

### Overview

#### HP ProBook x360 440 G1 Notebook PC



- |   |                                    |
|---|------------------------------------|
| 1. Security lock slot (Lock sold separately.) | 4. Headphone/microphone combo jack |
| 2. Power button                               | 5. SD Card reader                  |
| 3. USB 3.1 Gen 1 (Power port)                 |                                    |

### Overview



#### Right

- 1. Microphones (2)
- 2. Web/IR camera
- 3. Webcam light
- 4. Power connector
- 5. Ethernet port (RJ-R45)
- 6. HDMI port (Cable not included.)
- 7. USB 3.1 Gen 1
- 8. USB Type-C™ port (DisplayPort + Power Delivery)
- 9. Volume Up/Down
- 10. Fingerprint reader
- 11. Clickpad

### Overview

#### AT A GLANCE

- Preinstalled with Windows 10 versions or FreeDOS 2.0
- Choice of Intel® Core™ processors
- HP's signature linear wedge design converts from a traditional laptop to tablet, media and tent modes for easy creation, presentation, collaboration and sharing at the office and on the go
- Full size HP Premium Keyboard, spill-resistant keyboard with a thin layer of mylar film to prevent minor spills
- Function keys provide control of features including: standby mode, display brightness, external display, microphone mute, volume down, volume up, and backlight toggle for backlit keyboard (Select models only.)
- Large Clickpad with gestures support
- Enhanced security features with preinstalled software and hardware options
- Optional HD webcam or IR camera with dual-microphone array for video conferencing<sup>1</sup>
- Choice of displays 35.56 cm (14") diagonal FHD (1920 x 1080) UWVA flat LED backlit Corning® Gorilla® Glass 4 touch; 220 cd/m<sup>2</sup>, 67% sRGB; or 400 cd/m<sup>2</sup>, 100% sRGB
- Flexible wireless connectivity options
- Battery life up to 13 hours
- HP 3-cell, 48 WHr Li-ion battery
- Passed MIL-STD testing<sup>2</sup>
- The new optional HP Active Pen

1. Sold separately or as an optional feature.

2. MIL-STD-810G testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

### Features

#### PRODUCT NAME

HP ProBook x360 440 G1 Notebook PC

#### OPERATING SYSTEM

##### Preinstalled

Windows® 10 Pro 64<sup>1</sup>  
Windows® 10 Pro 64 (National Academic License)<sup>2</sup>  
Windows® 10 Home 64<sup>1</sup>  
Windows® 10 Home Single Language 64<sup>1</sup>  
FreeDos 2.0

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com/>.

2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see <https://aka.ms/ProEducation> for Windows 10 Pro Education feature information.

**NOTE:** Your product does not support Windows 8 or Windows 7

In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on <http://www.support.hp.com>

#### PROCESSORS

Intel® Core™ i7-8550U with Intel® UHD graphics 620 (1.8 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)<sup>3,4,5</sup>

Intel® Core™ i5-8350U vPro™ processor with Intel® UHD Graphics 620 (1.7 GHz base frequency, up to 3.6 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)<sup>3,4,5</sup>

Intel® Core™ i5-8250U with Intel® UHD Graphics 620 (1.6 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)<sup>3,4,5</sup>

Intel® Core™ i7-7500U with Intel® HD Graphics 620 (2.7 GHz base frequency, up to 3.5 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores)<sup>3,4,5</sup>

Intel® Core™ i5-7200U with Intel® HD Graphics 620 (2.5 GHz base frequency, up to 3.1 GHz with Intel® Turbo Boost Technology, 3 MB cache, 2 cores)<sup>3,4,5</sup>

Intel® Core™ i3-8130U with Intel® UHD graphics 620 (2.2 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores)<sup>3,4,5</sup>

Intel® Pentium® Gold 4415U with Intel® HD Graphics 610 (2.3 GHz, 2 MB cache, 2 cores)<sup>3,4,5</sup>

Intel® Celeron® 3865U with Intel® HD Graphics 610 (1.8 GHz, 2 MB cache, 2 cores)<sup>3,4,5</sup>

##### Processor Family

8th Generation Intel® Core™ i7 processor (i7-8550U model) <sup>5</sup>

8th Generation Intel® Core™ i5 processor (i5-8350U) <sup>5</sup>

8th Generation Intel® Core™ i5 processor (i5-8250U model) <sup>5</sup>

8th Generation Intel® Core™ i3 processor (i3-8130U model) <sup>5</sup>

7th Generation Intel® Core™ i7 processor (i7-7500U model) <sup>5</sup>

7th Generation Intel® Core™ i5 processor (i5-7200U model) <sup>5</sup>

Intel® Pentium® Gold processor <sup>5</sup>

Intel® Celeron® processor (3865U is Windows 10 only) <sup>5</sup>

3. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload

### Features

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

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

5. **NOTE:** 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>.

### CHIPSET

Integrated with processor

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### GRAPHICS

#### Integrated

Intel® UHD Graphics 620 <sup>6</sup>

Intel® HD Graphics 620 <sup>6</sup>

Intel® HD Graphics 610 <sup>6</sup>

#### Discrete

NVIDIA® GeForce® MX130 (2 GB DDR5 dedicated) <sup>7</sup>

6. HD content required to view HD images.

7. 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).

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### Features

#### DISPLAY

##### Touch

35.56 cm (14") diagonal FHD IPS eDP + PSR LED-backlit touch screen, 400 cd/m<sup>2</sup>, 100% sRGB for IR camera and WWAN (1920 x 1080) <sup>8,9,10</sup>

35.56 cm (14") diagonal FHD IPS eDP LED-backlit touch screen, 220 cd/m<sup>2</sup>, 67% sRGB for IR camera and WWAN (1920 x 1080) <sup>8,9,10</sup>

35.56 cm (14") diagonal FHD IPS eDP LED-backlit touch screen, 220 cd/m<sup>2</sup>, 67% sRGB for HD camera and WWAN (1920 x 1080) <sup>8,9,10</sup>

35.56 cm (14") diagonal FHD IPS eDP LED-backlit touch screen, 220 cd/m<sup>2</sup>, 67% sRGB for IR camera (1920 x 1080) <sup>8,9,10</sup>

35.56 cm (14") diagonal FHD IPS eDP LED-backlit touch screen, 220 cd/m<sup>2</sup>, 67% sRGB for HD camera (1920 x 1080) <sup>8,9,10</sup>

8. HD content required to view HD images.

9. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

10. Sold separately or as an optional feature.

Docking station model	Total number of supported displays (incl. the notebook display)	Max.resolutions supported	Dock Connectors	Technical limitations
HP UltraSlim Docking Station	3	Dual 2.5K @ 60Hz	2xDP, 1xVGA	Dual 2.5k only with both displays into DP
HP Elite 120W TB3 Dock	3	Dual 4K @ 60Hz	2xDP, 1xVGA, 1xTB, 1xUSB-C alt-mode	Dual 4k only with one display in to DP and + TB port or USB-C alt mode + TB port
HP Elite USB-C Dock G4	3	Dual 2K @ 60Hz Single 4K @ 60Hz (3840 x 1440)	1xHDMI, 2xDP	
HP USB-C Universal Dock	3	Dual 4K @ 60Hz Single 5K @ 60Hz	2xDP	
HP USB-C Travel Dock	2	Single 2K @ 60Hz	1xHDMI, 1xVGA	Single external display Only HDMI or VGA at the time
HP USB-C Mini Dock (	2	Single 4K @ 60Hz"	1xHDMI, 1xVGA	Single external display Only HDMI or VGA at the time

### Features

#### STORAGE AND DRIVES

##### Primary M.2 Storage M.2 2280 SSD (NGFF)

128 GB SATA TLC <sup>11</sup>  
256 GB PCIe® NVMe™ Value <sup>11,12</sup>  
256 GB SATA TLC <sup>11</sup>  
512 GB PCIe® NVMe™ TLC <sup>11,12</sup>

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

12. Not available with Intel® Celeron® processor.

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#### MEMORY

##### Maximum Memory 16 GB DDR4-2400 SDRAM <sup>13</sup>

##### Memory

16 GB DDR4-2400 SDRAM (1 X 16 GB) <sup>13</sup>  
16 GB DDR4-2400 SDRAM (2 X 8 GB) Dual channel <sup>13</sup>  
12 GB DDR4-2400 SDRAM (8 GB + 4 GB) Dual channel <sup>13</sup>  
8 GB DDR4-2400 SDRAM (1 x 8 GB) <sup>13</sup>  
8 GB DDR4-2400 SDRAM (2 x 4 GB) Dual channel <sup>13</sup>  
4 GB DDR4-2400 SDRAM (1 x 4 GB) <sup>13</sup>

##### Memory Slots

2 SODIMM  
Both slots are upgradeable  
System runs at 2400  
Supports Dual Channel Memory

13. 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.

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### Features

#### NETWORKING/COMMUNICATIONS

**WLAN**

Intel® Dual Band Wireless-AC 8265 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro™<sup>14</sup>  
Realtek RTL8822BE-CG 802.11a/b/g/n/ac (2x2) with Bluetooth® 4.2<sup>14</sup>

**WWAN**

HP lt4132 LTE/HSPA+ with GPS Mobile Broadband Module<sup>15</sup>  
Intel® XMM™ 7360 LTE-Advanced<sup>15</sup>

**Miracast**

Support for Miracast<sup>17</sup>

**Ethernet**

Realtek PCIe GbE Family Controller 10/100/1000<sup>16</sup>

14. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

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

16. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

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

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#### AUDIO/MULTIMEDIA

**Audio**

Integrated microphone (Mono) - On non-webcam configs only  
Integrated microphone (Dual Array) - on webcam configs only  
2 Stereo Speakers

**Camera**

720p HD camera<sup>8</sup>  
HD IR webcam<sup>8,18</sup>

8. HD content required to view HD images.

18. Internet access required.

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### Features

#### **KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS**

##### **Keyboard**

HP Premium Keyboard  
Full-sized chiclet keyboard  
Backlit full-sized chiclet keyboard

##### **Pointing Device**

Clickpad  
On/off control by driver  
Taps enabled as default

##### **Function Keys**

ESC: system information  
F1 - Display Switching  
F2 - Blank  
F3 - Brightness Down  
F4 - Brightness Up  
F5 - Speaker Mute  
F6 - Volume Down  
F7 - Volume Up  
F8 - Mic Mute  
F9 - Backlight Toggle (for backlit keyboard) or Blank  
F10 - NumLock  
F11 - Wifi Toggle  
F12 - Sleep

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### Features

#### SOFTWARE AND SECURITY

##### Preinstalled Software

###### BIOS

HP BIOSphere Gen4 <sup>19</sup>  
HP DriveLock & Automatic DriveLock  
BIOS Update via Network  
Master Boot Record Security  
Power On Authentication  
Secure Erase <sup>20</sup>  
Absolute Persistence Module <sup>21</sup>  
Pre-boot Authentication

###### Software

HP Native Miracast Support <sup>17</sup>  
HP LAN-Wireless Protection  
HP Velocity  
HP ePrint + JetAdvantage <sup>22</sup>  
HP Hotkey Support - CMIT  
HP Recovery Manager  
HP Jumpstart  
HP Support Assistant <sup>23</sup>  
HP Noise Cancellation Software  
HP Host Based MAC Address Manager  
HP PhoneWise <sup>24</sup>  
Buy Office (sold separately)

##### Manageability Features

HP Driver Packs <sup>25</sup>  
HP System Software Manager (SSM)  
HP Manageability Integration Kit Gen2 <sup>26</sup>  
Ivanti Management Suite <sup>27</sup>

##### Client Security Software

HP Client Security Suite Gen4 including: <sup>28</sup>  
HP Security Manager <sup>29</sup> (including Credential Manager, HP Password Manager, HP Spare Key)  
Power On Authentication  
HP Fingerprint Reader <sup>30</sup>  
HP Device Access Manager  
Microsoft Defender <sup>31</sup>

### Features

#### Security Management

Secure Erase <sup>20</sup>

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)

Power-on password (viaBIOS)

Setup password (viaBIOS)

Support for chassis padlocks and cable lock devices

Integrated hood sensor

HP Sure Click <sup>32</sup>

#### Security

##### TPM

Model:

Version:

Revision:

FIPS 140-2 Compliant:

#### IPv6 Certification:

Yes / No

**MD5 Hash:** Please follow the instructions below to access MD5 Hash.

Graphics (Intel Video Driver): TBD

WWAN: TBD

WLAN: TBD

#### Is the BIOS on this notebook ISO/IEC 19678:2015 (formerly NIST 800-147) compliant?:

Yes/No

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

19. HP BIOSphere Gen4 requires Intel® or AMD 8th Gen processors. Features may vary depending on the platform and configurations.

20. Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method.

21. 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.

22. HP ePrint Driver requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see [www.hp.com/go/eprintcenter](http://www.hp.com/go/eprintcenter)). Print times and connection speeds may vary.

23. HP Support Assistant requires Windows and Internet access.

24. HP PhoneWise Client may not be available with HP Workwise. For supported platforms and HP PhoneWise system requirements see [www.hp.com/go/HPPhoneWise](http://www.hp.com/go/HPPhoneWise).

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

26. HP Manageability Integration Kit can be downloaded from <http://www8.hp.com/us/en/ads/clientmanagement/overview.html>

27. Ivanti Management Suite subscription required.

### Features

- 28. HP Client Security Suite Gen 4 requires Windows and Intel® or AMD 8th generation processors.
- 29. HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.
- 30. HP Fingerprint Sensor sold separately or as an optional feature.
- 31. Microsoft Defender Opt in and internet connection required for updates.
- 32. HP Sure Click is available on select HP platforms and supports Microsoft® Internet Explorer, Google Chrome, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode. Check <http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-0922ENW> for all compatible platforms as they become available.

### POWER

#### Power Supply

- HP Smart 45 W External AC power adapter <sup>34</sup>
- HP Smart 65 W External AC power adapter <sup>34</sup>

#### Primary Battery

- HP Long Life 3-cell, 48 Wh Li-ion prismatic <sup>35,36</sup>

#### Power Cord

- 3-wire plug (C5), 1.8m, Sticker, Conventional
- 3-wire plug (C5), 1.0m, Sticker, Conventional

#### Battery Life

- Up to 13 hours <sup>37</sup>

- 34. Availability may vary by country.
- 35. Battery is internal and not replaceable by customer. Serviceable by warranty.
- 36. Supports HP Fast Charging.
- 37. Windows 10 MM14 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 [www.bapco.com](http://www.bapco.com) for additional details.

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### WEIGHTS & DIMENSIONS

#### Weight

- Starting at 3.8 lb <sup>38</sup>
- Starting at 1.72 kg <sup>38</sup>

#### Dimensions (w x d x h)

- 12.99 x 9.13 x 0.78 in
- 33 x 23.2 x 1.99 cm

- 38. Weight will vary by configuration.
-

### Features

#### PORTS/SLOTS

##### Ports

- 1 USB 3.1 Type-C™ Gen 1 (Power delivery, DisplayPort™)
- 1 USB 3.0 (charging)
- 1 USB 3.0
- 1 HDMI 1.4b <sup>39</sup>
- 1 RJ-45 <sup>39</sup>
- 1 headphone/microphone combo
- 1 AC power

##### Expansion Slots

- 1 SD Media Reader Slot
- Supports SDXC

<sup>39</sup>. Cables are not included.

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#### SERVICE AND SUPPORT

HP Services offers 3-year and 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/cpc>. <sup>40</sup>

<sup>40</sup>. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit [www.hp.com/go/cpc](http://www.hp.com/go/cpc). HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

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#### CERTIFICATION AND COMPLIANCE

- ENERGY STAR® certified
- EPEAT® Gold <sup>41</sup>
- Low halogen <sup>42</sup>
- TCO 5.0 Certified

<sup>41</sup>. EPEAT® registered where applicable. EPEAT registration varies by country. See <http://www.epeat.net> for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at [www.hp.com/go/options](http://www.hp.com/go/options).

<sup>42</sup>. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

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### Technical Specifications

#### SYSTEM UNIT

<b>Stand-Alone Power Requirements</b> (AC Power)	<b>Nominal Operating Voltage</b>	19V
	<b>Average Operating Power</b>	Win 10
	<b>Integrated graphics</b>	5.71W
	<b>Discrete Graphics</b>	6.78W
	<b>Max Operating Power</b>	Discrete < 65W UMA < 45W
<b>Temperature</b>	<b>Operating</b>	32° to 95° F (0° to 35° C)
	<b>Non-operating</b>	-4° to 140° F (-20° to 60° C)
<b>Relative Humidity</b>	<b>Operating</b>	10% to 90%, non-condensing
	<b>Non-operating</b>	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
<b>Shock</b>	<b>Operating</b>	40 G, 2 ms, half-sine
	<b>Non-operating</b>	200 G, 2 ms, half-sine
<b>Random Vibration</b>	<b>Operating</b>	0.75 grms
	<b>Non-operating</b>	1.50 grms
<b>Altitude</b> (unpressurized)	<b>Operating</b>	-50 to 10,000 ft (-15.24 to 3,048 m)
	<b>Non-operating</b>	-50 to 40,000 ft (-15.24 to 12,192 m)
<b>Planned Industry Standard Certifications</b>	<b>UL</b>	Yes
	<b>CSA</b>	Yes
	<b>FCC Compliance</b>	Yes
	<b>ENERGY STAR 6.0®</b>	Selected models [34]
	<b>EPEAT</b>	Registered Gold in United States [32]
	<b>ICES</b>	Yes
	<b>Australia /</b>	Yes
	<b>NZ A-Tick Compliance</b>	Yes
	<b>CCC</b>	Yes
	<b>Japan VCCI Compliance</b>	Yes
	<b>KC</b>	Yes
	<b>BSMI</b>	Yes
	<b>CE Marking Compliance</b>	Yes
	<b>BNCI or BELUS</b>	Yes
	<b>CIT</b>	Yes
	<b>GOST</b>	Yes
	<b>Saudi Arabian Compliance (ICCP)</b>	Yes
<b>SABS</b>	Yes	
<b>UKRSERTCOMPUTER</b>	Yes	

### Technical Specifications

#### DISPLAYS

<b>Panel LCD 14 inch FHD (1920x1080) WLED UWVA 45% cg 220nits eDP slim NB Touch</b>	<b>Outline Dimensions (W x H)</b>	316.112 x 197.98 max.
	<b>Active Area</b>	309.312 x 173.988
	<b>Weight</b>	<413g max.
	<b>Diagonal Size</b>	14.0"
	<b>Thickness</b>	3.2mm max.
	<b>Interface</b>	eDP 1.2
	<b>Surface Treatment</b>	Bright-View Glass
	<b>Touch Enabled</b>	Yes
	<b>Contrast Ratio</b>	600:1 (typical)
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220 nits typical (Panel Only)
	<b>Pixel Resolution</b>	1920 x 1080 (FHD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	45%
<b>Color Depth</b>	6 bits + Hi FRC	
<b>Viewing Angle</b>	UWVA 85/85/85/85	

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

<b>Panel LCD 14 inch FHD (1920x1080) WLED UWVA 72% cg 400nits eDP 1.3 + PSR slim NB Touch</b>	<b>Outline Dimensions (W x H x D)</b>	316.11 x 197.98 max.
	<b>Active Area</b>	309.31 x 173.99
	<b>Weight</b>	<285g max.
	<b>Diagonal Size</b>	14.0"
	<b>Thickness</b>	3.0mm max.
	<b>Interface</b>	eDP 1.3 + PSR (2 lane)
	<b>Surface Treatment</b>	Bright-View Glass
	<b>Touch Enabled</b>	Yes
	<b>Contrast Ratio</b>	600:1 (typical)
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	400 nits typical (Panel Only)
	<b>Pixel Resolution</b>	1920 x 1080 (FHD)

### Technical Specifications

<b>Format</b>	RGB
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	72%
<b>Color Depth</b>	6 bits + Hi FRC
<b>Viewing Angle</b>	UWVA 85/85/85/85

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

### STORAGE

<b>128 GB 2280 M2 SATA-3 TLC Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	128 GB
	<b>NAND Type</b>	TLC
	<b>Height</b>	0.09 in (2.3 mm)
	<b>Width</b>	0.87 in (22 mm)
	<b>Weight</b>	0.02 lb (10 g)
	<b>Interface</b>	ATA-8, SATA 3.0
	<b>Maximum Sequential Read</b>	Up To 520 MB/s
	<b>Maximum Sequential Write</b>	Up To 450 MB/s
	<b>Logical Blocks</b>	250,069,680
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	DIPM; TRIM; DEVSLP

<b>256 GB 2280 PCIe NVMe Value Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256 GB
	<b>NAND Type</b>	TLC
	<b>Height</b>	0.09 in (2.3 mm)
	<b>Width</b>	0.87 in (22 mm)
	<b>Weight</b>	0.02 lb (10 g)
	<b>Interface</b>	PCIe NVMe Gen3X4
	<b>Maximum Sequential Read</b>	Up To 1700 MB/s
	<b>Maximum Sequential Write</b>	Up To 600 MB/s
	<b>Logical Blocks</b>	500,118,192
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	TRIM; L1.2



### Technical Specifications

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<b>512 GB 2280 M2 PCIe NVMe TLC Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512 GB
	<b>NAND Type</b>	TLC
	<b>Height</b>	0.09 in (2.3 mm)
	<b>Width</b>	0.87 in (22 mm)
	<b>Weight</b>	0.02 lb (10 g)
	<b>Interface</b>	PCIe NVMe Gen3X4
	<b>Maximum Sequential Read</b>	Up To 2600 MB/s
	<b>Maximum Sequential Write</b>	Up To 1400 MB/s
	<b>Logical Blocks</b>	1,000,215,216
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	TRIM; L1.2

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### Technical Specifications

#### NETWORKING/COMMUNICATIONS

<b>HP It4132 LTE/HSPA+ 4G Mobile Broadband Module (Macan)<sup>1</sup></b>	<b>Technology/Operating bands</b>	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3) MHz, 850 (Band 5), 2600 (Band 7), 900 (Band 8) MHz, 800 (Band 20), 700 (Band 28) MHz. HSPA+: 2100 (Band 1), 1900 (Band 2), 850 (Band 5), 900 (Band 8) MHz E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 (Band 5), 900 (Band 8) MHz
	<b>Wireless protocol standards</b>	3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
	<b>GPS</b>	Standalone, A-GPS (MS-B and LTO)
	<b>GPS bands</b>	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz
	<b>Maximum data rates</b>	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
	<b>Maximum output power</b>	LTE: 23 dBm HSPA+: 23.5 dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
	<b>Maximum power consumption</b>	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) E-GPRS: 2,600 mA (peak); 500 mA (average)
	<b>Form Factor</b>	M.2, 3042-S3 Key B
	<b>Weight</b>	6 g
	<b>Dimensions (Length x Width x Thickness)</b>	42 x 30 x 2.3 mm

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices

### Technical Specifications

<b>Intel® XMM™ 7360 LTE-Advanced CAT9 (Pandora) <sup>1</sup></b>	<b>Technology/Operating bands</b>	FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 1400 (Band 11), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1400 (Band 21), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66). TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	<b>Wireless protocol standards</b>	3GPP Release 11 LTE Specification CAT.9, DL 60MHz BW throughput up to 450Mbps; UL 20MHz throughput up to 50Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	<b>GPS</b>	Standalone, A-GPS (MS-A, MS-B)
	<b>GPS bands</b>	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
	<b>Maximum data rates</b>	LTE: 450 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	<b>Maximum output power</b>	LTE: 23 dBm HSPA+: 23.5 dBm
	<b>Maximum power consumption</b>	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
	<b>Form Factor</b>	M.2, 3042-S3 Key B
	<b>Weight</b>	5.8 g
	<b>Dimensions (Length x Width x Thickness)</b>	42 x 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

### Technical Specifications

<b>Intel Windstorm Peak 8265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo <sup>1</sup> Non-vPro</b>	<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac	
	<b>Interoperability</b>	Wi-Fi certified	
	<b>Frequency Band</b>	<b>802.11b/g/n</b>	<ul style="list-style-type: none"> <li>• 2.402 – 2.482 GHz</li> </ul>
		<b>802.11a/n</b>	<ul style="list-style-type: none"> <li>• 4.9 – 4.95 GHz (Japan)</li> <li>• 5.15 – 5.25 GHz</li> <li>• 5.25 – 5.35 GHz</li> <li>• 5.47 – 5.725 GHz</li> <li>• 5.825 – 5.850 GHz</li> </ul>
	<b>Data Rates</b>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>• 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)</li> </ul>	
	<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM	
	<b>Security<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>	
	<b>Network Architecture</b>	Ad-hoc (Peer to Peer)	
	<b>Models</b>	Infrastructure (Access Point Required)	
	<b>Roaming</b>	IEEE 802.11 compliant roaming between access points	
	<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b : +18.5dBm minimum</li> <li>• 802.11g : +17.5dBm minimum</li> <li>• 802.11a : +18.5dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +15.5dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +14.5dBm minimum</li> <li>• 802.11n HT20(5GHz) : +15.5dBm minimum</li> <li>• 802.11n HT40(5GHz) : +14.5dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +11.5dBm minimum</li> </ul>	
	<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode 2.0 W</li> <li>• Receive mode 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode 50 mW (WLAN unassociated)</li> <li>• Connected Standby 10mW</li> <li>• Radio disabled 8 mW</li> </ul>	

### Technical Specifications

<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
<b>Receiver Sensitivity<sup>3</sup></b>	802.11b, 1Mbps : -93.5dBm maximum 802.11b, 11Mbps : -84dBm maximum 802.11a/g, 6Mbps : -86dBm maximum 802.11a/g, 54Mbps : -72dBm maximum 802.11n, MCS07 : -67dBm maximum 802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum 802.11ac, MCS9 : -59dBm maximum	
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
<b>Form Factor</b>	PCI-Express M.2 MiniCard	
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm	
<b>Weight</b>	Type 2230 : 2.8g	
<b>Operating Voltage</b>	3.3v +/- 9%	
<b>Temperature</b>	<b>Operating:</b>	14° to 158° F (-10° to 70° C)
	<b>Non-operating:</b>	-40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating:</b>	10% to 90% (non-condensing)
	<b>Non-operating:</b>	5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating:</b>	0 to 10,000 ft (3,048 m)
	<b>Non-operating:</b>	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	<b>LED Amber</b>	Radio OFF
	<b>LED White</b>	Radio ON

### HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

<b>Bluetooth Specification</b>	4.0/4.1/4.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth component shall operate as a Class II Bluetooth device with maximum transmit power of + 4 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW

### Technical Specifications

<b>Electrical Interface</b>	USB 2.0 compliant
<b>Bluetooth Software Supported</b>	Microsoft Windows Bluetooth Software
<b>Power Management Certifications</b>	Microsoft Windows ACPI, and USB Bus Support FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

<b>Realtek 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo</b> <sup>1</sup>	<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
	<b>Interoperability</b>	Wi-Fi certified
	<b>Frequency Band</b>	<b>802.11b/g/n</b> <ul style="list-style-type: none"> <li>• 2.402 – 2.482 GHz</li> </ul> <b>802.11a/n</b> <ul style="list-style-type: none"> <li>• 4.9 – 4.95 GHz (Japan)</li> <li>• 5.15 – 5.25 GHz</li> <li>• 5.25 – 5.35 GHz</li> <li>• 5.47 – 5.725 GHz</li> <li>• 5.825 – 5.850 GHz</li> </ul>
	<b>Data Rates</b>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)</li> </ul>
	<b>Modulation</b>	Direct Sequence Spread Spectrum

### Technical Specifications

	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
<b>Security<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b : +14dBm minimum</li> <li>• 802.11g : +12dBm minimum</li> <li>• 802.11a : +12dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +12dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +12dBm minimum</li> <li>• 802.11n HT20(5GHz) : +10dBm minimum</li> <li>• 802.11n HT40(5GHz) : +10dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +10dBm minimum"</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode 2.0 W</li> <li>• Receive mode 1.6 W</li> <li>• Idle mode (PSP) 180 mW(WLAN Associated)</li> <li>• Idle mode 50 mW (WLAN unassociated)</li> <li>• Connected Standby 10mW</li> <li>• Radio disabled 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	802.11b, 1Mbps : -93.5dBm maximum 802.11b, 11Mbps : -84dBm maximum 802.11a/g, 6Mbps : -86dBm maximum 802.11a/g, 54Mbps : -72dBm maximum 802.11n, MCS07 : -67dBm maximum 802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum 802.11ac, MCS9 : -59dBm maximum"
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	Type 2230 : 2.3 x 22.0 x 30.0 mm
<b>Weight</b>	Type 2230 : 2.8g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<b>Operating:</b> 14° to 158° F (–10° to 70° C) <b>Non-operating:</b> –40° to 176° F (–40° to 80° C)

### Technical Specifications

<b>Humidity</b>	<b>Operating:</b>	10% to 90% (non-condensing)
	<b>Non-operating:</b>	5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating:</b>	0 to 10,000 ft (3,048 m)
	<b>Non-operating:</b>	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	<b>LED Amber</b>	Radio OFF
	<b>LED White</b>	Radio ON

#### HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

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<b>Transmit Power</b>	The Bluetooth component shall operate as a Class II Bluetooth device with maximum transmit power of + 4 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
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<b>Bluetooth Software Supported</b>	Microsoft Windows Bluetooth Software
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX)



### Technical Specifications

Basic Imaging Profile (BIP)2  
 Headset Profile (HSP)  
 Hands Free Profile (HFP)  
 Advanced Audio Distribution Profile (A2DP)

## POWER

<b>HP 45W Smart AC adapter</b>	<b>Dimensions</b>	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)	
	<b>Weight</b>	0.386 lb (175g) max	
	<b>Input</b>	<b>Input</b>	90 to 265 VAC
		<b>Input Efficiency</b>	87.74% at 115Vac and 88.4% at 230Vac
		<b>Input frequency range</b>	47 to 63 Hz
	<b>Output</b>	<b>Input AC current</b>	1.4 A at 90 VAC
		<b>Output power</b>	45W
		<b>DC output</b>	19.5V
		<b>Hold-up time</b>	5 msec at 115 VAC input
		<b>Output current limit</b>	<8.0A
	<b>Connector</b>	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	
	<b>Environmental Design</b>	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
		<b>Non-operating (storage) temperature</b>	-4° to 185° F (-20° to 85° C)
		<b>Altitude</b>	0 to 16,400 ft (0 to 5,000 m)
		<b>Humidity</b>	20% to 95%
<b>EMI and Safety Certifications</b>	<b>Storage Humidity</b>	10% to 95%	
	CE Mark - full compliance with LVD and EMC directives		
	Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.		
MTBF - over 200,000 hours at 25°C ambient condition.			

<b>HP 65W Smart AC adapter</b>	<b>Dimensions</b>	107.0x47.0x30.0mm	
	<b>Weight</b>	unit: 250g +/- 10g	
	<b>Input</b>	<b>Input Efficiency</b>	88.0 % at 115 Vac and 89.0 % at 230Vac
		<b>Input frequency range</b>	47 ~ 63 Hz
		<b>Input AC current</b>	Max. 1.7 A at 90 Vac
	<b>Output</b>	<b>Output power</b>	65W
		<b>DC output</b>	19.5V
		<b>Hold-up time</b>	5ms at 115 Vac input
		<b>Output current limit</b>	<11.0A
		<b>Connector</b>	4.5mm Barrel Type
	<b>Environmental Design</b>	<b>Operating temperature</b>	32°F to 95°F (0° to 35°C)
		<b>Non-operating (storage) temperature</b>	-4°F to 185°F (-20° to 85°C)
		<b>Altitude</b>	0 to 16,400 ft (0 to 5000m)

### Technical Specifications

	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
<b>EMI and Safety Certifications</b>	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	

<b>HP 3 Cell Long Life -Li-On (48 WHr)</b>	<b>Dimensions (H x W x L)</b>	7.3*94*184.47mm (0.287*3.7*7.263 inch)	
	<b>Weight</b>	0.215kg	
	<b>Cells/Type</b>	3cell Lithium-Ion Prismatic cell / 596080 3cell Lithium-Ion Polymer cell / 606072	
	<b>Energy</b>	<b>Voltage</b>	11.4V
		<b>Amp-hour capacity</b>	4.212Ah
		<b>Watt-hour capacity</b>	48Wh
	<b>Temperature</b>	<b>Operating (Charging)</b>	32° to 113° F (0° to 45° C)
		<b>Operating (Discharging)</b>	14° to 122° F (-10° to 60° C)
	<b>Fuel Gauge LED</b>	N/A	

### COUNTRY OF ORIGIN

China

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

Type	Description	Part #
<b>Cases</b>	HP Essential Top Load Case	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Essential Messenger Case (up to 17.3")	H1D25AA
<b>Docking</b>	HP USB-C Dock G4	3FF69AA#xxx
	HP USB-C Universal Dock	1MK33AA#xxx
	HP USB-C Universal Dock NF	3DV65AA#xxx
	HP USB-C Mini Dock	1PM64AA
	HP USB Travel Dock	T0K30AA
	HP Thunderbolt Dock 120W G2	2UK37AA#xxx
	HP TB Dock G2 w/ Combo Cable	3TR87AA#xxx
	HP TB Dock 120W G2 w/ Audio	3YE87AA#xxx
	HP Thunderbolt Dock Audio Module	3AQ21AA
	HP TB Dock 120W G2 cable	3XB94AA
	HP TB Dock G2 combo cable	3XB96AA
	HP Adjustable Display Stand	AW663AA
	<b>Input/Output</b>	HP Slim USB Keyboard and Mouse
HP Slim Wireless Keyboard and Mouse		T6L04AA#xxx
HP USB Collaboration Keyboard		Z9N38AA#xxx
HP Wireless Collaboration Keyboard		Z9N39AA#xxx
HP USB Essential Keyboard and Mouse		H6L29AA
HP Ultra Mobile Wireless Mouse		H6F25AA#xxx
HP USB Premium Mouse		1JR32AA
HP Wireless Premium Mouse		1JR31AA
HP Elite Presenter Mouse		2CE30AA
HP Comfort Grip Wireless Mouse		H2L63AA
HP 3-Button USB Laser Mouse		H4B81AA
HP USB Travel Mouse		G1K28AA
HP HDMI to DVI Adapter		F5A28AA
HP USB-C to DP		N9K78AA
HP USB-C to USB-A Hub		Z6A00AA
HP Stereo 3.5mm Headset		T1A66AA
HP Stereo USB Headset		T1A67AA
HP Active Pen with Spare tips	1FH00AA	
<b>Power</b>	HP 45W Smart AC Adapter 4.5mm	H6Y88AA#xxx
	HP 65W Smart AC Adapter	H6Y89AA#xxx
	HP 65W Slim AC Adapter	H6Y82AA#xxx
	HP Notebook Power Bank	N9F71AA#xxx
	HP 45W 4.5mm Smart AC Adapter (Japan Only)	L6F60AA#ABJ
<b>Storage</b>	HP External USB Optical Drive	F2B56AA

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

	HP 500GB 7200rpm HDD	F3B97AA
<b>Security</b>	HP Essential Combination Lock	T0Y16AA
	HP Combination Lock	T0Y15AA
	HP Keyed Cable lock	T0Y14AA
	HP Keyed Cable Lock 10mm	T1A62AA
<b>UCC</b>	HP Conferencing Keyboard	K8P74AA#xxx
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA
	HP UC Wireless Mono Headset	W3K08AA
	HP UC Wireless Duo Headset	W3K09AA
<b>Displays</b>	HP EliteDisplay E243 23.8-inch Monitor	1FH47AA
	HP EliteDisplay E243i 23.8-inch Monitor	1FH49AA
	HP EliteDisplay E273 27-inch Monitor	1FH50AA
	HP EliteDisplay E273m 27-inch Monitor	1FH51AA
	HP EliteDisplay E273m 27-inch Monitor	1FH51AA

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### Summary of Changes

Date of change:	Version History:		Description of change:
June 14, 2018	v1 to v2	Update	Memory, display and displays sections updated according to current MAT
July 2, 2018	v2 to v3	Update	At a glance and storage section
July 4, 2018	v3 to v4	Update	Input/Output
July 11, 2018	v4 to v5	Update	HP Active Pen with Spare tips added to Options section
August 23, 2018	v5 to v6	Update	At a glance section
August 28, 2018	v6 to v7	Update	At a glance section
September 12, 2018	v7 to v8	Added	Processor
October 4, 2018	v8 to v9	Updated	Display section

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