## ProductSheet

# HP ZBook Studio 15.6 inch G8 Mobile Workstation (680Y9UT)



### Power to free the creative mind

From keyboard to screen, every aspect of our ZBook Studio is designed for performance workflows. Render or visualize in real time, collaborate remotely, and even game from anywhere. With all this power engineered into such a small package, finally, there's one device for everything you do.



HP recommends Windows 11 Pro for business Power-packed for the work you do

With NVIDIA® graphics and Intel® Core™ processors you can animate in seconds and render or visualize in real time. Plus, with ZCentral Remote Boost you can share this power with teammates when they need a boost.[2]

#### Thin, light and designed to perform anywhere

At less than 4lbs,[5] with long-lasting battery life and built-in noise suppression, this sleek PC is designed so you can work and game from anywhere. Need to stay in the zone? Speakers custom tuned by Bang and Olufsen surround you in rich audio.

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

Go ahead—work and game on the same laptop with the performance of Z and the power of NVIDIA® graphics. Whether you're rendering in 3D or trying out the latest title, now nothing will slow you down.

# **Featuring**

# Intel® Core™ i7 processor

Run several CPU-heavy programs simultaneously without sacrificing performance with an Intel® Core™ i7 processor. [1]

## 15.6" (39.6 cm) Diagonal 4K UHD DreamColor Display

Create with industry-leading HP DreamColor technology. With 1 billion possible colors and remarkable precision, what you see is what you get—great depth, flawless accuracy and sharp detail. Customize your color space or easily switch between AdobeRGB, sRGB and DCI-P3.

## **HP Z Turbo Drive High-speed Storage**

Work without limits in any location with local PCIe storage that's up to 6x faster than SATA SSD, and up to 21x faster than traditional HDD storage. [3]

Ultra-fast recharge takes you from zero to 50% charge in just 30 minutes. [4]

#### Industry-leading security features

Advanced security features come standard. System safeguards like HP Sure Start – the industry's first self-healing BIOS - mean your device is locked down tight, so your data and identity are too.

# **Specifications**

Processor family  11th Generation Intel® Core™ 17 processor  Intel® Core™ 17-11800H (up to 4.6 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 8 cores)  Memory  32 GB DDRA-3200 MHz RAM (onboard)  Internal Storage  512 GB PCIe™ NVMe™ M. 2 SSD  Memory card device  150 7.0 mediac and reader  Optical drive  Not included  Graphics  Graphics  Graphics  Intel® UNDIA® 11200 (4 GB GDDRS dedicated)  Graphics (discrete)  NINDIA® 11200 (4 GB GDDRS dedicated)  Graphics (integrated)  Intel® UND Graphics  Display  39.6 cm (15.67)  Display  39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display 39.6 cm (15.67)  Display size (diagonal)  15.67  Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bans Roll off  Minimum dimensions (W XD XH)  35.4 x 23.4 x 8.7.7 s cm (non-buch); 35.4 x 23.4 x 8.7.5 cm (touch)  Minimum dimensions (W XD XH)  Weight  5tarting at 3.9 s 2.4 x 0.70 in (non buch); 13.93 x 9.2 x 4.0 x.69 in (buch)  Weight  5tarting at 3.9 s 0.0 cm (19.4 kpc) and and components.)  Keyboard  HP RGR Keyboard - Full-size, per-key RGB backlit keyboard  Ports  (16.6 RGB	Operating system	Windows 11 Pro	
Processor   Intel® Core™ 17-11800H (up to 4.6 GHz with Intel® Turbo Boost Technology, 24 MB L3 cache, 8 cores)   Memory   32 GB DDR8+3200 MHz RAM (onboard)   Internal Storage   51 CB RPCIe® WM/WP MZ SSD   Memory card device   15 D 7.0 media card reader   Optical drive   Not Included   Graphics   Glastrete   Not Included   Graphics   Obscrete   Graphics (discrete)   NVIDIA™ TJ 200 (4 GB GDDR5 dedicated)   Graphics   Integrated   Graphics (integrated)   Intel® UND Graphics   Display   39.6 cm (15.6*) diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor   Display   15.6* diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor   Display   15.6* diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor   Display size (diagonal)   39.6 cm (15.6*)   Display size (diagonal)   39.6 cm (15.6*)   Display size (diagonal)   39.6 cm (15.6*)   Display size (diagonal)   39.5 cm (15.6*)   Audio   Maintinum dimensions (W x D x N)   35.4 x 23.46 x 1.79 cm (non-touchl); 35.4 x 23.46 x 1.75 cm (touch)   Minimum dimensions (W x D x N)   33.93 x 9.24 x 0.70 in (non touchl); 35.4 x 23.46 x 1.75 cm (touch)   Minimum dimensions (W x D x N)   33.93 x 9.24 x 0.70 in (non touchl); 35.9 x 2.24.6 x 1.75 cm (touch)   Melght   Starting at 1.79 kg   Weight   Verlegit varies by configuration and components.)  Weight   Starting at 3.96 lb   Weight   Starting at 3.96 lb   Weight   Starting at 3.96 lb   Weight   Privacy camera with integrated dual array microphones   1 headphone/microphone-combo; 1 Super-Speed USB Type-A Sebps signaling rate (charging); 1 nano security lock social ** Not Speed USB Type-A Sebps signaling rate (charging); 1 nano security lock social ** Not Speed USB Type-A Sebps signaling rate (charging); 1 nano security lock social ** Not Speed USB Type-A Sebps signaling rate (charging); 1 nano security lock social ** Not Speed USB Type-A Sebps signaling rate (Charging); 1 nano security lock social ** Not Speed USB Type-A Sebps signaling rate (Charging); 1		Windows 11 Pro	
Internal Storage	· <del></del>	·	
Internal Storage  \$12 GB PCLIe® NVMe" M.2 SSD  Memory card device  \$1 SD 7.0 media card reader  Optical drive  Not included  Graphics  Graphics  Discrete  Graphics (discrete)  NVDIN®**1200 (4 GB GDDR6 dedicated)  Graphics (integrated)  Inte®**UHD Graphics  Display  39.6 cm (15.6**)  Display  39.6 cm (15.6**)  Display  15.6** diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCL-P3, HP DreamColor  Display  15.6** diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCL-P3, HP DreamColor  Display size (diagonal)  15.6**  Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone-jack, HD audio with 150Hz  Bass Ball off  Minimum dimensions (W x D x H)  3.5 4 x 23.4 6 x 1.73 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Minimum dimensions (W x D x H)  3.5 4 x 1.79 s x 1.79 kg  (Weight Varies by configuration and components.)  Weight  \$1 starting at 3.5 8 fb  (Weight Varies by configuration and components.)  Keyboard  HP RGB Keyboard - Full-size, per-key RGB backtit keyboard  Politing device  CitckPad Glass with multi-touch peruse support, taps enabled as default  Camera  720 p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 Super Speed USB Type-A Spobs signaling rate (charging); 1 nano security lock sold**  Sold** (MEN) Displayport and HDMI restrictions to Graphics cards are noted in FootnoteS4 and FootnoteS6)  Power  15 Dever Cometor; 1 Mini DisplayPort* 1.4; 2 Thunderbil** 4 with USBA** Type-C** 40 Gbps signaling rate (USB  Power Delivery, DisplayBort** 1.4; 1 Ps Sieep and Charge); 1 HDML 2.1  Welless  Inte®** With CERTIFIED B** X201 (2) and Bluetooth** 5 combo (Supporting Glgabit data rate)  Power  15 W Silim Smart external AC power adaptive 40 signaling rate (USB  Power Delivery, DisplayBort** 1.4; Ps Sieep and Charge); 1 HDML 2.1  Wholl be substay the Ps was experiented to Scurity Link Ps ure Sense; HP BIOSphere Gene;			
Memory card device         1.50 7.0 media card reader           Optical drive         Not included           Graphics         Discrete           Graphics (discrete)         NVIDIA®*T1200 (4 GB GDDRG dedicated)           Graphics (Integrated)         Integrated           Display         3.9 6.cm (15.6°) diagonal, 4K UHD (3840 x 2160), anti-glave, 600 nits, 100% DCI-P3, HP DreamColor           Display         3.9 6.cm (15.6°)           Display size (diagonal)         3.9. 6 m (15.6°)           Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone/headphone/leak, HD audio with 150H2 Bass Roll off           Minimum dimensions (W x D x H)         3.5. 4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)           Minimum dimensions (W x D x H)         3.5. 4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)           Weight         Starting at 3.79 kg (Weight varies by configuration and components.)           Weight         Starting at 3.80 cm (15.6°)           Weight (Weight varies by configuration and components.)           Keyboard         HP RGE Reyboard - Full-size, per-key RGB backlit keyboard           Ports         In adphone/microphone combo; 1 Super Speed USB Type-A 5 Gbps signaling rate (charging); 1 nano security lock siol(12.13)           Wireless         In Eadphone/microphone comb			
Optical drive Not included Graphics Discrete Graphics Observe Graphics (Integrated) Graphics (Integrated) Integrated Graphics (Integrated) Integrated Graphics (Integrated) Integrated Integrated (Integrated) Integrated Integrated (Integrated) Inte		_	
Graphics Discrete Graphics (discrete) NVIDIA**T1200 (4 GB GDDR6 dedicated) Graphics (integrated) Integrated Intel® UHD Graphics Integrated Intel® UHD Graphics Intel® Graphics (integrated) Intel® UHD Graphics Intel® Graphics (integrated) Intel® Graphics (Integrated) Intel® Graphics (Integrated) Intel® Graphics (Integrated) Intel® Graphics Intel® Graphics (Intel® Graphics Good Intel® G			
Graphics (discrete)  NVIDIA® T1200 (4 GB GDDRG dedicated)  Graphics (Integrated)  Integrated  Graphics (integrated)  Display  39.6 cm (15.6° / diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor  Display  15.6° diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor (7.15.16.25.27.29)  Display size (diagonal)  33.6 cm (15.6°)  Display size (diagonal)  33.6 cm (15.6°)  Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off  Minimum dimensions (W x D x H)  35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Minimum dimensions (W x D x H)  35.4 x 23.46 x 1.79 cm (non-touch); 35.9 x 9.24 x 0.69 in (touch)  Starting at 1.79 kg  (Weight Varies Dy configuration and components.)  Weight  Starting at 1.39 lb  Weight Varies Dy configuration and components.)  Weight  ClickPad Glass with multi-touch gesture support, taps enabled as default  Gamera  720 p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 Super Speed USB Type-A 56bps signaling rate (charging); 1 nano security lock signt 12.31 (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote-54 and Footnote-55)  Ports  1 power connecto; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USB4™ Type-C* 406bps signaling rate (USB Power Delivery, DisplayPort™ 1.4; PS leep and Chargo); 1 HDMI 2.1  Wireless  Intel® Wi-FI CERTIFIED 6™ AX201 (X22) and Bluetooth® 5 combo (Supporting Gigabit data rate)  Power  150 W Silm Smart external AC power adapter (48)  Battery type  BH Long Life 6-cell, 83 Wh Li-lon polymer  Battery recharge time  Supports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications  Low haologen  Absolute persistence module: HP Device Access Manager; HP Dover On Authentication; Trusted Platform Module  TPM 2.0 Embedded Se			
Integrated			
Display   39.6 cm (15.6°) diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor   Display   39.6 cm (15.6°) diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor (7.15.16.25.27.28)   Display size (diagonal)   39.6 cm (15.6°)   Display size (diagonal)   39.6 cm (15.6°)   Display size (diagonal)   39.6 cm (15.6°)   Display size (diagonal)   40.6 cm (30.6 cm (30			
Display  39.6 cm (15.6") diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor  Display isc (diagonal)  39.6 cm (15.6")  Display size (diagonal)  39.6 cm (15.6")  Display size (diagonal)  15.6"  Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off  Minimum dimensions (W x D x H)  Minimum dimensions (W x D x H)  35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Minimum dimensions (W x D x H)  Minimum dimensions (W x D x H)  Starting at 1.79 kg  (Weight x arise by configuration and components.)  Weight Starting at 3.96 lb  (Weight varies by configuration and components.)  Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard  Pointing device ClickPad Glass with multi-touch gesture support, taps enabled as default  Camera 720p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo: 1 Super-Speed USB Type-A SGbps signaling rate (charging); 1 nano security lock stoft; 12.13 (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports 1 power connector; 1 Mini DisplayPort**1.4; 2 Thunderbolt** 4 with USB4**Type-C** 40Gbps signaling rate (USB Power Delivey, DisplayPort**1.4, 18 Sleep and Charga); 1 HDMI 2.1  Wireless 1 Intel® Wi-Fic (ERTIFIED 6** AR201 (x22) and Bluetooth* 5 combo (Supporting Gigabit data rate)  Power 8 Sustainable Impact specifications Low haloge  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-Boot Authentication; Trusted Platform Module TPM 2.0 Embedd		-	
Display 15.6° diagonal, 4K UHD (3840 x 2160), anti-glare, 600 nits, 100% DCI-P3, HP DreamColor <sup>[7,15,16,25,27,29]</sup> Display size (diagonal) 39.6 cm (15.6°) Display size (diagonal) 15.6° Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off Minimum dimensions (W x D x H) 35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch) Minimum dimensions (W x D x H) 35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch) Weight Starting at 1.79 kg (Weight varies by configuration and components.) Weight Starting at 3.96 lb (Weight varies by configuration and components.) Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard Pointing device (CitcRPad Glass with multi-touch gesture support, taps enabled as default Camera 720p HD IR privacy camera with integrated dual array microphones 1 headphone/microphone combo: 1 Super Speed USB Type-A 56bps signaling rate (charging); 1 nano security lock sloti <sup>[2,13]</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote5d and Footnote56) Ports 1 power connector; 1 Mini DisplayPort** 1.4; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 12 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Type-C** 406bps signaling rate (USB Power Delivery, DisplayPort** 1.4, 14; 2 Thunderbolt*** 4 with USB4*** Ty		·	
Display size (diagonal)  15.6" Audio by Bang & OlurSen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off  Minimum dimensions (W x D x H)  35.4 x 23.46 x 1.79 cm (non-touch); 35.3 y 2.4 x 0.75 cm (touch)  Minimum dimensions (W x D x H)  35.9 x 2.4 x 0.70 in (non touch); 13.93 x 9.24 x 0.69 in (touch)  Weight  Starting at 1.79 kg (Weight varies by configuration and components.)  Weight  Weight  Starting at 3.96 lb (Weight varies by configuration and components.)  Weight  Weight  Starting at 1.79 kg (Weight varies by configuration and components.)  Weight  ClickPad Glass with multi-touch gesture support, taps enabled as default  Camera  720p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 Super-Speed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot! 2.1313  (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports  1 power connector; 1 Mini Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Displayport** 1.4, 12 Stunderbolt** 4 with USBA** Type-C** 40Gbps signaling rate (USB Power Delivery, Display			
Audio Malio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off  Minimum dimensions (W x D x H) 35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Minimum dimensions (W x D x H) 35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Weight Starting at 1.79 kg (Weight varies by configuration and components.)  Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard  Pointing device (LickPad Glass with multi-touch gesture support, taps enabled as default  Camera 720 p HD IR privacy camera with integrated dual array microphones  Ports 1 headphone/microphone combo; 1 Super-Speed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot <sup>12,131</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote55)  Ports 1 power connector; 1 Mini DisplayPort** 1.4; 2 Thunderbolt** 4 with USB4** Type-C** 40Gbps signaling rate (USB Power Delivery, DisplayPort** 1.4, HP Sleep and Charge); 1 HDMI 2.1  Wireless Inte <sup>12*</sup> Wi-Fi (ERTIFIED E** AZ201 (Zx2) and Bluetooth** 5 combo (Supporting Gigabit data rate)  Power 150 v S Lim Smart external AC power adapter <sup>[48]</sup> Battery type HP Long Life 6-cell, 83 wh Li-ion polyme  Battery recharge time Supports battery HP fast charge: approximately 50% in 30 minutes  Security management Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Scure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant, Native Miracast support; HP Sure Recover Gen4 with Embedded Security Client; He Security Manager Gen7; HP Sure Recover Gen4 with Embedded Security Client; Tew Office; HP Hotkey Support; HP Conne			
Audio by Bang & Olufsen, stereo speakers (2 tweeters & 2 woofers), HP World Facing Microphone dual array digital microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz Bass Roll off  Minimum dimensions (W x D x H) 35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)  Minimum dimensions (W x D x H) 13.93 x 9.24 x 0.70 in (non touch); 13.93 x 9.24 x 0.69 in (touch)  Weight Starting at 1.79 kg (Weight varies by configuration and components.)  Weight (Weight varies by configuration and components.)  Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard  Pointing device ClickPad Glass with multi-touch gesture support, taps enabled as default  Camera 720p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 Super-Speed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot(*12.13) (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56) slot(*12.13) (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports 1 power connector; 1 Mini DisplayPort** 1.4; 2 Thunderbott** 4 with USBA*** Type-C** 40Gbps signaling rate (USB Power Delivery, DisplayPort*** 1.4; HP Sleep and Charge); 1 HDMI 2.1  Wireless Intel** Wi-Fi CERTIFIED 6*** AX201 (2x2) and Bluetooth** 5 combo (Supporting Gigabit data rate)  Power 150 W Slim Smart external AC power adapter (*40)  Battery type HP Long Life 6-cell, 83 Wh Li-ion polymer  Satanable impact specifications  Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPH 2.6 mibedded Security Chip; Master Boot Record security, Pre-boot authentication; HP Sure Click; Windows Defender; HP Sure Rundini; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Recover Gen4; HP Sure Rundini; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Surp Armanice Advis			
Audio Bass Roll off Minimum dimensions (W x D x H) Bass Roll off Minimum dimensions (W x D x H) Bass Roll off Minimum dimensions (W x D x H) Bass Roll off Minimum dimensions (W x D x H) Bass Roll off Minimum dimensions (W x D x H) Bass Roll off Minimum dimensions (W x D x H) Bass Roll off (Weight varies by configuration and components.) Weight Weight Starting at 1.79 kg (Weight varies by configuration and components.) Weight Weight Weight Varies by configuration and components.)  Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard Pointing device ClickPad Glass with multi-touch gesture support, taps enabled as default Camera 720 pt Dl R privacy camera with integrated dual array microphones 1 headphone/microphone combo; 1 Super-Speed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slott <sup>12,13</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports 1 power connector; 1 Mini DisplayPort** 1.4; 2 Thunderbolt** 4 with USB4** Type-C** 40Gbps signaling rate (USB Power Delivery, DisplayPort** 1.4; HP Steep and Charge); 1 HDMI 2.1  Wireless Intel** Wi-Fi CERTIFIED 6** AX201 (2x2) and Bluetooth** 5 combo (Supporting Gigabit data rate)  Power 150 W Stilm Smart external AC power adapter (as) Battery type Battery recharge time Sustainable impact specifications Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security, Pre-boot authentication; HP Sure Click; Windows Defender; HP Seure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BioSphere Gen6; HP Sure Click; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging (34,35,36,37,38,39,40,41,42,34,39) Bing search for IE 11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP	visplay size (diagonal)		
Minimum dimensions (W x D x H)         13.93 x 9.24 x 0.70 in (non touch); 13.93 x 9.24 x 0.69 in (touch)           Weight         Starting at 1.79 kg (Weight varies by configuration and components.)           Weight         Starting at 3.96 lb (Weight varies by configuration and components.)           Keyboard         HP RGB Keyboard - Full-size, per-key RGB backlit keyboard           Pointing device         ClickPad Glass with multi-touch gesture support, taps enabled as default           Camera         720 p HD IR privacy camera with integrated dual array microphones           Ports         1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot <sup>12,13</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)           Ports         1 power connector; 1 Mini DisplayPort™ 1.4; 1-Nunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4; 1-Nunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4; 1-Nunderbolt™ 5 combo (Supporting Gigabit data rate)           Wireless         Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)           Power         150 W Slim Smart external AC power adapter [4e]           Battery type         Battery type           Battery type         Supports battery HP fast charge: approximately 50% in 30 minutes           Security management         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted P	Audio	microphones, functions keys for volume up and down, combo microphone/headphone jack, HD audio with 150Hz	
Weight         Starting at 1.79 kg (Weight varies by configuration and components.)           Weight         Starting at 3.96 lb (Weight varies by configuration and components.)           Keyboard         HP RGB Keyboard – Full-size, per-key RGB backlit keyboard           Pointing device         ClickPad Glass with multi-touch gesture support, taps enabled as default           Camera         720 p HD IR privacy camera with integrated dual array microphones           Ports         1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot <sup>12,13</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)           Ports         1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbotit™ with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4; BP Sleep and Charge); 1 HDMI 2.1           Wireless         Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)           Power         150 W Slim Smart external AC power adapter [48]           Battery type         HP Long Life 6-cell, 83 Wh Li-ion polymer           Battery recharge time         Supports battery HP fast charge: approximately 50% in 30 minutes           Security management         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Sure Almin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Re	Minimum dimensions (W x D x H)	35.4 x 23.46 x 1.79 cm (non-touch); 35.4 x 23.46 x 1.75 cm (touch)	
Weight Starting at 3.96 lb (Weight varies by configuration and components.)  Keyboard HP RGB Keyboard - Full-size, per-key RGB backlit keyboard  Pointing device ClickPad Glass with multi-touch gesture support, taps enabled as default  Camera 720p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot [12,13] (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports 1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Steep and Charge); 1 HDMI 2.1  Wireless Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)  Power 150 W Stim Smart external AC power adapter [48]  Battery type HP Long Life 6-cell, 83 Wh Li-ion polymer  Battery recharge time Supports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click, Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Genef, HP Sure Restart Gen6; HP Sure Click, Windows Pure Rum Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34-35,33-33,34-33,34-31-44,24,34]  Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privay Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for 2 workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30-33,51,55,57,58]	Minimum dimensions (W x D x H)	13.93 x 9.24 x 0.70 in (non touch); 13.93 x 9.24 x 0.69 in (touch)	
Keyboard         HP RGB Keyboard - Full-size, per-key RGB backlit keyboard           Pointing device         ClickPad Glass with multi-touch gesture support, taps enabled as default           Camera         720p HD IR privacy camera with integrated dual array microphones           Ports         1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slote <sup>[12,13]</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)           Ports         1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USBa™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge); 1 HDMI 2.1           Wireless         Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)           Power         150 W Slim Smart external AC power adapter [48]           Battery type         HP Long Life 6-cell, 83 Wh Li-ion polymer           Battery recharge time         Supports battery HP fast charge: approximately 50% in 30 minutes           Sustainable impact specifications         Low halogen           Security management         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BlOSphere Gen6; HP Sure Start Gen6; HP Sure Rum Gen4; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Rum Gen4; HP Gleient Securit	Weight		
Pointing device  ClickPad Glass with multi-touch gesture support, taps enabled as default  Zamera  720p HD IR privacy camera with integrated dual array microphones  1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot <sup>12,131</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports  1 power connector; 1 Mini DisplayPort™ 1.4, HP Sleep and Charge); 1 HDMI 2.1  Wireless  Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)  Power  150 W Slim Smart external AC power adapter [48]  Battery type  HP Long Life 6-cell, 83 Wh Li-ion polymer  Battery recharge time  Supports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications  Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Start Gen6; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35.36,37,38,39,40.41.42,43,49]  Bing search for IE 11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP P Hotkey Support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP P Hotkey Support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP P Hotkey Support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP P Chardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free	Weight	<u> </u>	
Camera       720p HD IR privacy camera with integrated dual array microphones         Ports       1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot{12,13} (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)         Ports       1 power connector; 1 Mini DisplayPort™ 1.4; Pt Sleep and Charge); 1 HDMI 2.1         Wireless       Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)         Power       150 W Slim Smart external AC power adapter [48]         Battery type       HP Long Life 6-cell, 83 Wh Li-ion polymer         Battery recharge time       Supports battery HP fast charge: approximately 50% in 30 minutes         Sustainable impact specifications       Low halogen         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageablility Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Remote Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]         Software included       Bing search for IE 11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickProp; Data Science Stack, HP Easy Clean; HP PC Hardware Diagnostics; HP Zecentral	Keyboard	HP RGB Keyboard - Full-size, per-key RGB backlit keyboard	
Ports  1 headphone/microphone combo; 1 SuperSpeed USB Type-A 5Gbps signaling rate (charging); 1 nano security lock slot <sup>[12,13]</sup> (Mini Displayport and HDMI restrictions to Graphics cards are noted in Footnote54 and Footnote56)  Ports  1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge); 1 HDMI 2.1  Ntel® Wireless  Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)  Power  150 W Slim Smart external AC power adapter [48]  Battery type  HP Long Life 6-cell, 83 Wh Li-ion polymer  Susports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications  Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Seure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,24,34,9]  Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Pointing device	ClickPad Glass with multi-touch gesture support, taps enabled as default	
Ports    Slot [12,13]	Camera	720p HD IR privacy camera with integrated dual array microphones	
Ports       1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4, HP Sleep and Charge); 1 HDMI 2.1         Wireless       Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)         Power       150 W Slim Smart external AC power adapter [48]         Battery type       HP Long Life 6-cell, 83 Wh Li-ion polymer         Battery recharge time       Supports battery HP fast charge: approximately 50% in 30 minutes         Sustainable impact specifications       Low halogen         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security, Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]         Software included       Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Ports	slot <sup>[12,13]</sup>	
Wireless       Intel® Wi-Fi CERTIFIED 6™ AX201 (2x2) and Bluetooth® 5 combo (Supporting Gigabit data rate)         Power       150 W Slim Smart external AC power adapter [48]         Battery type       HP Long Life 6-cell, 83 Wh Li-ion polymer         Battery recharge time       Supports battery HP fast charge: approximately 50% in 30 minutes         Sustainable impact specifications       Low halogen         Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]         Software included       Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Ports	1 power connector; 1 Mini DisplayPort™ 1.4; 2 Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB	
Battery type  Battery recharge time  Supports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications  Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]  Software included  Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Wireless		
Battery type  Battery recharge time  Supports battery HP fast charge: approximately 50% in 30 minutes  Sustainable impact specifications  Low halogen  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]  Software included  Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Power		
Sustainable impact specifications  Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]  Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Battery type		
Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]  Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Battery recharge time	Supports battery HP fast charge: approximately 50% in 30 minutes	
TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded Reimaging [34,35,36,37,38,39,40,41,42,43,49]  Bing search for IE11; Buy Office; HP Hotkey Support; HP Noise Cancellation Software; HP Performance Advisor; HP Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial offer [30,33,51,55,57,58]	Sustainable impact specifications	Low halogen	
Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data  Software included  Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z  workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial  offer [30,33,51,55,57,58]	Security management	Absolute persistence module; HP Device Access Manager; HP Power On Authentication; Trusted Platform Module TPM 2.0 Embedded Security Chip; Master Boot Record security; Pre-boot authentication; HP Sure Click; Windows Defender; HP Secure Erase; HP Manageability Integration Kit; HP Sure Sense; HP BIOSphere Gen6; HP Sure Start Gen6; HP Sure Admin; HP Image Assistant; MS Bitlocker Encryption; Nano Security Lock Slot; HP Sure Recover Gen4; HP Sure Run Gen4; HP Client Security Manager Gen7; HP Sure Recover Gen4 with Embedded	
<b>UPC number</b> (ABA) 196548412006; (ABL) 196548411993	Software included	Support Assistant; Native Miracast support; HP Connection Optimizer; HP Privacy Settings; HP QuickDrop; Data Science Stack; HP Easy Clean; HP PC Hardware Diagnostics; HP ZCentral Remote Boost 2020 Software for Z workstation; Tile™ Application; Windows 10 Cloud Recovery Client; 1-month Adobe® free trial	
	UPC number	(ABA) 196548412006; (ABL) 196548411993	

# **Top Recommended Displays, Accessories and Services**

Z Displays	
HP Z27q G3 QHD Display	1C4Z7AA
HP Z24f G3 FHD Display	3G828AA
HP Z24n G3 WUXGA Display	1C4Z5AA
Docking Stations	
HP Thunderbolt Dock G2 with Combo Cable	3TR87AA
Cases	
HP Renew Business 15.6-inch Laptop Bag	3E5F8AA
HP Executive 15.6 Top Load	6KD06AA
Backpacks	
HP Executive 15.6 Backpack	6KD07AA
Keyboard and Mouse Kits	
HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
Mice	
HP 635 Multi-Device Wireless Mouse	1DOK2AA
AC Adapters	
HP 150W Slim Smart AC Adapter (4.5mm)	4SC18AA

### **Messaging Footnotes**

- [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 nerformance.
- [2] 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.
- [3] For hard drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB (for Windows 10) of system disk is reserved for system recovery software.
- [4] Recharges the battery up to 50% within 30 minutes when the system is off or in standby mode. Power adapter with a minimum capacity of 65 watts is required. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
- [5] Starting at weight. Weight will vary with configuration.

#### **Technical Specifications Footnotes**

- [7] Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost/ for more information.
- [12] HDMI 2.0 works with Discrete Graphics and Intel(r) Iris Xe Graphics. Note: For Nvidia Discreate Gfx, it can support HDMI 2.1 except GPU of QN20-P1 SKU(HDMI2.0 support).
- [13] HDMI 2.0 connector is provided with Intel® UHD Graphics and/or NVIDIA Quadro T1000 or T2000 configurations; miniDP 1.4 connector is provided with NVIDIA Quadro RTX 3000 or higher configurations
- [15] UHD content required to view UHD images.
- [16] HD content required to view HD images.
- [25] HP Sure View is optional and must be configured at purchase. It operates in landscape orientation.
- [27] Display options may be limited to specific CPU / GPU Configurations.
- [29] Resolutions are dependent upon monitor capability, and resolution and color depth settings.
- [30] 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.
- [33] HP Connection Optimizer requires Windows 10.
- [34] 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
- [35] 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.
- [36] HP Sure Run Gen4 is available on select HP PCs and requires Windows 10.
- $\hbox{[37] HP Manageability Integration Kit can be downloaded from $$http://www.hp.com/go/clientmanagement.}$
- [38] Security lock slot is Lock sold separately.
- [39] HP Client Security Manager Gen7 requires Windows and is available on the select HP Elite and Pro PCs.
- [40] HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module.
- [41] HP Sure Recover Gen4 with Embedded Reimaging is an optional feature which requires Windows 10 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 PCs with Intel Wi-Fi Module.
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