# HP EliteBook 650 15.6 inch G9 Notebook PC

## 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.

# Make connections that matter

Take collaboration to the professional level with optional  $4\mathrm{G}^3$  connectivity and audio/video enhancers powered by HP Presence  $^4$  on the HP EliteBook 650. Enjoy the crystal-clear audio performance delivered by HP Dynamic Audio  $^5$  and HP Al Noise Reduction.  $^6$ 

## Power to get the job done

With an Intel® 2 processor, this globally available PC is easy to service, drives performance, and has long battery life, and optional Thunderbolt™ docking.<sup>7</sup>

# Protected by HP Wolf Security

HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense. From the BIOS to the browser, above, in, and below the OS, these constantly evolving solutions help protect your PC from modern threats.<sup>8</sup>



\*Product image may differ from actual product

Sustainability in action

## Help protect our shared future

This PC contains at least 30-percent post-consumer recycled plastic in the bezel, at least 50-percent post-consumer recycled plastic in the keycaps 11, and the outer box packaging is 100 percent sustainably sourced. 12



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### **Featuring**

#### Look your best, even in low light

Optimized for video calls in low-lighting conditions. The HD camera provides visual clarity, while temporal noise reduction lowers the effects of visual noise and pixelation, allowing increased definition so you can capture all the details.

#### Crisp and clear collaboration

HP AI Noise Reduction improves collaboration by applying industry-leading noise-filtering technology to all audio input, giving you an enhanced audio and video conferencing experience even while wearing a mask.<sup>6</sup>

#### Balanced light for a clear image

HP Backlight Adjustment includes quality dual image sensors, working together to balance the background and foreground lighting and contrast. Make sure you can clearly be seen without blurring out the background.6

#### The next generation in resolution

Upscale your resolution and bring new dimension to your images. With HP Super Resolution, you can automatically upscale your camera resolution from HD (720p) to FHD (1080p) in a snap. 6,17

#### For the road warrior

If your travel schedule is going to keep you on the road, then consider configuring your PC with an optional larger battery that can keep you productive.9

#### Additional storage

Take more of your files with you on the road with an optional second SSD drive.<sup>9</sup>

#### Stay Connected

Your "office" can be where you need it, letting you stay connected almost everywhere with support for optional gigabit class CAT 9 4G LTE wireless broadband technology.3

#### Physical tamper protection

Know if someone has tried to open the cover of your PC thanks to a tamper lock intrusion detection system. 10

#### **Environmentally considerate**

This PC contains at least 30-percent post-consumer recycled plastic in the bezel, at least 50-percent post-consumer recycled plastic in the keycaps, and the outer box packaging is 100-percent sustainably sourced. 11,12

Enable hardware and software innovations from HP with the myHP application. This single dashboard houses access to settings for conferencing, the programmable key, and more. 14

#### **Browse confidently**

Help protect your PC from websites and read-only Microsoft Office and PDF attachments with malware, ransomware, or viruses with hardwareenforced security from HP Sure Click. 15

#### Help stop attacks on your PC

Malware is evolving rapidly, and traditional antivirus can't always recognize new attacks. Protect your PC against never-before-seen attacks with HP Sure Sense, which uses deep learning Al and machine learning to provide exceptional protection. 16



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## **Technical specifications**

Available Operating Systems	Windows 11 Pro <sup>1</sup> Windows 11 Pro Education <sup>1</sup> Windows 11 Home - HP recommends Windows 11 Pro for business <sup>1</sup> Windows 11 Home Single Language - HP recommends Windows 11 Pro for business <sup>1</sup> Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement) <sup>1</sup> Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade) <sup>1,2</sup> FreeDOS
Processor family <sup>6</sup>	12th Generation Intel® Core™ i7 processor 12th Generation Intel® Core™ i3 processor 12th Generation Intel® Core™ i5 processor
Available Processors <sup>3,4,5,6,45</sup>	Intel® Core™ i3-1215U with Intel® UHD Graphics (1.2 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 10 MB L3 cache, 6 cores, 8 threads) Intel® Core™ i5-1235U (1.3 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads) Intel® Core™ i7-1255U (1.7 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads) Intel® Core™ i5-1245U (1.6 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads), supports Intel® vPro® Technology Intel® Core™ i7-1265U (1.8 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 10 cores, 12 threads), supports Intel® vPro® Technology
Maximum memory	64 GB DDR4-3200 MHz RAM; (Transfer rates up to 3200 MT/s.); <sup>7</sup> Both slots are customer accessible/upgradeable. Supports dual channel memory.
Memory slots	2 SODIMM
Internal storage	256 GB up to 1 TB PCle® Gen4x4 NVMe™ M.2 SSD TLC <sup>8,46</sup> 256 GB up to 512 GB PCle® Gen4x4 NVMe™ M.2 SED SSD TLC <sup>8</sup> 256 GB up to 512 GB PCle® NVMe™ M.2 SSD <sup>8</sup> 128 GB up to 256 GB PCle® NVMe™ Value M.2 SSD <sup>8,43</sup>
Display size (diagonal, metric)	39.6 cm (15.6")
<b>Display</b> <sup>12,15,16</sup>	39.6 cm (15.6") diagonal, FHD (1920 x 1080), IPS, narrow bezel, anti-glare, 400 nits, low power, 100% sRGB; 39.6 cm (15.6") diagonal, FHD (1920 x 1080), IPS, narrow bezel, anti-glare, 250 nits, 45% NTSC; 39.6 cm (15.6") diagonal, HD (1366 x 768), narrow bezel, anti-glare, 250 nits, 45% NTSC; 39.6 cm (15.6") diagonal, FHD (1920 x 1080), touch, IPS, narrow bezel, anti-glare, 250 nits, 45% NTSC
Available Graphics	Integrated: Intel® UHD Graphics; Intel® Iris® X® Graphics <sup>12,13</sup> Discrete: NVIDIA® GeForce® MX570 (2 GB DDR6 dedicated); NVIDIA® GeForce® MX570A (2 GB DDR6 dedicated) <sup>42</sup> (Support HD decode, DX12, HDMI 2.0.)
Audio	Dual stereo speakers, dual array microphones
Ports and connectors	1 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4); 3 USB Type-A 5Gbps signaling rate (1 charging); 1 AC power; 1 HDMI 2.1; 1 stereo headphone/microphone combo jack; 1 RJ-45 <sup>11</sup> ; (HDMI cable sold separately.); Optional Ports: 1 Smartcard reader (optional); 1 External Nano SIM slot for WWAN <sup>44</sup>
Input devices	HP Premium Keyboard - spill resistant, optional backlit keyboard 14; Clickpad with multi-touch gesture support
Communications	(Compatible with Miracast-certified devices.);; Intel® I219-LM GbE, vPro®; Intel® I219-LM GbE, vPro®; Intel® I219-V GbE, non-vPro®; Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, vPro®; Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, non-vPro®; Intel® XMM™ 7560 LTE Advanced Pro Cat 16; Near Field Communication (NFC) module 910.17,45
Camera	720p HD camera with temporal noise reduction; IR Camera (select models) 12
Software	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 Quick TouchBuy Office (Sold separately) <sup>18</sup>
Available software	HP Smart Support <sup>57</sup>
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 Software Licenses	HP Wolf Pro Security Edition <sup>56</sup>
Fingerprint reader	Fingerprint sensor (select models)



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Technical specifications	
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 <sup>20,21,22,23,24</sup>
Power	HP Smart 65 W External AC power adapter; HP Smart 65 W EM External AC power adapter; HP Smart 45 W External AC power adapter; HP Smart 65 W USB Type-C* adapter; HP Smart 45 W USB Type-C* adapter; HP Smart 45 W USB Type-C* adapter; HP Smart 45 W USB Type-C* adapter 37
Battery type	HP Long Life 3-cell, 42.75 Wh polymer; HP Long Life 3-cell, 51 Wh polymer <sup>36</sup> ; Battery is internal and not replaceable by customer. Serviceable by warranty.
Battery life	Up to 13 hours <sup>19</sup>
Dimensions	35.94 x 23.39 x 1.99 cm; 6.9 x 52 x 30.5 cm (Package)
Weight	Starting at 1.74 kg; (Weight will vary by configuration.)
Ecolabels	EPEAT® registered configurations available; TCO Certified configurations available <sup>39</sup>
Certification and compliance	CCC; CECP; GS Mark
Sustainable impact specifications	Low Halogen; Bulk packaging available; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable; Outside box and corrugated cushions are 100% sustainably sourced and recyclable; 10% post-consumer recycled plastic; Ocean-bound plastic in speaker enclosure(s) <sup>40</sup>
Warranty	HP Services offers 1-year or 3-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. 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

Lookup Tool at: http://www.hp.com/go/cpc .

beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services



## HP EliteBook 650 15.6 inch G9 Notebook PC

#### **Footnotes**

#### **Messaging Footnotes**

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 you

hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

3 Gigabit class 4G LTE module is optional and must be configured at the factory. Module designed for up to 1 Gbps download speeds as carriers deploy 5 carrier aggregation and 100Mhz channel bandwidth, requires activation and separately purchased service contract. Backwards compatible to HSPA 3G technologies. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

1 HP Presence requires myHP application and Windows OS.

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.

Sold senarately or as an optional feature

\* Soils separately of as an optional reductive.

\*BHD 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.

\*Optional feature must be configured at the time of purchase.

\*DHP Tamper Lock must be enabled by the customer or your administrator.

11 Recycled plastic content percentage is based on the definition set in the IEEE 16801-2018 standard.
12 100% outer box packaging made from sustainably sourced certified and recycled fibers. Fiber cushions made from 100% recycled wood fiber and organic material. Any plastic cushions are made from >90% recycled plastic.

14 Requires Windows OS.

15 HP Sure Click requires Windows 10 and higher See https://bit.lv/2PrIT6A\_SureClick for complete details

<sup>16</sup> HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.

<sup>17</sup> FHD display resolution required to view FHD images.

#### Specification Footnotes

<sup>1</sup>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.

<sup>2</sup>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.

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hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

<sup>4</sup> Processor speed denotes maximum performance mode: processors will run at lower speeds in battery optimization mode.

<sup>5</sup> Intel<sup>8</sup> Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.

<sup>6</sup> 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.

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. For storage drives, GB = 1 brillion 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.

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 80211 specs. And available in countries where Wi-Fi 6E is supported.

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

<sup>11</sup> SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

12 HD content required to view HD images.

15 intel" his" X\* Graphics capabilities require system to be configured with intel" Core" is or it processors and dual channel memory. Intel" his" X\* Graphics with intel" Core" is or 7 processors and single channel memory will only function as UHD graphics.

<sup>14</sup> Backlit keyboard is an optional feature.

 $^{\rm 15}$  Resolutions are dependent upon monitor capability, and resolution and color depth settings.

16 Actual brightness will be lower with touchscreen.

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, netwoonditions, and other factors. 4G LTE not available on all products, in all regions. HP Support Assistant requires Windows and Internet access.

19 MM18 battery life will vary depending on various factors including 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 http://www.bapco.com for additional details.
20 HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.

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

22 HP Datch 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://www.8hp.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 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

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.

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®.

The Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2Pt16A, SureClick for complete details.

28 HP Sure Scholer survives Windows 10 Pro or higher or Enterprise. See https://bit.ly/2Pt16A, SureClick for complete details.

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

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.

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

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

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

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

SH PSure Recover Gen5 with finbedded Relimoging 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.

BH Pringerprint sensor is an optional feature that must be configured at purchase.

For new batteries, actual battery Watt-hours (Wh) may differ from the design capacity and may have a full charge capacity that differs by up to 10, which is typical for lithium-ion batteries. Battery capacity naturally decreases over time and with use, depending on several factors such as battery health management settings, shelf life, temperature, environment, loaded apps, features, system configuration, and power settings. Availability may vary by country.

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. 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, HP

38 Based on US EPEAT\* registration according to IEEE 1680.1-2018 EPEAT\*. EPEAT\* status varies by country. Visit www.epeat.net for more information.
40 External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
41 Second storage is only available with non-WWAN base Unit AND Primary M.2 storage.

41 Second storage is only available with non-WWAN base Unit AND Primary M2 storage.
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).
43 Second storage is only available with non-WWAN base Unit AND Primary M2 storage.
44 SIM slot is not user accessible without WWAN configuration.

As 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.

46 1TB PCIe\* Gen4x4 NVMe\* M.2 SSD TLC is only available for Hong Kong, Taiwan and China.

56 HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish\_3875769-3873014-16 as that EULA is modified by the following: 7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.

<sup>57</sup> 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.

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