



# HP Sales Central

## HP EliteBook 650 15.6 inch G9 Notebook PC (6G9D9PA)

Active as of 3/06/2022



### Overview

#### Upgrade to elite performance

The HP EliteBook 650 is a cost-effective, powerful, and secure PC that allows easy standardization, while giving end-users the tools needed work from almost anywhere. Designed around the fundamental needs of enterprise businesses, this PC features the collaboration, power, and security your business needs to stay on top.

The HP EliteBook 650 is a cost-effective, powerful, and secure PC that allows easy standardization into existing IT environments, while giving end-users the tools they need to work from almost anywhere.

#### Crystal-clear speakers

Enjoy the crystal-clear audio performance delivered by HP Dynamic Audio<sup>5</sup> and HP AI Noise Reduction.<sup>6</sup>

#### Protected by HP Wolf Security

HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense.<sup>8</sup>

#### Latest Intel® processor

Drive performance with the latest Intel®<sup>2</sup> processor, on this globally available and easy-to-service laptop.

## Specifications

#### Operating system

Windows 10 Pro (available through downgrade rights from Windows 11 Pro)<sup>1,21</sup>

#### Processor family

12th Generation Intel® Core™ i7 processor

#### Processor

Intel® Core™ i7-1255U (up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads)<sup>6,71</sup>

#### Processor technology

Intel® Core™ i7 with vPro™ Technology

#### Management features

HP Client Management Script Library (download); HP Driver Packs (download); HP Client Catalog (download); HP Manageability Integration Kit Gen4 (download); HP Image Assistant Gen5 (download); HP Patch Assistant (download); HP Cloud Recovery; HP Connect for Microsoft Endpoint Manager

#### Sustainable impact specifications

Low Halogen

#### Security management

Absolute persistence module; HP DriveLock and Automatic DriveLock; HP Secure Erase; HP Sure Click; HP

Sure Sense; BIOS Update via Network; HP Sure Admin; HP BIOSphere Gen6; HP Client Security Manager Gen7; TPM 2.0 embedded security chip (Common Criteria EAL4+ and FIPS 140-2 Level 2 Certified); HP Sure Start Gen7; HP Wake on WLAN; HP Tamper Lock; HP Sure Run Gen5; HP Sure Recover Gen5; Secured-Core PC Enable

**Memory**

16 GB DDR4-3200 MHz RAM (1 x 16 GB)

**Memory layout (slots & size)**

1 x 16 GB

**Memory Slots**

2 SODIMM

**Internal Storage**

256 GB PCIe® NVMe™ SSD

**Optical drive**

Not included

**Display**

39.6 cm (15.6") diagonal, FHD (1920 x 1080), IPS, narrow bezel, anti-glare, 250 nits, 45% NTSC

**Display size (diagonal)**

39.6 cm (15.6")

**Graphics**

Integrated

**Graphics (integrated)**

Intel® Iris® Xe Graphics

**Ports**

3 SuperSpeed USB Type-A 5Gbps signaling rate (1 charging); 1 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4); 1 RJ-45; 1 headphone/microphone combo; 1 HDMI 2.0; 1 AC power

*(HDMI cable sold separately.)*

3

**Camera**

720p HD privacy camera

**Audio**

Dual stereo speakers, dual array microphones

**Pointing device**

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

**Keyboard**

HP Premium Keyboard – spill-resistant, backlit keyboard with numeric keypad

**Wireless**

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.2 combo (supporting gigabit data rate)

**Power**

HP Smart 65 W External AC power adapter

**Battery type**

HP Long Life 3-cell, 51 Wh Li-ion

**Energy star certified**

ENERGY STAR® certified

**Minimum dimensions (W x D x H)**

35.94 x 23.39 x 1.99 cm

**Weight**

Starting at 1.74 kg

**UPC number**

196548920716

**Software included**

HP Connection Optimizer; HP Hotkey Support; HP MAC Address Manager; HP Support Assistant; HP Power Manager; myHP; HP Privacy Settings; Touchpoint Customizer for Commercial; HP Notifications; HP QuickDrop; HP Quick Touch<sup>18</sup>

## Manufacturer Warranty

1 year (1/1/1) limited warranty includes 1 year of parts, labor and on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.<sup>381</sup>

### Overview

- 1 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>. 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.
- 2 Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- 3 Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 (802.11ax) are draft and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the PC to communicate with other 802.11ax devices. Wi-Fi® supporting gigabit speeds is achievable with Wi-Fi 6 (802.11ax) when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
- 5 HP Dynamic Audio requires Windows 10 and higher, compatible with internal PC speakers and analog headsets.
- 6 Requires the myHP application and Windows OS.
- 8 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.

### Specifications

- 1 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>.
- 2 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.
- 6 Multi-core 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.
- 7 Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost/> for more information.
- 18 HP Support Assistant requires Windows and Internet access.
- 19 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.
- 38 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](http://www.hp.com/go/cpc). HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

## Detailed Specifications

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### Accessories

HP Wired USB-A Stereo Headset 428K6AA; HP Renew Business17.3 Laptop Backpack 3E2U5AA; HP Universal USB-C Multiport Hub 50H55AA; HP Multi-Device 635 Black Wireless Mouse 1DOK2AA

### Aggregation group name

BV\_FE\_FAMILY:thanos 15\_Group\_275

### Aggregation UPC group

196548656844 196548656875 196548656905 196548657001 196548657308 196548657407  
196548493838 196548678853 196548681198 196548681204 196548681228 196548681396  
196548681402 196548685332 196548685370 196548685592 196548685653 196548802807  
196548911042 196548920662 196548920679 196548920686 196548920709 196548920716  
196548920723 196548920730 196548934966 196548935079 196548935086 196548947478  
196548947485 196548947492 196548947508 196548949243 196548949250 196548949267  
196548949274 196548949281 196548958597 196548958603 196548958641 196548958818  
196548958825 196548958832 196548958849 196548958924 196548958931 196548970568  
196548970582 196548970650 196548970667 196548970711 196548970728 196548973194  
196786015496 196786030420 196786030444 196786030451 196786034152 196786034619  
196786055027 196786055034 196786055072 196786055089 196786082177 196786083303  
196786083310 196786083341 196786091889 196786122330 196786122347 196786122378  
196786122484 196786181696 196786285370 196786334252 196786334269 196786349447  
196786382895 196786449765

### Audio

Dual stereo speakers, dual array microphones

### Available software

HP Smart Support

### Available software footnote number

[57]

### Battery brand

HP

### Battery capacity

51

### Battery capacity uom

Wh

### Battery cells number

3

### Battery life

Long Life

### Battery life note

Battery is internal and not replaceable by customer. Serviceable by warranty.

### Battery type

HP Long Life 3-cell, 51 Wh Li-ion

### Battery type

Li-ion

### Battery weight

180 g

### Bluetooth version

Bluetooth® 5.2

### Brightness

250 nits

### Camera

720p HD privacy camera

### Camera resolution (vertical)

720p

**Camera resolution standard**

HD

**Certifications and compliances**

CCC; CECP; GS Mark

**Code name**

Thanos 15

**Color gamut**

45% NTSC

**Copyright notice**

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**Datasheet photo 1**

AHID/c562103dc4b7fd56762d504419ccca5f5bd67966

**Datasheet photo 2**

Publication logos/HP\_Care\_Pack\_RGB\_blue\_icon.jpg

**Datasheet photo 3**

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**Datasheet photo 4**

AHID/b454f90d29c09c6ea58e2d0fc00d269baf483f1e

**Datasheet photo 5**

AHID/bec8d0c030a35e04f539e70ff854895cf88b696d

**Display**

15.6" diagonal FHD display

**Display**

15.6" diagonal, FHD (1920 x 1080), IPS, narrow bezel, anti-glare, 250 nits, 45% NTSC

**Display**

39.6 cm (15.6") diagonal FHD display

**Display**

39.6 cm (15.6") diagonal, FHD (1920 x 1080), IPS, narrow bezel, anti-glare, 250 nits, 45% NTSC

**Display bezel**

narrow bezel

**Display brightness**

250

**Display brightness uom**

nits

**Display footnote number**

[12,15,16]

**Display panel technology**

IPS

**Display resolution (pixels)**

1920 x 1080

**Display resolution standard**

FHD

**Display size (diagonal)**

39.6 cm (15.6")

**Display size (diagonal) uom**

"

**Display size (diagonal, imperial)**

15.6

**Display size (diagonal, metric)**

39.6

**Display size (diagonal, metric) uom**

cm

**Display surface treatment**

anti-glare

**ECC memory**

non-ECC

**Energy star certified**

ENERGY STAR® certified

**External I/O ports footnote number**

[11]

**Fingerprint reader**

Fingerprint sensor

**Graphic card footnote number**

[42]

**Graphics**

Integrated

**Graphics (integrated)**

Intel® Iris® Xe Graphics

**Image legal disclaimer**

Product image may differ from actual product

**Internal Storage**

256 GB PCIe® NVMe™ SSD

**Keyboard**

HP Premium Keyboard – spill-resistant, backlit keyboard with numeric keypad

**Keyboard backlight**

backlit

**Keyboard features**

Spill-resistant

**Keyboard keypad**

numeric keypad

**Keyboard name**

HP Premium Keyboard

**Legal tagline**

HP recommends Windows 11 Pro for business

**Manageability features footnote number**

[20,21,22,23,24]

**Management features**

HP Client Management Script Library (download); HP Driver Packs (download); HP Client Catalog (download); HP Manageability Integration Kit Gen4 (download); HP Image Assistant Gen5 (download); HP Patch Assistant (download); HP Cloud Recovery; HP Connect for Microsoft Endpoint Manager

**Manufacturer Warranty**

1 year (1/1/1) limited warranty includes 1 year of parts, labor and on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.

**Memory**

16 GB DDR4-3200 MHz RAM (1 x 16 GB)

**Memory and storage**

16 GB memory; 256 GB SSD storage

**Memory layout (slots & size)**

1 x 16 GB

**Memory module type**

DIMM

**Memory size**

16

**Memory size uom**

GB

**Memory Slots**

2 SODIMM

**Memory speed**

3200

**Memory speed uom**

MHz

**Memory type**

DDR4

**Minimum dimensions (W x D x H)**

35.94 x 23.39 x 1.99 cm

**Mobile broadband**

Intel® XMM™ 7560 LTE Advanced Pro Cat 16

**Number of memory slots**

1

**Operating system**

Windows 10 Pro (available through downgrade rights from Windows 11 Pro)

**Operating system footnote number**

[1,2]

**Optical drive**

Not included

**Playbook TS icon battery life**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c03905264.png>

**Playbook TS icon connectivity**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08201987.png>

**Playbook TS icon dimensions NB**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08250394.png>

**Playbook TS icon display NB**

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**Playbook TS icon graphics**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08169202.png>

**Playbook TS icon memory**

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**Playbook TS icon OS**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c03905482.png>

**Playbook TS icon processor**

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**Playbook TS icon storage**

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**Playbook TS icon weight imperial**

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**Playbook TS icon weight metric**

<https://h10003.www1.hp.com/digmedialib/prodimg/lowres/c08267650.png>

**Pointing device**

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

**Ports**

3 SuperSpeed USB Type-A 5Gbps signaling rate (1 charging); 1 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4); 1 RJ-45; 1 headphone/microphone combo; 1 HDMI 2.0; 1 AC power

**Ports note**

HDMI cable sold separately.

**Power**

HP Smart 65 W External AC power adapter

**Power supply required footnote number**

[37]

**Processor**

Intel® Core™ i7-1255U (up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads)

**Processor base frequency**

1.7

**Processor Brand**

Intel®

**Processor cache**

12 MB L3

**Processor core**

10

**Processor family**

12th Generation Intel® Core™ i7 processor

**Processor family**

Core™ i7

**Processor frequency technology**

Intel® Turbo Boost Technology

**Processor frequency UOM**

GHz

**Processor generation**

12th Generation

**Processor maximum frequency**

4.7

**Processor maximum frequency uom**

GHz

**Processor model**

1255U

**Processor name footnote number**

[6,7]

**Processor technology**

Intel® Core™ i7 with vPro™ Technology

**Processor threads**

12

**Product brand name**

HP

**Product long name specifications**

HP EliteBook 650 15.6 inch G9 Notebook PC, 15.6", Windows 10 Pro (available through downgrade rights from Windows 11 Pro), Intel® Core™ i7, 16GB RAM, 256GB SSD, FHD

**Product short name specifications**

HP EliteBook 650 15.6 inch G9 Notebook PC, 15.6", Intel® Core™ i7, 16GB RAM, 256GB SSD

**Sales office and telephone number**

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#### **Security management**

Absolute persistence module; HP DriveLock and Automatic DriveLock; HP Secure Erase; HP Sure Click; HP Sure Sense; BIOS Update via Network; HP Sure Admin; HP BIOSphere Gen6; HP Client Security Manager Gen7; TPM 2.0 embedded security chip (Common Criteria EAL4+ and FIPS 140-2 Level 2 Certified); HP Sure Start Gen7; HP Wake on WLAN; HP Tamper Lock; HP Sure Run Gen5; HP Sure Recover Gen5; Secured-Core PC Enable

#### **Security management footnote number**

[25,26,27,28,29,30,31,32,33,34]

#### **Software included**

HP Connection Optimizer; HP Hotkey Support; HP MAC Address Manager; HP Support Assistant; HP Power Manager; myHP; HP Privacy Settings; Touchpoint Customizer for Commercial; HP Notifications; HP QuickDrop; HP Quick Touch

#### **Software included footnote number**

[18,19]

#### **Standard memory note**

Transfer rates up to 3200 MT/s.

#### **Storage capacity**

256

#### **Storage capacity uom 01**

GB

#### **Storage interface 01**

PCIe®

#### **Storage interface protocol 01**

NVMe™

#### **Storage type**

SSD

#### **Storage type 01**

SSD

#### **Sustainable impact specifications**

Low Halogen

#### **Sustainable impact specifications footnote number**

[40]

#### **Tech spec footnote**

[1] 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>.

#### **Tech spec footnote**

[10] Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

#### **Tech spec footnote**

[11] SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

#### **Tech spec footnote**

[12] HD content required to view HD images.

#### **Tech spec footnote**

[13] 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 i7 processors and single channel memory will only function as UHD graphics.

**Tech spec footnote**

[14] Backlit keyboard is an optional feature.

**Tech spec footnote**

[15] Resolutions are dependent upon monitor capability, and resolution and color depth settings.

**Tech spec footnote**

[16] Actual brightness will be lower with touchscreen.

**Tech spec footnote**

[17] WWAN module is an optional feature, requires factory configuration and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

**Tech spec footnote**

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

**Tech spec footnote**

[19] 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.

**Tech spec footnote**

[2] 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.

**Tech spec footnote**

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

**Tech spec footnote**

[21] HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.

**Tech spec footnote**

[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>.

**Tech spec footnote**

[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>.

**Tech spec footnote**

[24] 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.

**Tech spec footnote**

[25] 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.

**Tech spec footnote**

[26] HP 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™.

**Tech spec footnote**

[27] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.

**Tech spec footnote**

[28] HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.

**Tech spec footnote**

[29] HP Sure Admin requires Windows 10 or higher, 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.

**Tech spec footnote**

[3] 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.

**Tech spec footnote**

[30] HP BIOSphere Gen6 features may vary depending on the platform and configuration.

**Tech spec footnote**

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

**Tech spec footnote**

[32] HP Sure Start Gen7 is available on select HP PCs and requires Windows 10 and higher.

**Tech spec footnote**

[33] HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.

**Tech spec footnote**

[34] HP Sure Recover Gen5 with Embedded Reimaging is an optional feature which requires Windows 10 and must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Network based recovery using Wi-Fi is only available on PC's with Intel Wi-Fi Module.

**Tech spec footnote**

[35] HP Fingerprint sensor is an optional feature that must be configured at purchase.

**Tech spec footnote**

[36] 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.

**Tech spec footnote**

[37] Availability may vary by country.

**Tech spec footnote**

[38] 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](http://www.hp.com/go/cpc). HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

**Tech spec footnote**

[39] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information.

**Tech spec footnote**

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

**Tech spec footnote**

[40] External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

**Tech spec footnote**

[41] Second storage is only available with non-WWAN base Unit AND Primary M.2 storage.

**Tech spec footnote**

[42] Integrated graphics depends on processor. NVIDIA® Optimus™ technology requires an Intel processor, plus an NVIDIA® GeForce® discrete graphics configuration and is available on Windows 10 Pro OS. With NVIDIA®

Optimus™ technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

**Tech spec footnote**

[43] Second storage is only available with non-WWAN base Unit AND Primary M.2 storage.

**Tech spec footnote**

[44] SIM slot is not user accessible without WWAN configuration.

**Tech spec footnote**

[45] 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>.

**Tech spec footnote**

[5] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See [www.intel.com/technology/turboboost](http://www.intel.com/technology/turboboost) for more information.

**Tech spec footnote**

[6] Multi-core 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.

**Tech spec footnote**

[7] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost/> for more information.

**Tech spec footnote**

[8] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

**Tech spec footnote**

[9] Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

**Tech spec footnote 57**

[57] 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>.

**Touchscreen**

No

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**UNSPSC code**

43211503

**UPC number**

196548920716

**Warranty footnote number**

[38]

**Weight**

Starting at 1.74 kg

**Weight note (metric)**

Weight will vary by configuration.

**Wireless**

Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.2 combo (supporting gigabit data rate)

**Wireless antenna**

2x2

**Wireless Model**

Wi-Fi 6E AX211

**Wireless standard**

Wi-Fi 6

**Wireless supplier**

Intel®

**Wireless transfer speeds**

Supporting Gigabit data rate

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