



# HP ProBook x360 11 G3 EE Notebook PC

School-ready and adaptable to every style of learning

Improve learning outcomes, save teachers time, and engage students with our thinnest rugged convertible, the versatile, multi-modal HP ProBook x360 11 G3 Education Edition, enhanced with integrated security and manageability.



HP recommends Windows 10 Pro.

#### Built for learning in class and on the go

- Empower students with a device that's thinner than its predecessor yet still survives everyday bumps with shock-absorbing molded rubber trim, a reinforced power port, Corning® Gorilla® Glass 3, and a pick- and minor spill-resistant keyboard.

#### Let students learn how they learn best

- Give students the freedom to choose how they learn. A 360° hinge allows the device to flip and fold into notebook, stand, tent, and tablet modes, optional dual cameras<sup>2</sup> capture and share in all of them, and an optional pen<sup>3</sup> enhances screen inputs.

#### Optimized for easy, efficient management and security

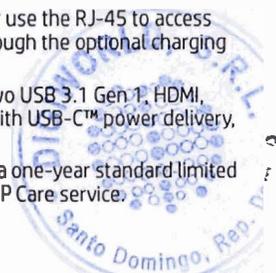
Maximize your investment with a serviceable design and integrated software like HP Manageability Integration Kit<sup>4</sup> to manage systems across the OS, HP BIOSphere Gen4<sup>5</sup> for automatic BIOS updates, and embedded TPM to help protect sensitive data.

- Deploy a device with the Windows 10 Pro OS that's already second nature to your students and teachers.
- Help teachers and students power through the day with the latest Intel® processors and up to 16 hours and 30 minutes of battery life, our longest battery life among rugged convertibles.
- Get a hardened device that passes HP's Total Test Process, a 76 cm drop on concrete, and MIL-STD 810G, and has a heathered gray resin design that's easy to grip and keep clean.
- Put a new spin on classroom interaction with our most advanced activity light in a rugged convertible. The HP Interactive Light simplifies group breakouts, Q&As, and ID of online status.
- Create content in notebook mode, collaborate in stand mode, share and present in tent mode, and read, write, and draw in tablet mode; customize with an optional 5 MP 2nd camera.
- Empower teachers, remove digital distractions, and unlock student potential with the HP School Pack 3.5 education suite of applications and access-from-anywhere, cloud-based services.

Get reliable wireless connectivity from 2x2 AC wireless or use the RJ-45 to access your stable wired network and push system updates through the optional charging carts.

Connect to multi-generation devices and displays with two USB 3.1 Gen 1, HDMI, and 3.5 mm mic and speaker ports. Streamline cabling with USB-C™ power delivery, device charging, and data transfers.

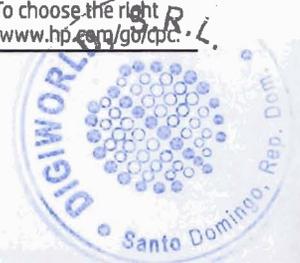
- Breathe easy with an IT investment that is supported by a one-year standard limited warranty. To extend your protection, select an optional HP Care service.



## HP ProBook x360 11 G3 EE Notebook PC Specifications Table



Available Operating Systems	Windows 10 Pro 64 – HP recommends Windows 10 Pro. <sup>1</sup> Windows 10 Home 64 <sup>1</sup> Windows 10 Home Single Language 64 <sup>1</sup> Windows 10 Pro In S mode <sup>3</sup>
Processor family <sup>6</sup>	Intel® Celeron® processor (N4100 is Windows 10 only); Intel® Celeron® processor (N4000 is Windows 10 only); Intel® Pentium® Silver processor (N5000 is Windows 10 only)
Available Processors <sup>4,5,6</sup>	Intel® Celeron® N4100 with Intel® HD Graphics 600 (1.1 GHz base frequency, up to 2.4 GHz, 4 MB cache, 4 cores); Intel® Celeron® N4000 with Intel® HD Graphics 600 (1.1 GHz base frequency, up to 2.6 GHz burst frequency, 4 MB cache, 2 cores); Intel® Pentium® Silver N5000 with Intel® UHD Graphics 605 (1.1 GHz base frequency, up to 2.7 GHz burst frequency, 4 MB cache, 4 cores)
Maximum memory	8 GB DDR4-2400 SDRAM <sup>7</sup>
Internal storage	128 GB up to 256 GB M.2 SSD <sup>8,9</sup> up to 64 GB eMMC <sup>8</sup>
Display	29.46 cm (11.6") diagonal HD SVA eDP LED-backlit touch screen, 220 cd/m <sup>2</sup> , 67% sRGB (1366 x 768); 29.46 cm (11.6") diagonal HD IPS eDP LED-backlit touch screen, 220 cd/m <sup>2</sup> , 67% sRGB (1366 x 768); 29.46 cm (11.6") diagonal HD SVA eDP anti-glare LED-backlit, 220 cd/m <sup>2</sup> , 67% sRGB (1366 x 768) <sup>15,18,19</sup>
Available Graphics	Integrated: Intel® UHD Graphics 605; Intel® UHD Graphics 600 <sup>15</sup>
Audio	HD audio, dual speakers
Wireless technologies	Intel® Dual Band Wireless-AC 9260 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, non-vPro™ <sup>12,13</sup> (Compatible with Miracast-certified devices.)
Expansion slots	1 multi-format digital media reader (Supports SD, SDHC, SDXC.)
Ports and Connectors	2 USB 3.1 Gen 1; 1 USB Type-C™ (Data transfer, power delivery); 1 RJ-45; 1 headphone/microphone combo; 1 HDMI 2.0a; 1 AC power (Cables are not included.)
Input devices	Full-size, spill and pick resistant keyboard; Clickpad with multi-touch gesture support, taps enabled as default;
Communications	Realtek RTL8111HSH-CG 10/100/1000 GbE NIC <sup>14</sup> ;
Camera	720p HD camera (user-facing); 5 MP camera (world-facing) <sup>15,16,17</sup>
Available Software	HP 3D DriveGuard 6; HP Connection Optimizer; HP Hotkey Support; HP JumpStart; HP MAC Address Manager; HP Noise Cancellation Software; HP School Pack; Native Miracast support; Buy Office (Sold separately) <sup>13,21</sup>
Security management	Absolute persistence module; HP BIOSphere Gen4; HP Client Security Gen3; HP Device Access Manager; HP DriveLock and Automatic DriveLock; HP Password Manager; HP Secure Erase; HP Security Manager; Power-on authentication; Preboot authentication; TPM 2.0 embedded security chip shipped with Windows 10 (Common Criteria EAL4+ Certified); HP Wireless Wakeup; RAID configurations; Windows Defender <sup>25,26,27,28,29,30,31,32,33,34,35</sup>
Management features	HP Driver Packs; HP System Software Manager (SSM); HP BIOS Config Utility (BCU); HP Client Catalog; HP Manageability Integration Kit Gen2; Ivanti Management Suite <sup>22,23,24</sup>
Power	HP Smart 65 W EM External AC power adapter; HP Smart 45 W External AC power adapter; HP Smart 45 W USB Type-C™ adapter <sup>38</sup>
Battery type	HP Long Life 3-cell, 48 Wh Li-ion <sup>37</sup>
Battery life	Up to 16 hours and 30 minutes <sup>36</sup>
Dimensions	30 x 20.59 x 1.99 cm
Weight	Starting at 1.35 kg (non-touch); Starting at 1.44 kg (touch) (Weight will vary by configuration.)
Energy efficiency compliance	ENERGY STAR® certified; EPEAT® Gold <sup>40</sup>
Environmental specifications	Low halogen; TCO 5.0 Certified <sup>41</sup>
Warranty	HP Services offers 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. Refer to <a href="http://www.hp.com/support/batterywarranty/">http://www.hp.com/support/batterywarranty/</a> for additional battery information. 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: <a href="http://www.hp.com/go/cpc">http://www.hp.com/go/cpc</a> .



## HP ProBook x360 11 G3 EE Notebook PC

### Accessories and services (not included)

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#### HP Active Pen with Spare Tips



Sketch, blend, write, and navigate on your tablet screen with the smooth control and astonishing accuracy of the HP Active Pen with Spare Tips.  
Product number: 1FH00AA

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#### HP 32U Essential Charging Cart



Keep your fleet of up to 32 notebooks and Chromebook™ notebook computers charged and ready to go at the start of each day with the affordable, durable HP 32U Essential Charging Cart, a lockable rolling cart that securely houses and charges your devices. Keep your fleet of up to 32 notebooks and Chromebook™ notebook computers charged and ready to go at the start of each day with the affordable, durable HP 32U Essential Charging Cart.  
Product number: 1HC89AA

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#### HP Essential Backpack



The HP Essential Backpack is a great notebook carrying solution for both students and business professionals.  
Product number: H1D24AA

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#### HP Notebook Power Bank



Boost your notebook's<sup>1</sup> uptime and charge your everyday USB devices at the same time with the portable, chargeable HP Notebook Power Bank. Boost your notebook's<sup>1</sup> uptime and charge your everyday USB devices at the same time with the portable, chargeable HP Notebook Power Bank.  
Product number: N9F71AA

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#### HP 3 year Next Business Day Onsite Notebook Only Service



Receive 3 years of next business day onsite HW support from an HP-qualified technician for your computing device, if the issue cannot be solved remotely.  
Product number: UK703E

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# HP ProBook X360 11 G3 EE Notebook PC

## Messaging Footnotes

- 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 (S1 Fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>).
- 2 Optional rear-facing camera is available on select configurations only. Front-facing camera is standard on all models.
- 3 Solid separately or as add-on feature.
- 4 HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientsmanagement>.
- 5 HP BIOSphere Gen4 requires Intel® or AMD 8th Gen processors. Features may vary depending on the platform and configurations.
- 6 Windows 10 M14 d 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.hp.com](http://www.hp.com) for additional details.
- 7 HP Total Protection Care Pack is not a guarantee of future performance under these test conditions. Any accidental damage requires an optional HP Accidental Damage Protection Care Pack.
- 8 Drop test is not a guarantee of future performance under these test conditions. Any accidental damage requires an optional HP Accidental Damage Protection Care Pack.
- 9 MIL-STD testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Any accidental damage requires an optional HP Accidental Damage Protection Care Pack.
- 10 Charging carts sold separately.
- 11 Solid 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.

## Technical Specifications Footnotes

- 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 (S1 Fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>).
- 2 Windows 10 Pro in S mode (S mode) excludes Windows apps from the Windows Store. Some accessories and apps compatible with Windows 10 may not work, and performance may vary. Certain default settings, features, and apps cannot be changed. Easily switch to Windows 10 Pro configuration (see <http://www.microsoft.com/windows/10>).
- 3 Multiple cores designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
- 4 Processor speed denotes maximum performance mode. Processors will run at lower speeds in battery optimization mode.
- 5 Windows 7 drivers on <http://www.support.hp.com>.
- 6 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.
- 7 GB for storage bytes. GB = 1 billion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.
- 8 Not available with eMMC storage.
- 9 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. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, they may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.
- 10 Microsoft Ethernet can be used to protect your screen to TVs, projectors, and streaming.
- 11 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 Gbps. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.
- 12 Internet access required to view HD images.
- 13 Solid separately or as an optional feature.
- 14 Touchscreen is an optional feature that must be configured at purchase.
- 15 Resolutions are dependent upon monitor capability, and resolution and color depth settings.
- 16 HP Support Assistant requires Windows and Internet access.
- 17 HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientsmanagement>.
- 18 HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientsmanagement>.
- 19 HP Management Suite subscription required.
- 20 HP BIOSphere Gen4 requires Intel® or AMD 8th Gen processors. Features may vary depending on the platform and configurations.
- 21 HP Drive Lock & Automatic Drive Lock is not supported on NVMe drives.
- 22 HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method.
- 23 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/computer-acq-agreement>. Data Delete is an optional service provided by Absolute Software. 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.
- 24 HP Client Security Suite Gen 3 requires Windows and Intel® or AMD 8th generation processors.
- 25 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.
- 26 Windows Defender Opt in and internet connection required for updates.
- 27 HP Secure Erase - For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Support on ProBook 400 G4 platforms under Hard Drive utilities within F10 BIOS.
- 28 Firmware TPM 2.0 Hardware TPM is V1.2, which is a subset of the TPM 2.0 specification version v0.9 as implemented by Intel Platform Trust Technology (PTT).
- 29 RAID configuration is optional and does not require a second hard drive.
- 30 Windows 10 M14 d 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.hp.com](http://www.hp.com) for additional details.
- 31 Recharges the battery up to 90% within 90 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 90% capacity, charging will return to normal. Charging time may vary +/- 10% due to system tolerance.
- 32 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.
- 33 EPEAT registered where applicable. EPEAT registration varies by country. See <http://www.epeat.org> for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at [www.hp.com/go/cpc](http://www.hp.com/go/cpc).
- 34 External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

## Sign up for updates [hp.com/go/updates](http://www.hp.com/go/updates)

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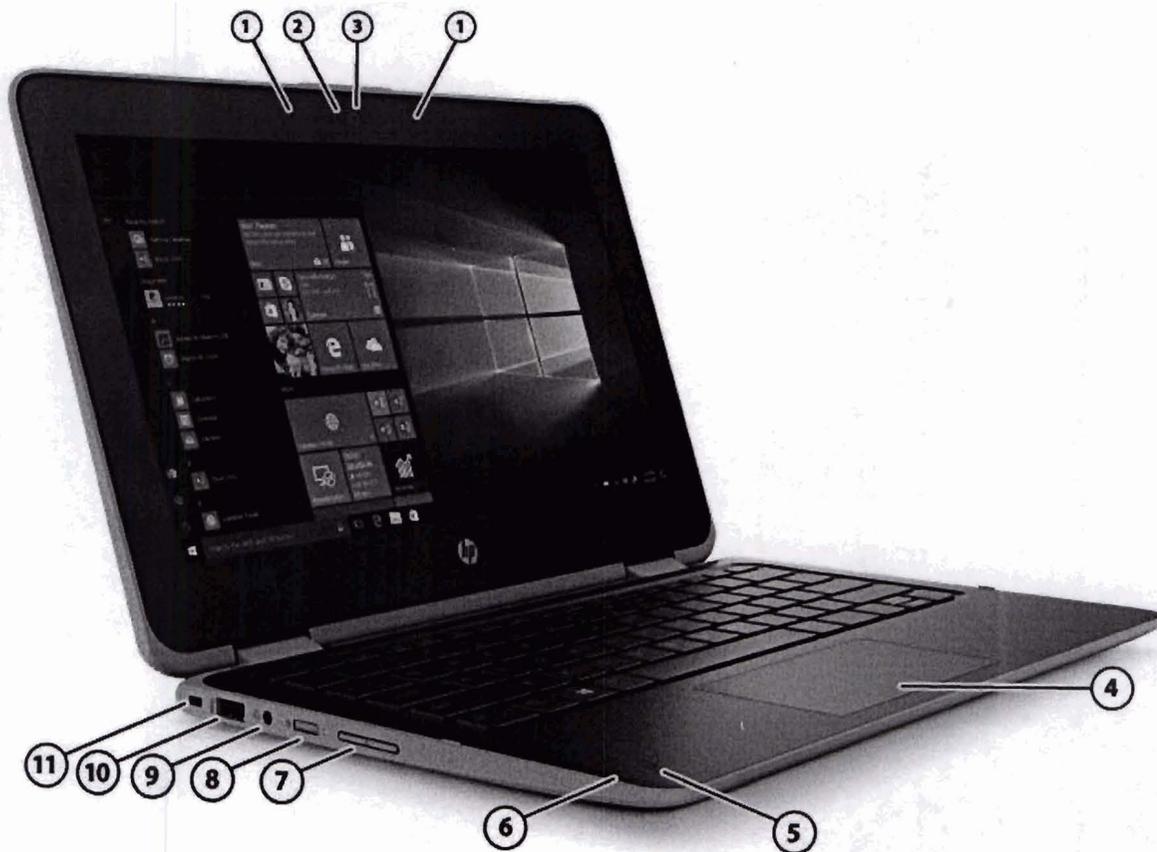
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4AA7-4296, December 2018



### Overview

#### HP ProBook x360 11 G3 EE Notebook PC



- |    |   |     |  |
|----|---|-----|--|
| 1. | Internal microphones (2)                              | 7.  | Volume button                                  |
| 2. | User-facing webcam LED                                | 8.  | Power button                                   |
| 3. | User-facing 720p webcam                               | 9.  | Headphone / Microphone combo jack              |
| 4. | ClickPad  | 10. | USB 3.1 Gen 1 port                             |
| 5. | World-facing 5 megapixels webcam (Select models only) | 11. | Security lock slot (Nano lock sold separately) |
| 6. | World-facing webcam LED (Select models only)          |     |  |

#### Left



### Overview



1. Power connector
2. Ethernet (RJ-45) port
3. HDMI port (Cable not included)

#### Right

4. USB 3.1 Gen 1 port
5. USB Type-C™ (Data and Power in-out)
6. Micro SD card reader



### Overview AT A GLANCE

- Starting at 2.97 lbs (1.35 kg) non-touch and 3.17 lbs (1.44 kg) touch
- Less than 20 mm (0.79 inch), this flexible 360° hinge converts to laptop, tablet, tent, or stand mode easily
- Passed MIL-STD 810G testing<sup>1</sup> with rugged features such as co-molded rubber trim, spill- and pick-resistant keyboard, and Corning® Gorilla® Glass 3 touch screen
- Optional dual camera system for project-based learning
- Optional HP Active Pen provides an authentic digital inking experience
- Pre-installed with Windows 10 Pro 64, Windows 10 Pro 64 (National Academic), Windows 10 Home 64, or Windows 10 Pro in S mode 64
- Powered by Intel® Celeron® N4000, Intel® Celeron® N4100 or Intel® Pentium® N5000 processors
- Choice of 29.4cm (11.6 inch) diagonal HD UWVA slim LED touch screen (1366 x 768), 29.4 cm (11.6 inch) diagonal HD SVA anti-glare slim LED non-touch (1366 x 768) or 29.4 cm (11.6 inch) diagonal HD SVA slim LED touch screen (1366 x 768) displays
- 64 GB eMMC or up to 256 GB SATA-3 Solid State Drive storage options
- Up to 8 GB system memory for enhanced memory management
- Reliable connectivity with choice of Intel® Dual Band Wireless-AC 9260 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo WLAN or Realtek RTL8822BE 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo WLAN for learning and collaboration beyond the classroom
- Built-in ports include: Ethernet (RJ-45), USB 3.1 Gen 1, USB Type-C™, and HDMI 2.0a port for connecting to high-resolution displays
- Enhanced security TPM 2.0 discrete chip
- Battery life Up to 16hrs and 30 mins for SSD
- Battery life Up to 16hrs and 50 mins for eMMC

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

**NOTE: See important legal disclosures for all listed specs in their respective features sections.**



### Technical Specifications

#### PRODUCT NAME

HP ProBook x360 11 G3 EE 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>  
Windows 10 Pro in S mode 64<sup>3</sup>  
Windows 10 Pro in S mode 64 (National Academic only)<sup>2,3</sup>

**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>.

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
3. Windows 10 Pro in S mode 64 works exclusively with apps from the Windows store. Some accessories and apps compatible with Windows 10 may not work, and performance may vary. Certain default settings, features, and apps cannot be changed. Easily switch to Windows 10 Pro configuration (fee applies) Learn more at [Microsoft.com/Windows 10S](https://Microsoft.com/Windows10S).

#### PROCESSORS

Intel® Pentium® Silver N5000 with Intel® UHD Graphics 605 (1.1 GHz base frequency, up to 2.7 GHz burst frequency, 4 MB cache, 4 cores)<sup>4,5,6</sup>

Intel® Celeron® N4100 with Intel® UHD Graphics 600 (1.1 GHz base frequency, up to 2.4 GHz burst frequency, 4 MB cache, 4 cores)<sup>4,5,6</sup>

Intel® Celeron® N4000 with Intel® UHD Graphics 600 (1.1 GHz base frequency, up to 2.6 GHz burst frequency, 4 MB cache, 2 cores)<sup>4,5,6</sup>

##### Processors Family

Intel® Celeron® processor (N4000 is Windows 10 only)<sup>6</sup>

Intel® Celeron® processor (N4100 is Windows 10 only)<sup>6</sup>

Intel® Pentium® silver processor (N5000 is Windows 10 only)<sup>6</sup>

4. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.



### Technical Specifications

5. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
6. 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>.

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### CHIPSET

Chipset is integrated with processor

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### GRAPHICS

#### Integrated

Intel® UHD Graphics 605 (for Pentium)<sup>7</sup>  
Intel® UHD Graphics 600 (for Celeron)<sup>7</sup>

7. HD content required to view HD images.

**NOTE:** View processor section for details.

### DISPLAY

#### Internal Non-Touch

29.46 cm (11.6") diagonal HD SVA eDP anti-glare LED-backlit slim, 220 cd/m<sup>2</sup>, 67% sRGB (1366 x 768)

#### Touch

29.46 cm (11.6") diagonal HD IPS eDP LED-backlit touch screen with HD camera, 220 cd/m<sup>2</sup>, 67% sRGB (1366 x 768)  
29.46 cm (11.6") diagonal HD SVA eDP LED-backlit touch screen with HD camera, 220 cd/m<sup>2</sup>, 67% sRGB (1366 x 768)

#### HDMI<sup>2</sup>

Port supports resolutions up to 3840 x 2160 external resolution @60 Hz

7. HD content required to view HD images.
8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
9. Touchscreen is an optional feature that must be configured at purchase.

**NOTE:** Resolutions are dependent upon monitor capability, and resolution and color depth settings.



### Technical Specifications

#### STORAGE AND DRIVES

##### Primary Storage

**M.2 (NGFF) 2280 Solid State Drive**

128 GB SATA-3 TLC Solid State Drive<sup>10,11</sup>

256 GB SATA-3 TLC Solid State Drive<sup>10,11</sup>

##### eMMC Configurations

64 GB eMMC<sup>10</sup>

10. 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.

11. Not available with eMMC storage.

#### MEMORY

##### Standard

**Maximum Memory**

8 GB DDR4-2400 SDRAM<sup>12</sup>

##### Memory

8 GB DDR4-2400 SDRAM (on-board)<sup>12</sup>

8 GB DDR4-2400 SDRAM (on-board)<sup>12</sup>

12. Due to the non-industry standard nature of some third-party memory modules, we recommend HP brand memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

#### NETWORKING/COMMUNICATIONS

##### Broadband Wireless (WWAN)<sup>1,2,3</sup>

##### WLAN

Intel® Dual Band Wireless-AC 9260 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, non-vPro™<sup>13</sup>

Realtek RTL8822BE 802.11ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo<sup>13</sup>

##### Miracast

Miracast Support<sup>15</sup>

##### Ethernet

Realtek RTL8111HSH-CG 10/100/1000 GbE NIC<sup>14</sup>

13. 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.

14. 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.

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



## Technical Specifications

### AUDIO/MULTIMEDIA

#### Audio

- HP Audio
- 2 Integrated stereo speakers

#### Camera

- User-facing 720p HD camera<sup>7,16</sup>
- Located on display

#### Webcam

- World-facing 5 MP secondary camera<sup>7,9,16</sup>
- Located on keyboard deck (option only available with touch display configurations)

**NOTE:** Both webcams are fix focus.

7. HD content required to view HD images.
9. Sold separately or as an optional feature.

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

#### Keyboard

Full-sized keyboard, spill and pick resistant

#### Pointing Device

- Clickpad with multi-touch gesture support, taps enabled as default
- Default on: 2-finger scroll, pinch
- Support Windows 10 modern Trackpad gestures

#### Function Keys

- F1 - Blank
- F2 - ClickPad Enable/Disable
- F3 - Sleep
- F4 - Display Switching
- F5 - Audio Mute/Unmute
- F6 - Volume Down
- F7 - Volume Up
- F8 - Mic Mute/Unmute
- F9 - Brightness Down
- F10 - Brightness Up
- F11 - Blank
- F12 - Wireless On/Off

#### Pen

- Optional HP Active Pen<sup>9</sup>



### Technical Specifications

#### Sensors

Accelerometer  
Magnetometer  
Gyroscope

9.Sold separately or as an optional feature.

## SOFTWARE AND SECURITY

### BIOS

HP BIOSphere Gen4<sup>17</sup>  
HP DriveLock & Automatic DriveLock<sup>18</sup>  
BIOS Update via Network  
Secure Erase<sup>19</sup>  
Absolute Persistence Module<sup>20</sup>  
Pre-boot Authentication  
HP Wireless Wakeup

### Software

HP Native Miracast Support<sup>15</sup>  
HP Connection Optimizer  
HP 3D DriveGuard  
HP Hotkey Support - CMIT  
HP Jumpstart  
HP Support Assistant<sup>22</sup>  
HP Noise Cancellation Software  
HP School Pack  
HP Host Based MAC Address Manager  
Buy Office (sold separately)

### Manageability Features

HP Driver Packs<sup>24</sup>  
HP System Software Manager (SSM)  
HP BIOS Config Utility (BCU)  
HP Client Catalog  
HP Manageability Integration Kit Gen2<sup>25</sup>  
Ivanti Management Suite<sup>26</sup>

### Client Security Software

- HP Client Security Suite Gen3<sup>27</sup> including:
  - HP Security Manager (including Credential Manager, HP Password Manager<sup>28</sup>, HP Spare Key)
  - HP Device Access Manager<sup>30</sup>
- HP Power On Authentication
- Windows Defender<sup>31</sup>

### Security Management



### Technical Specifications

#### Secure Erase<sup>19</sup>

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)<sup>32</sup>

SATA 0,1 port disablement (viaBIOS)

RAID configurations<sup>33</sup>

Serial, USB enable/disable (viaBIOS)

Power-on password (viaBIOS)

Setup password (viaBIOS)

Support for chassis padlocks and cable lock devices

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

17. HP BIOSphere Gen4 requires Intel(R) or AMD 8th Gen processors. Features may vary depending on the platform and configurations.

18. HP Drive Lock & Automatic Drive Lock is not supported on NVMe drives

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

20. 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.

21. 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.

22. HP Support Assistant requires Windows and Internet access.

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

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

26. Ivanti Management Suite subscription required.

27. HP Client Security Suite Gen 3 requires Windows and Intel® or AMD 8th generation processors.

28. 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 Device Access Manager requires HP Client Security Suite Gen4

31. Windows Defender Opt in and internet connection required for updates.

32. Firmware TPM is version 2.0. Hardware TPM is v1.2, which is a subset of the TPM 2.0 specification version v0.89 as implemented by Intel Platform Trust Technology (PTT).

33. RAID configuration is optional and does require a second hard drive.

### POWER

#### Power Supply

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

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

HP Smart 45 W USB Type-C™ adapter<sup>34</sup>

#### Primary Battery

HP Long Life 3-cell, 48 Wh Li-ion (90% in 90 minutes)<sup>35,36</sup>



## Technical Specifications

**Power Cord**  
3-wire plug - 1m

**Battery life**

Up to 16hrs and 30 mins for SSD<sup>37</sup>  
Up to 16hrs and 50 mins for eMMC<sup>37</sup>

**NOTE:** Battery is internal and not replaceable by customer.

- 34. Availability may vary by country.
- 35. Battery is internal and not replaceable by customer. Serviceable by warranty.
- 36. Recharges the battery up to 90% within 90 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 90% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
- 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.

## ENVIRONMENTAL

**Eco-Label Certifications & declarations**

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT® Gold registered in the United States. See <http://www.epeat.net> for registration status in your country.
- TCO Certified 5.0.

**System Configuration**

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".

**Energy Consumption (in accordance with US ENERGY STAR® test method)**

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Sort idle)	4.19 W	4.27 W	4.15 W
Normal Operation (Long idle)	1.48 W	1.51 W	1.45 W
Sleep	0.34 W	0.37 W	0.34 W
Off	0.25 W	0.30 W	0.25 W



### Technical Specifications

Note: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	14 BTU/hr	15 BTU/hr	14 BTU/hr
Normal Operation (Long idle)	5 BTU/hr	5 BTU/hr	5 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

\*Note: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

### Average Noise Emissions (in accordance with ISO 7779 and ISO 9296)

Sound Power (L<sub>WA</sub>, bels)

Sound Pressure (L<sub>pAm</sub>, decibels)

Typically Configured – Idle

2.5

16

Fixed Disk – Random writes

2.5

16

### Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots
- Optional expansion base docking station
- 1 multi-bay II storage port
- Interchangeable HDD

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:  
Mercury greater the 1ppm by weight  
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)  
Battery type: Lithium



### Technical Specifications

#### Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the <gold> level, see <http://www.epeat.net>
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 2.5% post-consumer recycled plastic (by wt.)
- This product is 97.6% recycle-able when properly disposed of at end of life.

#### Packaging Materials

<b>External:</b>	PAPER/Corrugated	237 g
<b>Internal:</b>	PLASTIC/Polyethylene Expanded - EPE	27 g
	PLASTIC/Polyethylene low density – LDPE	13 g
	PLASTIC/Polypropylene - PP	3 g

#### Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances  
Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)



### Technical Specifications

#### Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.  
Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

#### End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

#### Hewlett-Packard

#### Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

[http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC\\_GBU\\_Product\\_Design\\_ISO\\_14K\\_Certificate.pdf](http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf)

and <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

### WEIGHTS & DIMENSIONS

#### Product Weight

Starting at 2.97 lb (non-touch); Starting at 3.17 lb (touch)<sup>38</sup>  
Starting at 1.35 kg (non-touch); Starting at 1.44 kg (touch)<sup>38</sup>

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

11.8 x 8.11 x 0.78 in  
30 x 20.59 x 1.99 cm

38. Weight will vary by configuration.

### PORTS/SLOTS



Not all configuration components are available in all regions/countries.  
c06142922 — DA 16313 — Worldwide — Version 1 — January 18, 2019



### Technical Specifications

#### Ports

- 2 USB 3.1 Gen 1
- 1 USB Type-C™ (Data transfer, power delivery)
- 1 HDMI 2.0a<sup>39</sup>
- 1 AC power
- 1 RJ-45
- 1 headphone/microphone combo jack

#### Expansion Slots

- 1 multi-format digital media reader
- Supports SD, SDHC, SDXC

39. HDMI cable sold separately.

**NOTE:** All cables are sold separately.

### SERVICE AND SUPPORT

HP Services offers 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. Refer to <http://www.hp.com/support/batterywarranty/> for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go 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>

40. 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.



### Technical Specifications

#### SYSTEM UNIT

#### Stand-Alone Power Requirements (AC Power)

Nominal Operating Voltage	19V
Average Operating Power	Win 10
Integrated graphics	Yes
Max Operating Power	UMA < 45W

#### Temperature

Operating	32° to 95° F (0° to 35° C)
Non-operating	-4° to 140° F (-20° to 60° C)

#### Relative Humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature

#### Shock

Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine

#### Random Vibration

Operating	0.75 grms
Non-operating	1.50 grms

#### Altitude (unpressurized)

Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)

#### Planned Industry Standard

#### Certifications

UL	Yes
CSA	Yes
FCC Compliance	Yes
ENERGY STAR 7.0®	Yes <sup>41</sup>
EPEAT®	Registered Gold in United States <sup>42</sup>
ICES	Yes
Australia /	Yes
NZ A-Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marking Compliance	Yes
BNCI or BELUS	Yes
CIT	Yes
COCT	Yes
UAE Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	Yes



### Technical Specifications

41. Configurations of the HP ProBook x360 11 G3 is ENERGY STAR® qualified are identified as HP ProBook x360 11 G3 ENERGY STAR on HP websites and on <http://www.energystar.gov>.

42. 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 <http://www.hp.com/go/options>.

### DISPLAYS

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

<b>Panel LCD 11.6 HD AG WLED SVA 45%cg 220nits eDP Slim</b>	<b>Outline Dimensions (W x H x D)</b>	278.5 x 168.5 mm(max)
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	210g max
	<b>Diagonal Size</b>	11.6 (inch)
	<b>Thickness</b>	3.0 mm (max)
	<b>Interface</b>	eDP1.2
	<b>Surface Treatment</b>	Anti-glare
	<b>Touch Enabled</b>	None
	<b>Contrast Ratio</b>	400:1 (typical)
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	220 nit typical (panel only)
	<b>Pixel Resolution</b>	1366x768 (HD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	45%
	<b>Color Depth</b>	6 bits
	<b>Viewing Angle</b>	SVA 45/45/15/35

<b>Panel LCD 11.6 HD AG WLED SVA 45%cg 220nits eDP Slim</b>	<b>Outline Dimensions (W x H x D)</b>	278.5 x 168.5 mm(max)
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	210g max
	<b>Diagonal Size</b>	11.6 (inch)
	<b>Thickness</b>	3.0 mm (max)
	<b>Interface</b>	eDP1.2



### Technical Specifications

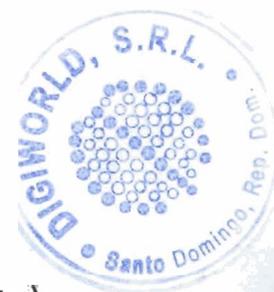
<b>Surface Treatment</b>	BrightView Glass
<b>Touch Enabled</b>	Yes
<b>Contrast Ratio</b>	400:1 (typical)
<b>Refresh Rate</b>	60Hz
<b>Brightness</b>	220 nit typical (panel only)
<b>Pixel Resolution</b>	1366x768 (HD)
<b>Format</b>	RGB
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	45%
<b>Color Depth</b>	6 bits
<b>Viewing Angle</b>	SVA 45/45/15/35

<b>Panel LCD 11.6 inch HD AG WLED UWVA 50percent cg 220nits eDP slim</b>	<b>Outline Dimensions (W x H x D)</b>	278.5 x 168.5 mm(max)
	<b>Active Area</b>	256.125 x 144 mm
	<b>Weight</b>	200g max
	<b>Diagonal Size</b>	11.6 (inch)
	<b>Thickness</b>	3.2 mm max

<b>Interface</b>	eDP1.2
<b>Surface Treatment</b>	BrightView Glass
<b>Touch Enabled</b>	Yes
<b>Contrast Ratio</b>	800:1 (typical)
<b>Refresh Rate</b>	60Hz
<b>Brightness</b>	220 nit typical (panel only)
<b>Pixel Resolution</b>	1366x768 (HD)
<b>Format</b>	RGB
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	50%
<b>Color Depth</b>	6 bits
<b>Viewing Angle</b>	UWVA 85/85/85/85

### STORAGE AND DRIVES

<b>eMMC 64 GB M0-276 MMCv5.0</b>	<b>Drive Weight</b>	0.2 g
	<b>Height</b>	1.4 mm
	<b>Width</b>	11.5 x 13 mm
	<b>Interface</b>	MMC optical
	<b>Seek Time</b>	<b>Sequential Read</b> Up to 250 MB/s
		<b>Sequential Write</b> Up to 70 MB/s
	<b>Logical Blocks</b>	32 GB (31,268,536,320 Bytes)/64 GB (62,537,072,640 Bytes)
	<b>Operating Temperature</b>	0 to 70



### Technical Specifications

<b>128 GB 2280 M2 SATA-3 TLC Solid State Drive</b>	<b>Security Features</b>	HS400		
	<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>Seek Time</b>	<b>Sequential Read</b>	<b>Sequential Write</b>	
		Up To 520 MB/s	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 M2 SATA-3 TLC Solid State Drive</b>	<b>Form Factor</b>	M.2 2280		
	<b>Capacity</b>	256GB		
	<b>NAND Type</b>	TLC		
	<b>Height</b>	0.09 in (2.3 mm)		
	<b>Width</b>	0.87 in (22 mm)		
	<b>Interface</b>	0.02 lb (10 g)		
	<b>Seek Time</b>	<b>Sequential Read</b>	<b>Sequential Write</b>	
		Up To 540 MB/s	Up To 515 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>	DIPM; TRIM; DEVSLP	

### NETWORKING/COMMUNICATIONS

<b>Realtek 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo</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>	802.11b/g/n •2.402 – 2.482 GHz
		802.11a/n •4.9 – 4.95 GHz (Japan) •5.15 – 5.25 GHz •5.25 – 5.35 GHz •5.47 – 5.725 GHz



### Technical Specifications

<b>Data Rates</b>	<ul style="list-style-type: none"><li>•5.825 – 5.850 GHz</li><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 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



### Technical Specifications

<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>	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
<b>Altitude</b>	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Amber – Radio OFF; LED White – Radio ON
	<ol style="list-style-type: none"> <li>1. Check latest software/driver release for updates on supported security features.</li> <li>2. Maximum output power may vary by country according to local regulations.</li> <li>3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).</li> </ol>
<b>HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology</b>	
<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 a 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
<b>Electrical Interface</b>	USB 2.0 compliant
<b>Bluetooth Software Supported</b>	Microsoft Windows Bluetooth Software
<b>Link Topology</b>	
<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</b>	ETS 300 328, ETS 300 826
<b>Certifications</b>	Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance



### Technical Specifications

- 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)

**Intel Thunder Peak 9260  
802.11a/b/g/n/ac (2x2)  
WiFi and Bluetooth® 5.0  
Combo<sup>1</sup> Non-vPro**

#### Wireless LAN Standards

- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n
- IEEE 802.11ac
- IEEE 802.11d
- IEEE 802.11e
- IEEE 802.11h
- IEEE 802.11i
- IEEE 802.11k
- IEEE 802.11r
- IEEE 802.11v

#### Interoperability Frequency Band

- Wi-Fi certified
- 802.11b/g/n
- 2.402 – 2.482 GHz

#### Data Rates

- 802.11a/n/ac
- 4.9 – 4.95 GHz (Japan)
- 5.15 – 5.25 GHz
- 5.25 – 5.35 GHz
- 5.47 – 5.725 GHz
- 5.825 – 5.850 GHz
- 802.11b: 1, 2, 5.5, 11 Mbps
- 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
- 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, 80MHz & 160MHz)

#### Modulation

- Direct Sequence Spread Spectrum
- BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM

#### Security<sup>3</sup>

- IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only



### Technical Specifications

	<ul style="list-style-type: none"><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><li>• 802.11ac VHT160(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/Modern Standby: 10mW</li><li>•Radio disabled: 8 mW</li></ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management
<b>Receiver Sensitivity<sup>3</sup></b>	802.11 compliant power saving mode 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>	<ol style="list-style-type: none"><li>1. Type 2230: 2.3 x 22.0 x 30.0 mm</li><li>2. Type 1216: 1.67 x 12.0 x 16.0 mm</li></ol>
<b>Weight</b>	<ol style="list-style-type: none"><li>1. Type 2230: 2.8g</li><li>2. Type 126: 1.3g</li></ol>
<b>Operating Voltage</b>	3.3v +/- 9%



### Technical Specifications

<b>Temperature</b>	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Amber – Radio OFF; LED White – Radio ON	
	<ol style="list-style-type: none"> <li>1. Check latest software/driver release for updates on supported security features.</li> <li>2. Maximum output power may vary by country according to local regulations.</li> <li>3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).</li> </ol>	
<b>HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology</b>		

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0 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 a 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
<b>Electrical Interface</b>	USB 2.0 compliant
<b>Bluetooth Software Supported Link Topology</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

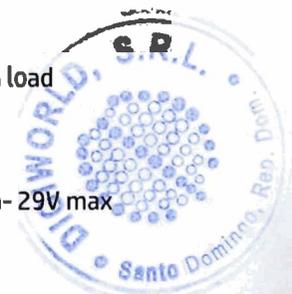


### Technical Specifications

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)

### POWER

<b>HP 45W Smart AC adapter</b>	<b>Dimensions (H x W x D)</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>	90 to 265 VAC	
		<b>Input Efficiency</b>	87.74% at 115Vac and 88.4% at 230Vac
	<b>Output</b>	<b>Input frequency range</b>	47 to 63 Hz
		<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>	5ms at 115 VAC input
	<b>Connector</b>	<b>Output current protection</b> <8.0A	
	<b>Environmental Design</b>	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords	
		<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 5000m)
		<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 EM Smart AC adapter</b>	<b>Dimensions</b>	102x55x30mm	
	<b>Weight</b>	270g +/- 10g	
	<b>Input</b>	<b>Input Efficiency</b>	87% min at 115V/230V
		<b>Input frequency range</b>	47 to 63 Hz
		<b>Input AC current</b>	1.7 A at 90 VAC and maximum load
	<b>Output</b>	<b>DC output</b>	65W(19.5V/3.33A)
		<b>Hold-up time</b>	5 msec at 115 VAC input
<b>Output current limit</b>		<11A, Over voltage protection- 29V max automatic shutdown	



### Technical Specifications

<b>Connector</b>	4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords
<b>Environmental Design</b>	<b>Operating temperature</b> 0° to 35° C <b>Non-operating (storage) temperature</b> -20° to 85° C <b>Altitude</b> 0 to 5,000 m <b>Humidity</b> 0% to 95% <b>Storage Humidity</b> 0% to 95%
<b>EMI and Safety Certifications</b>	CE Mark - 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; Reliability - failure rate of less than 0.1% annually within the first three years of operation.

### HP 45W USB type C Straight 1.8m AC Adapter

<b>Dimensions</b>	94.0mm*40.0mm*26.5mm
<b>Weight</b>	192.5g +/-10%
<b>Input</b>	<b>Input Efficiency</b> Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 87.41% 15V: 87.8% <b>Input frequency range</b> 47 ~ 63Hz <b>Input AC current</b> Max. 1.4 A at 90 Vac
<b>Output</b>	<b>Output power</b> 5V/15W 9V/27W 12V/36W 15V/45W <b>DC output</b> 5V/9V/12V/15V <b>Hold-up time</b> 5ms at 115 Vac input <b>Output current limit</b> <5.0A
<b>Connector</b>	USB Type-C
<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) <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, Class B, 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.



### Technical Specifications

<b>HP 3-cell Long Life Li-Ion (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>Voltage</b>	11.4V
	<b>Amp-hour capacity</b>	4.212Ah
	<b>Watt-hour capacity</b>	48Wh
	<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>Optional Travel Battery Available</b>	No

### COUNTRY OF ORIGIN

China



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

Type	Description	Part Number	
Cases	HP Essential Top Load Case	H2W17AA#xxx	
	HP Essential Backpack	H1D24AA	
	HP Slim Ultrabook Top Load	F3W15AA	
	HP Slim Ultrabook Backpack	F3W16AA	
	HP Black 11.6 Always On Case	2MY57AA	
Docking	HP Slim Ultrabook Messenger	F3W14AA	
	HP USB-C Universal Dock	1MK33AA	
	HP USB Travel Dock	TOK30AA	
	HP 3005pr USB3 Port Replicator	Y4H06AA	
	HP USB-C Universal Dock w/4.5mm Adapter	2UF95AA	
	HP USB-C Universal Dock NF	3DV65AA	
	HP USB-C Travel Dock	TOK29AA	
	HP Comfort Grip Wireless Mouse	H2L63AA	
	HP 3-Button USB Laser Mouse	H4B81AA	
	HP HDMI to VGA Adapter	H4F02AA	
Input/Output	HP Slim USB Keyboard & Mouse Bundle	T6T83AA#xxx	
	HP USB Premium Mouse	1JR32AA	
	HP Wireless Premium Mouse	1JR31AA	
	HP Essential USB Mouse	2TX37AA#xxx	
	HP USB Travel Mouse	G1K28AA	
	HP Slim Bluetooth Mouse	F3J92AA#xxx	
	HP Slim Wireless keyboard and mouse	T6L04AA#xxx	
	HP USB-C to USB 3.0 Adapter	N2Z63AA#xxx	
	HP USB-C to 3 and 4.5mm Adapter	N2Z65AA#xxx	
	HP USB-C to RJ45 Adapter	V7W66AA#xxx	
	HP Stereo USB Headset	T1A67AA	
	HP Stereo 3.5mm Headset	T1A66AA	
	HP Active Pen with Spare Tips	1FH00AA#xxx	
	HP Active Pen Nib Set	3RV57AA	
	Power	HP 45W Smart AC Adapter 4.5mm	H6Y88AA#xxx
		HP 45W USB-C Power Adapter	1HE07AA#xxx
		HP 65W USB-C Power Adapter	1HE08AA#xxx
		HP Notebook Powerbank	N9F71AA#xxx
	Storage	HP External USB Optical Drive	F2B56AA
		HP Nano Keyed Cable Lock	1AJ39AA
Security	HP ProDisplay P240VA 23.8-inch Monitor	N3H13AA	
	HP ProDisplay P232 23-inch Monitor	K7X31AA	
	HP EliteDisplay E243m 23.8-inch Collaboration Monitor	1FH48AA	
	HP EliteDisplay E230t 23-Inch Touch Monitor	W2Z50AA	
Displays	HP EliteDisplay S14 14-inch USB-C Portable Monitor	3HX46AA	



### Summary of Changes

Date of change:	Version History:		Description of change:
January 18, 2019	V1 to V2	Added	Environmental tab

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