

### Overview

### HP ProBook 630 G8 Notebook PC



#### Left

- |                              |  |
|------------------------------|--|
| 1. Internal Microphones (2)  | 6. Smartcard Reader (Optional)                     |
| 2. Webcam LED (Optional)     | 7. Audio Combo Jack                                |
| 3. HD Camera (Optional)      | 8. SuperSpeed USB Type-A 5Gbps signaling rate Port |
| 4. IR Camera LEDs (Optional) | 9. Nano Security Lock Slot (Lock sold separately)  |
| 5. Clickpad                  |  |



### Overview



#### Right

1. Power Button Key
2. Power Connector
3. SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™)
4. SuperSpeed USB Type-A 5Gbps signaling rate Port
5. HDMI Port (Cable not included)
6. Touch Fingerprint Sensor (select models)



### Overview

#### At a Glance

- New mechanical design - Smaller footprint and Light weight
  - Powerful quad core 11th Gen Intel® Core™ U-Series with SIPP CPU option
  - HP Sure View Gen3 panel
  - Physical HP Privacy Camera (Optional)
  - HP Fast Charge - Charge up to 50% in 30 minutes
  - Wi-Fi 6 capability (Optional)
  - Multi Factor Authentication - IR camera and hardened fingerprint sensor (Optional)
  - Rich IO ports with charging USB
  - Responsiveness w/Modern Standby and Wake on Fingerprint Sensor (Optional)
  - Backlit keyboard option and new programmable key
  - Nice range of display option from HD, FHD, all the way to SureView option
  - Passed 19 MIL STD 810H tests<sup>1</sup>
1. [MIL-STD 810H is not intended to demonstrate fitness of U.S. Department of Defense 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.](#)

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

---



---

## Technical Specifications

### PRODUCT NAME

HP ProBook 630 G8 Notebook PC

---

### OPERATING SYSTEMS

#### Preinstalled

Windows 10 Pro 64 – HP recommends Windows 10 Pro<sup>1</sup>  
Windows 10 Pro 64 (National Academic only)<sup>2</sup>  
Windows 10 Home 64<sup>1</sup>  
Windows 10 Home Single Language 64<sup>1</sup>  
Windows 10 Pro (Windows 10 Enterprise available with a Volume Licensing Agreement)<sup>1</sup>  
FreeDOS

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.

#### Supported Version

HP tested Windows 10, version 1809 on this platform For testing information on newer versions of Windows10, please see: <https://support.hp.com/document/c05195282>.

---

### PROCESSORS

Intel® Core™ i7-1185G7 processor (Up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores)<sup>3,4,5,6</sup>  
Intel® Core™ i7-1165G7 processor (Up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores)<sup>3,4,5,6</sup>  
Intel® Core™ i5-1145G7 processor (Up to 4.4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores)<sup>3,4,5,6</sup>  
Intel® Core™ i5-1135G7 processor (Up to 4.2 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores)<sup>3,4,5,6</sup>  
Intel® Core™ i3-1115G4 processor with Intel® UHD Graphics (Up to 4.1 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 2 cores)<sup>3,4,5,6</sup>

#### Processors Family

11th Generation Intel® Core™ i7 processor (i7-1165G7 & i7-1185G7)<sup>6</sup>

11th Generation Intel® Core™ i5 processor (i5-1135G7 & i5-1145G7)<sup>6</sup>

11th Generation Intel® Core™ i3 processor (i3-1115G4)<sup>6</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 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. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.



---

## Technical Specifications

6. 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

Chipset is integrated with processor

---

### GRAPHICS

#### Integrated

Intel® Iris® X<sup>e</sup> Graphics (Core i5 and Core i7)<sup>41</sup>

Intel® UHD Graphics (Core i3)<sup>7</sup>

#### Supports

Support HD decode, DX12, HDMI 1.4b

7. HD content required to view HD images.

41. Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

---

### DISPLAYS

#### Internal

##### Non-Touch

33.8 cm (13.3") diagonal HD SVA eDP anti-glare narrow bezel ultraslim, 250 nits, 45% NTSC (1366 x 768)<sup>7,9</sup>

33.8 cm (13.3") diagonal HD SVA eDP anti-glare narrow bezel flat, 250 nits, 45% NTSC for HD camera (1366 x 768)<sup>7,9</sup>

33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare narrow bezel slim, 250 nits, 45% NTSC (1920 x 1080)<sup>7,9</sup>

33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare narrow bezel flat, 250 nits, 45% NTSC for HD camera (1920 x 1080)<sup>7,9</sup>

33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare narrow bezel flat, 250 nits, 45% NTSC for HD+IR camera (1920 x 1080)<sup>7,9</sup>

33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare Low Power narrow bezel flat, 400 nits, 72% NTSC for HD camera (1920 x 1080)<sup>7,9</sup>

33.8 cm (13.3") diagonal FHD UWVA eDP anti-glare Low Power narrow bezel flat, 400 nits, 72% NTSC for HD+IR camera (1920 x 1080)<sup>7,8,9</sup>

33.8 cm (13.3") diagonal FHD IPS eDP anti-glare narrow bezel flat with HP Sure View Gen3 Integrated Privacy Screen, 1000 nits, 72% NTSC for HD+IR camera (1920 x 1080)<sup>7,8,9,10,43</sup>

##### Touch

33.8 cm (13.3") diagonal FHD SVA eDP narrow bezel ultraslim touch-on-panel screen, 250 nits, 45% NTSC for HD camera (1920x1080)<sup>7,8,9,43</sup>

##### HDMI

Supports resolutions up to 4K 30Hz

7. HD content required to view HD images.

8. Sold separately or as an optional feature.



### Technical Specifications

- 9. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
  - 10. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
  - 43. Actual brightness will be lower with HP Sure View or touch screen.
- 



### Technical Specifications

Docking station model	Total number of supported displays (incl. the notebook display)	Max. resolutions supported	Dock Connectors	Technical limitations
HP Thunderbolt Dock G2	3	Dual 4K @ 60Hz	2xDP, 1xVGA, 1xTB, 1xUSB-C alt-mode	System only runs at alt-mode speed
HP Elite USB-C Dock G5	3	Three 1680x1050 @ 60 Hz Dual 2K @ 60Hz Single 4K @ 60Hz (3840 x 1440)	1xHDMI, 2xDP	
HP USB-C Universal Dock G2	3	Dual 4K @ 60Hz Single 5K @ 60Hz	1xHDMI, 2xDP	
HP USB-C Travel Dock	2	Single 2K @ 60Hz	1xHDMI, 1xVGA	Single external display Only HDMI or VGA at the time



---

## Technical Specifications

### STORAGE AND DRIVES

#### Primary M.2 Storage

- 128 GB PCIe® NVMe™ M.2 TLC Solid State Drive <sup>11</sup>
- 256 GB PCIe® NVMe™ M.2 Value Solid State Drive<sup>11</sup>
- 256 GB PCIe® NVMe™ M.2 TLC Solid State Drive<sup>11</sup>
- 256 GB PCIe® NVMe™ M.2 TLC Solid State Drive (Opal 2) <sup>11</sup>
- 512 GB PCIe® NVMe™ M.2 TLC Solid State Drive<sup>11</sup>
- 512 GB PCIe® NVMe™ M.2 Value Solid State Drive<sup>11</sup>
- 512 GB PCIe® Gen3x4 NVMe™ M.2 SED SSD TLC<sup>11</sup>
- 512 GB Intel® PCIe® NVMe™ QLC M.2 SSD with 32 GB Intel® Optane™ memory H10 <sup>11,44</sup>
- 1 TB PCIe® NVMe™ M.2 TLC Solid State Drive<sup>11</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.

44. Intel® Optane™ H10 memory system acceleration does not replace or increase the DRAM in your system. Requires 8th Gen or higher Intel® Core™ processor, BIOS version with Intel® Optane™ supported, Windows 10 64-bit, and an Intel® Rapid Storage Technology (Intel® RST) driver.

---

### MEMORY<sup>41</sup>

#### Maximum Memory

64 GB DDR4-3200 SDRAM <sup>12</sup>

#### Memory

- 64 GB DDR4-3200 SDRAM (2 x 32 GB) <sup>12</sup>
- 32 GB DDR4-3200 SDRAM (1 x 32 GB) <sup>12</sup>
- 32 GB DDR4-3200 SDRAM (2 x 16 GB) <sup>12</sup>
- 16 GB DDR4-3200 SDRAM (1 x 16 GB) <sup>12</sup>
- 16 GB DDR4-3200 SDRAM (2 x 8 GB) <sup>12</sup>
- 12 GB DDR4- 3200 SDRAM (4 GB and 8 GB (1 x 8 GB) <sup>12</sup>
- 8 GB DDR4-3200 SDRAM (1 x 8 GB) <sup>12</sup>
- 8 GB DDR4-3200 SDRAM (2 x 4 GB) <sup>12</sup>
- 4 GB DDR4-3200 SDRAM (1 x 4 GB) <sup>12</sup>

#### Memory Slots

2 SODIMM

Both slots are customer accessible / upgradeable

DDR4 PC4 SODIMMS, (Tiger Lake runs at 3200)

Supports Dual Channel Memory

12. 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.





### Technical Specifications

#### NETWORKING/COMMUNICATIONS

##### WLAN

Intel Wi-Fi 6 AX201 + BT5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds)<sup>14</sup>

Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) WLAN and Bluetooth® 5 Combo, non-vPro<sup>13</sup>

Intel® Dual Band Wi-Fi 6 AX201 802.11a/b/g/n/ac (2x2) WLAN and Bluetooth® 5 Combo, non-vPro<sup>13</sup>

##### NFC

NFC Mirage WNC XRAV-1

13. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.

---

#### AUDIO/MULTIMEDIA

##### Audio

2 Integrated stereo speakers (70dB)

Integrated microphone (Dual Array)

##### Camera

720p HD Camera<sup>7</sup>

720p HD Camera+IR Camera<sup>7,8</sup>

7. HD content required to view HD images.

8. Sold separately or as an optional feature.

---



### Technical Specifications

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

##### Keyboard

HP Premium Keyboard, spill resistant with optional backlit function

##### Pointing Device

Clickpad with multi-touch gesture support

##### Function Keys

F1 - Display Switching

F2 - Blank or SureView On/Off

F3 - Brightness Down

F4 - Brightness Up

F5 - Audio Mute

F6 - Volume Down

F7 - Volume Up

F8 - Mic Mute

F9 - Blank or Backlit Toggle

F10 - Insert

F11 - Airplane mode

F12 - Programmable key

##### Hidden Function Keys

Fn+R – Break

Fn+S – Sys Rq

Fn+C – Scroll Lock

---

#### SOFTWARE AND SECURITY

##### Preinstalled Software

HP BIOSphere Gen5 <sup>14</sup>

NVMe Driverlock

BIOS Update (Status) Over Wi-fi

Power On Authentication

HP Secure Erase <sup>16</sup>

Absolute Persistence Module <sup>17</sup>

HP LAN-Wireless Protection

Pre-Boot Security

##### Software

HP Connection Optimizer <sup>15</sup>

HP Image Assistant

HP Hotkey Support

myHP

HP Support Assistant <sup>18</sup>

HP Noise Cancellation Software

HSA Fusion for Commercial

HSA Telemetry for Commercial

Touchpoint Customizer for Commercial



## Technical Specifications

HP Notifications  
HP Privacy Settings  
HP Wireless Button Driver  
HP Power Manager

### Manageability Features

HP Driver Packs (download) <sup>19</sup>  
HP Manageability Integration Kit Gen3 (download) <sup>20</sup>  
HP System Software Manager (SSM) (download)  
HP BIOS Config Utility (BCU) (download)  
HP Client Catalog (download)  
HP Client Management Script Library (download)

### Client Security Software

HP Client Security Manager Gen7 <sup>21</sup>  
Windows Defender <sup>22</sup>

### Security Management

Pre-Boot Security  
USB enable/disable (via BIOS)  
Power-on password (via BIOS)  
Setup password (via BIOS)  
HP Fingerprint Sensor <sup>23</sup>  
Support for chassis padlocks and cable lock devices  
HP Pro Security Edition (Select models) <sup>40</sup>  
HP Sure Click <sup>24</sup>  
HP Sure Sense <sup>25</sup>  
HP Sure Start Gen6 <sup>26</sup>  
HP Sure Admin <sup>27</sup>  
HP Sure Recover Gen4 <sup>28</sup>  
HP Sure Run Gen4 <sup>29</sup>  
TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified) <sup>30</sup>

### Security

#### TPM

Model: Infineon SLB9670  
Version: 7.85  
Revision: TPM 2.0  
FIPS 140-2 Compliant: Yes

#### Smartcard Reader

Model number: Alcor AU9560  
FIPS 201 Compliant: Yes

#### IPv6 Compliance

Yes

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

Yes

UEFI version: 2.7



---

## Technical Specifications

14. HP BIOSphere Gen5 is available on select HP Pro and Elite PCs. See product specifications for details. Features may vary depending on the platform and configurations.
15. HP Connection Optimizer requires Windows 10.
16. HP Secure Erase For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
17. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>.
18. HP Support Assistant requires Windows and Internet access.
19. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.
20. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.
21. HP Client Security Manager Gen6 requires Windows and is available on the select HP PCs.
22. Windows Defender Opt in and internet connection required for updates.
23. HP Fingerprint sensor is an optional feature that must be configured at purchase.
24. HP Sure Click requires Windows 10 Pro or Enterprise. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.
25. HP Sure Sense requires Windows 10.
26. HP Sure Start Gen6 is available on select HP PCs.
27. HP Sure Admin requires Windows 10, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
28. HP Sure Recover Gen3 is available on select HP PCs and requires an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data.
29. HP Sure Run Gen3 is available on select Windows 10 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors.
30. Firmware TPM is version 2.0.
40. HP Pro Security Edition is available preloaded on select HP PCs and includes HP Sure Click Pro and HP Sure Sense Pro. 3-year license required. The HP Pro Security Edition software is licensed under the license terms of the HP End User License Agreement (EULA) that can be found at: [https://h30670.www3.hp.com/ecommerce/common/disclaimer.do#EN\\_US](https://h30670.www3.hp.com/ecommerce/common/disclaimer.do#EN_US) as modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for thirty-six (36) months thereafter ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support." HP Pro Security Edition is optimized for the SMB environment and ships pre-configured - manageability is optional. The HP Pro Security Edition supports a limited tool set that can be used by the HP Manageability Integration Kit which can be downloaded from <http://www.hp.com/go/clientmanagement>.



### Technical Specifications

#### POWER

**Power Supply**

HP Smart 65 W External AC power adapter <sup>31</sup>

HP Smart 65 W EM External AC power adapter <sup>31</sup>

HP Smart 65 W USB Type-C® adapter <sup>31</sup>

HP Smart 45 W External AC power adapter <sup>31</sup>

HP Smart 45 W USB Type-C® adapter <sup>31</sup>

**Primary Battery**

HP Long Life 3-cell, 45 Wh Polymer <sup>32</sup>

**Power Cord**

3-wire plug - 1 m <sup>31</sup>

2-wire plug - 1 m <sup>31</sup>

**Battery life**

MM18: Up to 12 hours and 45 minutes

**Battery Weight**

190 g

31. Availability may vary by country.

32. Battery is internal and not replaceable by customer. Serviceable by warranty.

---

#### WEIGHTS & DIMENSIONS

**Product Weight <sup>33</sup>**

Starting at 2.81 lb

Starting at 1.28 kg (400 nits display only)

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

Metal bottom cover:

12.08 x 8.2 x 0.62 in

30.69 x 20.84 x 1.59 cm

Plastic bottom cover:

12.08 x 8.2 x 0.69 in

30.69 x 20.84 x 1.77 cm

33. Weight will vary by configuration.

---



## Technical Specifications

### PORTS/SLOTS

#### Ports

1 HDMI 1.4b <sup>34</sup>

1 Headphone/microphone combo jack

1 AC power

#### USB Ports

Processor Type	Type-C <sup>®</sup> Port	Type-A Port
Transactional + Multifunction version (non-vPro <sup>®</sup> )	1 SuperSpeed USB Type-C <sup>®</sup> 10 Gbps signaling rate Port (USB Power Delivery, DisplayPort <sup>™</sup> )	2 SuperSpeed USB Type-A 5Gbps signaling rate Port (1 Charging)
Transactional + Thunderbolt version (non-vPro <sup>®</sup> )	1 Thunderbolt <sup>™</sup> 4 with USB4 <sup>™</sup> Type-C <sup>®</sup> 40 Gbps signaling rate (USB Power Delivery, DisplayPort <sup>™</sup> )	2 SuperSpeed USB Type-A 5Gbps signaling rate Port (1 Charging)
vPro <sup>®</sup>	1 Thunderbolt <sup>™</sup> 4 with USB4 <sup>™</sup> Type-C <sup>®</sup> 40 Gbps signaling rate (USB Power Delivery, DisplayPort <sup>™</sup> ) <sup>42</sup>	2 SuperSpeed USB Type-A 5Gbps signaling rate Port (1 Charging)

#### Expansion Slots

1 Smart Card Reader (optional)

34. HDMI cable sold separately.

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

### SERVICE AND SUPPORT

HP Services offers 1-year and 3-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>35</sup>

35. 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 <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

### CERTIFICATION AND COMPLIANCE

<b>Energy Efficiency Compliance</b>	ENERGY STAR® certified
<b>Energy Efficiency Compliance</b>	EPEAT® 2019 Silver <sup>36</sup>
<b>Environmental Specifications</b>	Low halogen <sup>37</sup>
<b>Environmental Specifications</b>	TCO NB 8.0 Certification

36. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit <http://www.epeat.net> for more information.

37. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

### SYSTEM UNIT

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

Nominal Operating Voltage	19 V
Average Operating Power	4.62 W
Integrated graphics	Yes
Discrete Graphics	N/A
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	200 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®	Select models <sup>38</sup>
EPEAT®	EPEAT® 2019 Gold in U.S. <sup>39</sup>
Australia /	Yes
NZ A – Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes



### Technical Specifications

KC	Yes
BSMI	Yes
CE Marketing Compliance	Yes
BNCI or BELUS	Yes
CIT	Yes
GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes

38. Configurations of the HP ProBook 630 G8 that are ENERGY STAR® certified are identified as HP ProBook 630 G8 ENERGY STAR on HP websites and on <http://www.energystar.gov>.

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

---





### Technical Specifications

#### DISPLAYS

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

1. Actual brightness will be lower with HP Sure View or touch screen.

**Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 45% NTSC 250nits eDP 1.2 w/o PSR slim NWBZ**

<b>Outline Dimensions (W x H x D)</b>	300.56 x 187.77 mm (max) (w/ PCB & w/o bracket)
<b>Active Area</b>	293.76 x 165.24 mm (typ.)
<b>Weight</b>	260 g (max.)
<b>Diagonal Size</b>	13.3 (inch)
<b>Thickness</b>	3.0 (mm) max
<b>Interface</b>	eDP 1.2 (2 lane)
<b>Surface Treatment</b>	Anti-glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	600:1 (typ.)
<b>Refresh Rate</b>	60Hz
<b>Brightness</b>	250 nits
<b>Pixel Resolution</b>	1920 x 1080 (FHD)
<b>Format</b>	RGB
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	45% of NTSC
<b>Color Depth</b>	6 bits
<b>Viewing Angle</b>	UWVA 85/85/85/85

**Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 45% NTSC 250 nits eDP slim Touch on Panel NWBZ)**

<b>Outline Dimensions (W x H x D)</b>	300.56 x 177.77 mm (max)
<b>Active Area</b>	293.76 x 165.24 mm (typ.)
<b>Weight</b>	260 g (max.)
<b>Diagonal Size</b>	13.3 inch
<b>Thickness</b>	3.0 mm/ 5.0 mm (PCB) (max)
<b>Interface</b>	eDP1.2
<b>Surface Treatment</b>	Anti-glare On - cell
<b>Touch Enabled</b>	Yes
<b>Contrast Ratio</b>	600:1 (typ.)
<b>Refresh Rate</b>	60Hz
<b>Brightness<sup>1</sup></b>	250 nits*
<b>Pixel Resolution</b>	1920 x1080 (FHD)
<b>Format</b>	RGB Stripe
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	45% of NTSC
<b>Color Depth</b>	6 bits (Hi FRC supportive w/ condition to enable)
<b>Viewing Angle</b>	UWVA 85/85/85/85



## Technical Specifications

<b>Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% NTSC 1000 nits eDP 1.4+PSR2 flat Privacy NWBZ Gen3</b>	<b>Outline Dimensions (W x H x D)</b>	299.06 x 186.54 mm (max)
	<b>Active Area</b>	293.76 x 165.24 mm (typ.)
	<b>Weight</b>	255 g (max)
	<b>Diagonal Size</b>	13.3 inch
	<b>Thickness</b>	3.0 mm (max)
	<b>Interface</b>	eDP 1.4 + PSR (4 lane)
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	2000:1 (typ.)
	<b>Refresh Rate</b>	60 Hz
	<b>Brightness</b>	1000 nits*
	<b>Pixel Resolution</b>	1920 x 1080 (FHD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	100% of sRGB
<b>Color Depth</b>	8 bits	
<b>Viewing Angle</b>	UWVA 85/85/85/85	
<b>Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% NTSC 400 nits eDP 1.4+PSR2 ultraslim LP NWBZ</b>	<b>Outline Dimensions (W x H x D)</b>	299.06 x 185.54 mm (max)
	<b>Active Area</b>	293.76 x 165.24 mm (typ.)
	<b>Weight</b>	170 g (max)
	<b>Diagonal Size</b>	13 inch
	<b>Thickness</b>	2.0 mm (max)
	<b>Interface</b>	eDP 1.4 + PSR2 (2 lane)
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	1200:1 (typ.)
	<b>Refresh Rate</b>	60 Hz
	<b>Brightness</b>	400 nits
	<b>Pixel Resolution</b>	1920 x 1080 (FHD)
	<b>Format</b>	RGB
	<b>Backlight</b>	LED
	<b>Color Gamut Coverage</b>	72% of NTSC
<b>Color Depth</b>	8 bits	
<b>Viewing Angle</b>	UWVA 85/85/85/85	
<b>Panel LCD 13.3 inch HD (1366x768) Anti-Glare WLED SVA 45% NTSC 250 nits eDP NWBZ ultraslim</b>	<b>Outline Dimensions (W x H x D)</b>	300.56 x 187.77 max. (w/ PCB & w/o bracket)
	<b>Active Area</b>	293.83 x 165.20 typ
	<b>Weight</b>	260 max.
	<b>Diagonal Size</b>	13.3 inch
	<b>Thickness</b>	3.0mm max.



### Technical Specifications

<b>Interface</b>	eDP 1.2 (1 lane)
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	300:1 (typ)
<b>Refresh Rate</b>	60 Hz
<b>Brightness</b>	250 nits
<b>Pixel Resolution</b>	1366 x 768 (HD)
<b>Format</b>	RGB
<b>Backlight</b>	LED
<b>Color Gamut Coverage</b>	45% of NTSC
<b>Color Depth</b>	6 bits
<b>Viewing Angle</b>	SVA 45/45/15/35



---

## Technical Specifications

### STORAGE AND DRIVES<sup>1</sup>

1. 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.

<b>SSD 128GB 2280 PCIe-3x2 Three Layer Cell</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>	PCIe NVMe
	<b>Maximum Sequential Read</b>	1400 ~ 2100 MB/s
	<b>Maximum Sequential Write</b>	800 ~ 1200 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>	ATA Security; DIPM; TRIM; DEVSLP

---

<b>SSD 1TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	1 TB
	<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>	3100 ~ 3500 MB/s
	<b>Maximum Sequential Write</b>	2770 ~ 3037 MB/s
	<b>Logical Blocks</b>	2,000,409,264
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	ATA Security; TRIM; L1.2

---



---

Technical Specifications

<b>SSD 256GB 2280 PCIe NVMe Value</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256 GB
	<b>NAND Type</b>	Value
	<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 Gen3
	<b>Maximum Sequential Read</b>	2100 ~ 2200 MB/s
	<b>Maximum Sequential Write</b>	900 ~ 1400 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>	ATA Security (optional); TRIM; L1.2	

---

<b>SSD 512GB 2280 PCIe NVMe Value</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512 GB
	<b>NAND Type</b>	Value
	<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 Gen3
	<b>Maximum Sequential Read</b>	2200 ~ 2300 MB/s
	<b>Maximum Sequential Write</b>	1000 ~ 1600 MB/s
	<b>Logical Blocks</b>	1,000,215,215
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
<b>Features</b>	ATA Security (optional); TRIM; L1.2	

---

<b>SSD 512GB 2280 PCIe-3x2x2 NVMe+SSD 32GB 3D Xpoint</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512 GB
	<b>NAND Type</b>	QLC+3D XPoint
	<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 Gen3X2X2
	<b>Maximum Sequential Read</b>	Up to 2400 MB/s
	<b>Maximum Sequential Write</b>	Up to 1300 MB/s
	<b>Logical Blocks</b>	1,000,215,215
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
<b>Features</b>	ATA Security; TRIM; L1.2	



## Technical Specifications

<b>SSD 512GB 2280 M2 PCIe-3x4 SS NVMe TLC</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>	3100 ~ 3500 MB/s
	<b>Maximum Sequential Write</b>	2400 ~ 2956 MB/s
	<b>Logical Blocks</b>	1,000,215,215
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	ATA Security; TRIM; L1.2

<b>SSD 256GB 2280 M2 PCIe-3x4 SS NVMe TLC</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>	2800 ~ 3500 MB/s
	<b>Maximum Sequential Write</b>	1400 ~ 2200 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>	ATA Security; TRIM; L1.2

<b>SSD 256GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer Cell</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>	2800 ~ 3500 MB/s
	<b>Maximum Sequential Write</b>	1663 ~ 2200 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>	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2



---

### Technical Specifications

<b>SSD 512GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer</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>	3100 ~ 3500 MB/s
	<b>Maximum Sequential Write</b>	2400 ~ 2956 MB/s
	<b>Logical Blocks</b>	1,000,215,215
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
	<b>Features</b>	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2

---



## Technical Specifications

## NETWORKING/COMMUNICATIONS

<b>Intel Wi-Fi 6 AX201 + Bluetooth® 5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds) <sup>5,6</sup></b>	<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	<b>Interoperability</b>	Features Wi-Fi 6 technology
	<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>• 802.11b/g/n/ax 2.402 – 2.482 GHz</li> <li>• 802.11a/n/ac/ax 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</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, ,80MHz &amp; 160MHz)</li> <li>• 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> </ul>
	<b>Modulation</b>	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	<b>Security<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• IEEE 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>• WPA3 certification</li> <li>• IEEE 802.11i</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>	• 802.11b: +18.5dBm minimum





### Technical Specifications

	<ul style="list-style-type: none"> <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> <li>• 802.11ax HT40(2.4GHz): +10dBm minimum</li> <li>• 802.11ax VHT160(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/Modern 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>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0: -84dBm maximum</li> <li>• 802.11ac, MCS9: -59dBm maximum</li> <li>• 802.11ax, MCS11(HT40): -59dBm maximum</li> <li>• 802.11ax, MCS11(VHT160): -58.5dBm maximum</li> </ul>				
<b>Antenna type</b>	<p>High efficiency antenna with spatial diversity, mounted in the display enclosure</p> <p>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications</p>				
<b>Form Factor</b>	PCI-Express M.2 MiniCard with CNVi Interface				
<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: 2.8 g</li> <li>2. Type 126: 1.3 g</li> </ol>				
<b>Operating Voltage</b>	3.3v +/- 9%				
<b>Temperature</b>	<table border="0"> <tbody> <tr> <td><b>Operating</b></td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </tbody> </table>	<b>Operating</b>	14° to 158° F (-10° to 70° C)	<b>Non-operating</b>	-40° to 176° F (-40° to 80° C)
<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>	<table border="0"> <tbody> <tr> <td><b>Operating</b></td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>5% to 95% (non-condensing)</td> </tr> </tbody> </table>	<b>Operating</b>	10% to 90% (non-condensing)	<b>Non-operating</b>	5% to 95% (non-condensing)
<b>Operating</b>	10% to 90% (non-condensing)				
<b>Non-operating</b>	5% to 95% (non-condensing)				
<b>Altitude</b>	<table border="0"> <tbody> <tr> <td><b>Operating</b></td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </tbody> </table>	<b>Operating</b>	0 to 10,000 ft (3,048 m)	<b>Non-operating</b>	0 to 50,000 ft (15,240 m)
<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>	<p>LED Amber – Radio OFF</p> <p>LED Off – Radio ON</p>				



## Technical Specifications

### HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1 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>Signaling Data Rate</b>	Legacy: 3 Mbps signaling data rate <sup>1</sup> 2.17 Mbps BLE: 1 Mbps signaling data rate <sup>1</sup> 0.2 Mbps <a href="#">1. Actual throughput may vary.</a>
<b>Transmit Power</b>	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) The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Bluetooth Software Supported Link Topology</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) <sup>2</sup> Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited.

2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.



### Technical Specifications

3. Check latest software/driver release for updates on supported security features.
  4. 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).
  5. Wi-Fi supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
  6. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for Wi-Fi 6 (802.11ax 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 802.11ax WLAN devices. Only available in countries where 802.11ax is supported.
- 



### Technical Specifications

<p><b>Intel Wi-Fi 6 AX201 + Bluetooth® 5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds)<sup>5,6</sup> Non-vPro</b></p>	<p><b>Wireless LAN Standards</b></p> <ul style="list-style-type: none"> <li>IEEE 802.11a</li> <li>IEEE 802.11b</li> <li>IEEE 802.11g</li> <li>IEEE 802.11n</li> <li>IEEE 802.11ac</li> <li>IEEE 802.11ax</li> <li>IEEE 802.11d</li> <li>IEEE 802.11e</li> <li>IEEE 802.11h</li> <li>IEEE 802.11i</li> <li>IEEE 802.11k</li> <li>IEEE 802.11r</li> <li>IEEE 802.11v</li> </ul>
<p><b>Interoperability</b></p>	<p>Features Wi-Fi 6 technology</p>
<p><b>Frequency Band</b></p>	<ul style="list-style-type: none"> <li>• 802.11b/g/n/ax 2.402 – 2.482 GHz</li> <li>• 802.11a/n/ac/ax 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</li> </ul>
<p><b>Data Rates</b></p>	<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, 80MHz &amp; 160MHz)</li> <li>• 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, 80MHz &amp; 160MHz)</li> </ul>
<p><b>Modulation</b></p>	<p>Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</p>
<p><b>Security<sup>3</sup></b></p>	<ul style="list-style-type: none"> <li>• IEEE 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>• WPA3 certification</li> <li>• IEEE 802.11i</li> <li>• WAPI</li> </ul>
<p><b>Network Architecture Models</b></p>	<p>Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)</p>
<p><b>Roaming</b></p>	<p>IEEE 802.11 compliant roaming between access points</p>
<p><b>Output Power<sup>2</sup></b></p>	<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> </ul>



### Technical Specifications

	<ul style="list-style-type: none"> <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> <li>• 802.11ax HT40(2.4GHz): +10dBm minimum</li> <li>• 802.11ax VHT160(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/Modern 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>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0: -84dBm maximum</li> <li>• 802.11ac, MCS9: -59dBm maximum</li> <li>• 802.11ax, MCS11(HT40): -59dBm maximum</li> <li>• 802.11ax, MCS11(VHT160): -58.5dBm maximum</li> </ul>				
<b>Antenna type</b>	<p>High efficiency antenna with spatial diversity, mounted in the display enclosure</p> <p>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications</p>				
<b>Form Factor</b>	PCI-Express M.2 MiniCard with CNVi Interface				
<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: 2.8 g</li> <li>2. Type 126: 1.3 g</li> </ol>				
<b>Operating Voltage</b>	3.3v +/- 9%				
<b>Temperature</b>	<table> <tbody> <tr> <td><b>Operating</b></td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </tbody> </table>	<b>Operating</b>	14° to 158° F (-10° to 70° C)	<b>Non-operating</b>	-40° to 176° F (-40° to 80° C)
<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>	<table> <tbody> <tr> <td><b>Operating</b></td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>5% to 95% (non-condensing)</td> </tr> </tbody> </table>	<b>Operating</b>	10% to 90% (non-condensing)	<b>Non-operating</b>	5% to 95% (non-condensing)
<b>Operating</b>	10% to 90% (non-condensing)				
<b>Non-operating</b>	5% to 95% (non-condensing)				
<b>Altitude</b>	<table> <tbody> <tr> <td><b>Operating</b></td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </tbody> </table>	<b>Operating</b>	0 to 10,000 ft (3,048 m)	<b>Non-operating</b>	0 to 50,000 ft (15,240 m)
<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>	<p>LED Amber – Radio OFF</p> <p>LED Off – Radio ON</p>				

### HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology

**Bluetooth Specification** 4.0/4.1/4.2/5.0/5.1 Compliant



## Technical Specifications

<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>Signaling Data Rate</b>	Legacy: 3 Mbps signaling data rate <sup>1</sup> 2.17 Mbps BLE: 1 Mbps signaling data rate <sup>1</sup> 0.2 Mbps <a href="#">1. Actual throughput may vary.</a>
<b>Transmit Power</b>	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) The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Bluetooth Software Supported Link Topology</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)

1. Wireless access point and Internet service is required. Availability of public wireless access point is limited.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. Check latest software/driver release for updates on supported security features.
4. 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).



### Technical Specifications

5. Wi-Fi supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.

6. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. The specifications for Wi-Fi 6 (802.11ax 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 802.11ax WLAN devices. Only available in countries where 802.11ax is supported.

**Intel Jefferson Peak2  
9560 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

Wi-Fi® CERTIFIED modules

#### Frequency Band

- 802.11b/g/n  
2.402 – 2.482 GHz
- 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

#### Data Rates

- 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 compliant 64 / 128-bit WEP encryption for a/b/g mode only
- AES-CCMP: 128 bit in hardware
- 802.1x authentication
- WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
- WPA2 certification
- WPA3 certification
- IEEE 802.11i
- WAPI



### Technical Specifications

<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: +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 802.11 compliant power saving mode				
<b>Receiver Sensitivity<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0: -84dBm maximum</li> <li>• 802.11ac, MCS9: -59dBm maximum</li> </ul>				
<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 with CNVi Interface				
<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: 2.8 g</li> <li>2. Type 126: 1.3 g</li> </ol>				
<b>Operating Voltage</b>	3.3v +/- 9%				
<b>Temperature</b>	<table> <tr> <td><b>Operating</b></td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </table>	<b>Operating</b>	14° to 158° F (-10° to 70° C)	<b>Non-operating</b>	-40° to 176° F (-40° to 80° C)
<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>	<table> <tr> <td><b>Operating</b></td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>5% to 95% (non-condensing)</td> </tr> </table>	<b>Operating</b>	10% to 90% (non-condensing)	<b>Non-operating</b>	5% to 95% (non-condensing)
<b>Operating</b>	10% to 90% (non-condensing)				
<b>Non-operating</b>	5% to 95% (non-condensing)				
<b>Altitude</b>	<table> <tr> <td><b>Operating</b></td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </table>	<b>Operating</b>	0 to 10,000 ft (3,048 m)	<b>Non-operating</b>	0 to 50,000 ft (15,240 m)
<b>Operating</b>	0 to 10,000 ft (3,048 m)				
<b>Non-operating</b>	0 to 50,000 ft (15,240 m)				





## Technical Specifications

<b>LED Activity</b>	LED Amber – Radio OFF LED Off – Radio ON
---------------------	---

### HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology

<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>Signaling Data Rate</b>	Legacy: 3 Mbps signaling data rate <sup>1</sup> throughput up to 2.17 Mbps BLE: 1 Mbps signaling data rate <sup>1</sup> throughput up to 0.2 Mbps <a href="#">1. Actual throughput may vary.</a>
<b>Transmit Power</b>	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) 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>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 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)



## Technical Specifications

1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. The specifications for Wi-Fi 6 (802.11ax) are draft 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 802.11ax devices. Only available in countries where 802.11ax is supported. Wi-Fi® supporting gigabit speeds is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160 MHz channels.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. Check latest software/driver release for updates on supported security features.
4. 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).

<b>NXP NPC300 Near Field Communication Module</b>	<b>Dimensions (L x W x H)</b>	Module 17 mm by 10 mm by 2.0 mm
	<b>Chipset</b>	NPC300
	<b>System interface</b>	I2C
	<b>NFC RF standards</b>	ISO/IEC 14443 A
		ISO/IEC 14443 B
		ISO/IEC 15693
		ISO/IEC 18092
		ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	<b>NFC Forum Support</b>	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	<b>Reader (PCD-VCD) Mode<sup>1</sup></b>	ISO/IEC 14443 A
		ISO/IEC 14443 B
		ISO/IEC 15693
		MIFARE 1K
		MIFARE 4K
MIFARE DESFire		
FeliCa		
Jewel and Topaz cards		
1. With application or UICC support		
<b>Card Emulation (PICC-VICC) Mode<sup>1</sup></b>	ISO/IEC 14443 A	
	ISO/IEC 14443 B and B'	
	MIFARE	
	FeliCa	
1. With application or UICC support		
<b>Frequency</b>	13.56 MHz	
<b>NFC Modes Supported</b>	Reader/Writer, Peer-to-Peer	
<b>Raw RF Data Rates</b>	106, 212, 424, 848 kbps	
<b>Operating temperature</b>	-25°C to 80°C	
<b>Storage temperature</b>	-25°C to 125°C	
<b>Humidity</b>	10-90% operating	
	5-95% non-operating	
<b>Supply Operating voltage</b>	2.7 to 5.5 Volts	



### Technical Specifications

**I/O Voltage** 1.8V or 3.3V

#### Power Consumption

(Booster enable, VBAT= 3.3V, VCC\_BOOST = 5V)

**Mode** Power Consumption, Typical  
Actual Power Consumption is dependent on NFC antenna and matching circuit and on the particular polling sequence and period configured.

**Polling** 710.93 mW

**Detected Test Tag Type 1** 152.09 mW

**Detected Test Tag Type 2** 341.26 mW

**Detected Test Tag Type 3** 383.76 mW

**Detected Test Tag Type 4** 312.26 mW

**Antenna** Antenna connector, 0.3mm pitch, 7 connector FPC. Antenna matching is external to module.



---

 Technical Specifications

## POWER

<b>AC Adapter 45 Watt nPFC Standard USB Type-C® Straight 1.8m</b>	<b>Dimensions (H x W x D)</b>	94.0 x 40.0 x 26.5 mm
	<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 ~ 63 Hz
		<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> 5 ms at 115 Vac input
	<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 5,000 m)
		<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.	



---

Technical Specifications

<b>AC Adapter 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m</b>	<b>Dimensions</b>	95 x 45 x 26.8 mm	
	<b>Weight</b>	200 g +/- 10 g	
	<b>Input</b>	<b>Input Efficiency</b>	87.74 % at 115 Vac and 88.4 % at 230Vac
		<b>Input frequency range</b>	47 ~ 63 Hz
	<b>Output</b>	<b>Input AC current</b>	Max. 1.4 A at 90 Vac
		<b>Output power</b>	45 W
		<b>DC output</b>	19.5 V
		<b>Hold-up time</b>	5 ms at 115 Vac input
		<b>Output current limit</b>	<8.0A
	<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)
<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>AC Adapter 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m 2prong</b>	<b>Dimensions</b>	95 x 45 x 26.8 mm	
	<b>Weight</b>	200 g +/- 10 g	
	<b>Input</b>	<b>Input Efficiency</b>	87.74 % at 115 Vac and 88.4 % at 230Vac
		<b>Input frequency range</b>	47 ~ 63 Hz
	<b>Output</b>	<b>Input AC current</b>	Max. 1.4 A at 90 VAC
		<b>Output power</b>	45 W
		<b>DC output</b>	19.5 V
		<b>Hold-up time</b>	5 ms at 115 Vac input
		<b>Output current limit</b>	<8.0A
	<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)
<b>Humidity</b>		20% to 95%	
<b>Storage Humidity</b>		10% to 95%	



### Technical Specifications

<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>AC Adapter 65 Watt nPFC Standard USB type C® Straight 1.8m</b>	<b>Dimensions</b>	90.0 x 51 x 28.5mm	
	<b>Weight</b>	250 g +/- 10 g	
	<b>Input</b>	<b>Input Efficiency</b>	81.5% min at 115 Vac/ 230Vac @ 5V/3A 86.7% min at 115 Vac/ 230Vac @ 9V/3A 88% min at 115 Vac/ 230Vac @ 12V/5A 89% min at 115 Vac/ 230Vac @ 15V/4.33A 89% min at 115 Vac/ 230Vac @ 20V/3.25A
		<b>Input frequency range</b>	47 ~ 63 Hz
	<b>Output</b>	<b>Input AC current</b>	1.6 A at 90 VAC and maximum load
		<b>Output power</b>	65 W
		<b>DC output</b>	5V/9V/12V/15V/20V
		<b>Hold-up time</b>	5 ms at 115 Vac input
		<b>Output current limit</b>	8.0A Max.
	<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, 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.		



## Technical Specifications

<b>AC Adapter 65 Watt Smart nPFC EM Barrel 4.5mm New EM</b>	<b>Dimensions (H x W x D)</b>	102 x 55 x 30mm	
	<b>Weight</b>	250g +/-10%	
	<b>Input</b>	<b>Input Efficiency</b>	88.0 % at 115 Vac and 89.0 % at 230 Vac
		<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>	5 ms 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 5,000 m)
<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>AC Adapter 65 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m</b>	<b>Dimensions (H x W x D)</b>	90 x 51 x 28.5mm	
	<b>Weight</b>	230g +/-10%	
	<b>Input</b>	<b>Input Efficiency</b>	88.0 % at 115 Vac and 89.0 % at 230 Vac
		<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>	5 ms 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 5,000 m)



### 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>Battery RH 3 Cell WHr 45 Long Life -PL Fast Charge</b>	<b>Dimensions (H x W x L)</b>	6.2 x 68.7 x 249.6mm
	<b>Weight</b>	190g
	<b>Cells/Type</b>	3cell Lithium-Ion Polymer cell/ 545974
	<b>Voltage</b>	11.4 V
	<b>Amp-hour capacity</b>	3.950Ah
	<b>Watt-hour capacity</b>	45 Wh
	<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
	<b>Warranty</b>	Based on system offering





### Technical Specifications

#### ENVIRONMENTAL DATA

##### Sustainable Impact Specifications

- Bulk packaging available
- Low halogen<sup>1</sup>
- Ocean-Bound Plastic in speaker enclosure<sup>2</sup>
- Outside Box and corrugated cushions are 100% sustainably sourced and recyclable<sup>3</sup>
- 10% post-consumer recycled plastic<sup>4</sup>

1. External power supplies, WWAN modules, power cords, cables and peripherals excluded.

2. Percentage of ocean-bound plastic contained in each component varies by product

3. 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.

4. Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.

---

#### Country of Origin

China

---



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

Type	Description	Part Number
<b>Cases</b>	HP Business Backpack (up to 17.3")	2SC67AA
	HP Business Slim Top Load (up to 14.1")	2SC65AA
	HP Prelude Pro Recycle Backpack (Montrose)	1X644AA
	HP Prelude Pro Recycle Top Load (Midtown)	1X645AA
	HP Recycled Top Load	5KN29AA
	HP Recycled Backpack	5KN28AA
<b>Docking</b>	HP USB-C Mini Dock	1PM64AA
	HP Thunderbolt Dock 120W G2	2UK37AA
	HP TB Dock G2 w/ Combo Cable	3TR87AA
	HP TB Dock 120W G2 w/Audio	3YE87AA
	HP TB Dock 120W G2 Cable	3XB94AA
	HP TB Dock G2 Combo Cable	3XB96AA
	HP TB Dock G2 Audio Module	3AQ21AA
	HP USB-C/A Universal Dock G2	5TW13AA
	HP USB-C Dock G5	5TW10AA
<b>Input/Output</b>	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Wired Desktop 320MK Mouse & Keyboard	9SR36AA
	HP Bluetooth Travel Mouse	6SP30AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Wired Desktop 320M Mouse	9VA80AA
	HP USB Travel Mouse	G1K28AA
	HP Elite USB-C Hub	4WX89AA
	HP USB-C Travel Hub G2	7PJ38AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
<b>Power</b>	HP 45W Smart AC Adapter 4.5mm	H6Y88AA
	45W Smart Power Adapter 2 prong -4.5mm (Japan only)	L6F60AA
	65W Smart Power Adapter (w/ 4.5mm to 7.5mm DC dongle)	H6Y89AA
	HP 65W Slim AC Adapter	H6Y82AA
	HP 65W USB-C Slim Power Adapter	3PN48AA
	HP 45W LC USB-C Power Adapter	1MZ01AA
	HP 65W USB-C LC Power Adapter	TBD
	HP Power Bank	N9F71AA
	HP USB-C Notebook Power Bank	3TB55AA



---

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

<b>Storage</b>	HP External USB Optical Drive	F2B56AA
<b>Security</b>	HP Sure Key Cable Lock	6UW42AA
	HP Nano Keyed Cable Lock	1AJ39AA



### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
January 15, 2021	V1 to V2	Update	Processor Section
January 21, 2021	V2 to V3	Added	WPA3 certification in Security, Networking section
January 29, 2021	V3 to V4	Update	USB ports to new industry standards.
February 2, 2021	V4 to V5	Update	UEFI Version
February 3, 2021	V5 to V6	Update	Software and Security section
February 9, 2021	V6 to V7	Added	Environmental Data
February 24, 2021	V7 to V8	Update	USB ports
	V8 to V9		

Copyright © 2021 HP Development Company, L.P. The only warranties for HP products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Intel®, Core®, and Intel vPro™ are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. USB Type-C™ and USB-C™ are trademarks of USB Implementers Forum. ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency. All other trademarks are the property of their respective owners.

