

# HP ZBook Studio 16 inch G9 Mobile Workstation PC

**Powerfully immersive. Perfectly sized**



**Be ready when inspiration strikes. Packed with professional performance in an incredibly sleek PC that comfortably fits in your bag, the ZBook Studio is engineered to get you in the zone and help you stay focused. Now you can build complex assemblies, render in real time or visualize data—from anywhere.**

## **Power to push the limits**

Push your workflow further with up to an Intel® Core™ i9 CPU,<sup>1,2</sup> NVIDIA RTX™ A5500 or NVIDIA® GeForce RTX™ 3080 Ti Laptop GPU,<sup>2</sup> and 64 GB RAM.<sup>2</sup> From 3D design to machine learning this pro grade PC delivers peak performance so you can work uninterrupted.

## **Immerse in your work**

Unlock complete color accuracy and see more of your work with a 16:10 HP DreamColor display.<sup>3</sup> Get smooth motion for video editing with a 120Hz refresh rate.<sup>3</sup> Customize your keyboard lighting and highlight shortcuts with RGB per-key LED backlighting.<sup>4</sup>

## **Create and collaborate everywhere**

Follow inspiration wherever it strikes with a thin and light laptop that delivers the power to run the software you need on the go. Work and collaborate effectively from anywhere with up to 12-hour battery life,<sup>5</sup> AI noise cancellation<sup>6</sup> and Wi-Fi 6E.<sup>7,8</sup>

## **A work laptop you'll want to game on**

Enjoy fast, smooth gameplay with an NVIDIA RTX™ professional or GeForce RTX™ GPU<sup>2</sup> and 120Hz refresh rate.<sup>3</sup> Highlight favorite keys and create custom key maps with Z Light Space software<sup>9</sup> and a RGB keyboard with per-key LED backlighting.<sup>4</sup>



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## Additional Features

### Windows 11

Work anywhere without compromising on performance or security with Windows 11<sup>10</sup> powered by HP's collaboration and connectivity technology.

### Intel® Core™ Processor

Crank up your multi-tasking and productivity with up to Intel vPro® with 12th Gen Intel® Core™ i9 processor<sup>1,2,11</sup> designed to handle complex, multithreaded apps.

### NVIDIA Graphics

Tackle your biggest projects with a choice of up to NVIDIA RTX™ A5500 or NVIDIA® GeForce RTX™ 3080 Ti Laptop GPU;<sup>2</sup> certified for pro apps.

### Vapor Force Thermals

Keep cool under any workload with HP Vaporforce Thermals,<sup>12</sup> with new curved metal blades, that protect your workstation from overheating, so you can cut through your heaviest workloads with peak processing power.

### Lightning-Fast Storage

Blitz through multiple tasks and ditch external drives with up to 4 TB PCIe Gen4 NVMe storage<sup>2,13</sup>

### Large Memory Configurations

Accelerate your workflow. Power through projects with up to 64 GB RAM<sup>14</sup> for fast rendering, editing and visual effects performance.

### Wi-Fi 6E

Get a fast and reliable connection in dense wireless environments with Wi-Fi 6E.<sup>7,8</sup>

### DNN Noise Suppression

Collaborate with confidence with advanced features like DNN Noise Suppression to suppress background noise for crisp, clear calls.<sup>15</sup>

### Z Light Space

Personalize your laptop RGB lighting in one place. With Z Light Space software,<sup>9</sup> you can customize your keyboard lighting with the RGB per-key LED backlighting.<sup>4</sup> For commonly used software apps, use pre-loaded color-maps or create your own.

### Work, Play, and Create in VR

Elevate your workflow with a VR-ready laptop. Develop lifelike content and transform how you design, train, and collaborate. And when paired with the HP Reverb G2 VR Headset, you get stunning immersion with full-resolution rendering.<sup>16</sup>

### 16:10 Aspect Ratio

Now with a 16:10 aspect ratio you get 11% more usable screen area than 16:9, for productivity and creative tasks. With more vertical screen space reduce the need to scroll and see more of your project without minimizing program menus or toolbars.

### Multiple Ports for Maximum Productivity

Connect to everything you need with a wide-range of connectivity options: multiple USB Type-C® ports, mSD Card Reader, headphone/microphone combo jack and more.



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## Specifications Table

Available Operating Systems	Windows 11 Pro – HP recommends Windows 11 Pro <sup>1</sup> Windows 11 Home – HP recommends Windows 11 Pro for Business <sup>1</sup> Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade) <sup>1,2</sup> Ubuntu 20.04 FreeDOS 3.0
Processor family <sup>2,3,4,5,6</sup>	12th Generation Intel® Core™ i7 processor; 12th Generation Intel® Core™ i9 processor
Available Processors <sup>2,3,4,5,6</sup>	Intel® Core™ i9-12900H with Intel® UHD Graphics (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads), supports Intel® vPro® Technology Intel® Core™ i7-12800H with Intel® UHD Graphics (1.8 GHz E-core base frequency, 2.4 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads), supports Intel® vPro® Technology
Maximum memory	64 GB DDR5-4800 non-ECC SODIMM <sup>11</sup> Memory is SODIMM. Supports dual channel memory.
Memory slots	2 SODIMM; supports dual channel
Internal storage	256 GB up to 4 TB PCIe® Gen4 x4 NVMe™ M.2 SSD <sup>10</sup> up to 512 GB PCIe® NVMe™ M.2 SED SSD <sup>10</sup>
Display size (diagonal, metric)	40.6 cm (16")
Display	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 <sup>7,15,16,25,27,29</sup>
Available Graphics	Integrated: Intel® Iris® Xe Graphics <sup>18,20,21,22,32</sup> Discrete: NVIDIA RTX™ A1000 (4 GB GDDR6 dedicated) NVIDIA® GeForce RTX™ 3060 Laptop GPU (6 GB GDDR6 dedicated) NVIDIA® GeForce RTX™ 3070 Ti Laptop GPU (8 GB GDDR6 dedicated) NVIDIA® GeForce RTX™ 3080 Ti Laptop GPU (16 GB GDDR6 dedicated) NVIDIA RTX™ A4500 Laptop GPU (16 GB GDDR6 dedicated) NVIDIA RTX™ A5500 Laptop GPU (16 GB GDDR6 dedicated) NVIDIA RTX™ A2000 Laptop GPU (8 GB GDDR6 dedicated) NVIDIA RTX™ A3000 Laptop GPU (12 GB GDDR6 dedicated) <sup>12,18,21,22</sup>
Audio	Audio by Bang & Olufsen, Quad-speaker audio (2 tweeters & 2 Quad 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
Memory card device <sup>59</sup>	1 microSD 7.1 media card reader
Ports and connectors	Left side: 1 power connector; 1 headphone/microphone combo; 2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge) <sup>12</sup> ; Right side: 1 Super Speed USB Type-A 5Gbps signaling rate (charging); 1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) <sup>12</sup>
Keyboard	HP Premium Quiet Keyboard – spill-resistant, full-size, backlit keyboard with drain and DuraKeys; HP RGB Keyboard - Full-size, per-key RGB backlit keyboard; HP RGB Z Command Keyboard – spill-resistant, full-size, backlit keyboard with drain and DuraKeys <sup>24</sup>
Mouse	Clickpad with image sensor, supporting multi-touch gestures and taps



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<b>Communications</b>	WLAN: 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 <sup>14</sup> ;
<b>Camera</b>	720p HD IR camera <sup>16,17</sup>
<b>Software<sup>30,31,33,51,55,57,58</sup></b>	<ul style="list-style-type: none"> <li>Bing search for IE11</li> <li>Buy Office</li> <li>HP Hotkey Support</li> <li>HP Noise Cancellation Software</li> <li>HP Performance Advisor</li> <li>HP Support Assistant</li> <li>Native Miracast support</li> <li>HP Connection Optimizer</li> <li>HP Privacy Settings</li> <li>HP QuickDrop</li> <li>Data Science Stack</li> <li>HP Easy Clean</li> <li>HP PC Hardware Diagnostics</li> <li>HP ZCentral Remote Boost 2020 Software for Z workstation</li> <li>Tile™ Application</li> <li>Windows 10 Cloud Recovery Client</li> <li>1-month Adobe® free trial offer</li> <li>HP Z Light Space</li> <li>HP Camera &amp; Super Resolution Software</li> </ul>
<b>Available software</b>	HP Smart Support <sup>19</sup>
<b>Security management<sup>8,34,35,37,38,39,40,43,49</sup></b>	<ul style="list-style-type: none"> <li>Absolute persistence module</li> <li>HP Device Access Manager</li> <li>HP Power On Authentication</li> <li>Trusted Platform Module TPM 2.0 Embedded Security Chip</li> <li>Master Boot Record security</li> <li>Pre-boot authentication</li> <li>Windows Defender</li> <li>HP Manageability Integration Kit</li> <li>HP BIOSphere Gen6</li> <li>HP Sure Start Gen6</li> <li>HP Sure Admin</li> <li>HP Image Assistant</li> <li>HP Tamper Lock</li> <li>MS Bitlocker Encryption</li> <li>Nano Security Lock Slot</li> <li>HP Client Security Manager Gen7</li> <li>HP Privacy Key</li> </ul>
<b>Security Software Licenses</b>	HP Wolf Pro Security Edition <sup>56</sup>
<b>Fingerprint reader</b>	Fingerprint sensor (select models)
<b>Management features</b>	HP Power Manager <sup>13</sup>
<b>Power</b>	HP Slim Smart 150 W External AC power adapter; HP Slim Smart 200 W External AC power adapter <sup>48</sup>
<b>Battery type</b>	HP Long Life 6-cell, 86 Wh polymer <sup>26,47</sup>
<b>Battery recharge time</b>	Supports battery fast charge: approximately 50% in 30 minutes
<b>Dimensions</b>	35.6 x 24.2 x 1.9 cm (non-touch); 35.6 x 24.2 x 1.8 cm (touch); 552 x 69 x 345 mm (Package)
<b>Weight</b>	Starting at 1.73 kg; (Weight varies by configuration and components.)
<b>Ecolabels</b>	EPEAT® Gold registered in the U.S. <sup>45</sup>
<b>Sustainable impact specifications</b>	Low Halogen; 40% post-consumer recycled plastic; Bulk packaging available; External power supply 90% efficiency; Molded paper pulp cushion inside box is 100% sustainably sourced and recyclable; Outside box and corrugated cushions are 100% sustainably sourced and recyclable; Ocean-bound plastic in speaker enclosure(s) <sup>46,50,52,53,54</sup>
<b>Warranty</b>	3 year (3/3/0) limited warranty includes 3 years of parts and labor. No on-site repair. Terms and conditions vary by country. Certain restrictions and exclusions apply.



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## Accessories and services (not included)

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### HP 935 Creator Wireless Mouse



Experience seamless and uninterrupted creativity with a mouse that is crafted to create. Be at your creative best with programmable buttons, ergonomic design, and battery life that lasts up to 12 weeks<sup>1</sup>. Enhance your creative process by pairing with up to 3 devices and enjoy the freedom to work on any surface with track-on-glass sensor.

**Product number: 1D0K8AA**

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### HP Renew Business 17.3-inch Laptop Backpack



Now you can feel good about the backpack you use to protect your laptop. Designed to keep your laptop protected and accessories organized, the Renew Business 17.3-inch Laptop Backpack uses environmentally-responsible materials that are durable, easy to clean and designed for comfort.

**Product number: 3E2U5AA**

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### HP 975 Dual-Mode Wireless Keyboard



Now you can make your keyboard truly yours while enjoying an elevated typing experience. That's because you can connect up to 3 devices either via Bluetooth® or USB-A. We've also included many must-have features like comfortable, quiet, soft return keys, 20+ of which can be programmed with shortcuts, controllable smart backlight, and a long life, rechargeable battery.

**Product number: 3Z726AA**

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### HP Stereo USB Headset G2



Plug right in and get ready to speak and hear clearly all day. With noise-cancelling, comfortable design, and easy adjustment, your sound comfort will carry you from call to call without interference or frustration.

**Product number: 428K6AA**

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## Messaging Footnotes

<sup>1</sup> 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.

<sup>2</sup> Optional feature that must be configured at purchase.

<sup>3</sup> HP DreamColor display with 120Hz refresh rate is an optional feature that must be configured at purchase.

<sup>4</sup> RGB keyboard is an optional, configurable feature. Available only in the US, UK, Germany and France only.

<sup>5</sup> 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.

<sup>6</sup> DNN Noise Reduction is delivered automatically through Windows update or can be downloaded from <https://support.hp.com/us-en/drivers> when available. Requires Windows 10 or higher, compatible with internal PC speakers, microphone and analog headsets. The DNN Noise Reduction setting can be configured through the Application HP Audio Control.

<sup>7</sup> Wi-Fi 6E is an optional feature that must be configured at purchase.

<sup>8</sup> 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.

<sup>9</sup> Z Light Space requires Windows 10 or higher.

<sup>10</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>11</sup> For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See <http://intel.com/vpro>

<sup>12</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>13</sup> For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 35GB (for Windows) is reserved for system recovery software.

<sup>14</sup> Up to 64 GB memory is an optional feature that must be configured at purchase.

<sup>15</sup> DNN Noise Reduction is delivered automatically through Windows update or can be downloaded from <https://support.hp.com/us-en/drivers>. Requires Windows 10 or higher, compatible with internal PC speakers, microphone and analog headsets. The DNN Noise Reduction setting can be configured through the Application HP Audio Control.

<sup>19</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>.

<sup>20</sup> 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.

<sup>21</sup> USB-C cable sold separately.

<sup>22</sup> GPU configurations may be limited to specific GPU/Memory Configurations

<sup>24</sup> HP RGB Z Command Keyboard only available in the US, UK, France, and Germany. Not available with Privacy Panel.

<sup>25</sup> HP Sure View is optional and must be configured at purchase. It operates in landscape orientation.

<sup>26</sup> 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.

<sup>27</sup> Display options may be limited to specific CPU / GPU Configurations.

<sup>28</sup> Resolutions are dependent upon monitor capability, and resolution and color depth settings.

<sup>30</sup> HP ZCentral Remote Boost Sender does not come preinstalled on Z Workstations but can be downloaded and run on all Z desktop and laptops without license purchase through 2022. With non-Z sender devices, purchase of perpetual individual license or perpetual floating license per simultaneously executing versions and purchase of ZCentral Remote Boost Software Support is required. ZCentral Remote Boost Sender for non-Z Hardware requires a license and Windows 10, RHEL/CentOS (7 or 8), or UBUNTU 18.04 or 20.04 LTS operating systems. macOS (10.14 or newer) operating system and ThinPro 7.2 are only supported on the receiver side. Requires network access. The software is available for download at [hp.com/ZCentralRemoteBoost](http://hp.com/ZCentralRemoteBoost).

<sup>31</sup> 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>.

<sup>32</sup> Others NVIDIA dGPU: Support HD decode, DX12, HDMI 2.1, mDP 1.4, HDP2.3 via DP up to 5K@60Hz(W/o DSC) or 8K@60(With DSC and requires 2 display heads) and via HDMI up to 8K @ 60Hz(With DSC and requires 2 display heads)

<sup>33</sup> HP Connection Optimizer requires Windows 10.

<sup>34</sup> HP BioSphere Gen6 requires Windows 10 and is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations

<sup>35</sup> Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription.

<sup>36</sup> 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.

<sup>37</sup> HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.

<sup>38</sup> Security lock for security slot is sold separately.

<sup>39</sup> HP Client Security Manager Gen7 requires Windows and is available on the select HP Elite and Pro PCs.

<sup>40</sup> MicroSD 7.1 supports next generation secure digital and is compatible to SD, SDHC, SDXC, SDUC media.

<sup>41</sup> HP Sure Start Gen6 is available on select HP PCs and requires Windows 10 and higher.

<sup>42</sup> 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.

<sup>43</sup> Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT® status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information.

<sup>44</sup> External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Halogen.

<sup>45</sup> Supports HP Fast Charge Technology

<sup>46</sup> 150W Power Adapter is not available with Nvidia RTX™ Graphics

<sup>47</sup> HP Sure Admin requires Windows 10 or higher, 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.

<sup>48</sup> Percentage of ocean-bound plastic contained in each component varies by product.

<sup>51</sup> HP Easy Clean requires Windows 10 RS3 and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for clean.

<sup>52</sup> Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.

<sup>53</sup> Fiber cushions made from 100% recycled wood fiber and organic materials.

<sup>54</sup> 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.

<sup>55</sup> HP Quick Drop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.

<sup>56</sup> HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: [https://support.hp.com/us-en/document/ish\\_3875769-3873014-16](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 (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renew 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.

<sup>57</sup> Tile requires Windows 10. Some features require optional subscription to Tile Premium. Tile application for Windows 10 available for download from the Windows Store. Mobile phone app available for download from App Store and Google Play. Requires iOS 11.0 and greater or Android 6.0 and greater see <https://support.gettileapp.com/hc/en-us/articles/200424778> for more information. HP Tile will function as long as the PC has battery power.

<sup>58</sup> 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.

<sup>59</sup> MicroSD 7.1 media reader supports SD 4.0 cards at SD 3.0 speeds with any SD 7.0 host. SD 7.0 card availability is expected later in 2022.

## Technical Specifications 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.

<sup>3</sup> Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

<sup>4</sup> Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.

<sup>5</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>.

<sup>6</sup> For full Intel® vPro® functionality, Windows 10 Pro 64 bit or Windows 11 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See <http://intel.com/vpro>.

<sup>7</sup> Actual brightness will be lower with HP Sure View or touch-screen.

<sup>8</sup> HP Tamper Lock is an optional feature that must be configured at the factory and requires a supervisor password be established prior to use.

<sup>9</sup> 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.

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

<sup>11</sup> 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.

<sup>12</sup> Multi-Function USB-C port works with Discrete Graphics and Intel® Iris Xe Graphics. Note: For Nvidia Discrete Gfx, it can support HDMI 2.1 except GPU of QN20-P1 SKU (HDMI2.0 support).

<sup>13</sup> Manage and monitor your battery's performance and condition and customize charging options with the easy-to-use HP Power Manager dashboard.

<sup>14</sup> 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.

<sup>15</sup> UHD content required to view UHD images.

<sup>16</sup> HD content required to view HD images.

<sup>17</sup> 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.

<sup>18</sup> Both UMA and Discrete configurations support 4 independent displays (both Intel and NVIDIA Graphic cards, UMA/DIS mode need to close lid or only 3 displays max are supported externally. Max. resolution = 8K@60Hz (miniDP) 4K@60Hz (Type-C output port using a Type C-to-DP adapter), 4K@60Hz (Type-C output port using a Type C-to-DP adapter), OR 4K @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).

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August 2023

