

Overview

HP Pro c640 G2 Chromebook Enterprise



Left

1. Microphones (2)
2. Camera LED
3. Privacy Camera Switch
4. HD Camera
5. Clickpad
6. Nano Security Lock Slot (Lock sold separately)
7. SuperSpeed USB Type-C® 10Gbps signaling rate (Power delivery, DisplayPort™) ¹
8. HDMI 2.0
9. SuperSpeed USB Type-A 10Gbps signaling rate ¹

1. SuperSpeed USB 20Gbps is not available.

Overview



Right

- | | |
|---|---|
| 1. Power Button | 4. Stereo Headphone / Microphone Combo Jack |
| 2. SuperSpeed USB Type-A 10Gbps signaling rate ² | 5. MicroSD™ Memory Card Reader |
| 3. SuperSpeed USB Type-C® 10Gbps signaling rate (Power delivery, DisplayPort™) ² | 6. Fingerprint Sensor (Optional) |

2. SuperSpeed USB 20Gbps is not available.

Overview

AT A GLANCE

- Support Intel® 11th Generation Core Processors
- Up to 16GB memory and storage options of 64GB eMMC or up to 256GB SSD.
- Sleek design with aluminum cover & narrow border display
- Faster data transfer in dense office environments by having Wi-Fi 6 2X2 ax WLAN with MU-MIMO and HP Extended Range Wireless Lan design
- Conferencing experience with audio by B&O
- Optional backlit keyboard for working in dark environment and optional touchscreen for intuitive interactions
- Optional fingerprint sensor for seamless login
- Built-in security with the HP Privacy Camera and Chrome OS automatic updates and anti-virus protection.
- Save time and money with the easily manageable Chrome Enterprise Upgrade.¹
- HP Fast Charge Technology with long battery life for supporting your long workday
- One HDMI port for instant collaboration without dongles
- Support HP USB Type-C® docks and docking monitors
- Undergoes MIL-STD 810H Tests²

1. Single Chrome Enterprise Upgrade included. Requires one-time setup. Please see <https://support.google.com/a/topic/1409901>

2. 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.

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

Technical Specifications

PRODUCT NAME

HP Pro c640 G2 Chromebook Enterprise

OPERATING SYSTEM

Preinstalled Chrome OS

NOTE: Single Chrome Enterprise Upgrade included. Requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see <https://support.google.com/a/answer/60216>

PROCESSORS

Intel® Core™ i7-1185G7 processor (Up to 4.80 GHz with Intel® Turbo Boost Technology, 12 MB cache, 4 cores) ^{1,2,3}

Intel® Core™ i7-1165G7 processor (Up to 4.70 GHz with Intel® Turbo Boost Technology, 12 MB cache, 4 cores) ^{1,2,3}

Intel® Core™ i5-1145G7 processor (Up to 4.40 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores) ^{1,2,3}

Intel® Core™ i5-1135G7 processor (Up to 4.20 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores) ^{1,2,3}

Intel® Core™ i3-1115G4 processor with Intel® UHD Graphics (Up to 4.10 GHz with Intel® Turbo Boost Technology, 6 MB cache, 2 cores) ^{1,2,3}

Intel® Pentium® Gold 7505 processor with Intel® UHD Graphics (Up to 3.50 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores) ^{1,2,3}

Intel® Celeron® 6305 processor with Intel® UHD Graphics (Up to Standard, 4 MB cache, 2 cores) ^{1,2,3}

Processor Family

11th Generation Intel® Core™ i7 processor

11th Generation Intel® Core™ i5 processor

11th Generation Intel® Core™ i3 processor

Intel® Pentium® processor

Intel® Celeron® processor

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 namig is not a measurement of higher performance.

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

3. 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® Iris® X^e Graphics ^{4,5}

Intel® UHD Graphics ⁴

4. UHD/HD content required to view UHD/HD images.

5. Intel® Iris® X^e Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® X^e Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

DISPLAY

Non-Touch

35.56 cm (14") diagonal HD (1366 x 768) SVA anti-glare micro-edge WLED-backlit, 250 nits, 45% NTSC ^{4,6,7}

35.56 cm (14") diagonal FHD (1920 x 1080) IPS anti-glare micro-edge WLED-backlit, 250 nits, 45% NTSC ^{4,6,7}

Touch

35.56 cm (14") diagonal FHD (1920 x 1080) IPS anti-glare touch on panel micro-edge WLED-backlit touch screen, 250 nits, 45% NTSC ^{4,6,7,8}

35.56 cm (14") diagonal HD (1366 x 768) SVA anti-glare touch on panel micro-edge WLED-backlit touch screen, 250 nits, 45% NTSC ^{4,6,7,8}

HDMI

HDMI 2.0 supporting up to 1920 x1080

Displays support

Support extended displays through HP docks

Display Size

14"

35.56 cm (14")

4. 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. Actual brightness will be lower with touchscreen or Sure View

Technical Specifications

STORAGE AND DRIVES

Primary Storage

64 GB eMMC ⁹

Primary M.2 Storage

256 GB PCIe[®] NVMe™ M.2 SSD ⁹

128 GB PCIe[®] NVMe™ M.2 SSD ⁹

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

MEMORY

Maximum Memory

16 GB DDR4-3200 SDRAM

Memory

16 GB DDR4-3200 SDRAM

8 GB DDR4-3200 SDRAM

Memory Slots

On-board system memory

Supports Dual Channel Memory

NETWORKING/COMMUNICATIONS

WLAN

Intel[®] Wi-Fi 6 AX201 802.11a/b/g/n/ac/ax (2x2) Wi-Fi[®] and Bluetooth[®] 5 Combo, non-vPro™ (Support MU-MIMO and HP Extended Range Wireless LAN) ¹⁰

Chromecast

Chromecast Support ¹¹

10. 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.

11. Chromecast must be purchased separately.

Technical Specifications

AUDIO/MULTIMEDIA

Audio

HD Audio

Dual stereo Speakers

Audio by B&O

Speaker Power

2W/4ohm per speaker

Camera

720p HD camera ⁴

HP Privacy Camera

4. HD content required to view HD images.

KEYBOARD/POINTING DEVICES

Keyboard

Full-size Textured island-style Chrome keyboard, Flint Silver, spill resistant

Full-size 3-coat painted island-style Chrome keyboard, backlit, Flint Silver, spill resistant ¹²

Pointing Device

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

12. Backlit keyboard is an optional feature.

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Google Play Store

Manageability Features

Chrome OS zero-touch enrollment ¹³

Chrome Enterprise Upgrade ¹⁴

Security Management

Titan C security chip

Fingerprint sensor (Optional)¹⁵

Nano security lock slot ¹⁶

13. ZTE 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.

14. Single Chrome Enterprise Upgrade included. Requires one-time setup. Please see <https://support.google.com/a/topic/1409901>

15. HP Fingerprint Sensor is an optional feature and requires configuration at purchase.

16. Sold separately.

POWER

Power Supply

AC Adapter 65 Watt nPFC Standard USB type C® Straight ¹⁷

AC Adapter 45 Watt nPFC Standard USB type C® Straight ¹⁷

Primary Battery

HP Long Life 3-cell, 58 Wh Li-ion; support fast charge ^{18,19}

HP Fast Charge Technology (90% in 90 minutes)²⁰

Power Cord

3-wire plug – 1.0 m

Battery Life

Up to 12 hours and 30 minutes (Configuration: i3-1115 G4/HD/8 GB/128 GB SSD)²¹

Battery Weight

8.11 onz

230 g

Technical Specifications

- 17. Availability may vary by country.
 - 18. Battery is internal and not replaceable by customer. Serviceable by warranty.
 - 19. 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.
 - 20. 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.
 - 21. 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.
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WEIGHTS & DIMENSIONS

Product Weight

Starting at 3.26 lb ²²

Starting at 1.48 kg ²²

Product Dimensions (w x d x h)

12.7 x 8.7 x 0.65 in

32.36 x 22.1 x 1.65 cm

- 22. Weight will vary by configuration. Does not include power adapter.
-

PORTS/SLOTS

2 SuperSpeed USB Type-C® 10Gbps signaling rate (Power delivery, DisplayPort™) ²³

2 SuperSpeed USB Type-A 10Gbps signaling rate ²³

1 HDMI 2.0 ²⁴

1 stereo headphone/microphone combo jack

Expansion Slots

1 MicroSD™

1 multi-format digital media reader

Supports SD, SDHC, SDXC

- 23. SuperSpeed USB 20Gbps is not available.

- 24. HDMI cable sold separately.
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Technical Specifications

SERVICE AND SUPPORT

1-year and 3-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>.²⁵

25. 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.

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	USB-C® 45W and 65W adapter
Nominal Operating Voltage	5V/9V/12V/15V
Average Operating Power	< 45 W
Integrated graphics	Yes
Discrete Graphics	N/A
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 (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	
UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR 8.0®	Yes, ENERGY STAR® ²⁶
EPEAT®	Yes, EPEAT® Silver in United States ²⁷
ICES	Yes
Australia /	Yes
NZ RCM Compliance	Yes
CCC	No
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marking Compliance	Yes
BNCI or BELUS	No
CIT	No
EAC	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	No

Technical Specifications

26. Configurations of the HP Pro c640 Chromebook Enterprise G2 that are ENERGY STAR® qualified are identified as HP Pro c640 Chromebook Enterprise G2 ENERGY STAR on HP websites and on <http://www.energystar.gov>.

27. 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.

Technical Specifications

DISPLAYS

1. Actual brightness will be lower with touchscreen or sure view.

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

Panel LCD 14-in FHD (1920 x 1080) Anti-Glare WLED UWVA 45% cg 250nits eDP NWBZ slim	Outline Dimensions (W x H x D)	316.17 x 197.98 max. (w/ PCB)
	Active Area	309.37 x 174.02
	Weight	<285 g max.
	Diagonal Size	14.0"
	Thickness	3.0 mm max.
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	NA
	Contrast Ratio	600:1 – AG
	Refresh Rate	60Hz
	Brightness	250 nit
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
Color Gamut Coverage	45%	
Color Depth	6bit	
Viewing Angle	UWVA 85/85/85/85	

Panel LCD 14-in FHD (1920 x 1080) Anti-Glare WLED UWVA 45% cg 250nits eDP TOP NWBZ slim	Outline Dimensions (W x H x D)	316.17 x 198.07 max. (w/ PCB)
	Active Area	309.37 x 174.02
	Weight	<290g max
	Diagonal Size	14.0"
	Thickness	3.0 mm (Panel Side) / 3.2 mm (PCBA Side) max.
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	Yes
	Contrast Ratio	600:1 - AG
	Refresh Rate	60 Hz
	Brightness ¹	250 nits
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
Color Gamut Coverage	45%	
Color Depth	6bit	
Viewing Angle	UWVA 85/85/85/85	

Technical Specifications

Panel LCD 14-in HD (1366 x 768)	Outline Dimensions (W x H x D)	(315.9 +/- 0.3) * (197.54 +/- 0.5)
Anti-Glare WLED SVA 45% cg	Active Area	309.4 x 173.95
250 nits eDP 1.2 w/o PSR TOP	Weight	290 g Max
NWBZ flat	Diagonal Size	14.0"
	Thickness	3.0 mm (Panel Side) / 3.2 mm (PCBA Side) max.
	Interface	eDP 1.2 (1 lane)
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	Yes
	Contrast Ratio	400:1 - AG
	Refresh Rate	60 Hz
	Brightness¹	250 nits
	Pixel Resolution	1366 x 768 (HD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits
	Viewing Angle	SVA 45/45/15/30

Panel LCD 14-in HD (1366 x 768)	Outline Dimensions (W x H x D)	315.9+/-0.3 x 197.54 +/- 0.5
Anti-Glare WLED SVA 45% cg	Active Area	309.4 x 173.95
250 nits eDP NWBZ ultraslim	Weight	285 g Max
	Diagonal Size	14.0"
	Thickness	3.0 mm max
	Interface	eDP 1.2 (1 lane)
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	NA
	Contrast Ratio	300:1 - AG
	Refresh Rate	60 Hz
	Brightness	250 nits
	Pixel Resolution	1366 x 768 (HD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits
	Viewing Angle	SVA 45/45/15/30

Technical Specifications

STORAGE AND DRIVES

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

eMMC 64GB M0-276 MMCv5.0	Form Factor	Flash memory
	Capacity	64 GB
	NAND Type	MLC/TLC
	Height	1.4mm
	Width	11.5x13mm
	Interface	MMC protocol
	Maximum Sequential Read	Up to 250MB/s
	Maximum Sequential Write	Up to 70 MB/s
	Logical Blocks	64GB (62,537,072,640 Bytes)
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	HS400

SSD 128GB 2230 PCIe NVMe Value	Form Factor	M.2 2230
	Capacity	128 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4/Gen3x2
	Maximum Sequential Read	up to 2100MB/s
	Maximum Sequential Write	up to 1200MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

SSD 256GB 2230 PCIe NVMe Value	Form Factor	M.2 2230
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X4/Gen3x2
	Maximum Sequential Read	up to 2500MB/s
	Maximum Sequential Write	up to 1300MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

Technical Specifications

NETWORKING

Intel® Wi-Fi 6 AX201 + Bluetooth® 5 (802.11ax 2x2, non- vPro®, supporting gigabit data rate) (non- vPro®)^{1,5}	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi® certified
	Frequency Band	<ul style="list-style-type: none"> • 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	<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) • 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
	Security³	<ul style="list-style-type: none"> • IEEE and Wi-Fi® 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 • 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

Technical Specifications

Output Power²	<ul style="list-style-type: none"> • 802.11b: +17dBm minimum • 802.11g: +16dBm minimum • 802.11a: +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 • 802.11ax HE160(5GHz): +10dBm 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 Sensitivity⁴	<ul style="list-style-type: none"> • 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 with CNVi Interface				
Dimensions	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. Type 2230: 2.8 g 2. Type 1216: 1.3 g 				
Operating Voltage	3.3v +/- 9%				
Temperature	<table> <tr> <td>Operating</td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td>Non-operating</td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </table>	Operating	14° to 158° F (-10° to 70° C)	Non-operating	-40° to 176° F (-40° to 80° C)
Operating	14° to 158° F (-10° to 70° C)				
Non-operating	-40° to 176° F (-40° to 80° C)				
Humidity	<table> <tr> <td>Operating</td> <td>10% to 90% (non-condensing)</td> </tr> </table>	Operating	10% to 90% (non-condensing)		
Operating	10% to 90% (non-condensing)				

Technical Specifications

Altitude	Non-operating	5% to 95% (non-condensing)
	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 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)
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 + 9.5 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 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.
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).
5. Wi-Fi 5 or 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.

Technical Specifications

POWER

45W AC adapter	Dimensions	94.0 mm x 40.0 mm x 26.5 mm
	Weight	192.5g +/-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
	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
	Connector	C6
	Operating temperature	32°F to 95°F (0° to 35°C)
	Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

65W AC adapter	Dimensions	90.0 mm x 51.0 mm x 28.5 mm
	Weight	250g +/-10%
	Input	
	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 88% 15V: 88% 20V: 89%
	Input frequency range	47 ~ 63Hz
	Input AC current	Max. 1.6 A at 90 Vac
	Output	
	Output power	5V/15W 9V/27W 12V/60W 15V/60W 20V/65W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	5ms at 115 Vac input
	Output current limit	<8.0A
	Connector	C6
	Operating temperature	32°F to 95°F (0° to 35°C)
	Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

FINGERPRINT READER

Model: FINGERPRINTS FPC1021A
 Mobile Voltage Operation: 1.62V to 1.98V (Typical 1.8V)
 Operating Temperature: -40° to +85°C
 Current Consumption Image: < 6 mA
 Low Latency Wait For Finger: 2.1 mA
 Capture Rate:
 ESD Resistance: +/- 30kV
 Detection Matrix: 160 x 160 pixels

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® • 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 • Japan PC Green label*
Sustainable Impact Specifications	<ul style="list-style-type: none"> • Ocean-bound plastic in Speaker Enclosure • 5% post-consumer recycled plastic • External Power Supply 90% Efficiency • 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
Footnotes	<ul style="list-style-type: none"> • 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.
System Configuration	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.</p>

Technical Specifications

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	4.82 W	5.13 W	4.70 W
Normal Operation (Long idle)	2.19 W	2.43 W	2.11 W
Sleep	0.55 W	0.61 W	0.55 W
Off	0.40 W	0.42 W	0.39 W
	<p>NOTE:</p> <p>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.</p>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	16 BTU/hr	17 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	1 BTU/hr	1 BTU/hr
	<p>*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		

Technical Specifications

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	24	
Fixed Disk – Random writes	2.7	23.9	
Optical Drive – Sequential reads	N/A	N/A	
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
Additional Information	<ul style="list-style-type: none"> • 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 http://www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 96.2% recycle-able when properly disposed of at end of life. 		
Packaging Materials	External:	PAPER/Corrugated	281 g
	Internal:	PAPER/Molded pulp	141 g
		PLASTIC/Polyester	9 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	<p>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.</p> <p>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.</p> <p>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.</p> <p>To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.</p>		

Technical Specifications

<p>Material Usage</p>	<p>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):</p> <ul style="list-style-type: none"> • 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 (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)
<p>Packaging Usage</p>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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 and Recycling	<p>HP 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.</p> <p>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 HP 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.</p>
HP, Inc. Corporate Environmental Information	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</p> <p>Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</p> <p>ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>

COUNTRY OF ORIGIN

China

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

Category	Description	Part Number
Cases	HP Prelude Pro Recycled 15.6 Backpack	1X644A6
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA, 1X644UT, 1X644ET
	HP Prelude Pro Recycled 15.6 Top Load	1X645A6
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA, 1X645UT, 1X645ET
Docking	HP USB-C® 120W G5 Dock	5TW10AA, 5TW10ET, 5TW10UT
	HP USB-C®/A 120W G2 Universal Dock	5TW13AA, 5TW13UT, 5TW13ET
Adapters / Cables - External - NB	HP HDMI to VGA Adapter	H4F02AA, H4F02UT, H4F02ET
	HP USB to Gigabit RJ45 Adapter	N7P47AA, N7P47UT
	HP USB-C® to DisplayPort Adapter	N9K78AA, N9K78UT
	HP USB-C® to HDMI 2.0 Adapter	2PC54AA, 1WC36UT, 1WC36AA
	HP USB-C® to RJ45 Adapter	V8Y76AA, V7W66AA, V7W66UT
	HP USB-C® to USB 3.0 Adapter	N2Z63AA, N2Z63UT
	HP USB-C® to USB-A Hub	Z8W90AA, Z6A00AA, Z6A00UT, Z6A00ET
HP USB-C® to VGA Adapter	P7Z54AA, N9K76AA, N9K76UT	
Input/Output	HP Bluetooth Travel Bluetooth Mouse	6SP30AA, 6SP30UT
	HP Comfort Grip USB Wireless Mouse	H2L63AA, H2L63UT
	HP USB 320M Wired Mouse	9VA80AA, 9VA80UT, 9VA80ET
	HP USB Fingerprint Reader USB Mouse	4TS44AA, 4TS44UT, 4TS44ET
	HP USB Premium USB Mouse	1JR32AA, 1JR32UT
	HP USB Premium Wireless Mouse	1JR31AA, 1JR31UT
	HP USB Travel USB Mouse	G1K28AA, G1K28ET
	HP Wireless 2.4GHz X4000 Bluetooth Mouse	H3T50AA, H3T50UT
	HP Multi-Device 635 Black Wireless Mouse	1DOK2AA, 1DOK2ET, 1DOK2UT
HP Creator 935 Black Wireless Mouse	1DOK8AA, 1DOK8ET, 1DOK8UT	
HP Presenter Bluetooth 4.2 Bluetooth Mouse	2CE30AA, 2CE30UT, 2CE30ET	
Power-AC adaptor	HP 45W USB-C® G2 AC Power Adapter	1HE07AA, 1HE07UT
	HP 45W USB-C® LC AC Power Adapter	1MZ01AA
	HP 65W USB-C® Auto AC Power Adapter	5TQ76AA, 5TQ76UT, 5TQ76ET
	HP 65W USB-C® AC Power Adapter	1HE08AA, 1HE08UT
	HP 65W USB-C® LC AC Power Adapter	1P3K6AA, 1P3K6UT
	HP 65W USB-C® Travel Slim AC Power Adapter	3PN48AA, 3PN48UT
	HP 90W USB-C® AC Power Adapter	2LN85AA
Power – Power Bank	HP USB-C® Essential Power Bank	3TB55AA, 3TB55UT
Storage-ODD	HP USB DVD-Writer EXT ODD	Y3T76AA, F2B56AA, F2B56UT, F2B56ET

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

Security	HP Nano Cable Lock	1AJ39AA, 1AJ39UT
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA, 6UW42UT
Audio/Video - External	HP Wired USB-A UC SPK Phone	4VW02AA

Summary of Changes

Date of change:	Version History:	Updated	Description of change:
Jun 3, 2021	V1 to V2	Add	Environmental Data
	V2 to V3		

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