	



Technical Specifications

Environmental Design	Operating temperature	0° to 35° C
	Non-operating (storage) temperature	-20° to 85° C
	Altitude	0 to 5,000 m
	Humidity	0% to 95%
	Storage Humidity	0% to 95%
EMI and Safety Certifications	CE Mark - EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; Reliability - failure rate of less than 0.1% annually within the first three years of operation.	

HP 45 W USB type C Straight 1.8 m AC Adapter	Dimensions	94.0mm x 40.0mm x 26.5 mm		
	Weight	192.5 g +/-10%		
	Input	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 87.41% 15V: 87.8%	
		Input frequency range	47 ~ 63Hz	
	Output	Input AC current	Max. 1.4 A at 90 Vac	
		Output power	5V/15W 9V/27W 12V/36W 15V/45W	
		DC output	5V/9V/12V/15V	
		Hold-up time	5ms at 115 Vac input	
		Output current limit	<5.0A	
	Connector	USB Type-C		
	Environmental Design	Operating temperature	32°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%		



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 200,000 hours at 25°C ambient condition.

HP 3-cell Long Life Li-Ion (48 WHr)

Dimensions (H x W x L)

7.3 x 94 x 184.47 mm (0.287 x 3.7 x 7.263 inch)

Weight

0.215 kg

Cells/Type

3cell Lithium-Ion Prismatic cell / 596080

3cell Lithium-Ion Polymer cell / 606072

Voltage

11.4 V

Amp-hour capacity

4.212Ah

Watt-hour capacity

48Wh

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



Technical Specifications

COUNTRY OF ORIGIN

China



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

Type	Description	Part Number
Cases	HP Essential Top Load Case (up to 15.6")	H2W17AA
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Slim Ultrabook Top Load (up to 15.6" x .88"/22/5mm)	F3W15AA
	HP Slim Ultrabook Backpack (up to 15.6" x .88"/22/5mm)	F3W16AA
	HP Black 11.6 Always On Case	2MY57AA
	HP Slim Ultrabook Messenger	F3W14AA
Docking*	HP USB-C/A Universal Dock G2	5TW13AA
Input/Output	HP Slim USB Keyboard & Mouse Bundle	T6T83AA
	HP 3-Button Laser Mouse	H4B81AA
	HP USB Premium Mouse	1JR32AA
	HP Wireless Premium Mouse	1JR31AA
	HP Essential USB Mouse	2TX37AA
	HP USB Travel Mouse	G1K28AA
	HP Slim Bluetooth Mouse	F3J92AA
	HP Slim Wireless keyboard and mouse	T6L04AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to 3 and 4.5mm Adapter	N2Z65AA
	HP HDMI to VGA Adapter	H4F02AA
	HP Stereo USB Headset	T1A67AA
	HP Stereo 3.5mm Headset	T1A66AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP Pro Pen with Spare Tips	TBD
HP Pro Pen Nib Set	TBD	
HP Comfort Grip Wireless Mouse	H2L63AA	
Power	HP 45W Smart AC Adapter (4.5mm)	H6Y88AA
	HP 65W Smart AC Adapter (4.5mm)	H6Y89AA
	HP 45W LC USB-C Power Adapter	1MZ01AA
	HP Notebook Powerbank	N9F71AA
	HP USB-C Essential Power Bank	3TB55AA
	HP USB-C Notebook Power Bank	2NA10AA
Storage	HP External USB Optical Drive	F2B56AA
Security	HP Nano Keyed Cable Lock	1AJ39AA

*Supported using the USB connection for video and data. Power is not supported and must be provided directly to the Notebook with the power adapter that comes with the unit



Summary of Changes

Date of change:	Version History:		Description of change:
March 16, 2020	V1 to V2	Added	Environmental Section
May 13, 2020	V2 to V3	Updated	Military Standards information and removed old docking stations.
June 25, 2020	V3 to V4	Updated	HDMI port
July 7, 2020	V4 to V5	Updated	Accessories section
September 17, 2020	V5 to V6	Removed	HP USB-C Universal Dock w/4.5mm Adapter and HP USB-C/A universal Dock G2
December 14, 2020	V6 to V7	Updated	Docking list
March 4, 2021	V7 to V8	Added	Speaker Power
April 20, 2021	V8 to V9	Updated	Input/ Output Section Updated
August 9, 2021	V9 to V10	Added	WLAN in Networking/Communications section

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