Overview

HP ZBook Studio 16” G9 Mobile Workstation PC

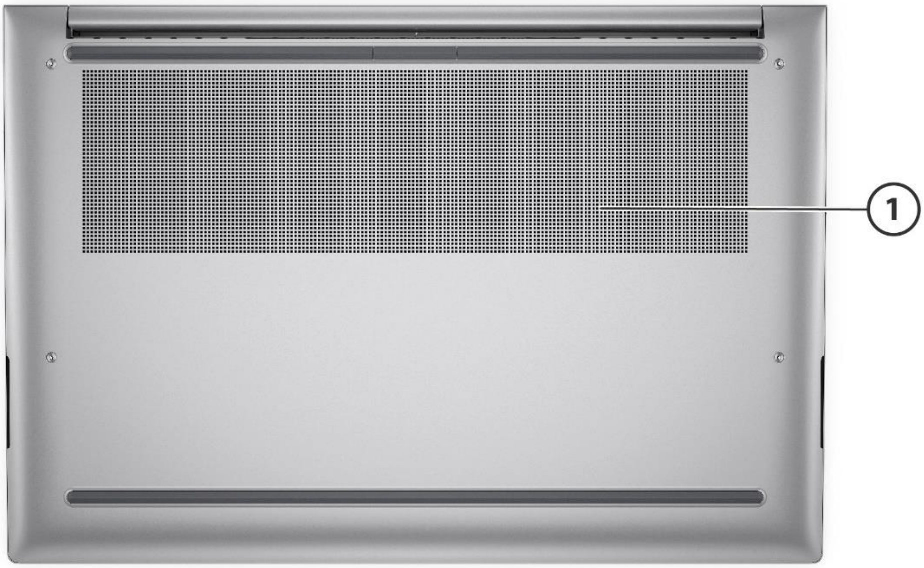
Right

1. Ambient Light Sensor (Optional)
2. Top Facing Microphone (2)
3. Webcam LED
4. IR Camera
5. HD Camera
6. IR Camera LEDs
7. Clickpad
8. Camera Privacy Key
9. Nano Security Lock slot
10. Super Speed USB Type-A 5Gbps signaling rate (charging)
11. SuperSpeed USB Type-C® 10Gbps signaling rate (Power Delivery Out, Display Out)1
12. microSD 7.1 media card reader
13. Woofer
14. Fingerprint Sensor (Optional)
15. Speakers

Overview

Left

1. Power Charging indicator
2. Power connector
3. (2) Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge)
4. headphone/microphone combo
5. Woofer



Bottom

1. Fan Venting

At A Glance

- New chassis design
- 12th Generation Intel® Core™ i7, i9 H series processors; up to 14-core
- Preinstalled with Windows 11 versions, Ubuntu 20.04, or FreeDOS
- 16:10 aspect ratio – taller aspect that is better for productivity and 11% more screen area
- 720p HD IR camera & Super Resolution SW
- New DDR5 SODIMM memory and PCIe Gen4 SSDs provide fast access to your work
- Choice of displays:
  - 40.6 cm (16") diagonal, 4K WQUXGA (3840 x 2400), 120 Hz, IPS, anti-glare, 500 nits, 100% DCI-P3, HP DreamColor
  - 40.6 cm (16") diagonal, 4K WQUXGA (3840 x 2400), OLED, multitouch-enabled, UWVA, BrightView, Corning® Gorilla® Glass 5, Low Blue Light, 400 nits, 100% DCI-P3
  - 40.6 cm (16") diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 1000 nits, 72% NTSC, HP Sure View Reflect integrated privacy screen
  - 40.6 cm (16") diagonal, WUXGA (1920 x 1200), IPS, narrow bezel, anti-glare, Low Blue Light, 400 nits, low power, 100% sRGB
- Larger 3:2 Clickpad surface for an easier, more intuitive input
- HP RGB Keyboard[5] with Z Light Space[1]
- HP Vaporforce Thermals including new curved metal blade design
- HP Long Life 6-cell, 86 Wh polymer battery
- HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense.[3]
- Undergoes 21 MIL-STD 810H tests[4]
- Designed to support all HP docking options including the HP Thunderbolt 280W G4 Dock w/Combo Cable
- HP Presence[2], a new portfolio of conferencing and collaboration solutions for people to truly work together and feel connected

[1] Requires Windows OS.
[2] HP Presence requires myHP application and Windows OS.
[3] HP Wolf Security for Business requires Windows 10 and higher, includes various HP security features and is available on HP Pro, Elite, Workstation, and RPOS products. See product details for included security features and OS requirements.
[4] MIL-STD 810H is not intended to demonstrate fitness of U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

[5] RGB Keyboard is optional

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

OPERATING SYSTEM

Preinstalled OS

Windows 11 Pro - HP recommends Windows 11 Pro[2]
Windows 11 Home - HP recommends Windows 11 Pro[2]
Windows 10 Pro (available through downgrade rights from Windows 11 Pro)[1,2,3]
Ubuntu 20.04[4]
FreeDOS 3.0

[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.
[3] This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.
[4] For detailed Linux® OS/hardware support information, see: http/www.hp.com/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. 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. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

PROCESSOR

12th Generation Intel® Core™ i9-12900H with Intel® Iris® Xe Graphics (2.5 GHz base frequency, up to 5.0 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads), supports Intel® vPro® Technology [1,2,3,4,5]

12th Generation Intel® Core™ i9-12900HK with Intel® Iris® Xe Graphics (2.5 GHz base frequency, up to 5.0 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 8 cores, 20 threads) [1,2,3,4]

12th Generation Intel® Core™ i7-12800H with Intel® Iris® Xe Graphics (2.4 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads), supports Intel® vPro® Technology [1,2,3,4,5]

12th Generation Intel® Core™ i7-12700H with Intel® Iris® Xe Graphics (2.3 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 14 cores, 20 threads) [1,2,3,4]

[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. See www.intel.com/technology/turboboost for more information.
[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] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

CHIPSET

Integrated in the processor

INTEL® CORE™ i7 WITH VPRO®/CORE i9 WITH VPRO® TECHNOLOGY CAPABLE

Intel® Core™ i7 with vPro®, 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] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

GRAPHICS

Integrated

Intel® Iris® X^e Graphics

Discrete

NVIDIA RTX™ A1000 Laptop GPU (4GB GDDR6 dedicated)
NVIDIA RTX™ A2000 8GB Laptop GPU (8GB GDDR6 dedicated)
NVIDIA RTX™ A3000 12GB Laptop GPU (12GB GDDR6 dedicated)[6]
NVIDIA RTX™ A4500 Laptop GPU (16GB GDDR6 dedicated)[6]
NVIDIA RTX™ A5500 Laptop GPU (16GB GDDR6 dedicated)[6]
NVIDIA GeForce 3060 Laptop GPU (6GB GDDR6 dedicated)
NVIDIA GeForce 3070 Ti Laptop GPU (8GB GDDR6 dedicated)
NVIDIA GeForce 3080 Ti Laptop GPU (16GB GDDR6 dedicated)

Supports

Support HD decode, DX12, HDMI 2.0b, HDCP 2.3
Hybrid Graphics supported (Default)

[1] UHD content required to view UHD images.

[2] Both UMA & Discrete configurations support up to 4 displays when on the HP Thunderbolt Dock G2 (sold separately) – Max. resolution = 2.5K @60Hz (DP1) & 2.5K @60Hz (DP2) & FHD (VGA) OR 4K @60Hz (one DP Port) & 4K @60Hz (Type-C® output port using a Type C®-to-DP adapter).

[3] Support HD decode, DX11, DX12, HDMI 1.4, HDCP 2.3 via DP up to 4K @ 60Hz and via HDMI up to 4K @ 30Hz

[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 GPU/Memory Configurations.

[6] **NOTES:**
NVIDIA Feature: Discrete Graphics (RTX A3000, A4500, A5500) can turn "ECC ON" with the VRAM

- NV Control Panel should have the following selectable option:
  - Change ECC State
- Native Display: There is no option to Change ECC State in NV Control Panel
- External Display: There is an option to Change ECC State in NV Control Panel
- Software Driver solution available in Q3 2022

DISPLAY

Non-touch

- 16.0” diagonal, WUXGA (1920 x 1200), IPS, anti-glare, 1000 nits, 72% NTSC, HP Sure View Reflect integrated privacy screen[1,3,5,6,7,8]
- 16.0” diagonal, WUXGA (1920 x 1200), IPS, narrow bezel, anti-glare, WLED+LBL, 400 nits, low power, 100% sRGB[1,3,6,7,8]
- 16.0” diagonal, 4K WQUXGA (3840 x 2400), 120 Hz, IPS, UWVA, anti-glare, 500 nits, 100% DCI-P3, HP DreamColor[1,3,6,7,8]

Touch

- 16.0” diagonal, 4K WQUXGA (3840 x 2400), OLED, LBL, multitouch-enabled, UWVA, BrightView, TS, Corning® Gorilla® Glass 5, 400 nits, 100% DCI-P3[1,3,5,6,7,8]

[1] HD content required to view HD images.
[3] Resolutions are dependent upon monitor capability, and resolution and color depth settings.
[5] Actual brightness will be lower with touchscreen or Sure View.
[6] UHD content required to view UHD images.
[7] HP Sure View is optional and must be configured at purchase. It operates in landscape orientation.
[8] Display options may be limited to specific CPU / GPU Configurations.

DOCKING

Docking station model #1	HP Thunderbolt Dock G2
Total number of supported displays (incl.the notebook) display)	4
Max.resolutions supported	Dual 4K @30Hz or dual 4K UHD @ 60Hz is supported Single 8K@ 30Hz (multiple tiles) for Thunderbolt hosts Non-TBT hosts DP 1.4 in high res mode(1) 8K video single cable@30Hz
Dock Connectors	2xDP, 1xVGA, 1xTB, 1xUSB-C alt-mode
Technical limitations	Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Max resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in High Resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a max resolution of: (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
Docking station model #2	HP USB-C Dock G5
Dimensions (L x W x H)	4.80 x 4.80 x 1.77 in (122 x 122 x 45 mm)
Weight	1.49 lb (0.68 kg)
Top components	LED and power button to power or wake host system[1]
Front components	One USB-CTM port with data and power out (15W) One USB-CTM cable to connect to host system (1 meter cable length)
Side components	Two USB 3.0 charging ports One combo audio jack
Back components	Two USB 3.0 charging ports Two DisplayPort™ ports One 10/100/1000 RJ 45 port One HDMI 2.0 port One standard lock slot
External monitor support **Power to system**	3 displays is the maximum displays supported, depending on the capabilities of the host machine. Triple 4K displays requires a DP 1.4 machine with DSC** in high res mode. See QuickSpecs for configurations supported at: http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04168358
Power to host	(USB-C PD) 5V , 9V, 10V, 12V, 15V, 20V all at 5A MAX

Features

STORAGE AND DRIVES*

PCIe® NVMe™ M.2 2280 Storage
4 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC
2 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC
1 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC
512 GB PCIe® Gen4x4 NVMe™ M.2 SSD TLC
512 GB PCIe® Gen4x4 NVMe™ SED SSD
256 GB PCIe® Gen4x4 NVMe™ M.2 SSD TLC

* 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.
NOTE: SSD/SODIMM will be CSR-B

DRIVE CONTROLLERS

M.2 Storage Bay (PCIe NVMe)	PCIe® Gen4 x4 lanes NVMe™ Solid State Drive
RAID:	Not supported

MEMORY

Maximum Memory
64 GB DDR5-4800 non-ECC SODIMM
RAM Support – 16GB, 32GB, 64GB are populated in 2 DIMMs

Memory
64GB DDR5-4800 (2x32GB)
32GB DDR5-4800 (2x16GB)
16GB DDR5-4800 (2x8GB)

Memory Slots
2 SODIMM
1 DIMM per channel; support up to 4800MHz
DDR5 SODIMMS, system runs at 4800MT/s
Supports Dual Channel Memory

NOTE: 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.
NOTE: SSD/SODIMM requires low to moderate technical skills required to replace
NOTE: FreeDOS is limited to 32GB MAX ex-factory. Customer can add RAM, but should not uninstall their FreeDOS rev., but can upgrade.

NETWORKING/COMMUNICATIONS

WLAN[1]

Intel® Wi-Fi CERTIFIED 6E™ AX211 (2x2) and Bluetooth® 5.2 combo, vPro®
Intel® Wi-Fi CERTIFIED 6E™ AX211 (2x2) and Bluetooth® 5.2 combo, non-vPro®

[1] Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, and Windows 11 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.

Miracast

Native Miracast Support

NOTE: Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

AUDIO/MULTIMEDIA

Audio

Audio by Bang & Olufsen, Quad-speaker audio (2 tweeters & 2 woofers), 2 Top Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 200Hz Bass Roll off

Camera[1, 2]

720p HD IR camera

[1] HD content required to view HD images.

[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.

Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard*
HP RGB Z Command Keyboard – spill-resistant, full-size, per-key RGB backlit keyboard backlit keyboard and DuraKeys
HP Premium Quiet Keyboard – spill-resistant, full-size, backlit keyboard and DuraKeys
HP RGB Keyboard – Full-size, per-key RGB backlit keyboard

NOTE: RGB will only function after Zlight Space is activated
NOTE: Ubuntu will not function with RGB as Zlight Space is WinApp. No Ubuntu support

Pointing Devices
Clickpad with image sensor and glass surface supporting multi-touch gestures and taps

Function Keys
ESC: system information
F1 – Display Switching
F2 – Blank or Privacy
F3 – Brightness Down
F4 – Brightness Up
F5 – Audio Mute
F6 – Volume Down
F7 – Volume Up
F8 – Mic Mute
F9 – Blank or Backlit Toggle
F10 – Insert
F11 – Airplane Mode
F12 – HP Command Center
Power Button (with LED)
delete
Hidden Keys
home
end
Fn+R – Break
Fn+S – Sys Rq
Fn+C – Scroll Lock
Fn+left/right arrow
Privacy Key

*HP RGB Z Command Keyboard only available in the US, UK, France, and Germany. Not available with Privacy Panel.

SOFTWARE AND SECURITY

Software
HP Quick Drop[18]
HP Easy Clean[28]
HP PC Hardware Diagnostics Windows
Touchpoint Customizer for Commercial
myHP
HP Smart Support[19]
HP Mac Address Manager
HP Hotkey Support
HP Support Assistant[1]
HP Notifications
HP Privacy Settings
HP Power Manager
Buy Microsoft Office (Sold separately)

Features

Bing search for IE11
HP Noise Cancellation Software
HP Performance Advisor[5]
Native Miracast support[2]
1-month Adobe® free trial offer[29]
HP Z Light Space
Data Science Stack

Manageability Features
HP Connect for Microsoft Endpoint Manager[21]
HP Image Assistant Gen5 (download)
HP Manageability Integration Kit (download)[8]
HP Client Management Script Library (download)
HP Patch Assistant (download)[22]
HP Driver Packs (download)[30]
HP Cloud Recovery[23]
HP Client Catalog (download)

Security Management
HP Wolf Security of Business[24] includes:
HP Sure Click[25]
HP Sure Sense[16]
HP Sure Run Gen5[26]
HP Sure Recover Gen5[10]
HP Sure Start Gen7[12]
HP Tamper Lock
HP Sure Admin[14]
HP Client Security Manager Gen7[15]
HP Device Access Manager
HP Power On Authentication
Master Boot Record security
Pre-boot authentication
Windows Defender
MS Bitlocker Encryption
Nano Security Lock Slot[9]

BIOS
HP BIOSphere Gen6[3]
HP Secure Erase[13]
Absolute Persistence Module[4]
HP DriveLock & Automatic DriveLock
BIOS Update via Network
HP Wake on WLAN
Fingerprint Sensor (select models)[27]
Secured-Core PC Enable[17]
Trusted Platform Module TPM 2.0 Embedded Security Chip

BIOS Version
ISO/IEC 19678: 2015 (formerly NIST 800-147) compliant
UEFI version: 2.7
UEFI Class 3

TPM
Model: Infineon SLB9672
Version: 2.0
Revision: 1.38

Features

FIPS 140-2 Compliant: Yes with Convert TPM to 2.0 (FIPS 140-2) option

Fingerprint Sensor (Optional)
Voltage: 3.0-3.6V
Operating temperature: -20° - 85°C
Imaging current: 31mA
Wake on finger current: 40 uA
Capture rate: 30ms/frame
ESD Resistance: IEC 6100-4-2 4B (+/-15KV)
Detection Matrix: 363 dpi, sensing area 8x8 mm

Security Features
HP Fingerprint Sensor (optional)[27]

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

[1] HP Support Assistant requires Windows and Internet access.

[2] Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast.

[3] HP BIOSphere Gen6 features may vary depending on the platform and configurations.

[4] Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/company/legal/agreements/computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

[5] HP Performance Advisor Software – HP Performance Advisor is ready to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at: http://hp.com/PerformanceAdvisor

[7] Microsoft Defender Opt in and internet connection required for updates.

[8] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html

[9] Nano Security lock slot is Lock sold separately.

[10] HP Sure Recover Gen5 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

[11] HP Sure Recover with Embedded Reimaging Gen3 is an optional feature which must be configured at purchase with a base unit that has the On System Recovery (OSR) module . See product specifications for availability You must back up important files, data, photos, videos, etc. before use to avoid loss of data. HP Sure Recover with Embedded Reimaging (Gen1) does not support platforms with Intel® Optane™.

[12] HP Sure Start Gen 7 is available on select HP PCs and workstations. See product specifications for availability.

[13] Secure Erase – 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.

[14] HP Sure Admin requires Windows 11, HP BIOS, 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.

[15] HP Client Security Manager Gen7 requires Windows and is available on the select HP PCs.

[16] HP Sure Sense requires Windows 11 Pro or Enterprise and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.

[17] Secured-core PC requires an Intel® vPro® or AMD Ryzen™ Pro processor. Requires 8 GB or more system memory. Secured-core PC functionality can be enabled from the factory.

[18] HP Quick Drop requires Internet access and Windows 10 or higher 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.

[19] HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit http://www.hp.com/smart-support.

[21] HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.

Features

[22] HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.

[23] 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.

[24] HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features.

[25] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.

[26] HP Sure Run Gen5 is available on select Windows 11 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors

[27] HP Fingerprint Reader is an optional feature that requires Windows 10 IoT and must be configured at purchase.

[28] HP Easy Clean requires Windows 10 RS3 and higher and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for cleaning instructions.

[29] Offer available worldwide (excluding China and embargoed countries or other countries identified as restricted by applicable law or regulation) to new and existing subscribers who are 18+. Click on the Adobe icon in the start menu to redeem a 1-month free trial membership for select Adobe software. The software is tied to the device and is not transferrable. If you would like to sign up for an auto-renewing subscription, you can provide your payment method at sign-up. By adding a payment method, your subscription will automatically renew at the then current rate on your renewal date until you cancel. If you cancel before the end of the one-month free trial, you won’t be charged. You can cancel your subscription anytime via your Adobe Account page or by contacting Customer Support. Please see current prices for Adobe Spark and the remaining Adobe products available in this offer. Offer not available to Education, OEM, or volume licensing customers. Subject to availability where the recipient resides. Additional terms and conditions may apply. VOID WHERE PROHIBITED OR RESTRICTED BY LAW.

[30] HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.

Features

POWER

Power Supply

HP Slim Smart 150W External Right Angle AC Power Adapter
HP Slim Smart 200W External Right Angle AC Power Adapter

Battery

HP XL-Long Life 86Whr Polymer Fast Charge 6 cell

Battery Recharge Time

Supports battery HP fast charge: approximately 50% in 30 minutes

Battery life

Up to 12:50 hrs (UMA, Intel H, 400 nits, 2*4GB, 512GB SSD)

[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] Supports HP Fast Charge Technology

[3] 150W Power Adapter is not available with Nvidia RTX™ Graphics

[4] 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

ENERGY STAR® certified
EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See www.epeat.net for registration status by country.
EPEAT® 2019 Gold
Low halogen

[1] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. 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)
35.6 x 24.2 x 1.9 cm (non-touch)
14.02 x 9.54 x 0.76 in (non-touch)

35.6 x 24.2 x 1.8 cm (touch)
14.02 x 9.54 x 0.72 in (touch)

Weights*
Starting Weight: 3.92 lbs (1.78 kg)
Weight varies by configuration and components.

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

PORTS/SLOTS

MicroSD SD7.1 supports next generation secure digital and is compatible to SD, SDHC, SDXC, SDUC media

Left side
1 power connector
2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge)
1 headphone/microphone combo

Right side
1 SuperSpeed USB Type-A 5Gbps signaling rate (charging)
1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) *
1 nano security lock slot

* Multi-Function USB-C port works with Discrete Graphics and Intel® Iris Xe Graphics.

SERVICE AND SUPPORT

1-year warranty and 90-day software limited warranty options depending on country. Batteries have a default 1-year limited warranty except for HP Long Life batteries which will follow the one or three year warranty of 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 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] Sold separately or as an optional feature. 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. 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. Consult your local HP Customer Support Center for details.

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	19V
	Average Operating Power(idle)	System in hybrid mode High-end 15.0W

Features

		Mid-range 8.8W
	Integrated graphics	Yes
	Discrete Graphics	Yes
	Max Operating Power	A1000/A2000 <40W A3000/A4000/A5000/RTX3060/RTX3070ti/RTX3080ti <80W
Temperature	**Operating**	32° to 95° F (0° to 35° C), System performance may be reduced above 32°C (89.6°F). No sustained direct exposure to sunlight.
	Non-operating	-4-140°F (-20 – 60°C)
Relative Humidity	**Operating**	10% to 90%, non-condensing
	Non-operating	5% to 95%; 38.7C (101.6F) maximum wet bulb tempera-ture; non-condensing.
Shock	**Operating**	40 G, 2 ms, half-sine
	Non-operating	200 G, 2 ms, half-sine
Random Vibration	**Operating**	0.75 grms
	Non-operating	1.50 grms
Maximum Altitude (unpressurized)	**Operating**	3048m (10,000ft)
	Non-operating	12192m (40,000ft)
Temperature Derating with Altitude	**Operating**	1.8°F / 1000 ft (1°C / 304.8 m)
Planned Industry Standard Certifications	**Regulatory Model Number**	HSN-152C
	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Selected models
	EPEAT®	EPEAT Gold in United States
	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
	CIT	Yes
	EAC	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes

[1] Configurations of the HP Zbook Studio 16” G9 Mobile Workstation PC that are ENERGY STAR® qualified are identified as HP Zbook Studio 16” G9 Mobile Workstation PC 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

16.0 in WQUXGA (3840 x 2400) BrightView UWVA DCI-P3 NBZ2 400 eDP 1.4+PSR 100 bent OLED Panel	**Active Area (W x H, mm)**	344.448 x 215.280 (typ)	
	Dimensions (W x H, mm)	348.578 x 224.310 (max)	
	Diagonal Size (inch)	16	
	Thickness (body/PCB, mm)	1.242 / 3.143 (max)	
	Weight (g)	230 (max)	
	Interface	eDP1.4	
	Surface Treatment	Bright View	
	Contrast Ratio	100,000:1 (typ)	
	Refresh Rate (Hz)	60 (typ)	
	Brightness (nits)	400 (typ)	
	P.P.I.	283	
	Pixel Resolution	**Pitch**	3840 x 2400 (WQUXGA)
		Format	RGB
	Backlight	OLED	
	Color Gamut Coverage	DCI-P3 100%	
	Color Depth	8	
	Viewing Angle	UWVA 85/85/85/85	
	Power Consumption (W, EBL@ 150nits max /200nits max)	6.10 (max) / 7.40 (max)	
	Low Blue Light	Yes	
	Touch Enabled	Yes	
	Touch Point Supported	10-point multi-touch	
	Pen Enabled	No	

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

16.0 in WQUXGA DreamColor (3840 x 2400) Anti-Glare UWVA LED DCI-P3 NB2Y 500 eDP1.4 w/o PSR 100 120Hz bent LCD Panel	**Active Area (W x H, mm)**	344.680 x 215.420 (typ)	
	Dimensions (W x H, mm)	349.980 x 225.420 (max)	
	Diagonal Size (inch)	16	
	Thickness (body/PCB, mm)	2.3 / 4.1(max)	
	Weight (g)	300 (max)	
	Interface	eDP1.4	
	Surface Treatment	Anti-Glare	
	Contrast Ratio	1200:1 (typ)	
	Refresh Rate (Hz)	120 (typ)	
	Brightness (nits)	500 (typ)	
	P.P.I.	283	
	Pixel Resolution	**Pitch**	3840 x 2400 (WQUXGA)
		Format	RGB
	Backlight	LED	
	Color Gamut Coverage	DCI-P3 100%	

Color Depth	8
Viewing Angle	UWVA 89/89/89/89
Power Consumption (W, EBL@ 150nits max /200nits max)	4.98 (max)/ 5.84 (max)
Low Blue Light	No
Touch Enabled	No
Touch Point Supported	No
Pen Enabled	No

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

16.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 1000 eDP 1.3+PSR 100 PrivacyG4 Plus bent LCD Panel	**Active Area (W x H, mm)**	344.680 x 215.420 (typ)	
	Dimensions (W x H, mm)	349.980 x 225.420 (max)	
	Diagonal Size (inch)	16	
	Thickness (body/PCB, mm)	2.2 / 3.9 (max)	
	Weight (g)	310 (max)	
	Interface	eDP 1.3	
	Surface Treatment	Anti-Glare	
	Contrast Ratio	1500:1 (typ)	
	Refresh Rate (Hz)	60 (typ)	
	Brightness (nits)	1000 (typ)	
	P.P.I.	142	
	Pixel Resolution	**Pitch**	1920 x1200 (WUXGA)
		Format	RGB
	Backlight	WLED	
	Color Gamut Coverage	sRGB 100%	
	Color Depth	8	
	Viewing Angle	UWVA 85/85/85/85	
	Power Consumption (W, EBL@ 150nits max /200nits max)	N/A	
	Low Blue Light	Yes	
	Touch Enabled	No	
	Touch Point Supported	No	
	Pen Enabled	No	

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

16.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel	**Active Area (W x H, mm)**	344.678 x 215.424 (typ)
	Dimensions (W x H, mm)	350.680 x 226.470 (max)
	Diagonal Size (inch)	16
	Thickness (body/PCB, mm)	2.6 / 4.6 (max)
	Weight (g)	330 (max)
	Interface	eDP1.4
	Surface Treatment	Anti-Glare

Technical Specifications – Displays

Contrast Ratio	1000:1 (typ)	
Refresh Rate (Hz)	60 (typ)	
Brightness (nits)	400 (typ)	
P.P.I.	142	
Pixel Resolution	**Pitch**	1920 x1200 (WUXGA)
	Format	RGB
Backlight	WLED	
Color Gamut Coverage	sRGB 100%	
Color Depth	8	
Viewing Angle	UWVA 89/89/89/89	
Power Consumption (W, EBL@ 150nits max /200nits max)	1.60 (max)/ 1.95 (max)	
Low Blue Light	Yes	
Touch Enabled	No	
Touch Point Supported	No	
Pen Enabled	No	

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

Technical Specifications – Storage

STORAGE AND DRIVES

4TB PCIe-4x4 2280 NVMe Three Layer Cell double-sided M.2 Solid State Drive	**Form Factor**	M.2 2280	
	Capacity	4TB	
	NAND Type	TLC	
	Height	0.14 in (3.5mm)	
	Width	0.87 in (22 mm)	
	Weight	15g	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6400 MB/s ±20%	5000 MB/s ±20%
	Logical Blocks	8,001,594,720	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	Pyrite 2.0; TRIM; L1.2	
		Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.	
SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280	
	Capacity	2 TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Weight	0.02 lb (10 g)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6400 MB/s ±20%	5000 MB/s ±20%
	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	
		Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.	
SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280	
	Capacity	1TB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Weight	0.02 lb (10 g)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6400 MB/s ±20%	5000 MB/s ±20%
	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	

		Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.	
SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280	
	Capacity	512GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Weight	0.02 lb (10 g)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6400 MB/s ±20%	3500 MB/s ±20%
	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	
		Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.	
SSD 256GB 2280 PCIe-4x4 NVMe Three Layer Cell	Form Factor	M.2 2280	
	Capacity	256GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Weight	0.02 lb (10 g)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		4000 MB/s ±20%	2000 MB/s ±20%
	Logical Blocks	500,118,192	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	Pyrite 2.0; TRIM; L1.2	
		Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.	
512GB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**Form Factor**	M.2 2280	
	Capacity	512GB	
	NAND Type	TLC	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Weight	0.02 lb (10 g)	
	Interface	PCIe NVMe Gen4X4	
	Performance	**Maximum Sequential Read**	**Maximum Sequential Write**
		6400 MB/s ±20%	3500 MB/s ±20%
	Logical Blocks	1,000,215,215	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	TCG Opal 2.0; TRIM; L1.2	

Technical Specifications – Storage

Note: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35 GB (for Windows 10) is reserved for system recovery software.

NETWORKING/COMMUNICATION

Intel AX211 Wi-Fi 6E +BT 5.2 M.2 160MHz CNVi World-Wide WLAN 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 • 5.955 – 6.415 GHz • 6.435 – 6.515 GHz • 6.535 – 6.875 GHz • 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: max 300Mbps • 802.11ac : 1733Mbps • 802.11ax : max 2.4Gbps
	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. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points

Output Power[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum	
Power Consumption	• 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(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm maximum •802.11ax, MCS11(HE160): -53.5dBm maximum	
Antenna Type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230 : 2.8g 2. Type 1216: 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)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	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	

Technical Specifications – Networking

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) BT5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range

* Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, and Windows 11 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.

Technical Specifications – Networking

Intel AX211 Wi-Fi 6E +BT 5.2 M.2 160MHz CNVi World-Wide WLAN 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 • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz • 5.955 – 6.415 GHz • 6.435 – 6.515 GHz • 6.535 – 6.875 GHz • 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: max 300Mbps • 802.11ac : 1733Mbps • 802.11ax : max 2.4Gbps
	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. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum

	• 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum	
Power Consumption	• 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(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm maximum •802.11ax, MCS11(HE160): -53.5dBm maximum	
Antenna Type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230 : 2.8g 2. Type 1216: 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)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	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)

Technical Specifications – Networking

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	ETS 300 328, ETS 300 826
Certifications	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) BT5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range
Security & Manageability	Intel® vPro® support with appropriate Intel® chipset components

* Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, and Windows 11 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.

Technical Specifications – Networking

AUDIO

HD Stereo Codec	Realtek ALC3315
Audio I/O Ports	Headset: CTIA only and Headphone-out
Internal Speaker Amplifier	Cirrus Logic High-Efficiency Boosted Class D Amplifier
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio. Following MSFT Behaviour
Sampling	DAC: 44.1k/48kHz ADC: 48kHz
Wavetable Syntheses	
Analog Audio	Support 3.5mm Headset: CTIA only and Headphone-out
# of Channels on Line-Out	
Internal Speaker	Yes

FINGERPRINT SENSOR

Sensor vendor	Synaptics FS7604
Sensor type	Capacitive
DPI resolution	363DPI
Scan area	7.4x6mm sensor area
False Rejection Rate	<1%
False Acceptance Rate	1:50K FAR
Mobile Voltage Operation	Mobile Voltage Operation: 3.0V to 3.6V
Operating Temperature	Operating Temperature: 0~60°C
Current Consumption Image	Current Consumption Image : 100mA Max
Low Latency Wait For Finger	Low Latency Wait For Finger: 260 uA
Capture Rate	Capture Rate: <30msec per image
ESD Resistance	ESD Resistance: IEC 61000-4-2 4B (+/-15KV)
Detection Matrix	Detection Matrix: 363 dpi / 7.4x6mm sensor area

POWER

HP 150W Slim 4.5 mm PFC Right Angle Smart (3-pin) AC Power 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

Technical Specifications – Networking

	DC Plug	4.5mm Barrel Type
Connector	C6	
Environmental Design	**Operating temperature**	32° to 95° F (0° to 35° C)
	Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
	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 – IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals – C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF – over 200,000 hours at 25°C ambient condition.	

Technical Specifications – Power

HP 200W Slim 4.5 mm PFC Right Angle Smart (3-pin) AC Power Adapter	**Dimensions**	152x73x23.5mm	
	Weight	unit: 510g +/- 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**	200W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<21.0A
		DC Plug	4.5mm Barrel Type
	Connector	C14	
	Environmental Design	**Operating temperature**	32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
		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 – IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1 , Class1, SELV; Agency approvals – C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF – over 200,000 hours at 25°C ambient condition.	

86Whr XL-Long Life Polymer Fast Charge 6 cell Battery	**Dimensions (H x W x L)**	299.15*81.2*8.14 mm(11.7*3.2*0.32 inch)	
	Weight	0.339kg+/-0.010kg (0.75lb+/-0.02lb)	
	Cells/Type	6-cell Lithium-Ion Polymer cell / 684467	
	Energy	Voltage	11.58V
		Amp-hour capacity	7.130Ah / 7.428Ah
		Watt-hour capacity	86Wh
	Temperature	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
	Fuel Gauge LED	NA	
	Warranty	Follow product spec	
	Optional Travel Battery Available	No	

*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.

Refer to http://www.hp.com/support/batterywarranty/ for battery warranty information.

NOTE: batteries are not customer replaceable.

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 Box
- 35% 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)	14.37 W	14.63 W	14.23 W
Normal Operation (Long idle)	1.37 W	1.39 W	1.26 W
Sleep	1.37 W	1.39 W	1.26 W
Off	0.46 W	0.47 W	0.46 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)	49.1 BTU/hr	50 BTU/hr	48.7 BTU/hr
Normal Operation (Long idle)	4.7 BTU/hr	4.8 BTU/hr	4.3 BTU/hr
Sleep	4.7 BTU/hr	4.8 BTU/hr	4.3 BTU/hr
Off	1.6 BTU/hr	1.6 BTU/hr	1.6 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	3.2	25
Fixed Disk – Random writes	N/A	N/A
Optical Drive – Sequential reads	4.3	36

Longevity and Upgrading

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

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

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the 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 90.0% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	358 g
	PAPER/Molded Pulp	156 g
	PAPER/Paper	4 g
Internal:	PLASTIC/Polyethylene low density – LDPE	21 g

The plastic packaging material contains at least 100% recycled content.

The corrugated paper packaging materials contains at least 35.6% recycled content.

RoHS Compliance

HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.

Technical Specifications – Environmental

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (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.

Technical Specifications – Environmental

These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP Inc. Corporate Environmental Information

For more information about HP’s commitment to the environment:

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
ISO 14001 certificates:
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.

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

Type	Description	Part #
	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 Top Load	2Z8P4AA
	HP Prelude 15.6 Top Load	50P31AA
	HP Prelude 15.6 Backpack	1E7D6AA
	HP Prelude 15.6 Backpack	2Z8P3AA
	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	HP Thunderbolt Dock Audio Module	3AQ21AA
	HP TB Dock G2 w/ Combo Cable	3TR87AA
	HP TB Dock 230W G2 Cable	3XB95AA
	HP TB Dock G2 Combo Cable	3XB96AA
	HP Thunderbolt 280W G4 Dock w/Combo Cable	4J0G4AA
Input/Output	HP USB 3.0 to Gigabit Adapter	N7P47AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to VGA Adapter	N9K76AA
	HP USB-C to HDMI 2.0 Adapter	2PC54AA
	HP 320K Wired Keyboard	9SR37AA
	HP 125 Wired Keyboard	266C9AA
	HP 975 USB+BT Dual-Mode Wireless Keyboard	3Z726AA
	HP Slim Wireless KB and Mouse	T6L04AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	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 128 LSR Wired Mouse	265D9AA
	HP 125 Wired Mouse	265A9AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA

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

Hub	HP USB-C to USB-A Hub	Z6A00AA
Memory	HP 8GB DDR5 4800 SODIMM Memory	5S4C3AA
	HP 16GB DDR5 4800 SODIMM Memory	5S4C4AA
	HP 32GB DDR5 4800 SODIMM Memory	5S4C0AA
Audio	HP USB G2 Stereo Headset	428H5AA
	HP 3.5mm G2 Stereo Headset	428H6AA
Power	HP 150W Slim Smart 4.5mm AC Adapter	4SC18AA
	HP Zbook 200W Slim Smart 4.5mm AC Adapter	491C7AA
	HP ZBook 230W Slim Smart 4.5mm AC Adapter	6E6M1AA
Storage	HP USB External DVDRW Drive	F2B56AA
Security	HP Nano Keyed Cable Lock	1AJ39AA
	HP Sure Key Cable Lock	6UW42AA

Date of change:	**Version History:**		**Description of change:**
May 27, 2022	From v1 to v2	Changed	ENVIRONMENTAL DATA section, Changed format page 1
July 8, 2022	From v2 to v3	Changed	GRAPHICS section
August 10, 2022	From v3 to v4	Changed	Options and Accessories section
September 15, 2022	From v4 to v5	Removed	Tile App for Software