QuickSpecs

Overview

HP Pro c645 Chromebook Enterprise

1. Microphone
2. Webcam LED
3. Webcam
4. Privacy Camera Latch
5. Touchpad

Left

6. Lock slot (Lock sold separately.)
7. USB Super Speed Type-C® 3.2
8. HDMI 1.4 (HDMI cable sold separately.)
9. USB Type-A 3.2

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

Right

1. Power button
2. USB Type-A 3.2
3. USB Type-C® 3.2

4. Headphone/microphone combo
5. Micro SD card reader
6. Fingerprint sensor (Select models)

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QuickSpecs

Overview

AT A GLANCE

- Experience seamless device integration with the included Chrome Enterprise Upgrade
- Choose from AMD Ryzen™ or AMD Athlon™ processors
- Up to 16 GB memory and 128 GB SSD storage options
- Work farther from the Wi-Fi® router having Wi-Fi® 6 2X2 ax WLAN with MU-MIMO and HP Extended Range Wireless Lan design
- Sleek design with aluminum cover & narrow border display
- Audio by B&O
- Privacy Camera protects your privacy from remote camera hacking
- Optional fingerprint Sensor[1] for unlock the screen in a flash
- Optional backlit keyboard[1] for working in a dark environment
- Optional touchscreen for intuitive interactions on the screen
- HP Fast Charge Technology (With optional 65W adapter)[2]
- One native HDMI port for connection to display without dongles
- Undergoes 19 MIL-STD 810H Tests[3]

1. HP Fingerprint Sensor, Backlit Keyboard and Touchscreen are optional features and require configuration at purchase.
2. Recharges the battery up to 90% within 90 minutes when the system is off or in standby mode. Power adapter with a minimum capacity of 65 watts is required. After charging has reached 90% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
3. 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.

Not all configuration components are available in all regions/countries.
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PRODUCT NAME

HP Pro c645 Chromebook Enterprise

OPERATING SYSTEM

Preinstalled   Chrome OS™ with Chrome Enterprise Upgrade[1]

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

PROCESSOR

AMD Athlon™ Gold 3150C with Radeon™ Graphics (2.4 GHz base clock, up to 3.3 GHz max boost clock, 4 MB L3 cache, 2 cores) [2,3,4,5]
AMD Athlon™ Silver 3050C with Radeon™ Graphics (2.3 GHz base clock, up to 3.2 GHz max boost clock, 4 MB L3 cache, 2 cores) [2,3,4,5]
AMD Ryzen™ 3 3250C with Radeon™ Graphics (2.6 GHz base clock, up to 3.5 GHz max boost clock, 4 MB cache, 2 cores) [2,3,4,5]
AMD Ryzen™ 5 3500C with Radeon™ Graphics (2.1 GHz base clock, up to 3.7 GHz max boost clock, 4 MB L3 cache, 4 cores) [2,3,4,5]
AMD Ryzen™ 7 3700C with Radeon™ Graphics (2.3 GHz base clock, up to 4.0 GHz max boost clock, 4 MB L3 cache, 4 cores) [2,3,4,5]

Processor Family
AMD Ryzen™ 3 processor
AMD Ryzen™ 5 processor
AMD Ryzen™ 7 processor
AMD Athlon™ Gold processor
AMD Athlon™ Silver processor

2. 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.
3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
5. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.

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CHIPSET
Integrated with processor

GRAPHICS

Integrated
AMD Radeon™ Graphics
AMD Radeon™ Graphics

Supports
Support HD Decode, DX12, and HDMI 1.4b[6]

6. HDMI cable sold separately.

DISPLAY

Non-Touch
35.6 cm (14") diagonal, FHD (1920 x 1080), IPS, micro-edge, anti-glare, 250 nits, 45% NTSC [7,8,9]
35.6 cm (14") diagonal, HD (1366 x 768), micro-edge, anti-glare, 250 nits, 45% NTSC[7,8,9]

Touch
35.6 cm (14") diagonal, FHD (1920 x 1080), touch, IPS, micro-edge, anti-glare, 250 nits, 45% NTSC [7,8,9]
35.6 cm (14") diagonal, HD (1366 x 768), touch, micro-edge, anti-glare, 250 nits, 45% NTSC[7,8,9]

HDMI
HDMI v1.4b supporting: up to 1920x1080

Displays support
Support extended displays through HP docks [10]

Display Size
14"
35.56 cm (14")

7. FHD/HD content required to view FHD/HD images.
8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
9. Actual brightness will be lower with touchscreen or Sure View.
10. Docks are sold separately.

Technical Specifications

STORAGE AND DRIVES

Primary Storage
32 GB eMMC 5.0[11]
64 GB eMMC 5.0[11]
SSD 128GB 2230 PCIe NVMe Value[11]

Primary M.2 Storage
128 GB PCIe® NVMe™ M.2 SSD[11]

11. 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 DDR4-2666 SDRAM

Memory
4 GB DDR4-2666 SDRAM
8 GB DDR4-2666 SDRAM
16 GB DDR4-2666 SDRAM

Note: Transfer rates up to 2666 MT/s.

Memory Slots
On-board system memory
Supports Single Channel Memory (Athlon)
Supports Dual Channel Memory (Ryzen)

NETWORKING/COMMUNICATIONS

WLAN
Intel® AX200 Wi-Fi® 6 (2x2) and Bluetooth® 5 combo[13]

Chromecast
Chromecast Support[14]

13. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for Wi-Fi 6 (802.11ax WLAN) are draft specifications and are not final. If the final specifications differ from the draft specifications, it
may affect the ability of the notebook to communicate with other 802.11ax WLAN devices. Only available in countries where 802.11ax is supported.
14. Chromecast must be purchased separately.

Not all configuration components are available in all regions/countries.
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Technical Specifications

AUDIO/MULTIMEDIA

Audio
Audio by B&O
Dual stereo speakers

Camera
720p HD camera[7]

7. FHD/HD content required to view FHD/HD images.

KEYBOARD / POINTING DEVICES

Keyboard
Spill-resistant, full-size, optional backlit, pike silver Chrome keyboard[15]

Pointing Device
Touchpad with multi-touch gesture support, taps enabled as default

15. Backlit keyboard is an optional feature.

SOFTWARE AND SECURITY

Preinstalled Software
Manageability Features
Chrome Enterprise Upgrade[16]

Security Management
Google Titan C
Nano Security Lock Slot[17]

Fingerprint sensor (Select models)
Zero-Touch Enrollment capable

16. Chrome Enterprise Upgrade requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see https://support.google.com/a/answer/60216.
17. Locks are sold separately.

Not all configuration components are available in all regions/countries.
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Technical Specifications

POWER

Power Supply
AC Adapter 65 Watt nPFC Standard USB Type-C® Straight [18]
AC Adapter 45 Watt nPFC Standard USB Type-C® Straight[18]

Primary Battery
HP Long Life 3-cell, 58 Wh Li-ion[19, 26]
Supports fast charge [20]

Power Cord
3-wire plug - 1m

Battery life
Up to 13 hours and 15 minutes (Athlon gold 3050C/HD/8GB memory/64GB eMMC)[21]

Battery Weight
0.22 kg
0.49 lb

18. Availability may vary by country.
19. Battery is internal and not replaceable by customer. Serviceable by warranty.
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 and battery optimization activation. See http://www.chromium.org/chromium-os/testing/power-testing for test details.
26. 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.

WEIGHTS & DIMENSIONS

Product Weight
Starting at 3.38 lb[22]
Starting at 1.54 kg[22]

Product Dimensions (w x d x h)
12.75 x 8.7 x 0.64 in
32.4 x 22.1 x 1.65 cm

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

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

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Technical Specifications

PORTS/SLOTS

Ports
2 USB Super Speed Type-C® 5Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.2)
2 Super Speed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
1 Headphone/microphone combo
1 HDMI 1.4[6]

6. HDMI cable sold separately.

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

SERVICE AND SUPPORT

HP Services offers 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 https://www8.hp.com/us/en/privacy/limited_warranty.html 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. [23]

23. 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.

Not all configuration components are available in all regions/countries.
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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	< 45W
	Integrated Graphics	Yes
	Max Operating Power	UMA < 45W
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®	Yes[24]
	EPEAT® 2019	Yes[25]
	ICES	Yes
	Australia /	Yes
	NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	No
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	No
	CIT	No
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes
	UKRSERTCOMPUTER	No

24. Configurations of the HP Pro c645 Chromebook   that are ENERGY STAR® certified are identified as HP Pro c645 Chromebook ENERGY STAR on HP websites and on http://www.energystar.gov.
25. 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

Panel LCD 14 inch FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP slim Touch on Panel NWBZ

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	3.0mm (Panel Side) / 3.2mm (PCBA Side) max.
Interface	eDP 1.2
Surface Treatment	Anti-glare (AG)
Touch Enabled	Yes
Contrast Ratio	600:1 (typ)
Refresh Rate	60Hz
Brightness	250 nits typ. [1]
Pixel Resolution	1920 x 1080 (FHD)
Format	RGB
Backlight	LED
Color Gamut Coverage	45%
Color Depth	6 bits
Viewing Angle	UWVA 85/85/85/85

Panel LCD 14-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent 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	<285g max
Diagonal Size	14.0"
Thickness	3.0mm max.
Interface	eDP 1.2
Surface Treatment	Anti-glare (AG)
Touch Enabled	None
Contrast Ratio	600:1 (typ)
Refresh Rate	60Hz
Brightness	250nit typ.
Pixel Resolution	1920 x 1080 (FHD)
Format	RGB
Backlight	LED
Color Gamut Coverage	45%
Color Depth	6 bits
Viewing Angle	UWVA 85/85/85/85

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

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Technical Specifications

Panel LCD 14-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR TOP NWBZ flat

Outline Dimensions (W x H x D)	(315.9 +/- 0.3) * (197.54 +/- 0.5)
Active Area	309.4 x 173.95 typ.
Weight	290g Max
Diagonal Size	14."
Thickness	3.0mm (Panel Side) / 3.2mm (PCBA Side) max.
Interface	eDP 1.2
Surface Treatment	AG
Touch Enabled	YES
Contrast Ratio	400:1 (Typ)
Refresh Rate	60Hz
Brightness	250nits[1]
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 (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP NWBZ ultraslim

Outline Dimensions (W x H x D)	315.9+/-0.3 x 197.54 +/- 0.5
Active Area	309.4 x 173.95
Weight	285g Max
Diagonal Size	14."
Thickness	3.0mm max
Interface	eDP 1.2
Surface Treatment	AG
Touch Enabled	None
Contrast Ratio	300:1 (typ)
Refresh Rate	60Hz
Brightness	250nits
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

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

32 GB eMMC

Drive Weight	0.2g
Rotation speed	32GB
Cache Buffer	1.4mm
Height	11.5x13mm
Width	MMC potocal
Interface	
Transfer Rate	Up to 250 MB/s
Seek Time	Up to 70 MB/s
Logical Blocks	31,268,536,320 Bytes
Operating Temperature	0 to 70
Security Features	HS400

64 GB eMMC

Drive Weight	0.2g
Rotation speed	64GB
Cache Buffer	1.4mm
Height	11.5x13mm
Width	MMC potocal
Interface	
Transfer Rate	Up to 250 MB/s
Seek Time	Up to 70 MB/s
Logical Blocks	62,537,072,640 Bytes
Operating Temperature	0 to 70
Security 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)
Weight	0.01 lb (5 g)
Interface	PCIe NVMe Gen3X4
Maximum Sequential Read	Up to 1500 MB/s
Maximum Sequential Write	UP to 600 MB/s
Logical Blocks	250,069,680
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TRIM; L1.2

Not all configuration components are available in all regions/countries.
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Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® Wi-Fi ®6 AX200 + Bluetooth® 5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) [1,2] non-vPro		
	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Features Wi-Fi® 6 technology

	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: 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
	Security[3]	• IEEE compliant 64 /128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[4]	• 802.11b: +18.5dBm minimum • 802.11g: +17.5dBm minimum • 802.11a: +18.5dBm minimum • 802.11n HT20(2.4GHz): +15.5dBm minimum • 802.11n HT40(2.4GHz): +14.5dBm minimum • 802.11n HT20(5GHz): +15.5dBm minimum • 802.11n HT40(5GHz): +14.5dBm minimum • 802.11ac VHT80(5GHz): +11.5dBm minimum • 802.11ac VHT160(5GHz): +11.5dBm minimum

Not all configuration components are available in all regions/countries.
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	• 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax VHT160(5GHz): +10dBm minimum	
Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[5]	• 802.11b, 1Mbps: -93.5dBm maximum • 802.11b, 11Mbps: -84dBm maximum • 802.11a/g, 6Mbps: -86dBm maximum • 802.11a/g, 54Mbps: -72dBm maximum • 802.11n, MCS07: -67dBm maximum • 802.11n, MCS15: -64dBm maximum • 802.11ac, MCS0: -84dBm maximum • 802.11ac, MCS9: -59dBm maximum • 802.11ax, MCS11(HT40): -59dBm maximum • 802.11ax, MCS11(VHT160): -58.5dBm maximum	
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	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230: 2.8 g 2. Type 126: 1.3 g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (−10° to 70° C) −40° to 176° F (−40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

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.
2. Wi-Fi supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
3. Check latest software/driver release for updates on supported security features.
4. 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.

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

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5. 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).

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

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy: 3 Mbps signaling data rate[6] 2.17 Mbps BLE: 1 Mbps signaling data rate[6] 0.2 Mbps 6. Actual throughput may vary. Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.

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

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Technical Specifications

POWER

HP 3-cell Long Life Li-Ion (58 WHr)

Dimensions (H x W x L)	4.7 x 249 x 103.07 mm (0.183 x 9.72 x 4.02 inch)
Weight	0.23 kg (0.506 lb)
Cells/Type	3cell Lithium-Ion Polymer cell / 407792
Energy	
Voltage	11.55V
Amp-hour capacity	5.095Ah
Watt-hour capacity	58.84Wh
Temperature	
Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
Fuel Gauge LED	N/A
Warranty	1-year
Optional Travel Battery Available	No

HP Smart 65 W USB Type-C adapter

Dimensions	3.54x2.0x1.12in (9.0 x 5.1 X 2.85cm)
Weight	
	unit: 0.51 lbs (235g)
Input	100 to 240 VAC
Input Efficiency	
	81.5% min at 115 Vac/ 230Vac @ 5V/3A
	86.7% min at 115 Vac/ 230Vac @ 9V/3A
	88% min at 115 Vac/ 230Vac @ 12V/5A
	89% min at 115 Vac/ 230Vac @ 20V/3.25A
	89% min at 115 Vac/ 230Vac @ 15V/4.33A
Input frequency range	47 ~ 63 Hz
Input AC current Output	1.6 A at 90 VAC and maximum load
Output power	65W
DC output	5V/9V/12V/15V/20V
Hold-up time	5ms at 115 Vac input by each output voltage
Output current limit	8.0A Maximum
Connector	USB TYPE-C
Environmental Design	
Operating temperature	32°F to 95°F (0°to 35°C)
Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
Altitude	0 to 16,400 ft (0 to 5000m)
Humidity	20% to 95%
Storage Humidity	10% to 95%

Not all configuration components are available in all regions/countries.
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Technical Specifications

EMI and Safety Certifications	- CE Mark - full compliance with LVD and EMC directives - Worldwide safety standards -IEC60950, EN60950, UL60950, UL62368, 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 Smart 45 W USB Type-C adapter

Dimensions	3.74x1.69x1.08 in (9.5*4.3*2.75cm)
Weight	
	unit: 0.45 lbs (200g)
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 ~ 63 Hz
Input AC current	Max. 1.4 A at 90 Vac
Output power	45W
	5V/15W 9V/27W 12V/36W
DC output	15V/45W
Hold-up time	5ms at 115 Vac input
Output current limit	<5.0A
Connector	
Connector	USB TYPE-C
Environmental Design	
Operating temperature	32°F to 95°F (0°to 35°C)
Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
Altitude	0 to 16,400 ft (0 to 5000m)
Humidity	20% to 95%
Storage Humidity	10% to 95%
EMI and Safety Certifications	- CE Mark - full compliance with LVD and EMC directives - Worldwide safety standards -IEC60950, EN60950, UL60950, UL62368, 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.

FINGERPRINT READER

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

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FINGERPRINTS FPC1025

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
FRR (False Reject Rate) / FAR (False Acceptance Rate):	

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ENVIRONMENTAL DATA

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT☐ Silver registered in the United States. See http://www.epeat.net for registration status in your country. • TCO • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*
Sustainable Impact Specifications	• Ocean-bound plastic in speaker Enclosure • 2% post-consumer recycled plastic • 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)	3.76 W	3.86 W	3.82 W
Normal Operation (Long idle)	1.74 W	1.92 W	1.78 W
Sleep	0.42 W	0.44 W	0.40 W
Off	0.21 W	0.27 W	0.21 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)	12.9 BTU/hr	13.2 BTU/hr	13.1 BTU/hr
Normal Operation (Long idle)	6 BTU/hr	6.6 BTU/hr	6.1 BTU/hr
Sleep	1.4 BTU/hr	1.5 BTU/hr	1.4 BTU/hr
Off	0.7 BTU/hr	0.9 BTU/hr	0.7 BTU/hr

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

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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	24.0
Fixed Disk – Random writes	2.7	23.9
Optical Drive – Sequential reads		

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	- 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 Silver 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 96.1% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Corrugated	230 g
	Internal:	PAPER/Paper	51 g
		PAPER/Molded Pulp	141 g
		PLASTIC/Polypropylene - PP	4 g
		PLASTIC/Polyethylene low density - LDPE	9 g
	The plastic packaging material contains at least xx% recycled content.		
	The corrugated paper packaging materials contains at least xx% 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. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.
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

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	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 (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.
End-of-life Management and Recycling	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. 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:

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	http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment:
	
	Global Citizenship Report
	    http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
	Eco-label certifications
	    http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
	 ISO 14001 certificates:
	    http://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. • Plastic cushions are made from >90% recycled plastic.

COUNTRY OF ORIGIN

    China

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

Category	Description	Part Number
Cases	HP Prelude Pro Top Load	1X645AA
	HP Prelude Pro Backpack	1X644AA
	HP Business Backpack (17.3")	2SC67AA
	HP Business Case (15.6")	2SC66AA
	HP Business Slim Top Load (14.1")	2SC65AA
	HP 14.1 Business Sleeve	2UW01AA
	HP 13.3 Business Sleeve	2UW00AA
Docking	HP USB Type-C /A Universal Dock G2	5TW13AA
Input/Output	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Slim Wireless Keyboard & Mouse	T6L04AA
	HP Wired Desktop 320K Keyboard	9SR37AA
	HP Slim Wireless Keyboard (Link-5)	T6U20AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Wired Desktop 320M Mouse	9VA80AA
	HP USB Optical Travel mouse	G1K28AA
	HP Bluetooth Travel Mouse	6SP30AA
	HP Essential USB Mouse	2TX37AA
	HP USB Type-C to HDMI 2.0 Adapter	1WC36AA
	HP USB Type-C to USB HUB	Z6A00AA
	HP USB to RJ45 Adapter	N7P47AA
	HP USB Type-C Travel Dock G2	7PJ38AA
	HP USB Type-C to VGA Adapter	N9K76AA
Power	HP 45W USB-C G2 Power Adapter	1MZ01AA#ABA
	HP 65W USB Type-C Slim Power adapter	3PN48AA
	HP USB-C Essential Power Bank	3TB55AA
Storage	HP External USB Optical Drive	F2B56AA
Security	HP Nano Keyed Cable Lock	1AJ39AA
	HP Sure Key Cable Lock	6UW42AA

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Summary of Changes

Date of change:	Version History:		Description of change:
	V1 to V2		Storage section updated
February 4, 2021	V2 to V3	Update	Battery Life
March 2, 2021	V3 to V4	Update	Options and Accessories section
May 19	V4 to V5	Update	Software section
May 24, 2021	V5 to V6	Add	Environmental Data
July 6, 2021	V6 to V7	Add	Battery disclaimer
August 3, 2021	V7 to V8	Add	Zero Touch Enrollment in Security Management
October 22, 2021	V8 to V9	Update	Software and Security section
April 20,2022	V9 to V10	Added	Reference for USB Ports