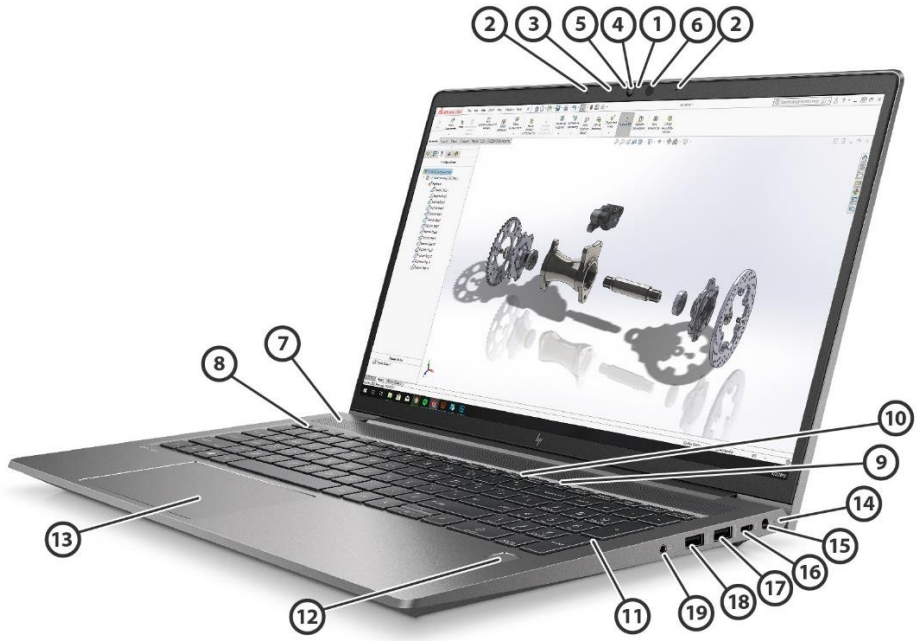
Overview

HP ZBook Power 15.6 inch G8 Mobile Workstation PC

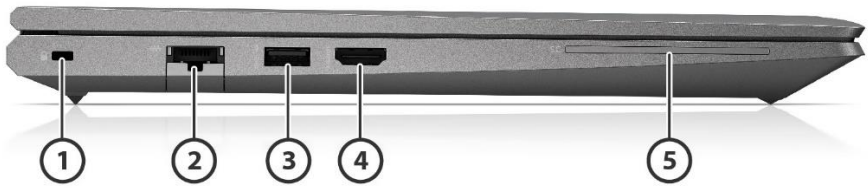


1. Ambient Light Sensor
2. Internal Microphones (optional)
3. Camera LEDs (optional)
4. Camera (optional)
5. IR Camera (optional)
6. Camera Cover
7 Speakers
8. Function Keys (changes with configured options)
9. Power button
10. HP Programmable Key

Right

11. Numeric Keypad
12. Fingerprint Sensor (optional)
13. Touchpad
14. Indicator LEDs: Power light, Wireless light, Storage usage light
15. Power connector
16. USB Type-C® with Thunderbolt™ 4
17. USB 3.1 Gen 1
18. USB 3.1 Gen 1
19. Audio Combo Jack

Overview



Left

1. Nano Security lock slot
2. RJ-45
3. USB 3.1 Gen 1 Charging Port
4. HDMI port
5. Smart Card Reader

Overview

At A Glance

- Work anywhere without compromising on performance or security with Windows 10 Pro and HP's collaboration and connectivity technology.
- NVIDIA Quadro GPUs provide the interactive visual workspace you need to do great work wherever, whenever. With twice the CUDA cores as previous generations, NVIDIA Quadro GPUs deliver the performance professionals need to work from anywhere.
- Take multitasking to the next level with 11th gen Intel® Core™ i9 processors built to handle multithreaded apps like Adobe Premiere Pro®, and with fast clock speeds to boost your speed on single threaded apps like Autodesk 3ds Max.
- Strenuously tested to meet ISV certification and deliver superb performance and support with leading software providers, including Autodesk and Adobe®.
- Have confidence with HP's most secure mobile workstations and defend against firmware and malware attacks with HP Sure Start and Sure Sense.
- Built with the environment in mind, this ZBook includes recycled ocean-bound plastics, plastic-free packaging, and ultra-efficient power consumption.
- Designed for ultimate durability, this ZBook undergoes brutal MIL-STD 810H tests to help ensure this PC keeps rolling through your workday.
- Plug in to greater connectivity at your desktop with the HP Thunderbolt™ Dock for lightning fast Thunderbolt™ 4 transfers and the flexibility to run up to 1 external 4K and 1 external 5K.
- Work without limits in any location with up to 4TB of local PCIe storage.

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

Features

OPERATING SYSTEM

Preinstalled OS	Windows 11 Pro[2] - HP recommends Windows 11 Pro[2] Windows 11 Pro Education[2] Windows 11 Home - HP recommends Windows 11 Pro for business [2] Windows 11 Home Single Language - HP recommends Windows 11 Pro for business [2] Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement)[2] Windows 10 Pro[1,2] Windows 10 Pro Education[1,2] Windows 10 Home - HP recommends Windows 11 Pro for business [1,2] Windows 10 Home Single Language - HP recommends Windows 11 Pro for business [1,2] Windows 10 Pro (Windows 10 Enterprise available with a Volume Licensing Agreement)[1,2] FreeDOS
Web support OS	Windows 10 Enterprise 64[2]
Supported Version	HP tested Windows 10, version 1809 on this platform. For testing information on newer versions of Windows 10, please see https://support.hp.com/document/c05195282

[1] Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).
[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

PROCESSOR

11th Generation Intel® Core™ i9-11950H vPro™ with Intel® Iris® Xe Graphics (2.6 GHz base frequency, up to 5.0 GHz with Intel® Turbo Boost Technology, X MB cache, 8 cores) [1,2,3,4,5,6]

11th Generation Intel® Core™ i9-11900H with Intel® Iris® Xe Graphics (2.5 GHz base frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, X MB cache, 8 cores) [1,2,3,4,5,6]

11th Generation Intel® Core™ i7-11850H vPro™ with Intel® Iris® Xe Graphics (2.5 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, X MB cache, 8 cores) [1,2,3,4,5,6]

11th Generation Intel® Core™ i7 11800H with Intel® Iris® Xe Graphics (2.3 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, X MB cache, 8 cores)[1,2,3,4,5]

11th Generation Intel® Core™ i5-11500H vPro™ with Intel® Iris® Xe Graphics (2.9 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, X MB cache, 6 cores)[1,2,3,4,5,6]

11th Generation Intel® Core™ i5 11400H with Intel® Iris® Xe Graphics (2.7 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, X MB cache, 6 cores) [1,2,3,4,5,6]

[1] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
[2] Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
[3] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. Energy Efficient Turbo is a power management feature that can lower the maximum core ratio (frequency), if the CPU thinks it can achieve about the same performance as with the maximum turbo frequency. Energy Efficient Turbo feature is disabled in Comet Lake H in order to prioritize performance in DC mode. It can be changed in F10 BIOS settings. See www.intel.com/technology/turboboost for more information.

Features

[4] 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.

[5] For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See http://intel.com/vpro

[6]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.

Features

CHIPSET

Mobile Intel® TigerLake PCH-H, WM 590

INTEL® CORE™ I5 WITH VPRO/CORE I7 WITH VPRO TECHNOLOGY CAPABLE

Intel® Core™ i5 with vPro®, Core™ i7 with vPro® and Core™ i9 with vPro® technology is a selectable feature that is available on units configured with select processors, a qualified Intel® WLAN module and a preinstalled Windows® operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel® Active Management Technology (iAMT) offers built-in manageability and proactive security for networked mobile workstations, even when they are powered off* or when the operating system is inoperable. It can help identify threats before they reach the network, isolate infected systems, and update regardless of their power state. [1,2]

[1] Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.
[2] For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See http://intel.com/vpro

GRAPHICS

Integrated

Intel® Iris® Xe Graphics [1,2,3,4,5]

Discrete

NVIDIA Graphic options:

NVIDIA RTX™ A2000 (4 GB GDDR6 dedicated) [1,2,3,4,5]

NVIDIA® T1200 (4 GB GDDR6 dedicated) [1,2,3,4,5]

NVIDIA® T600 (4 GB GDDR dedicated) [1,2,3,4,5]

[1] UHD content required to view UHD images.
[2] Support HD decode, DX11, DX12, HDMI 1.4, HDCP 2.3 via DP up to 4K @ 60Hz and via HDMI up to 4K @ 30Hz
[3] HDMI cable Sold Separately
[4] 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.
[5] GPU configurations may be limited to specific panel options

Multi Display Support

With HP Thunderbolt™ Dock G2

HP ZBook Power configuration with hybrid graphics supports a maximum of three independent displays which can include any combination of the Internal panel and two external display connected to the HDMI port and/or external displays connected to the dock Type-C®, or VGA, or two DisplayPort™ ports.

NOTE: Resolutions are dependent upon monitor capability and resolution and color depth settings.

Features

Without HP Thunderbolt™ Dock G2

HP ZBook Power with hybrid graphics and without the use of the dock supports up to a maximum of three independent displays, Internal panel plus two external displays connected to the two following ports: HDMI 2.0, Thunderbolt™ 4

NOTE: Resolutions are dependent upon monitor capability and resolution and color depth settings.

DISPLAY

Non-touch

- 15.6" diagonal FHD IPS eDP1.2 anti-glare bent WLED-backlit and ambient light sensor 250 nits 45% NTSC (1920 x 1080) [1,2]
- 15.6" diagonal FHD Low Power IPS eDP1.4 + PSR2 anti-glare bent WLED-backlit and ambient light sensor 400 nits 100% sRGB (1920 x 1080) [1,2]
- 15.6" diagonal UHD Low Power IPS eDP 1.4 + PSR2 +PSR anti-glare bent WLED-backlit and ambient light sensor 400 nits 100% sRGB (3840 x 2160) [1,2]

Touch

- 15.6" diagonal FHD IPS eDP1.2 anti-glare bent WLED-backlit Touch On Cell screen with ambient light sensor 250 nits 45% NTSC (1920 x 1080) [1,2,3]

[1] UHD content required to view UHD images.
[2] Resolutions are dependent upon monitor capability, and resolution and color depth settings.
[3]Actual brightness will be lower with Sure View or touchscreen.

Features

STORAGE AND DRIVES*

Max Storage
4TB through two M.2 NVMe drives

(up to 2) M.2 Storage (NVMe™ PCIe SSD)
256 GB PCIe® NVMe™ M.2 SSD
512 GB PCIe® NVMe™ M.2 SSD
1 TB PCIe® NVMe™ M.2 SSD
2 TB PCIe® NVMe™ M.2 SSD
256 GB PCIe® NVMe™ M.2 SED SSD
512 GB PCIe® NVMe™ M.2 SED SSD

* For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB of disk is reserved for system recovery software.

DRIVE CONTROLLERS

M.2 Storage Bay (PCIe NVMe) Primary slot	Up to PCIe Gen 4 x 4 lanes NVMe Solid State Drive
M.2 Storage Bay (PCIe NVMe) Secondary slot	PCIe Gen 3 x 4 lanes NVMe Solid State Drive
RAID:	RAID 0/1

MEMORY

Maximum Memory[1]
64 GB DDR4-3200 non-ECC SDRAM[2]
2 DDR4 SODIMMS[4]
Supports Dual Channel Memory[3]
Slots are customer accessible / upgradeable

[1] Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.
[2]Transfer rates up to 3200 MT/s on nECC memory.
[3] Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory channels.
[4] Maximum memory capacities assume Windows 64-bit operating systems. With Windows 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.

Features

NETWORKING/COMMUNICATIONS

LAN

Intel® I219-LM GbE, vPro®
Intel® I219-V GbE, non-vPro®

[1]GbE - The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

WLAN

Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5.2 combo, vPro® [1]
Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5.2 combo, non-vPro® [1]

[1] Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.

Optional Near Field Communication (NFC) module

AUDIO/MULTIMEDIA

Audio

HP Audio, dual stereo speakers, dual array digital microphone[3], functions keys for volume up and down, combo microphone/headphone jack, HD audio

Camera[1, 2]

720p HD webcam with IR

720p HD webcam

[1] HD content required to view HD images respectively.

[2] Windows Hello face authentication utilizes a camera specially configured for near infrared (IR) imaging to authenticate and unlock Windows devices as well as unlock your Microsoft Passport.

[3]Dual-microphone array when equipped with optional webcam.

Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Quiet Keyboard, full-size, spill-resistant, backlit, with Programmable Key, with sperate numeric keypad, clickpad with glass surface, multi-touch gestures and taps enabled

Pointing Devices
Clickpad with multi-touch gestures enabled, taps enabled as default;
Microsoft Precision Touchpad Default Gestures Support

SOFTWARE AND SECURITY

Workstation ISV Certifications
See the latest list of certifications at: http://www.hp.com/go/isv

HP ZCENTRAL REMOTE BOOST SOFTWARE
The remote desktop solution for serious workstation users and their most demanding applications. Download at: http://www.hp.com/go/RGS

HP Performance Advisor
HP Performance Advisor HP Performance Advisor enables optimal configuration of HP Mobile Workstations delivering stability and best performance. HP Performance Advisor will guide your system setup allowing a "custom" configuration that best matches the workstation to user requirements. Download at: https://www.hp.com/us-en/workstations/performance-advisor.html

Software
Adobe Creative Cloud Bundle
Bing search for IE11;
Buy Office;
Data Science Stack
HP Connection Optimizer[1]
HP Cloud Recovery[2]
HP Easy Clean
HP PC Hardware Diagnostics
HP Privacy Settings
HP Hotkey Support;
HP Noise Cancellation Software;
HP Performance Advisor[20]
HP QuickDrop[3]
HP Remote Graphics Software;
HP Smart Support[4]
HP Support Assistant;
HP ZCentral Remote Boost 2020 Software for Z workstation[5]
TileApp

Manageability Features
HP Driver Packs (download)
HP Manageability Integration Kit Gen4 (download)[6]
HP Client Catalog (download)
HP Client Management Script Library (download)
HP Image Assistant (download)

Security Management
HP Pro Security Edition (optional)[7]
HP Client Security Manager Gen7
HP Sure Sense[8]

Features

HP Sure Click[9]
HP Sure Run Gen4[10]
HP Sure Recover Gen4[11]
HP Sure Start Gen6[12]
HP Sure Admin[13]
HP BIOSphere Gen6[14]
HP Secure Erase[15]
Absolute Persistence Module[16]
HP Drive Lock & Automatic Drive Lock[17]
BIOS Update via Network
HP Wake on WLAN
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)[18]
HP Fingerprint Sensor
Secured-Core PC Enable[19]
HP Tamper Lock

BIOS Version
ISO/IEC 19678: 2015 (formerly NIST 800-147) compliant
UEFI version: 2.7

For more information on HP Client Security Software Suite, refer to http://www.hp.com/go/clientsecurity**.**

[1] HP Connection Optimizer requires Windows 10.
[2] HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/document/c05115630
[3] HP QuickDrop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
[4] HP Smart Support is available to commercial customers through your HP Service Representative and HP Factory Configuration Services; or it can be downloaded at: http://www.hp.com/smart-support. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights.
[5] HP ZCentral Remote Boost Sender does not come preinstalled on Z Workstations but can be downloaded and run on all Z desktop and laptops without license purchase through 2022. With non-Z sender devices, purchase of perpetual individual license or perpetual floating license per simultaneously executing versions and purchase of ZCentral Remote Boost Software Support is required. ZCentral Remote Boost Sender for non-Z Hardware requires a license and Windows 10, RHEL/CentOS (7 or 8), or UBUNTU 18.04 or 20.04 LTS operating systems. macOS (10.14 or newer) operating system and ThinPro 7.2 are only supported on the receiver side. Requires network access. The software is available for download at hp.com/ZCentralRemoteBoost.
[6] HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
[7] HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/c00581401?openCLC=true as that EULA is modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support."
[8] HP Sure Sense is available on select HP PCs and is not available with Windows10 Home.
[9] HP Sure Click requires Windows 10. See https://bit.ly/2PrLT6A_SureClick for complete details.
[10] HP Sure Run Gen4 is available on select HP PCs and requires Windows 10.
[11] HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module.
[12] HP Sure Start Gen6 is available on select HP PCs.

Features

[13] HP Sure Admin requires HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
[14] HP BIOSphere Gen6 features may vary depending on the platform and configuration.
[15] For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
[16] Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/.
[17]Drive Lock is not supported on NVMe drives
[18] TPM 2.0 is limited on HP ThinPro/HP Smart Zero, and functionality is dependent upon use of a customer-enabled application that can locate the TPM chip.
[19] Secured-Core PC Enable only available with vPro config and with TPM)
[20]HP Performance Advisor Software - HP Performance Advisor is ready and waiting to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at: https://www.hp.com/us-en/workstations/performance-advisor.html

Features

POWER

Power Supply

Up to 12 hours[1]

HP Long Life 6-cell, 83 Wh Li-ion polymer[2,5]

120 W Slim Smart external AC power adapter[3]
150 W Slim Smart external AC power adapter[4]

Supports battery fast charge: approximately 50% in 30 minutes (defined under system hibernation and off mode)

[1] Battery life will vary depending on the product model, configuration, loaded applications, features, use, wireless functionality and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See MobileMark18 battery benchmark https://bapco.com/products/mobilemark-2018/ for additional details.
[2] Battery is internal and not replaceable by customer. Serviceable by warranty. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year.
[3]Only available with UMA graphics
[4] Only available with discrete graphic options
[5]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.

ENVIRONMENTAL

Targeting ENERGY STAR® certified and EPEAT® GOLD registered configurations available [1]

Low halogen[2]

[1] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.
[2] External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.

Features

WEIGHTS & DIMENSIONS

Dimensions (w x d x h)
35.94 x 23.39 x 2.28 cm
14.15 x 9.21 x 0.9 in

Weights
Starting at 1.9kg (4.16 lb)
Weight varies by configuration and components.

A deck: Anodized Aluminum
B deck: PC-ABS with Talc
C deck: Anodized Aluminum
D deck: Anodized Aluminum
Metal Alloy Hinges

PORTS/SLOTS

Left side
1 RJ-45
1 SuperSpeed USB Type-A 5Gbps signaling rate (charging) [USB 3.1 Gen 1 Type A charging]
1 HDMI[1,2]
1 smart card reader
1 Nano Security Lock Slot

Right side
1 power connector
1 Audio Combo Jack
1 USB Type-C® (Thunderbolt™ 4, pass through support DisplayPort™ 1.4, USB 3.1 Gen 2, with BC 1.2)
2 SuperSpeed USB Type-A 5Gbps signaling rate [USB 3.1 Gen 1 Type A]

[1]HDMI port-cable not included.
[2]HDMI 2.0 with discrete, 1.4 with UMA.

SERVICE AND SUPPORT

HP Services offers 3-year and 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services[1] 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.

[1] HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP Services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications – System Unit

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	19.5V		
	Average Operating Power(idle)	2.5W	System in idle mode + max panel brightness	Adapter Safety test condition
	Discrete Graphics	NVIDIA® T600: 25W NVIDIA® T1200: Max-Q 35W NVIDIA RTX™ A2000: Max-Q 35W		
	Max Operating Power	<150W		
Temperature	**Operating**	32° to 95° F (0° to 35° C) (No sustained direct exposure to sunlight.)		
	Non-operating	-4° to 140° F (-20° to 60° C)		
Relative Humidity	**Operating**	10% to 90%, non-condensing		
	Non-operating	5% to 95% (101.6° F (38.7° C) maximum wet bulb temperature, non-condensing)		
Shock	**Operating**	40 G, 2 ms, half-sine		
	Non-operating	240 G, 2 ms, half-sine		
Random Vibration	**Operating**	Nominal 1.043 grms		
	Non-operating	Nominal 3.50 grms		
Maximum Altitude (unpressurized)	**Operating**	10,000 ft (3,048 m)		
	Non-operating	40,000 ft (12,192 m)		
Temperature Derating with Altitude	**Operating**	1.8°F / 1000 ft (1°C / 304.8 m)		
Planned Industry Standard Certifications	**UL**	Yes		
	CSA	Yes		
	FCC Compliance	Yes		
	ENERGY STAR®	Yes		
	EPEAT®	Yes[2]		
	ICES	Yes		
	Australia / NZ A-Tick Compliance	Yes		
	CCC	Yes		
	Japan VCCI Compliance	Yes		
	KCC	Yes		
	BSMI	Yes		
	CE Marking Compliance	Yes		
	MIL STD 810H	Yes		
	BNCI or BELUS	Yes		
	GOST	Yes		
	Saudi Arabian Compliance (ICCP)	Yes		
	UKRSERTCOMPUTER	Yes		

[1]Configurations of the HP ZBook Power 15.6 Inch G8 Mobile Workstation that are ENERGY STAR® qualified are identified as HP ZBook Power 15.6 Inch G8 Mobile Workstation ENERGY STAR on HP websites and on http://www.energystar.gov.
[2]Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

DISPLAYS

15.6" diagonal FHD IPS eDP anti-glare bent WLED-backlit and ambient light sensor 250 nits 45% NTSC (1920 x 1080) NWBZ	**Outline Dimensions (W x H)**	350.96 x 205.54 mm (max)	
	Active Area	344.16 x 193.59 mm (typ.)	
	Weight	370 g (max)	
	Diagonal Size	15.6 inch	
	Thickness	3.0 mm/ 5.0 mm (w/PCB) (max)	
	Interface	eDP 1.2 (2 lane)	
	Panel Technology	IPS	
	Surface Treatment	Anti-Glare	
	Touch Enabled	No	
	Contrast Ratio	600:1 (typ.)	
	Refresh Rate	60 hz	
	Brightness	250 nits	
	Pixel Resolution	**Format**	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	142	
	Color Gamut Coverage	NTSC 45%	
	Color Depth	6 bits (Hi FRC supportive w/ condition to enable)	
	Viewing Angle	UWVA 85/85/85/85	
	NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.		
15.6" diagonal FHD Low Power IPS eDP1.4 anti-glare bent WLED-backlit and ambient light sensor 400 nits low power 100% sRGB (1920 x 1080)	**Outline Dimensions (W x H)**	349.46 x 204.79 mm (max)	
	Active Area	344.16 x 193.59 mm (typ.)	
	Weight	325 g (max)	
	Diagonal Size	15.6 inch	
	Thickness	2.6mm / 4.6mm (PCB) (max)	
	Interface	eDP 1.4 (2 lane)	
	Panel Technology	IPS	
	Surface Treatment	Anti-Glare	
	Touch Enabled	No	
	Contrast Ratio	1200:1 (typ.)	
	Refresh Rate	60 Hz	
	Brightness	400 nits	
	Pixel Resolution	**Format**	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	166	
	Color Gamut Coverage	sRGB 100%	
	Color Depth	8 bit	
	Viewing Angle	UWVA 85/85/85/85	

Technical Specifications – Displays

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

15.6" diagonal UHD Low Power IPS eDP1.4 +PSR anti-glare bent WLED-backlit and ambient light sensor 400 nits 100% sRGB (3840 x 2160)	**Outline Dimensions (W x H)**	349.52 x 205.42 mm (max)	
	Active Area	344.22 x 193.62 mm (typ.)	
	Weight	320 g (max)	
	Diagonal Size	15.6”	
	Thickness	2.6mm / 4.6mm (PCB) (max)	
	Interface	eDP 1.4 (2 lane)	
	Panel Technology	IPS	
	Surface Treatment	Anti-glare (AG)	
	Touch Enabled	No	
	Contrast Ratio	1200:1 (typ.)	
	Refresh Rate	60Hz	
	Brightness	400nits	
	Pixel Resolution	**Format**	3840x2160 (UHD)
	Backlight	LED	
	PPI	282	
	Color Gamut Coverage	100% sRGB	
	Color Depth	8 bits	
	Viewing Angle	UWVA 85/85/85/85	

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

15.6" diagonal FHD IPS eDP anti-glare bent WLED-backlit Touch On Panel screen with Corning® Gorilla® Glass 5 with ambient light sensor 250 nits 45% NTSC (1920 x 1080)	**Outline Dimensions (W x H)**	350.96 x 205.74 mm (max)	
	Active Area	344.16 x 193.59 mm (typ.)	
	Weight	380 g (max)	
	Diagonal Size	15.6 inch	
	Thickness	3.2mm/ 5.2mm (PCB) (max)	
	Interface	eDP 1.2 (2 lane)	
	Panel Technology	IPS	
	Surface Treatment	Anti-Glare On-cell	
	Touch Enabled	Yes	
	Contrast Ratio	600:1 (typ.)	
	Refresh Rate	60 Hz	
	Brightness	250 nits*	
	Pixel Resolution	**Format**	1920 x 1080 (FHD)
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	142	
	Color Gamut Coverage	NTSC 45%	
	Color Depth	6 bits	
	Viewing Angle	UWVA 85/85/85/85	

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

Technical Specifications – Displays

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

Technical Specifications – Storage

STORAGE AND DRIVES

256GB PCIe NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	256GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	2200 MB/s
	Logical Blocks	500,118,192	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
256GB PCIe NVMe TLC M.2 2280 SED Opal 2 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	256 GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	2200 MB/s
	Logical Blocks	500,118,192	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
512GB PCIe NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	512GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	2956 MB/s
	Logical Blocks	1,000,215,215	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security; TRIM; L1.2	

Technical Specifications – Storage

		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
512TB PCIe NVMe TLC M.2 2280 SED Opal 2 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	512GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	2956 MB/s
	Logical Blocks	1,000,215,215	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
1TB PCIe NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	1TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	3000 MB/s
	Logical Blocks	2,000,409,264	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
2TB PCIe NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	2TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		3500 MB/s	3000MB/s
	Logical Blocks	3,907,029,168	

Technical Specifications – Storage

	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security (Option);TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
512TB PCIe Gen 4 NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	512GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6600 MB/s	5100 MB/s
	Logical Blocks	1,000,215,215	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	Pyrite 2.0; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
1TB PCIe Gen 4 NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	1TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		7100 MB/s	5200 MB/s
	Logical Blocks	2,000,409,264	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	Pyrite 2.0; TRIM; L1.2	
		For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds	
2TB PCIe Gen 4 NVMe TLC M.2 2280 Solid State Drive	**Form Factor**	M.2 2280	
	Drive Weight	0.02 lb (10 g)	
	Capacity	2TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**

Technical Specifications – Storage

	7100 MB/s	5200MB/s
Logical Blocks	4,000,797,360	
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
Features	Pyrite 2.0; TRIM; L1.2	

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.
Slot 1 supports up to Gen 4 speeds, slot 2 supports up to Gen 3 speeds

Technical Specifications – Networking

NETWORKING/COMMUNICATION

Intel i219LM 10/100/1000 Integrated NIC vPro®	**Connector**	RJ-45
	System Interface	PCI(Intel proprietary) + SMBus
	Data Rates Supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
	IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
	Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling(Hash Mode Only) Jumbo Frame 9K
	Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Management Interface	Auto MDI/MDIX Crossover cable detection
	IT Manageability	Wake-on-LAN from modem standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
	Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel i219v 10/100/1000 Integrated NIC non-vPro®	**Connector**	RJ-45
	System Interface	PCI(Intel proprietary) + SMBus
	Data Rates Supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10, 100 & 1000 Mbit/s
	IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support

Technical Specifications – Networking

		IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet) IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BAE-T IEEE 802.3bz 2.5GBASE-T
	Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling(Hash Mode only) Jumbo Frame 9K
	Power consumption	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Management Interface	Auto MDI/MDIX Crossover cable detection
	IT Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Intel Wi-Fi 6 AX201 + BT5.2 (802.11ax 2x2, non-vPro®, supporting gigabit file transfer speeds*) 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	Wi-Fi certified
	Frequency Band	802.11b/g/n/ax • 2.402 – 2.482 GHz 802.11a/n/ac/ax • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz

Technical Specifications – Networking

	• 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[1]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • 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
Output Power[2]	• 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 • 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 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	•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

Technical Specifications – Networking

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 : 2.8g 2. Type 126: 1.3g	
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	
HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology		
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.	
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW	
Bluetooth Software Supported	Microsoft Windows Bluetooth Software	
Link Topology		
Power Management	Microsoft Windows ACPI, and USB Bus Support	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance	

		LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

*GbE - The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

*Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
**Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.

Intel Wi-Fi 6 AX201 + BT5.2 (802.11ax 2x2, vPro®, supporting gigabit file transfer speeds*) 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	Wi-Fi certified
	Frequency Band	802.11b/g/n/ax • 2.402 – 2.482 GHz 802.11a/n/ac/ax • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
	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

Technical Specifications – Networking

Security[1]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA3 certification • IEEE 802.11i • WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[2]	• 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 • 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[3]	•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 : 2.8g 2. Type 126: 1.3g
Operating Voltage	3.3v +/- 9%
Temperature	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)

Technical Specifications – Networking

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 White – Radio ON	

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

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.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)
Security & Manageability	Intel® vPro® support with appropriate Intel® chipset components

Technical Specifications – Networking

*GbE - The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

*Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
**Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.

NFC (Near Field Communication) module (optional)

Dimensions (L x W x H)	Module 25 mm by 10 mm by 2.0 mm		
Chipset	NPC100		
System interface	I2C		
NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2		
NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2		
Reader (PCD-VCD) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz cards		
Card Emulation (PICC-VICC) Mode(1)	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa		
Frequency	13.56 MHz		
NFC Modes Supported	Reader/Writer, Peer-to-Peer		
Raw RF Data Rates	106, 212, 424, 848 kbps		
Operating temperature	0°C to 70°C		
Storage temperature	-20°C to 125°C		
Humidity	10-90% operating 5-95% non-operating		
Supply Operating voltage	4.35 to 5.25 Volts		
I/O Voltage	1.8V or 3.3V		
Power Consumption	**Booster enable, VCC_BOOST = 5V) Mode Power Consumption,**	VBAT= 3.3V, **Polling** **Detected Test Tag Type 1**	 7.3 mA Total 283.8 mA Net Module 236.8 mA

Technical Specifications – Networking

	Typical	**Detected Test Tag Type 2**	Total 288.8 mA Net Module 241.8 mA
		Detected Test Tag Type 3	Total 287.7 mA Net Module 240.7 mA
		Detected Test Tag Type 4	Total 282.3 mA Net Module 235.3 mA
Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.		

Technical Specifications – Power

POWER

120 Watt Slim Smart AC Adapter	**Dimensions**	138x68.5x25.4mm	
	Weight	unit: 350g +/- 10g	
	Input	**Input Efficiency**	88% at 115 Vac and 89% at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	1.7 A at 90 Vac and Maximum Load
	Output	**Output power**	120W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<18.0A
	Connector	C5	
	Environmental Design	**Operating temperature**	32oFto 95oF (0oto 35oC)
		Non-operating (storage) temperature	-4oFto 185oF (-20oto 85oC)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	5% to 95%
		Storage Humidity	5% to 95%
	EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. * MTBF - over 100,000 hours at 25°C ambient condition.	

NOTE: Can only be configured with Intel UMA Graphics option

150 Watt Slim Smart AC Adapter	**Dimensions**	138x66x22mm	
	Weight	unit: 325g +/- 10g	
	Input	**Input Efficiency**	88% at 115 Vac and 89% at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	2.7 A at 90 Vac and Maximum Load
	Output	**Output power**	150W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<16.0A
	Connector	C5	
	Environmental Design	**Operating temperature**	32oFto 95oF (0oto 35oC)
		Non-operating (storage) temperature	-4oFto 185oF (-20oto 85oC)
		Altitude	0 to 16,400 ft (0 to 5000m)

Technical Specifications – Power

	Humidity	5% to 95%
	Storage Humidity	5% to 95%
EMI and Safety Certifications	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. * MTBF - over 100,000 hours at 25°C ambient condition.	

NOTE: Can only be configured with Quadro T1200 and A2000 Graphics option

Technical Specifications – Power

HP Long Life 6-cell Polymer (83Wh) Battery*	**Dimensions (H x W x L)**	8.7 x 316.1 x70.2mm (0.342 x 12.44 x 2.763 inch)	
	Weight	0.31kg (0.683lb)	
	Cells/Type	6-cell; Polymer	
	Energy	Voltage	11.58V
		Amp-hour capacity	7.170Ah
		Watt-hour capacity	83Wh
	Temperature	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Fuel Gauge LED	NA	
	Warranty	Refer to http://www.hp.com/support/batterywarranty/ for battery warranty information.	
	Optional Travel Battery Available	N/A	

NOTE: Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform.

*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.

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 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

• Ocean-bound plastic in Speaker Enclosure
• 15% 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

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 (Short idle)	6.09 W	6.31 W	5.92 W
Normal Operation (Long idle)	1.43 W	1.41 W	1.47 W
Sleep	1.43 W	1.41 W	1.47 W
Off	0.41 W	0.42 W	0.42 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)	21 BTU/hr	21 BTU/hr	21 BTU/hr
Normal Operation (Long idle)	5 BTU/hr	5 BTU/hr	5 BTU/hr
Sleep	5 BTU/hr	5 BTU/hr	5 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

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

Technical Specifications – Environmental

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.6	14.3
Fixed Disk – Random writes	3.3	24.3
Optical Drive – Sequential reads	3.6	28.4

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.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product is 95.5% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	250 g
Internal:	PAPER/Molded pulp	177 g
	PLASTIC/Polyethylene low density	10 g

The plastic packaging material contains at least 0% recycled content.

The corrugated paper packaging materials contains at least 45% 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 http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

Technical Specifications – Environmental

- 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: 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.

Technical Specifications – Environmental

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.

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

Type	Description	Part #
Displays	HP Z32 31.5” 4k UHD Display	1AA81A8#XXX
	HP Z38c 37.5” Curved Display	Z4W65A8#ABA
Cases	HP 17.3 Business Backpack	2SC67AA
	HP 15.6 Business Top Load	2SC66AA
	HP 17.3 Business Slim Top Load	2UW02AA
	HP Prelude Pro Recycle Backpack	1X644AA
	HP Prelude Pro Recycle Top Load	1X645AA
	HP Executive 17.3 Backpack	6KD05AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Executive 15.6 Backpack	6KD07AA
	HP Executive 17.3 Top Load	6KD08AA
	HP Executive 15.6 Leather Top Load	6KD09AA
	HP Prelude 15.6 Top Load	1E7D7AA
	HP Prelude 15.6 Backpack	1E7D6AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
Docking Accessories	HP TB Audio Module (comp with Thunderbolt Dock G2)	3AQ21AA
Docking station	HP USB-C Mini Dock - power not supported on mWKS	1PM64AA
	HP TB Dock G2 w/ Combo Cable (this is 230W)	3TR87AA
	HP USB-C/A Universal Dock G2 Power Not Supported on Mobile Workstations	5TW13AA
	HP USB-C Dock G5 Power Not Supported on Mobile Workstations	5TW10AA
Input/Output - Mice & Keyboard	HP Comfort Grip Wireless Mouse (See Link 5 Tab)	H2L63AA
	HP USB Travel Mouse	G1K28AA
	HP Wireless Premium Mouse (See Link 5 Tab)	1JR31AA
	HP Wired 320M Mouse	9VA80AA
	HP Travel Bluetooth Mouse	6SP30AA
	HP Multi-Device 635 Black Wireless Mouse	1D0K2AA
	HP Creator 935 Black Wireless Mouse	1D0K8AA
	HP Slim Wireless Keyboard and Mouse	T6L04AA
	HP Wireless (Link-5) Keyboard	T6U20AA
	HP 320K Wired Keyboard	9SR37AA
	HP 125 Wired Keyboard	266C9AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
Input/Output - Adapter	HDMI to VGA Adapter	H4F02AA
	HP HDMI to DVI Adapter	F5A28AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA

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

	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to VGA Adapter	N9K76AA
	HP USB 3.0 to Gigabit Adapter	N7P47AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
Memory	HP 4GB 3200MHz DDR4 (pending approval)	286H5AA
	HP 8GB 3200MHz DDR4 (pending approval	286H8AA
	HP 16GB 3200MHz DDR4(pending approval)	286J1AA
Power - A/C Adapter	HP 150W Slim Smart 4.5mm AC Adapter	4SC18AA
Security	HP Nano Keyed Cable Lock	1AJ39AA
	HP Sure Key Cable Lock	6UW42AA
Storage - External	HP External USB DVDRW Drive	F2B56AA
Storage - SS M2	HP 256GB PCIe-3x4 NVME M.2 SSD	1D0H6AA
	HP 512GB PCI-e 3x4 NVMe M2 SSD	1D0H7AA

Date of change:	Version History:		Description of change:
June 29, 2021	From v1 to v2	Changed	AUDIO/MULTIMEDIA section
July 9, 2021	From v2 to v3	Changed	NETWORKING/COMMUNICATIONS section
July 29, 2021	From v3 to v4	Changed	PROCESSOR section
August 11, 2021	From v4 to v5	Changed	SOFTWARE AND SECURITY section
August 18, 2021	From v5 to v6	Changed	Product Name
November 26, 2021	From v6 to v7	Changed	OPERATING SYSTEM section
December 3, 2021	From v7 to v8	Changed	SOFTWARE AND SECURITY section
December 9, 2021	From v8 to v9	Changed	SYSTEM UNIT section
December 15, 2021	From v9 to v10	Changed	OPERATING SYSTEM section
December 23, 2021	From v10 to v11	Changed	NETWORKING/COMMUNICATIONS section