HP Fortis x360 11 inch G5 Chromebook

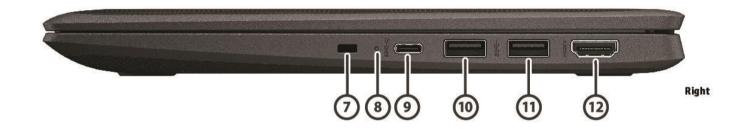


- I. Internal Microphone (2)
- 2. Webcam
- 3. Camera Shutter
- 4. Webcam LED
- 5 HP USI Garaged Pen (Optional)
- 6. Pen Charging Garage (Optional)

Front

- 7. Lock Key
- 8. Touchpad
- 9. Microphone (Optional)
- **10.** Auto-Focus 8MP Rear Camera with single mic (World Facing secondary camera) (Optional) Volume Buttons
- 11. Webcam LED (Optional)





Sides

- 1. Stereo Headphone/Microphone Combo Jack
- 2. SuperSpeed USB Type-C® 5Gbps signaling rate (Power Delivery, video, data)
- 3. Power Light
- 4. Power Button
- 5. Volume Buttons
- 6. SIM Card Tray

- 7. Nano Lock slot (Lock sold separately)
- 8. Power Light
- 9. USB Type-C[®] 5Gbps signaling rate (Power Delivery, video, data)
- **10.** SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
- **11.** SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
- 12. HDMI v1.4





Fold

1. HP USI Garaged Pen (Optional)

At a Glance

- Enjoy affordable, convenient mobile productivity with Intel® N100 and N200 processors
- Optional WWAN 4G LTE (Cat 6) with embedded eSIM
- Undergoes MIL-STD 810H tests¹
- 2 USB Type-C[®] 5Gbps signaling rate (Power Delivery, video, data)
- 1 HDMI port to connect to displays and projectors without dongle
- Choice of up to 16GB LPDDR5 memory and 128GB UFS storage
- Corning® Gorilla® Glass damage-resistant cover glass
- Spill and pick resistant keyboard with Full Skirted anchored key
- Flexible 360°hinge, 2nd 8 MP world-facing camera (Optional) and HP USI Garaged Pen (Optional) support laptop, tablet, tent or media mode
- Your Chromebook boots up within 10 seconds and you can be browsing online and working in Google Apps just moments later
- Intel® Wi-Fi 6E AX 2x2 WLAN with MU-MIMO and HP Extended Range Wireless LAN for stable connection in dense environments
- Keyboard that can be repeatedly wiped down with common household cleaning wipes²
- Easy for small hands to grip and handle with Unique textured surface
- Spend less time charging with HP Fast Charge technology
- HP Privacy Camera
- 1. MIL-STD 810H is not intended to demonstrate fitness of U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.
- 2. The chassis, ports, keyboards and displays the HP Chromebook x360 11 G4 EE, HP Chromebook x360 11MK G3 EE, HP Chromebook 11 G9 EE, HP Chromebook 11 G7 EE, HP Fortis 11" G9 Chromebook and HP x360 Fortis 11" G4 Chromebook have been tested to 1,000 wipes with Windex® Original Glass & Surface Wipes and Clorox® Disinfecting Wipes with EPA Registration Number 5813-79. See user guide for cleaning instructions.

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



PRODUCT NAME

HP Fortis x360 11 inch G5 Chromebook

OPERATING SYSTEMS

Preinstalled

Chrome OS

PROCESSORS

Processor 1,2	Cores	Number of	Threads	L3 Cache	Max Turbo Frequency	Base Frequency	
	Coles	E-cores	inicaus	LJ Cacile	E-cores	E-cores	
Intel® N200	4	4	4	6 MB	3.7 GHz	1.0 GHz	
Intel® N100	4	4	4	6 MB	3.4 GHz	0.8 GHz	

Processor Family

Intel® Processor N-series

- 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. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- 2. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® UHD Graphics3

Supports

Support HD decode, DX12, HDMI

3. HD content required to view HD images.



DISPLAY

Touch

29.5cm (11.6") diagonal, HD (1366 x 768), BrightView, Corning® Gorilla® Glass 3, LED UWVA, 250 nits, 50% NTSC, eDP slim, Touchscreen (USI Pen supported) 3,4,5,6

Pen

HP USI Garaged Pen (optional)

Displays support

Support extended displays through HP docks

Display Size (Diagonal)

11.6"

29.5cm

- 3. HD content required to view HD images.
- 4. Sold separately or as an optional feature.
- 5. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
- 6. Actual brightness will be lower with touchscreen or HP Sure View

DOCKING (Sold Separately)

Docking station model #1

HP USB-C G5 Dock

For additional aftermarket options and docking specs please see page 24.

STORAGE AND DRIVES

Primary Storage

64GB eMMC 5.0 ⁷ 32GB eMMC 5.0 ⁷

128GB UFS 7

7. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 18.0GB is not user accessible



MEMORY

Maximum Memory

16 GB LPDDR5X -7500 SDRAM

Memory

16 GB LPDDR5X -7500 SDRAM 8 GB LPDDR5X -7500 SDRAM 4 GB LPDDR5 -6400 SDRAM

Memory Slots

Memory soldered on board

NETWORKING/COMMUNICATIONS

WLAN

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, non-vPro® 8
MediaTek Wi-Fi 6 MT7921 (2x2) and Bluetooth® 5.3 wireless card, non-vPro® 9
MU-MIMO supported
HP Extended Range WLAN supported

WWAN

Qualcomm® Snapdragon™ X12 LTE-Advanced CAT 6¹⁰

Chromecast

Chromecast Support 11

8. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
9. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.

10. 4G LTE module is optional, must be configured at the factory, 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.

11. Chromecast must be purchased separately.



AUDIO/MULTIMEDIA

Audio

Waves MaxxAudio® Dual speakers Dual array microphones

Speaker Power

2W/4ohm Per speaker

Camera

720p HD camera ³
HP Privacy Camera
8 MP Rear Camera with SingleMic (World Facing secondary camera) (Optional)

Sensors

Accelerometer + Gyroscope

3. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

Full-size island-style Chrome keyboard, spill resistant with HP Full-Skirted Anchored Key

Pointing Device

Clickpad with multi-touch gesture support Taps enabled as default

Function Keys

_	D-al-
←	Rack

→ Forward

C Reload

Full Screen

□II Display Apps

Brightness Down

Brightness Up

Nute

Volume Down

Volume Up



Technical Specifications

SOFTWARE AND SECURITY

Software

HP Classroom Manager (Sold Separately) 12 HP Support Assistant

Manageability Features

Chrome Education Upgrade 13,14

Security Management

Titan C security chip Nano lock slot (Lock sold separately) ¹³ Zero-touch enrollment ¹⁵

IPv6 Support

Yes

Does the BIOS on this Chromebook follow ISO/IEC 19678:2015 guidelines (formerly NIST 800-147)?: Yes

- 12. HP Classroom Manager is sold separately. Control and device locking from the teacher's desktop requires purchase of HP Classroom Manager for Teachers.
- 13. Sold separately
- 14. Chrome Education Upgrade requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see https://support.google.com/a/answer/60216.
- 15. Zero-touch enrollment is sold separately and requires separately purchased HP Get More Service. HP Services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product



Technical Specifications

POWER

Power Supply

HP Smart 45 W USB Type-C® adapter 16

Battery

HP Long Life 2-cell, 47 Wh Li-ion polymer ^{17,18} HP Fast Charge Technology (90% in 90 minutes) ¹⁹

Power Cord

3-wire plug - 1m 16

Battery Life

Up to 11 hours 8 minutes with 47 Wh battery (HP Long Life 2-Cell, 47 Whr Polymer, UMA graphic, Intel N100, display set to 80 nits, 16G memory, 128 GB UFS)²⁰

Battery Weight

0.48 lb 220 g

- 16. Availability may vary by country.
- 17. Battery is internal and not replaceable by customer. Serviceable by warranty.
- 18. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
- 19. 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.
- 20. 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 and battery optimization activation. See http://www.chromium.org/chromium-os/testing/power-testing for test details. Battery configuration and charge capacity is optimized to improve battery health over time based upon charging patterns and temperature.



WEIGHTS & DIMENSIONS

Product Weight

Starting at 3.41 lb ²¹ Starting at 1.46 kg ²¹

Product Dimensions (W x D x H)

11.61 x 8.03 x 0.78 in 29.5 x 20.4 x 2.1 cm

Pallet Dimensions (W x D x H) 22

12"-15" boxes (305 mm height): 1200 mm x 1000 mm x 1080 mm

- 21. Weight will vary by configuration. Does not include power adapter.
- 22. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details.

PORTS/SLOTS

2 USB Type-C® 5Gbps signaling rate (Power Delivery, video, data) 2 USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1) 1 Headphone/microphone combo jack 1 HDMI v1.4 ²³

23. 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 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. Onsite 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. ²⁴

24. 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 www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.



Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements

(AC Power)

Nominal Operating Voltage 15V

Average Operating Power <4.3w with PLT test Integrated graphics Intel® UHD Graphics

USB-C 45W adapter

Discrete Graphics N/A
Max Operating Power < 45W

Temperature

Operating 41° to 95° F (5° to 35° C) Non-operating -4° to 140° F (-20° to 60° 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 grams
Non-operating 3.5 grams

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

Regulatory Model Number TPN-Q296

CSA/UL 62368-1 Yes ENERGY STAR® Yes ²⁵

EPEAT® Gold in the United States ²⁶

FCC/ICES/CISPR/VCCI Yes
CE MARKING Yes
GS Mark No

Related commodity should comply with ISO 9241 Standards.

China CCC/SRRC No Taiwan BSMI/NCC Yes Korea KCC/KC/KES Yes **Ukraine NSoC/TEC** No **EAEU Compliance** Yes Saudi Arabian Compliance No TC0 Yes **WW RoHS** Yes Low Blue Light No



25. Configurations of the HP Fortis x360 11 inch G5 Chromebook that are ENERGY STAR® qualified are identified as HP Fortis x360 11 inch G5 Chromebook ENERGY STAR on HP websites and on http://www.energystar.gov.

26. 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.

DISPLAYS

1. Actual brightness will be lower with touchscreen or HP Sure View.

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

11.6" diagonal HD antiglare flat LED backlit (1366 x 768)

Outline Dimensions (W x H x D) 284.840 x 188.860 mm (max) **Active Area** 257.440 x 145.300 mm (tvp.)

Weight 320 g (max) **Diagonal Size** 11.6 (inch) **Surface Treatment** Anti-Glare **Touch Enabled** Yes 1

Contrast Ratio 600:1 (typical)

Refresh Rate 60Hz **Brightness** 250 nits 1

Pixel Resolution - Format 1366x768 (HD)

Backlight **WLED Pixel Resolution RGB Color Gamut Coverage**

NTSC 50%

Color Depth 6 (Hi FRC w/ condition to enable)

EBL@60nits/150nits: 1.3 (max)/ 1.94 (max)

UWVA 85/85/85/85 **Viewing Angle**

Low Blue Light No

Power Consumption (W, EBL@

150nits max/ 200nits max)

Technical Specifications

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 18.0GB is not user accessible.

eMMC 5.0 Form Factor eMMC 5.0

Capacity 32GB/64GB
NAND Type MLC/TLC
Interface MMC

Maximum Sequential Readup to 250MB/sMaximum Sequential Writeup to 70 MB/s

Logical Blocks 32GB (31,268,536,320 Bytes)/64GB (62,537,072,640 Bytes)

Features HS400

128GB UFS Form Factor UFS 3.1

Capacity128GBNAND TypeTLCInterfaceSCSI

Maximum Sequential Read 1000MB/s (ADL-N support UFS 2.1 only)

Maximum Sequential Write 200MB/s

Logical Blocks 128GB (127,984,992,256 Bytes)

Features HS400



NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E and Wireless LAN Standards

Bluetooth® 5.3 wireless

card M.2 160MHz CNVi

World-wide WLAN nonvPro® 1

EEE 802.11ac

IEEE 802.11ac

IEEE 802.11ac

IEEE 802.11ac

IEEE 802.11d
IEEE 802.11e
IEEE 802.11h
IEEE 802.11i
IEEE 802.11k
IEEE 802.11r
IEEE 802.11v

Interoperability Wi-Fi certified

Frequency Band •802.11b/g/n/ax

2.402 – 2.482 GHz •802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan)

5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz

Data Rates • 802.11b: 1, 2, 5.5, 11 Mbps

802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

802.11n: max 300Mbps802.11ac: 1733Mbps802.11ax: max 2.4Gbps

Modulation Direct Sequence Spread Spectrum

OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM

• 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 certificationWPA3 certificationIEEE 802.11iWAPI

Network Architecture

Models

Ad-hoc (Peer to Peer)

Infrastructure (Access Point Required)

Roaming IEEE 802.11 compliant roaming between access points

Output Power³ • 802.11b: +17dBm minimum

802.11g: +16dBm minimum802.11a: +17dBm minimum

802.11n HT20(2.4GHz): +14dBm minimum
802.11n HT40(2.4GHz): +13dBm minimum
802.11n HT20(5GHz): +14dBm minimum
802.11n HT40(5GHz): +13dBm minimum
802.11ac VHT80(5GHz): +10dBm minimum
802.11ac VHT160(5GHz): +10dBm minimum
802.11ax HE40(2.4GHz): +12dBm minimum
802.11ax HE80(5GHz): +10dBm minimum

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)

802.11ax HE160(5GHz): +10dBm minimum

Connected Standby 10mW
 Radio disabled 8 mW

Power Management ACPI and PCI Express compliant power management

802.11 compliant power saving mode

Receiver Sensitivity⁴ • 802.11b, 1Mbps : -93.5dBm maximum

802.11b, 11Mbps: -84dBm maximum
802.11a/g, 6Mbps: -86dBm maximum
802.11a/g, 54Mbps: -72dBm maximum
802.11n, MCS07: -67dBm maximum
802.11n, MCS15: -64dBm maximum

802.11ac, MCS0(VHT80): -84dBm maximum
802.11ac, MCS9(VHT80): -59dBm maximum
802.11ac, MCS9(VHT160): -58.5dBm maximum
802.11ax, MCS11(HE40): -57dBm maximum
802.11ax, MCS11(HE80): -54dBm maximum
802.11ax, MCS11(HE160): -53.5dBm maximum

Antenna type High efficiency antenna with spatial diversity, mounted in the display

enclosure

Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications

Form Factor PCI-Express M.2 MiniCard

Dimensions 1. Type 2230: 2.3 x 22.0 x 30.0 mm

Weight 1. Type 2230: 2.8g

Operating Voltage 3.3v +/- 9%

Temperature Operating 14° to 158° F (-10° to 70° C)

Non-operating -40° to 176° F (-40° to 80° C)

Humidity Operating 10% to 90% (non-condensing)

Non-operating 5% to 95% (non-condensing)

Altitude Operating 0 to 10,000 ft (3,048 m)

Technical Specifications

Non-operating 0 to 50,000 ft (15,240 m)

LED Activity LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth Specification 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant

Frequency Band 2402 to 2480 MHz

Number of Available Legacy: 0~79 (1 MHz/CH) **Channels** BLE: 0~39 (2 MHz/CH)

Data Rates andLegacy: 3 Mbps data rate; throughput up to 2.17 Mbps **Throughput**BLE: 1 Mbps data rate; throughput up to 0.2 Mbps

Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice

channels

Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps

asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)

Transmit Power The Bluetooth component shall operate as a Class II Bluetooth device with

a maximum transmit power of + 9.5 dBm for BR and EDR.

- 1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.2. Check latest software/driver release for updates on supported security features.
- 3. 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.
- 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).



Mediatek MT7921 Wi-Fi 6 Wireless LAN Standards + Bluetooth® 5.3 wireless

card (802.11ax 2x2, supporting gigabit data

rate)1

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

IEEE 802.11ac
IEEE 802.11d
IEEE 802.11e
IEEE 802.11h
IEEE 802.11i
IEEE 802.11k
IEEE 802.11r
IEEE 802.11r

Interoperability Wi-Fi certified modules

Frequency Band •802.11b/g/n/ax

2.402 – 2.482 GHz •802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz

Data Rates • 802.11b: 1, 2, 5.5, 11 Mbps

802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

802.11n: max 300Mbps
802.11ac: max 866.7Mbps
802.11ax: max 1201Mbps

Modulation DSSS, OFDM, DBPSK, DQPSK, CCK, 16 QAM, 64 QAM, 256 QAM,

1024 QAM

• 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

Ad-hoc (Peer to Peer)

Infrastructure (Access Point Required)

Roaming IEEE 802.11 compliant roaming between access points

• 802.11b: +18.5dBm minimum

802.11g: +17.5dBm minimum
802.11a: +18.5dBm minimum

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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 • 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 • 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(HE40): -57dBm maximum
 802.11ax, MCS11(HE80): -54dBm 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

Weight 1. Type 2230 : 2.8g

Operating Voltage 3.3v +/- 9%

Temperature Operating 14° to 158° F (–10° to 70° C)

Non-operating -40° to 176° F (-40° to 80° C)

Humidity Operating 10% to 90% (non-condensing)

Non-operating 5% to 95% (non-condensing)

Altitude Operating 0 to 10,000 ft (3,048 m)

Non-operating 0 to 50,000 ft (15,240 m)

LED Activity LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth Specification 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant

Frequency Band 2402 to 2480 MHz

Number of AvailableLegacy : 0~79 (1 MHz/CH)ChannelsBLE : 0~39 (2 MHz/CH)

Data Rates andLegacy: 3 Mbps data rate; throughput up to 2.17 Mbps **Throughput**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. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
- 2. Check latest software/driver release for updates on supported security features.
- 3. 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.
- 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).



Qualcomm®

Snapdragon™ X12 LTE-Advanced (CAT 6)¹

Chrome

Technology/Operating bands FDD-LTE:

1,2,3,4,5,7,8,12,13,14,17,18,19,20,25,26,28,29,30,66

TDD-LTE:

38,39,40(1),41,42(1),43(1),48(2)UMTS/HSPA+:

1,2,4,5,6,8,19

(1)Not support B40/42/43 in FCC/IC

(2)Not support B48 in IC (3)Not support HPUE in Japan

Wireless protocol standards LTE Modulation 3GPP Release 12 LTE Specification DL-CAT.6, DL

64QAM BW throughput up to 300Mbps; UL-CAT.4 16QAM throughput

up to 50Mbps

UMTS Modulation 3GPP Release 9

GPS Not support

Maximum data rates LTE: 300 Mbps (Download), 50 Mbps (Upload)

DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) UMTS: 384Kbps (Download), 384Kbps (Upload)

Maximum output power LTE: 23/24dBm

WCDMA: 23.5dBm 2.5A maximum

Maximum power consumption

Form Factor M.2, 3042-S3 Key B

Weight 5.8 g

Dimensions 42 x 30 x 2.3 mm

(Length x Width x Thickness)

embedded eSIM Support

1. 4G LTE module is optional, must be configured at the factory, 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.



POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

45W USB Type C[®] Adapter Weight 0.44 lb (200 g) max (Not including power cord. Power cord varies by

country.)

Input 100-240Vac

Input Efficiency Average Efficiency of 25%, 50%, 75%, 100%

load condition with 115Vac/230Vac Spec:

5V: 81.5% 9V: 86.7% 12V: 87.4% 15V: 87.8%

Input frequency range 47-63Hz

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 100% load 5ms at 115 Vac input

Output current limit < 5.0A

Connector USB Type C®

Environmental Design Operating 32°F to 95°F (0°to 35°C)

temperature

Non-operating (storage) -4°F to 185°F (-20°to 85°C)

temperature

Altitude 0 to 16,400 ft (0 to 5000m)

Humidity 20% to 95% **Storage Humidity** 10% to 95%

EMI and Safety Certifications

Output

CE Mark - full compliance with LVD and EMC directives

Worldwide safety standards - IEC60950-1 and IEC62368-1: 2018,

EN62368-1:2014+A11, UL62368-1

Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC, USB-IF,

Ukraine(CoC+DoC+RoHS+ECO)

HP 2-cell Long Life Li-Ion Weight

(47 Wh)¹

Weight 0.22 kg (0.48 lb)

Cells/Type 2cell Lithium-Ion Polymer cell / 4473A9

Energy Voltage 8.8V

Amp-hour capacity 6.15Ah

Watt-hour capacity¹ 47.3 Wh

Temperature Operating (Charging) 32° to 113° F (0° to 45° C)

Operating (Discharging) 14° to 122° F (-10° to 60° C)

Optional Travel Battery No

Available

AUDIO

HD Stereo Codec Realtek ALC5682I-VS

Audio I/O Ports Headset connector supports both CTIA and OMTP style headset

Internal Speaker Amplifier Maxim MAX98360A x 2, up to 3W class-D mono amplifier

Multi-streaming CapableFollow ChromeOS behavior and definitionSamplingFollow ChromeOS behavior and definition

Wavetable Syntheses N/A

Analog Audio Stereo headphone out by 3.5mm audio jack only.

of Channels on Line-Out

Line-out is not supported.

Internal Speaker Yes

COUNTRY OF ORIGIN

China



Technical Specifications

ENVIRONMENTAL DATA

Eco-Label Certifications &	This product has received	or is in the process of being o	certified to the following approvals and		
Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: IT ECO declaration US ENERGY STAR® US Federal Energy Management Program (FEMP) EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. TCO Certified China Energy Conservation Program (CECP) China State Environmental Protection Administration (SEPA) Taiwan Green Mark				
	Korea Eco-label				
Sustainable Impact	Japan PC Green la				
Specifications	 Product Carbon Footprint 2% post-consumer recycled plastic 1% recycled metal Low halogen Outside Box and corrugated cushions are 100% sustainably sourced and recyclable Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable. Bulk packaging available 				
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".				
Energy Consumption (in accordance with US ENERGY STAR® test					
method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz		
Normal Operation (Sort idle)	1.81 W	1.95 W	1.82 W		
Normal Operation (Long					
idle)	3.84 W	3.97 W	3.85 W		
Sleep Off	0.45 W 0.27 W	0.51 W 0.31 W	0.46 W 0.26 W		
	NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.				
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz		
Normal Operation (Short idle)	6 BTU/hr	7 BTU/hr	6 BTU/hr		
Name of One and the Atlanta	0 210/111	, 2.0/111	0.510/111		



idle)

Sleep Off

Normal Operation (Long

14 BTU/hr

2 BTU/hr

1 BTU/hr

13 BTU/hr

2 BTU/hr

1 BTU/hr

13 BTU/hr

2 BTU/hr

1 BTU/hr

Technical Specifications

	*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 Pr (L _{PAm} , de		
Typically Configured – Idle		2.4	24.	24.1	
Fixed Disk – Random writes		2.4		24.1	
Optical Drive – Sequential reads		N/A	N/A	A	
Longevity and Upgrading	-	can be upgraded, possibly e /or components contained i	extending its useful life by seven the	eral years. Upgradeable	
	Spare parts a of production	_	warranty period and or for up	to "5" years after the end	
Additional Information	 This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC. This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net Plastics parts weighing over 25 grams used in the product are marked per IS011469 and IS01043. This product is 97.1% recycle-able when properly disposed of at end of life. 				
Packaging Materials	External:	PAPER/Corrugated		226 g	
		PAPER/Molded Pulp		82 g	
	Internal:	OTHER/Other		16 g	
	The plastic packaging material contains at least 100% recycled content.				
	The corrugated paper packaging materials contains at least 35.6% recycled content.				
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.				
	We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.				
	We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.				
	-	commitment to include furt	nei restricteu substances as re	egatations continue to	



Technical Specifications

Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): - Asbestos - Certain Azo Colorants - Certain Brominated Flame Retardants – may not be used as flame retardants in plastics - Cadmium - Chlorinated Hydrocarbons - Chlorinated Paraffins - Bis(2-Ethylhexyl) phthalate (DEHP) - Benzyl butyl phthalate (BBP) - Dibutyl phthalate (DBP) - Diisobutyl phthalate (DBP) - Diisobutyl phthalate (DIBP) - Formaldehyde - Halogenated Diphenyl Methanes - Lead carbonates and sulfates - Lead and Lead compounds - Mercuric Oxide Batteries - Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user Ozone Depleting Substances - Polybrominated Biphenyls (PBBs) - Polybrominated Biphenyl Ethers (PBBEs) - Polybrominated Biphenyl Oxides (PBBOs) - Polychlorinated Biphenyl (PCB) - Polychlorinated Terphenyls (PCT) - Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications Radioactive Substances - Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	 HP follows these guidelines to decrease the environmental impact of product packaging: Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. Eliminate the use of ozone-depleting substances (ODS) in packaging materials. Design packaging materials for ease of disassembly. Maximize the use of post-consumer recycled content materials in packaging materials. Use readily recyclable packaging materials such as paper and corrugated materials. Reduce size and weight of packages to improve transportation fuel efficiency. Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.



Technical Specifications

End-of-life Management	HP offers end-of-life HP product return and recycling programs in many geographic areas. To				
and Recycling	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	For more information about HP's commitment to the environment:				
Environmental					
Information	Global Citizenship Report				
	http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html				
	Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates:				
	http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and				
	http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf				
footnotes	 Percentage of ocean-bound plastic contained in each component varies by product Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. External power supplies, WWAN modules, power cords, cables and peripherals excluded. 				
	 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. 				
	Fiber cushions made from 100% recycled wood fiber and organic materials.				



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

DOCKING (Sold Separately)

Docking station model #1 HP USB-C G5 Dock

Total number of supported displays

(incl. the notebook display)
Max. resolutions supported

Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port

High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @

60Hz on HDMI port

Dock Connectors 1x HDMI 2.0, 2x DisplayPort 1.4

Technical limitations Maximum resolution and display support is dependent on the maximum

capability of the notebook.

Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution

mode.

3

Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K

UHD@ 30 Hz on HDMI in multi-function mode.

The highest resolution for a non-Thunderbolt host in Multi-function mode is a

single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.



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

Туре	Description	Part Number
Cases	HP 115 15.6 Laptop Backpack	8DV45AA#ACJ
	HP 215 15.6 Laptop Backpack	35L98AA#ACJ
	HP 225 15.6 Laptop Backpack	2P7U6AA#ACJ
	HP 235 15.6 Laptop Backpack	35M00AA#ACJ
	HP 315 15.6 Laptop Backpack	35L97AA#ACJ
	HP Campus Blue Backpack	7J596AA
	HP Campus Green Backpack	7J595AA
	HP Campus XL Marble Stone Backpack	7J592AA
	HP Campus XL Tie Dye Backpack	7J593AA
	HP Mobility 11.6 Laptop Case	4U9G8A6
	HP Mobility 11.6 Laptop Case	4U9G8AA
	HP Prelude 15.6 Top Load	1E7D7A6
	HP Prelude 15.6 Backpack	1E7D6A6
	HP Prelude G2 15.6 Backpack	2Z8P3AA
	HP Prelude G2 15.6 Top Load	2Z8P4AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644A6
	HP Prelude Pro Recycled 15.6 Top Load	1X645A6
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Sleeve	3E2U7A6
	HP Renew Business 14.1 Laptop Bag	3E5F9A6
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8A6
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5A6
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 18L 15.6 Iron Gray Laptop Backpack	6B8U6AA
	HP Travel 25L 15.6 Iron Gray Laptop Backpack	6B8U4AA
Docking	HP USB-C G5 Dock	5TW10AA
Keyboard/Combo	HP 320K WD USB Keyboard	9SR37AA
	HP 325 Chrome BT Keyboard	45U14AA#ABA





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

_		
Power	HP 45W USB-C LC Dali AC Power Adapter	1MZ01AA
	HP 65W USB-C Hades AC Power Adapter	X7W50AA
	HP 65W USB-C Laptop Charger	671R2AA
	HP 65W USB-C LC AC Power Adapter	944V0AA
Hub	HP 4K USB-C Multiport Hub	6G842AA
	HP Universal USB-C Multiport Hub	50H98AA
	HP USB-C to USB-A Hub Jake	Z8W90AA
	HP USB-C Travel Hub G3	86T46AA
Adapters	HP HDMI to VGA Adapter Wall-e	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter G2 Luna2	8Y8Y1AA
	HP USB-C to DisplayPort Adapter Luna	N9K78AA
	HP USB-C to HDMI 2.0 Adapter GABBA	2PC54AA
	HP USB-C to RJ45 Adapter G2	4Z534AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter Scrappy	P7Z54AA
Audio	HP 3.5mm G2 Stereo Headset	428H6AA
	HP USB G2 Stereo Headset	428H5AA
Security	HP Combination Nano Cable Lock	63B28AA
	HP Essential Combination Nano Cable Lock	63B31AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA



Change Log

Date of change:	Version History:	Description of change:
18th January 2024	V1 to V2	Added Environmental Data
1 February 2024	V2 to V3	Added Overview Section

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