QuickSpecs

Overview

HP Chromebook 11A G8 EE

	Left
1. **Webcam LED**	5. **USB 2.0**
2. **Webcam**	6. **USB Type-C™ 3.1 Gen1 Port**
3. **Internal Microphone**	**(Support charging, Power delivery, Video, Data)**
4. **Touchpad**	7. **Nano Security Lock Slot**

Not all configuration components are available in all regions/countries.
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Overview

Right

1. **Power Button**
2. **USB Type-C™ 3.1 Gen1 port**
   (Support charging, Power delivery, Video, Data)
3. **USB 2.0**

4. **MicroSD™ memory card reader**
5. **Stereo Headphone / Microphone Combo Jack**

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Overview

AT A GLANCE

- <19 mm thin and rugged design for durability
- Enjoy affordable, convenient mobile productivity with AMD Stoney Ridge processors
- Designed to pass MIL STD 810 H tests, 76 cm drop on concrete and 122 cm drop on plywood, and enhanced USB-C™ connectors to stand against daily uses of plug and unplug[1]
- 2 USB-C™ ports (Supports Power Delivery, Display Port™ and data)
- Choice of up to 8 GB memory and 32GB eMMc storage
- Spill and pick resistant keyboard with HP Improved Anchored Key Design
- Battery life up to 10 hours[3] and spend less time charging with HP Fast Charge technology
- 180 degree hinge and optional HD IPS anti-glare touchscreen for collaboration[2]
- Enjoy Android™ Apps* on Chrome OS™[2]
- Your Chromebook boots up within 10 seconds and you can be browsing online and working in Google Apps just moments later
- Qualcomm® 2x2 AC WLAN with MU-MIMO and HP Extended Range Wireless LAN for stable connection in dense environment
- Keyboard that can be repeatedly wiped down with common household cleaning wipes
- Easy for small hands to grip and handle with unique textured surface
- Degrees of IP41 certified to against access to hazardous/solid foreign objects and ingress of water

1. MIL-STD-810H 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.
2. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.
3. Testing conducted by HP using Google Chrome OS power_LoadTest. Battery life will vary and the maximum capacity of the battery will naturally decrease with time and usage. See http://www.chromium.org/chromium-os/testing/power-testing for test details. Full charge battery life will decrease after Adaptive Battery Optimizer activation.

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

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

PRODUCT NAME

HP Chromebook 11A G8 EE

OPERATING SYSTEM

Preinstalled   **Chrome OS™**

PROCESSOR

AMD A4-9120C APU with Radeon™ R4 Graphics (1.6 GHz base clock, up to 2.4 GHz max boost clock, 1 MB cache, 2 cores)[1, 2, 3]

AMD A6-9220C APU with Radeon™ R5 Graphics (1.8 GHz base clock, up to 2.7 GHz max boost clock, 1 MB cache, 2 cores)[1, 2, 3]

Processor Family
AMD® A-Series processors

1. 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. AMD's numbering is not a measurement of clock speed.
2. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
3. AMD Max Boost Clock performance varies depending on hardware, software and overall system configuration.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
AMD Radeon™ R4 Graphics[4]
AMD Radeon™ R5 Graphics[4]

Supports
Support HD Decode, DX12, and HDMI 1.4b

4. HD content required to view HD images.

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

DISPLAY

Non-Touch
29.46 cm (11.6") diagonal HD SVA Anti-Glare WLED-backlit, 220 nits, 45% NTSC (1366 x 768)[5, 6, 7, 8]
29.46 cm (11.6") diagonal HD UWVA Anti-Glare WLED-backlit, 220 nits, 50% NTSC (1366 x 768)[5, 6, 7, 8]

Touch
29.46 cm (11.6") diagonal HD IPS Anti-Glare WLED-backlit touch screen, 220 nits, 50% NTSC (1366 x 768)[5, 6, 7, 8]

Display Size (diagonal)
11.6"
29.46 cm (11.6")

5. HD content required to view HD images.
6. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
7. Sold separately or as an optional feature.
8. All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

STORAGE AND DRIVES

Primary Storage
16 GB eMMC 5.0[9]
32 GB eMMC 5.0[9]

9. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 8.1 GB is not user available

MEMORY

Maximum Memory
8 GB DDR4-1866 SDRAM

Memory
4 GB DDR4-1866 SDRAM
8 GB DDR4-1866 SDRAM

Memory Slots
On-board system memory

NETWORKING/COMMUNICATIONS

WLAN
Qualcomm® Wireless-AC 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro™[10]
MU-MIMO supported
HP Extended Range Wireless LAN supported

Chromecast
Chromecast Support[11]

Not all configuration components are available in all regions/countries.
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Options and Accessories (sold separately and availability may vary by country)

10. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited.
11. Chromecast must be purchased separately.

AUDIO/MULTIMEDIA

Audio
HD Audio
Dual Speakers
Integrated Microphone

Camera
720p HD camera[5]

5. HD content required to view HD images.

KEYBOARD / POINTING DEVICES

Keyboard
Full Size Textured island-style Keyboard, spill-resistant & HP Improved Anchored Key Design

Pointing Device
Touchpad with multi-touch gesture support. Taps enabled as default

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SOFTWARE AND SECURITY

Preinstalled Software
Store up to 100 GB with Google Drive (2-year subscription included)[12]
HP Classroom Manager[13]

Manageability Features
Chrome Enterprise Upgrade[14, 15]
Chrome Education Upgrade[14, 15]

Security Management
Google H1 Security Chip
Nano Security lock slot[14]

12. Google Drive offer is tied to this device and is non-transferable. If this device is returned, the extra storage will be revoked. In order to redeem this offer, you will need to be on Chrome OS™ 23 or later. Internet access is required and not included. Additional information about storage plan refunds, renewals, cancellations and expiration is available at the Google website: https://support.google.com/chromebook/answer/2703646?hl=en
13. HP Classroom Manager is sold separately. Control and device locking from the teacher's desktop requires purchase of HP Classroom Manager.
14. Sold separately.
15. Requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see https://support.google.com/a/answer/60216.

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

POWER

Power Supply
HP Smart 45 W Type-C™ AC power adapter

Primary Battery
HP Long Life 2-cell, 47.36 Wh Li-ion polymer[16]
HP Fast Charge Technology (90% in 90 minutes)[17]

Power Cord
3-wire plug – 1 m

Battery life
Up to 10 hours (Non-touch Display)[18]

16. Battery is internal and not replaceable by customer. Serviceable by warranty.
17. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.
18. Testing conducted by HP using Google Chrome OS power_LoadTest. Battery life will vary and the maximum capacity of the battery will naturally decrease with time and usage. See http://www.chromium.org/chromium-os/testing/power-testing for test details. Full charge battery life will decrease after Adaptive Battery Optimizer activation.

ENVIRONMENTAL

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® Silver registered in the United States. See http://www.epeat.net for registration status in your country.** **• TCO Certified 8.0**
System Configuration	**The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".**

Energy Consumption (in accordance with US ENERGY STAR® test method)	*115VAC, 60Hz*	*230VAC, 50Hz*	*100VAC, 50Hz*
Normal Operation (Sort idle)	**4.560 W**	**4.680 W**	**4.464 W**

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

Normal Operation (Long idle)	**2.004 W**	**2.088 W**	**1.908 W**
Sleep	**0.600 W**	**0.624 W**	**0.600 W**
Off	**0.408 W**	**0.468 W**	**0.408 W**

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

*Heat Dissipation**	*115VAC, 60Hz*	*230VAC, 50Hz*	*100VAC, 50Hz*
Normal Operation (Short idle)	**16 BTU/hr**	**16 BTU/hr**	**16 BTU/hr**
Normal Operation (Long idle)	**7 BTU/hr**	**7 BTU/hr**	**7 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	**2.7**	**17**
Fixed Disk – Random writes	**2.7**	**17**

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**

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

	Batteries used in the product do not contain:		
	Mercury greater the1ppm by weight		
	Cadmium greater than 20ppm by weight		
	Battery size: Not Applicable		
	Battery type: Not Applicable		
Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.		
	• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.		
	• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).		
	• This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <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 3% post-consumer recycled plastic (by wt.)		
	• This product is 94.5% recycle-able when properly disposed of at end of life.		

Packaging Materials	**External:**	**PAPER/Corrugated**		**186 g**
		PAPER/Paper		**40 g**
		PAPER/Molded Pulp		**116 g**
	Internal:	**PLASTIC/Polyethylene density - LDPE**	**low**	**7 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.

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

Packaging Usage	• **Radioactive Substances** • **Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)** **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.**
Hewlett-Packard 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**

WEIGHTS & DIMENSIONS

Product Weight
Starting at 3.02 lb[19]
Starting at 1.37 kg[19]

Product Dimensions (w x d x h)
11.61 x 8.08 x 0.74 in
29.5 x 20.53 x 1.88 cm

19. Weight will vary by configuration.

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

PORTS/SLOTS

Ports
2 USB 3.1 Type-C™ Gen 1 (Charging, power delivery, video, data)
2 USB 2.0
1 Stereo Headphone/microphone combo jack

Expansion Slots
1 Micro SD multi-format digital media reader
Supports Micro SD, SDHC, SDXC

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.[20]

20. 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.

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

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**USB-C 45 W adapter**	
	Nominal Operating Voltage	**15 V**
	Average Operating Power	**<45 W**
	Integrated Graphics	**Yes**
	Max Operating Power	**UMA < 45 W**
Temperature	Operating	**32° to 95° F (0° to 35° C)**
	Non-operating	**41° to 95° F (5° to 35° C)**
Relative Humidity	Operating	**10% to 90%**
	Non-operating	**5% to 95%**
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 to 3,048 m)**
	Non-operating	**-50 to 40,000 ft (-15 to 12,192 m)**
Planned Industry Standard Certifications	UL	**Yes**
	FCC Compliance	**Yes**
	ENERGY STAR®	**Yes[19]**
	EPEAT® 2019	**Yes, Silver in U.S.[20]**
	ICES	**Yes**
	Australia /	**Yes**
	NZ RCM Compliance	**Yes**
	KC	**Yes**
	BSMI	**Yes**
	CE Marking Compliance	**Yes**
	EAC	**Yes**
	Saudi Arabian Compliance (ICCP)	**Yes**
	SABS	**Yes**

19. Configurations of the HP ChromeBook 11A G8 EE that are ENERGY STAR® qualified are identified as HP ChromeBook 11A G8 EE ENERGY STAR on HP websites and on http://www.energystar.gov.
20. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.

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

DISPLAYS

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

11.6 inch diagonal HD (1366 x 768) Anti-Glare WLED SVA 45% NTSC 220 nits eDP slim		
	Outline Dimensions **(W x H x D)**	**268.5 x 168.54 (mm) max.**
	Active Area	**256.125 x 144.0 (mm)**
	Weight	**210 g max.**
	Diagonal Size	**11.6 inch**
	Thickness	**3.0 (mm) max**
	Interface	**eDP 1.2**
	Surface Treatment	**Anti-glare (AG)**
	Touch Enabled	**No**
	Contrast Ratio	**400:1 (typ) - AG**
	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-bit**
	Viewing Angle	**SVA 40/40/15/30**

11.6 inch diagonal HD (1366 x 768) Anti-Glare WLED UWVA 50% NTSC 220 nits eDP 1.2 w/o PSR slim Touch on Panel		
	Outline Dimensions **(W x H x D)**	**278.5 x 168.52 (mm) max**
	Active Area	**256.125 x 144 (mm)**
	Weight	**200 g max**
	Diagonal Size	**11.6 (inch)**
	Thickness	**3.20 (mm) max**
	Interface	**eDP 1.2**
	Surface Treatment	**Anti-glare (AG)**
	Touch Enabled	**yes**
	Contrast Ratio	**1000:1 (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	**50% of NTSC**
	Color Depth	**6 bit**
	Viewing Angle	**UWVA 85/85/85/85**

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

11.6 inch diagonal HD (1366 x 768) Anti-Glare WLED UWVA 50% NTSC 220 nits eDP slim		
	Outline Dimensions **(W x H x D)**	**278 x 168(mm) max**
	Active Area	**256.125 × 144.0 (mm)**
	Weight	**200 g max.**
	Diagonal Size	**11.6 (inch)**
	Thickness	**3.0 (mm) max**
	Interface	**eDP 1.2**
	Surface Treatment	**Anti-glare (AG)**
	Touch Enabled	**No**
	Contrast Ratio	**800:1 (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	**50% of NTSC**
	Color Depth	**6 bit**
	Viewing Angle	**UWVA 85/85/85/85**

QuickSpecs

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

STORAGE AND DRIVES*

16 G eMMC		
	Drive Weight	**0.2 g**
	Rotation speed	**16 GB / 32 GB**
	Cache Buffer	**1.4 mm**
	Height	**11.5 x 13 mm**
	Width	**MMC protocol**
	Transfer Rate	**Up to 250 MB/s**
	Seek Time	**Up to 70 MB/s**
	Logical Blocks	**16 GB (15,758,000,128 Bytes) / 32 GB (31,268,536,320 Bytes)**
	Operating Temperature	**0 to 70**
	Security Features	**HS400**

32 G eMMC		
	Drive Weight	**0.2 g**
	Rotation speed	**16 GB / 32 GB**
	Cache Buffer	**1.4 mm**
	NAND Type/Size	**11.5 x 13 mm**
	Height	**MMC protocol**
	Interface	**Up to 250 MB/s**
	Transfer Rate	**Up to 70 MB/s**
	Seek Time	**16 GB (15,758,000,128 Bytes) / 32 GB (31,268,536,320 Bytes)**
	Logical Blocks	**0 to 70**
	Operating Temperature	**HS400**

For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 8.1 GB is not user available

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

NETWORKING/COMMUNICATIONS

802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo	*Wireless LAN Standards*	**IEEE 802.11a** **IEEE 802.11b** **IEEE 802.11g** **IEEE 802.11n** **IEEE 802.11ac**
	Interoperability	**QCA6174A passed Google AVL tests for Wi-Fi/BT**
	Frequency Band	**IEEE 802.11a/b/g/n/ac (2.4GHz and 5GHz)**
	Data Rates	**•802.11b: 1, 2, 5.5, 11 Mbps** **•802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps** **•802.11n: MCS 0 ~ MCS 15, (20/40/80 MHz)** **•802.11ac: MCS 0 ~ MCS 9, (20/40/80 MHz), 1x1/2x2**
	Modulation	**CCK, DQPSK, DBPSK for DSSS** **64QAM, 16QAM, QPSK, BPSK for OFDM** **256QAM for OFDM in 11ac mode and VHT (20/40) mode**
	Security[3]	**• IEEE 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.** **• IEEE 802.11i**
	Network Architecture Models	**Infrastructure (Access Point Required)**
	Roaming	**IEEE 802.11 compliant roaming between access points**
	Output Power[2]	**• 802.11b: +17dBm minimum** **• 802.11g: +14dBm minimum** **• 802.11a: +9dBm minimum** **• 802.11n HT20(2.4GHz): +14dBm minimum** **• 802.11n HT40(2.4GHz): +14dBm minimum** **• 802.11n HT20(5GHz): +7dBm minimum** **• 802.11n HT40(5GHz): +7dBm minimum** **• 802.11ac HT20(5GHz): +6dBm minimum** **• 802.11ac HT40(5GHz): +5dBm minimum** **• 802.11ac HT80(5GHz): +5dBm minimum**
	Power Consumption	**Transmit: 2.0 W (max)** **Receive: 1.6 W (max)** **Idle mode: 60 mW**
	Power Management	**ACPI and PCI Express compliant power management**
	Receiver Sensitivity [3]	**802.11b, 11 Mbps: -84dBm maximum** **802.11g, 54 Mbps: -70dBm maximum** **802.11a, 54 Mbps: -70dBm maximum** **802.11n 2.4g, HT20: -69dBm maximum** **802.11n 2.4g, HT40: -67dBm maximum** **802.11n 5g, HT20: -68dBm maximum** **802.11n 5g, HT40: -66dBm maximum** **802.11n 5g, HT20: -63dBm maximum**

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

		802.11n 5g, HT40: -59dBm maximum
		802.11n 5g, HT80: -56dBm maximum
	Antenna type	**High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded 2.4 GHz antennas are provided to the card to support WLAN and Bluetooth communications (Support Dual antenna or Single antenna, depend on platform requirement)**
	Form Factor	**PCI-Express M.2 MiniCard**
	Dimensions	**Type 2230: 2.3 x 22.0 x 30.0 mm**
	Weight	**Type 2230: 2.3 g**
	Operating Voltage	**3.3 v +/- 5%**
	Temperature	**Operating: 32° to 149° F (0° to 65° C)**
		Non-operating: −40° to 185° F (−40° to 85° C)
	Humidity	**Operating: 10% to 90% (non-condensing)**
		Non-operating: 5% to 95% (non-condensing)

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

	Bluetooth Specification	**4.0/4.1/4.2 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 0.2 Mbps
		1. Actual throughput may vary.
		Legacy: Synchronous Connection Oriented links, 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 is required. Availability of public wireless access point is limited.

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).

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

POWER

45 W PD AC adapter	Dimensions **(H x W x D)**	**95 mm x 43 mm x 27.5 mm**	
	Weight	**200 g +/-10%** **Not including power cord. Power cord varies by country**	
	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: 87.41%** **15V: 87.8%**
		Input frequency range	**47 ~ 63Hz**
		Input AC current	**Max. 1.4 A at 90 Vac**
	Output	Output power	**5V/15W** **9V/27W** **12V/36W** **15V/45W**
		DC output	**5V/9V/12V/15V**
		Hold-up time	**5ms at 115 Vac input**
		Output current limit	**<5.0A by each outputs**
	Connector	**USB Type-C™**	
	Environmental Design	Operating temperature	**32°F to 95°F (0°C to 35°C)**
		Non-operating (storage) temperature	**-4°F to 185°F (-20°C 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 2-cell Long Life Li-Ion (47 Whr)	Dimensions **(H x W x L)**	**5.2 x 240.8 x 76.4 mm (0.204 x 9.48 x 3 inch)**	
	Weight	**0.19 kg (0.418 lb)**	
	Cells/Type	**2cell Lithium-Ion Polymer cell / 4473A9**	
	Voltage	**7.7 V**	
	Amp-hour capacity	**6.15 Ah**	
	Watt-hour capacity	**47.3 Wh**	
	Operating (Charging)	**32° to 113° F (0° to 45° C)**	
	Operating (Discharging)	**14° to 122° F (-10° to 60° C)**	
	Warranty	**1-year**	
	Optional Travel Battery Available	**No**	

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

Category	Description	Part Number
Cases	**HP Business Slim Top Load**	**2SC65AA**
	HP Essential Top Load Case (up to 15.6")	**H2W17AA**
	HP Essential Backpack (up to 15.6")	**H1D24AA**
	HP Reversible Neoprene Sleeve	**7ZE81AA**
Docking	**HP USB-C Mini Dock**	**1PM64AA**
	HP USB-C Travel Dock G2	**7PJ38AA**
	HP E24d G4 Advanced Docking monitor	**6PA50AA**
	HP E27d G4 Advanced Docking monitor	**6PA56AA**
Input/output	**HP 3-Button Laser Mouse**	**H4B81AA**
	HP Ultra Mobile Wireless Mouse	**H6F25AA**
	HP USB Optical Travel mouse	**G1K28AA**
	HP Essential USB Mouse	**2TK37AA**
	HP Slim Bluetooth Mouse	**F3J92AA**
	HP Slim USB KB & Mouse	**T6T83AA**
	HP USB-C to HDMI 2.0 Adapter	**1WC36AA**
	HP USB-C to DisplayPort Adapter	**N9K78AA**
	HP USB-C to USB 3.0 Adapter	**N2Z63AA**
	HP USB-C to RJ45 Adapter	**V7W66AA**
	HP USB-C to VGA Adapter	**N9K76AA**
	HP USB-C Travel Hub G2	**7PJ38AA**
	Stereo 3.5mm Headset	**T1A66AA**
Power	**HP 45W Type -C Straight Type**	**1MZ01AA**
	HP USB-C Notebook Power Bank	**2NA10AA**
Storage	**HP External USB Optical Drive**	**F2B56AA**
Security	**HP Nano Keyed Cable Lock**	**1AJ39AA**
	HP Sure Key Cable lock	**6UW42AA**

Summary of Changes

Date of change:	Version History:		Description of change:
January 22, 2020	V1 to V2	Updated	Product photo
February 21, 2020	V2 to V3	Updated	Docking Section
March 6, 2020	V3 to V4	Added	Environmental Section
March 17, 2020	V4 to V5	Updated	Accessories Section
May 23, 2020	V5 to V6	Added	Military Standards Information

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