

### Overview

### HP Chromebox Enterprise G4



#### Front

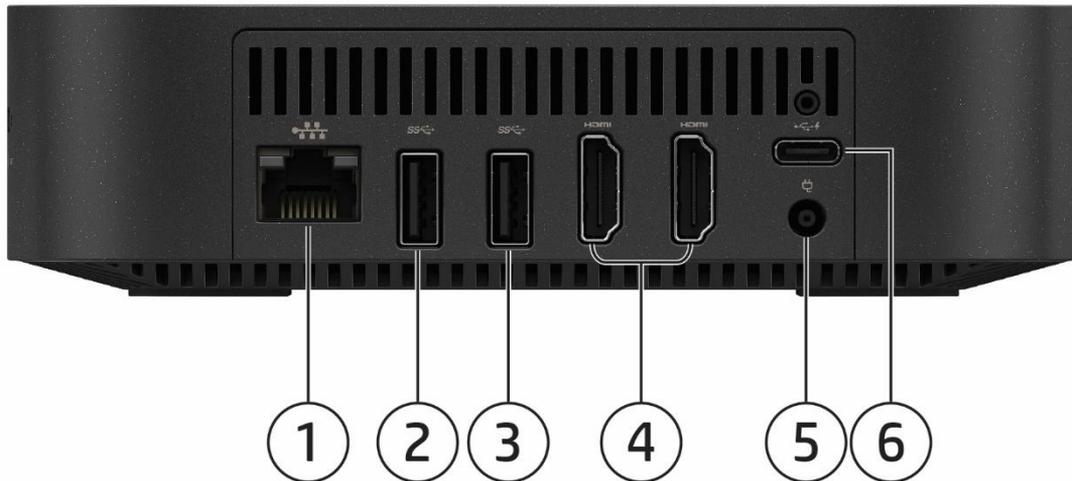
1. Headphone / Microphone Combo Jack
2. (2) USB 3.2 Gen 2
3. MicroSD card slot (Push-pull type)
4. Power button/LED

#### Side

5. Standard Security Lock Slot

### Overview

### HP Chromebox Enterprise G4



1. Ethernet network port or RJ-45 connector
2. USB-A 3.2 Gen 2
3. USB-A 3.2 Gen 2

#### Back

4. (2) HDMI ports
5. AC-in plug - 4.5mm barrel connector
6. USB Type-C® 3.2 Gen 2 – support charging, power/data delivery, DisplayPort™

### Features

#### AT A GLANCE

- Share among multiple users with ChromeOS, helping protect device and data. Easily manage with Chrome Enterprise Upgrade and Google Admin console.
- Get the performance of up to a 13th gen Intel® Core™ i7 processor<sup>1</sup> to complete tasks in multiple windows simultaneously.
- Support up to 32GB DDR4 memory.
- Support 64GB eMMC and 256GB SSD.
- microSD Multi-Format Digital Media Card Reader.
- Get a fast and reliable connection in dense wireless environments with gigabit-speed Wi-Fi 6E.
- 100 mm VESA mounting capability.
- Connect up to three 4K displays.
- Complete work tasks with multiple ports: two integrated HDMI (v2.0) ports and a USB-C® port.
- Environmental Certifications<sup>1</sup>.
- ENERGY STAR®
- EPEAT® registered.
- BFR/PVC Free<sup>1</sup>.
- WEEE compliant.
- RoHS 2 compliant.
- Standard Security Lock Slot.

1. External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

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

### Features

#### PRODUCT NAME

HP Chromebox Enterprise G4

#### OPERATING SYSTEM

**Preinstalled** Chrome OS™ with Chrome Enterprise Upgrade

#### PROCESSORS

##### 13th Generation Intel® Core™ i7 Processors

Intel Core i7-1365U 10 Core 1.8-5.2G BGA 12ML3 Intel® Iris® Xe Graphics<sup>2</sup> 3200MHz 15W<sup>1</sup>

##### 13th Generation Intel® Core™ i5 Processors

Intel Core i5-1335U 10 Core 1.3-4.6G BGA 12ML3 Intel® Iris® Xe Graphics<sup>2</sup> 3200MHz 15W<sup>1</sup>

Intel Core i5-1345U 10 Core 1.6-4.7G BGA 12ML3 Intel® Iris® Xe Graphics<sup>2</sup> 3200MHz 15W<sup>1</sup>

##### 13th Generation Intel® Core™ i3 Processors

Intel Core i3-1315U 6 Core 1.2-4.5G BGA 10ML3 UHD Graphics 3200MHz 15W<sup>1</sup>

##### Intel® Celeron® Processors

Intel Celeron 7305 5 Core 1.1GHz BGA 8ML3 UHD Graphics 3200MHz 15W<sup>1</sup>

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. Intel® Iris® Xe Graphics only support on Intel® Core™ i5-1335U

**NOTE:** Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

#### CHIPSET

Chipset is integrated with processor.

#### GRAPHICS

##### Integrated

Intel® UHD Graphics

Intel® Iris® Xe Graphics<sup>1</sup>

1. Intel® Iris® Xe Graphics only support on Intel® Core™ i5-1335U

**NOTE:** Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

#### MEMORY

4GB DDR4 Synchronous Dynamic Random Access Memory (SDRAM) (Up to 3200 MT/s)<sup>1</sup> 1x4GB\*

8GB DDR4 Synchronous Dynamic Random Access Memory (SDRAM) (Up to 3200 MT/s)<sup>1</sup> 2x4GB\*

16GB DDR4 Synchronous Dynamic Random Access Memory (SDRAM) (Up to 3200 MT/s)<sup>1</sup> 2x8GB\*

32GB DDR4 Synchronous Dynamic Random Access Memory (SDRAM) (Up to 3200 MT/s)<sup>1</sup> 2x16GB\*

1. Shared video memory (UMA) uses part of the total system memory for video performance. System memory dedicated to video performance is not available for other use by other programs.

### Features

#### STORAGE AND DRIVES

##### Internal Storage Device

64GB eMMC<sup>1</sup>  
256GB PCIe NVMe Value SSD<sup>1</sup>

##### Removable Storage

Micro SD card slot

1. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 5.1 GB of the eMMC are dedicated/allocated to the Chrome OSTM and OS partitions.

#### NETWORKING/COMMUNICATIONS

##### Networking

Wired Gigabit Ethernet (RTL8111K-CG)

##### Wi-Fi® and Bluetooth®

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card<sup>1</sup>

1. 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

#### SECURITY

Nano lock slot (Lock sold separately)

Titan C security chip

#### AUDIO/MULTIMEDIA

##### Audio

Realtek ALC5682I-VS-CGT  
Internal Beeper  
Combo Mic/Headphone Jack

#### PORTS/SLOTS

##### Ports

1 - Audio Combo jack - Headphone/Microphone (Front)  
2 - USB 3.2 Gen 2 (Front)  
1 - Micro SD card slot (Front)  
1 - USB Type-C® 3.2 Gen 2 (Back)  
1 - AC Adapter plug (Back)  
2 - HDMI, up to 4K@60fps, HDMI version 2.0 (Back)  
2 - USB 3.2 Gen 2 (Back)  
1 - RJ-45 Connector (Back)

### Features

#### SOFTWARE COMPONENTS AND APPLICATIONS

##### Software

HP Support Assistant<sup>1</sup>

##### Manageability Features

Zero Touch Enrollment 4<sup>2</sup>

1. HP Support Assistant requires Internet Access.
2. Sold separately.

#### POWER

##### Power Supply

External 65W adapter > 85% efficiency 100-240V, 50-60Hz, power cord (1.0m)<sup>1,2</sup>

External 90W adapter > 85% efficiency 100-240V, 50-60Hz, power cord (1.0m)<sup>1</sup>

1. Not all power supplies are available in every region.
2. 65W is for Celeron only while 90W is for i3, i5 and i7 only

#### WEIGHT & DIMENSIONS

##### Dimensions (WxDxH)

5.87 x 5.87 x 1.57 in (14.93 x 14.93 x 4 cm)

##### Weight

1.42 lb (645 g)<sup>1</sup>

1. Lowest weight noted. Weight will vary by configuration.

#### PACKAGING INFORMATION

##### One Unit

Dimension of single box: 235 x 190 x 110 mm (9.25 x 7.48 x 4.33 in)

Weight: 790 g (1.74 lb)

##### One Unit + Keyboard / Mouse

Dimension of DIB box: 310 x 190 x 140 mm (12.2 x 7.48 x 5.51 in)

Weight: 1330 g (2.92 lb)

### Features

#### PALLETIZATION PROFILE

	<b>Units per layer</b>	<b>Layers Max (for Air)</b>	<b>Units per pallet</b>	<b>Dimension (LxWxH) (excluding pallet)</b>
<b>1 IN 1 SINGLE</b> (ADP/Power code/Doc)	34	5	170	46.5 x 35.8 x 38.4 in (118 x 91 x 97.5 cm)
<b>1 IN 1 DIB</b> (KB/MOUSE/ADP/Power code/Doc)	24	5	120	44.6 x 36.5 x 38.4 in (113.4 x 92.8 x 97.5 cm)
<b>5 IN 1 bulk</b> (ADP/Power code/Doc)	8	5	40	46.5 x 38.3 x 38.4 in (118 x 97.4 x 97.5 cm)
<b>1 IN 1 DIB</b> (USB Wired KB)	16	5	80	44.1 x 37.6 x 38.4 in (112 x 95.6 x 97.5 cm)

#### IN THE BOX

HP Chromebox Enterprise G4  
External Power Supply  
Quick Start Guide

### Technical specifications - Storage

#### STORAGE

##### 256GB M.2 2230 PCIe NVMe SSD

<b>Drive Weight</b>	< 10g
<b>Capacity</b>	256 GB
<b>Height</b>	2.3 mm
<b>Length</b>	30 mm
<b>Width</b>	22 mm
<b>Interface</b>	PCIe NVMe
<b>Maximum Sequential Read</b>	2200 MB/s $\pm$ 20%
<b>Maximum Sequential Write</b>	1100 MB/s $\pm$ 20%
<b>Logical Blocks</b>	500,118,192
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]
<b>Features</b>	TRIM; L1.2

**NOTE:** For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less.

*Technical specifications – Memory*

**MEMORY**

DDR4-3200 (Transfer rates up to 3200 MT/s), 4GB, 2 SO-DIMM, 1x4GB\*

DDR4-3200 (Transfer rates up to 3200 MT/s), 8GB, 2 SO-DIMM, 2x4GB\*

DDR4-3200 (Transfer rates up to 3200 MT/s), 16GB, 2 SO-DIMM, 2x8GB\*

DDR4-3200 (Transfer rates up to 3200 MT/s), 32GB, 2 SO-DIMM, 2x16GB\*

Technical specifications – Networking and Communications

### NETWORKING AND COMMUNICATIONS

<b>Intel AX211 Wi-Fi 6E +Bluetooth® 5.3 Wireless Card M.2 160MHz CNVi WW WLAN<sup>1</sup></b>	
<b>Wireless LAN Standards</b>	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
<b>Interoperability</b>	Wi-Fi certified
<b>Frequency Band</b>	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
<b>Data Rates</b>	• 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: 1733Mbps • 802.11ax: max 2.4Gbps
<b>Modulation</b>	Direct Sequence Spread Spectrum  OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
<b>Security<sup>2</sup></b>	• 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
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer)  Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>3</sup></b>	• 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

### Technical specifications – Networking and Communications

	<ul style="list-style-type: none"> <li>• 802.11n HT20(5GHz): +14dBm minimum</li> <li>• 802.11n HT40(5GHz): +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz): +10dBm minimum</li> <li>• 802.11ac VHT160(5GHz): +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz): +12dBm minimum</li> <li>• 802.11ax HE80(5GHz): +10dBm minimum</li> <li>• 802.11ax HE160(5GHz): +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode 2.0 W</li> <li>• Receive mode 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode 50 mW (WLAN unassociated)</li> <li>• Connected Standby 10mW</li> <li>• Radio disabled 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0(VHT80): -84dBm maximum</li> <li>• 802.11ac, MCS9(VHT80): -59dBm maximum</li> <li>• 802.11ac, MCS9(VHT160): -58.5dBm maximum</li> <li>• 802.11ax, MCS11(HE40): -57dBm maximum</li> <li>• 802.11ax, MCS11(HE80): -54dBm maximum</li> <li>• 802.11ax, MCS11(HE160): -53.5dBm maximum</li> </ul>
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure  Two embedded dual band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	1. Type 2230: 2.3 x 22.0 x 30.0 mm
<b>Weight</b>	1. Type 2230: 2.8g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
<b>Altitude</b>	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Amber – Radio OFF; LED OFF – Radio ON
<b>HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3<sup>5</sup> Wireless Card Technology</b>	
<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of + 9.5 dBm for BR and EDR.

### Technical specifications – Networking and Communications

<b>Power Consumption</b>	<p>Peak (Tx): 330 mW</p> <p>Peak (Rx): 230 mW</p> <p>Selective Suspend: 17 mW</p>
<b>Bluetooth® Software Supported Link Topology</b>	Bluetooth® Software
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	<p>ETS 300 328, ETS 300 826</p> <p>Low Voltage Directive IEC950</p> <p>UL, CSA, and CE Mark</p>
<b>Bluetooth® Profiles Supported</b>	<p>BT4.1-ESR 5/6/7 Compliance</p> <p>LE Link Layer Ping</p> <p>LE Dual Mode</p> <p>LE Link Layer</p> <p>LE Low Duty Cycle Directed Advertising</p> <p>LE L2CAP Connection Oriented Channels</p> <p>Train Nudging &amp; Interlaced Scan</p> <p>BT4.2 ESR08 Compliance</p> <p>LE Secure Connection- Basic/Full</p> <p>LE Privacy 1.2 –Link Layer Privacy</p> <p>LE Privacy 1.2 –Extended Scanner Filter Policies</p> <p>LE Data Packet Length Extension</p> <p>FAX Profile (FAX)</p> <p>Basic Imaging Profile (BIP)2</p> <p>Headset Profile (HSP)</p> <p>Hands Free Profile (HFP)</p> <p>Advanced Audio Distribution Profile (A2DP)</p> <p>BT5.3</p> <p>ESR9/10 Compliance</p> <p>LE Advertisement Extensions</p> <p>Channel Selection Algo</p> <p>Limited High Duty Cycle Non-Connectable Advertising</p> <p>2Mbps LE</p> <p>LE Long Range</p>
<p>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.</p> <p>2. Check latest software/driver release for updates on supported security features.</p> <p>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.</p> <p>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).</p> <p>5. Bluetooth® 5.3 operation requires Chrome OS support. Until Chrome OS support is available, Bluetooth® 5.3 will function as Bluetooth® 5.2 or lower.</p>	

### Technical specifications – Power

#### POWER

##### Unit Environment and Operating Conditions

Temperature Range	Operating: 5°C ~35°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

<b>External Power Supplies<sup>1</sup></b>	EM 65W EPS, non-PFC, 88% average efficiency at 115V & 89% at 230Vac Hera 65W EPS, non-PFC, 88% average efficiency at 115V & 89% at 230Vac Ares 90W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac
<b>80 PLUS Platinum</b>	N/A
<b>Operating Voltage Range</b>	90Vac~264Vac
<b>Rated Voltage Range</b>	100Vac~240Vac
<b>Rated Line Frequency</b>	50HZ~60HZ
<b>Operating Line Frequency</b>	47HZ~63HZ
<b>Rated Input Current with Energy Efficient* Power Supply</b>	65W EM ≤1.7A HERA 65W ≤1.7A ARES 90W ≤1.7A
<b>DC Output</b>	+19.5V

1. External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

<b>Current Leakage (NFPA 99: 2012)</b>	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.  Less than 100 microamps of leakage current at 264 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.
<b>Power Supply Fan</b>	N/A
<b>Power cord length</b>	6.0 ft. (1.83 m) <sup>2,3</sup>
<b>External Power Adapter</b>	External power
<b>Dimensions</b>	65W EM: 102x55x30mm HERA 65W: 90x51x28.5mm ARES 90W: 126x50x30mm
<b>Total Cord Length</b>	6.0 ft. (1.83 m)

2. Power cord length will be varied from different type of cords start from 1.8m.

3. The length of India power cord is 2.0m

### Technical specifications – Power

<b>AC Adaptor</b>		<b>65W EM</b>
<b>Dimensions</b>		4.016 x 2.165 x 1.181 in (10.2 x 5.5 x 3 cm)
<b>Weight</b>		270 g (+/- 10 g)
<b>Input</b>	<b>Input Efficiency</b>	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115 Vac / 230 Vac Spec: 88% at 115 Vac and 89 % at 230 Vac
	<b>Input Frequency Range</b>	47-63Hz
	<b>Input AC current</b>	Max. 1.7A at 90 Vac
<b>Output</b>	<b>Output Power</b>	65W
	<b>DC Output</b>	19.5V
	<b>Hold-up Time</b>	5 ms at 115 Vac input
	<b>Output Over Current Protection</b>	11A
<b>Leakage Current</b>		Shall not exceed 30uA when tested at 250 Vac/50 Hz in a normal operating condition
<b>AC connector (Ac Inlet)</b>		C6
<b>DC Plug</b>		4.5 mm Barrel Type
<b>Environmental Design</b>	<b>Operating Temperature</b>	32°F to 95°F (0° to 35°C)
	<b>Non-operating (storage) Temperature</b>	-4°F to 185°F (-20° to 85°C)
	<b>Altitude</b>	0 to 16,400 ft (0 to 5000 m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>		*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1 2&3 ed, EN60950-1 and/or EN62368-1, UL62368-1 , Class I, SELV; Agency approvals - cULus, CCC, BIS, PSE(J62368), EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE, EAEU, Australia MTBF - over 100,000 hours at 35°C ambient condition

<b>AC Adaptor</b>		<b>HERA 65W</b>
<b>Dimensions</b>		3.543 x 2.008 x 1.122 in (9.0 x 5.1 x 2.85 cm)
<b>Weight</b>		230g (+/- 10 g)
<b>Input</b>	<b>Input Efficiency</b>	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115 Vac / 230 Vac Spec: 88% at 115 Vac and 89 % at 230 Vac
	<b>Input Frequency Range</b>	47-63Hz
	<b>Input AC current</b>	Max. 1.7A at 90 Vac
<b>Output</b>	<b>Output Power</b>	65W
	<b>DC Output</b>	19.5V
	<b>Hold-up Time</b>	5 ms at 115 Vac input
	<b>Output Over Current Protection</b>	11A
<b>Leakage Current</b>		Shall not exceed 30uA when tested at 250 Vac/50 Hz in a normal operating condition
<b>AC connector (Ac Inlet)</b>		C6

### Technical specifications – Power

<b>DC Plug</b>	4.5mm Barrel Type	
<b>Environmental Design</b>	<b>Operating Temperature</b>	32°F to 95°F (0° to 35°C)
	<b>Non-operating (storage) Temperature</b>	-4°F to 185°F (-20° to 85°C)
	<b>Altitude</b>	0 to 16,400 ft (0 to 5000 m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>	*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1 2&3 ed, EN60950-1 and/or EN62368-1, UL62368-1 , Class I, SELV; Agency approvals - cULus, CCC, BIS, PSE(J62368), EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE, EAEU, Australia MTBF - over 100,000 hours at 35°C ambient condition	

<b>AC Adaptor</b>	<b>Ares 90W</b>	
<b>Dimensions</b>	5 x 2.008 x 1.181 in (12.7 x 5.1 x 3 cm)	
<b>Weight</b>	350 g (+/- 10 g)	
<b>Input</b>	<b>Input Efficiency</b>	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115 Vac / 230 Vac Spec: 88% at 115 Vac and 89 % at 230 Vac
	<b>Input Frequency Range</b>	47-63Hz
	<b>Input AC current</b>	Max. 1.7A at 90 Vac
<b>Output</b>	<b>Output Power</b>	90w
	<b>DC Output</b>	19.5V
	<b>Hold-up Time</b>	5 ms at 115 Vac input
	<b>Output Over Current Protection</b>	11A
<b>Leakage Current</b>	Shall not exceed 30uA when tested at 250 Vac/50 Hz in a normal operating condition	
<b>AC connector (Ac Inlet)</b>	C6	
<b>DC Plug</b>	4.5mm Barrel Type	
<b>Environmental Design</b>	<b>Operating Temperature</b>	32°F to 95°F (0° to 35°C)
	<b>Non-operating (storage) Temperature</b>	-4°F to 185°F (-20° to 85°C)
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	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>	*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1 2&3 ed, EN60950-1 and/or EN62368-1, UL62368-1 , Class I, SELV; Agency approvals - cULus, CCC, BIS, PSE(J62368), EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE, EAEU, Australia MTBF - over 100,000 hours at 35°C ambient condition	

### Technical specifications – Power

#### Wireless Charger General Description

Operating Voltage	12~13V (DC) After Qi certificate, this range are optimum voltage.
Nominal Input voltage	12.6V (DC) (The optimum working voltage)
Input Current	Typ. 1.5A (2A max.)
Max Input Power	<24W
Standby Current (No load)	Average current=12.5mA Max. (Q/Ping period= 500ms Avg. Power 150mW Max.)
Over Voltage Protection	15V Max.
Over Current Protection	2.1A± 10%

For active power factor correction the power factor at 50% & 100% loads shall be greater than 0.9 over the entire nominal input voltage range (100-127VAC and 200-240VAC). The power supply shall comply with harmonic input current requirements as detailed in EN61000-3-2 and JEIDA MITI standards. The harmonic input current requirements must be met under the following operating conditions:

Load Requirements: 50% and 100%

Input Voltage: 230Vac/50Hz.

For active power factor correction the power factor at 50% & 100% loads shall be greater than 0.9 over the entire nominal input voltage range (100-127VAC and 200-240VAC).

Condition	Standard Efficiency	82/85/82%	85/88/85%	87/90/87%	90/92/89%	Input Voltage
10% of Rated Load	-	75%	81%	84%	86%	115Vac/60HZ
20% of Rated Load	-	82%	85%	87%	90%	115Vac/60HZ
50% of Rated Load	-	85%	88%	90%	92%	115Vac/60HZ
	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.95	
100% of Rated Load	70%	82%	85%	87%	89%	115Vac/60HZ
	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.9	230Vac/50HZ

### Technical Specifications – System Unit

#### SYSTEM UNIT

<b>Temperature</b>	<b>Operating</b>	41°F to 95°F (5°C to 35°C)
	<b>Non-operating</b>	-4°F to 140°F (-20°C to 60°C)
<b>Relative Humidity</b> (noncondensing)	<b>Operating</b>	10% to 90%
	<b>Non-operating</b>	5% to 95%
<b>Altitude</b> (unpressurized)	<b>Operating</b>	-50 ft to 10,000 ft (-15 m to 3,048 m)
	<b>Non-operating</b>	-50 ft to 40,000 ft (-15 m to 12,192 m)
<b>Planned Industry Standard Certifications</b>	<b>UL</b>	Yes
	<b>CSA</b>	No
	<b>FCC Compliance</b>	Yes
	<b>ENERGY STAR 8.0</b>	Yes
	<b>EPEAT®*</b>	Yes
	<b>ICES</b>	Yes
	<b>Australia / NZ A-Tick Compliance</b>	Yes
	<b>CCC</b>	No
	<b>Japan VCCI Compliance</b>	Yes
	<b>KC</b>	Yes
	<b>BSMI</b>	Yes
	<b>CE Marking Compliance</b>	Yes
	<b>BNCI or BELUS</b>	No
	<b>CIT</b>	No
	<b>GOST</b>	No
	<b>Saudi Arabian Compliance (ICCP)</b>	Yes
	<b>SABS</b>	Yes
<b>UKRSERTCOMPUTER</b>	No	
<b>TCO CERTIFIED, generation 8</b>	Yes	

\*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.

### ENVIRONMENTAL & INDUSTRY

**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<sup>1</sup> 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\*

\*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.

**Sustainable Specifications** **Impact**

- 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

**System Configuration** The configuration used for the Energy Consumption and Declared Noise Emissions data for the Ultra-slim Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

#### Energy Consumption (in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	4.8 W	4.908 W	4.908 W
Normal Operation (Long idle)	3.228 W	3.396 W	3.252 W
Sleep	0.828 W	0.84 W	0.78 W
Off	0.156 W	0.192 W	0.168 W

Energy efficiency data listed is for an ENERGY STAR® certified 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® certified 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. Search keyword generator on HP's 3rd party option store for solar generator accessories at: <http://www.hp.com/go/options>

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
<b>Heat Dissipation*</b>			
Normal Operation (Short idle)	16.42 BTU/hr	16.79 BTU/hr	16.79 BTU/hr
Normal Operation (Long idle)	11.04 BTU/hr	11.61 BTU/hr	11.12 BTU/hr
Sleep	2.83 BTU/hr	2. BTU/hr	2.67 BTU/hr
Off	0.53 BTU/hr	0.66 BTU/hr	0.57 BTU/hr

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

### Technical Specifications – Environmental & Industry

**Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)**  
Typically Configured – Idle  
Fixed Disk – Random writes

Sound Power  
(L<sub>WAd</sub>, bels)

Sound Pressure  
(L<sub>pAm</sub>, decibels)

2.7

24

2.7

24

**Longevity and Upgrading**

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

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

**Batteries**

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

Batteries used in the product do not contain:

Mercury greater than 1ppm by weight

Cadmium greater than 20ppm by weight

Battery size: ML1220 (coin cell)

Battery type: Lithium

**Additional Information**

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <silver> level, see [www.epeat.net](http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 10% post-consumer recycled plastic (by wt.)
- This product is % recycle-able when properly disposed of at end of life.

**Packaging Materials**

<b>External:</b>	PAPER/Corrugated	249 g
<b>Internal:</b>	PLASTIC/EPS (Expanded Polyethylene)	69 g
	PLASTIC/Polyethylene low density	4 g

**Material Usage**

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)

### Technical Specifications – Environmental & Industry

- 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.

HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

[http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC\\_GBU\\_Product\\_Design\\_ISO\\_14K\\_Certificate.pdf](http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf)

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

#### 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.

## COUNTRY OF ORIGIN

China

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

### AFTER MARKET OPTIONS

Type	Description	Part #
Display	HP Z27u G3 QHD USB-C Display	1B9X2AA
	HP Z24u G3 WUXGA USB-C With HDMI With DisplayPort Display	1C4Z6AA
	HP P32u G5 QHD USB-C With HDMI With DisplayPort Monitor	64W51AA
	HP P34hc G4 WQHD USB-C Curved With HDMI With DisplayPort Monitor	21Y56AA
	HP E24u G5 FHD USB-C With HDMI With USB-C With DisplayPort Monitor	6N4D0AA
	HP E27q G5 QHD With HDMI With DisplayPort Monitor	6N6F2AA
	HP P22h G5 FHD With HDMI With VGA With DisplayPort Monitor	64W30AA
	HP P24h G5 FHD With HDMI With VGA With DisplayPort Monitor	64W34AA

Input/Output	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP HDMI to VGA Adapter	H4F02AA
	HP USB-C to VGA Adapter	N9K76AA

Mounts and Stands	HP B550 PC Mounting Bracket	16U00AA
	HP Quick Release Kit 2	6KD15AA
	HP Desktop Mini Security Dual VESA Sleeve (PC bracket required)	13L67AA
	HP Integrated Work Center for Desktop Mini	G1V61AA

Power Adapters	HP 65W Smart AC Adapter (4.5mm)	6H459AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
	HP 90W Smart AC Adapter (4.5mm)	G6H43AA

Security	HP Keyed Cable Lock 10mm	T1A62AA
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### Summary of Changes

Date of change:	Version History:		Description
	V1 to V2		
	V2 to V3		
	V3 to V4		
	V4 to V5		
	V5 to V6		
	V6 to V7		
	V7 to V8		
	V8 to V9		
	V9 to V10		
	V10 to V11		

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