

### Overview

### HP 470 G7 Notebook PC



#### Left

- |                         |                       |
|-------------------------|-----------------------|
| 1. Webcam LED           | 7. USB 3.1 Gen 1 Port |
| 2. Webcam               | 8. USB 3.1 Gen 1 Port |
| 3. Internal Microphones | 9. HDMI Port          |
| 4. Touchpad             | 10. RJ-45             |
| 5. Touchpad Button      | 11. Power             |
| 6. Audio Combo Jack     | 12. Power Button      |



### Overview



#### Right

- |                                      |                   |
|--------------------------------------|-------------------|
| 1. Security Lock Slot                | 4. SD Card Reader |
| 2. Optional Integrated Optical Drive | 5. Hard Drive LED |
| 3. USB 2.0                           | 6. Power LED      |



### Overview

#### At a Glance

- Preinstall Windows 10, Windows 10 Pro, FreeDOS
- Choice of 10th generation Intel® Core™ i7, i5 and i3 processors
- 17" diagonal Anti-Glare high resolution display
- AMD Radeon 530 + 2 GB GDDR5 discrete graphics
- Security features including: Kensington Security Lock and TPM2.0
- Advanced Intel Wi-Fi 6<sup>1</sup> wireless LAN
- Weight starting at 5.2 lb (weight will vary by configuration)
- Battery life Up to 11 hours and 30 minutes<sup>2</sup>
- Up to 2 TB 5400 rpm SATA Drives
- Up to 512 GB M.2 Solid State Drives
- Up to 16 GB total system memory
- 720p HD camera and single digital mic
- Optional backlit keyboard, Precision touchpad with 2 buttons

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.

2. Recharges the battery up to 50% within 30 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 50% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.

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

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## Technical Specifications

### PRODUCT NAME

HP 470 G7 Notebook PC

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### OPERATING SYSTEMS

#### Preinstalled

Windows 10 Pro 64<sup>1</sup>

Windows 10 Home 64 – HP recommends Windows 10 Pro.<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>.

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### PROCESSORS

Intel® Core™ i7-10510U processor with Intel® UHD Graphics (1.8 GHz base frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)<sup>2,3,4,5</sup>

Intel® Core™ i5-10210U processor with Intel® UHD Graphics (1.6 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)<sup>2,3,4,5</sup>

Intel® Core™ i3-10110U processor with Intel® UHD Graphics (2.1 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 4 MB cache, 2 cores)<sup>2,3,4,5</sup>

#### Processors Family

10th Generation Intel® Core™ i7 processor (i7-10510U)<sup>5</sup>

10th Generation Intel® Core™ i5 processor (i5-10210U)<sup>5</sup>

10th Generation Intel® Core™ i3 processor (i3-10110U)<sup>5</sup>

2. 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.

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

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

5. 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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## Technical Specifications

### CHIPSET

Integrated with processor

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### GRAPHICS

#### Integrated

Intel® UHD graphics<sup>6</sup>

#### Discrete

AMD Radeon™ 530 (2 GB GDDR5 dedicated)

#### Supports

Support HD decode, DX12, HDMI 1.4b

[6. HD content required to view HD images.](#)

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### DISPLAYS

#### Internal

##### Non-Touch

43.9 cm (17.3") diagonal HD SVA eDP anti-glare LED-backlit, 220 nits, 45% NTSC (1600 x 900)<sup>6,7</sup>

43.9 cm (17.3") diagonal FHD IPS eDP anti-glare LED-backlit, 300 nits, 72% NTSC (1920 x 1080)<sup>6,7</sup>

#### Display Size

17.3"

43.9 cm (17.3")

[6. HD content required to view HD images.](#)

[7. Resolutions are dependent upon monitor capability, and resolution and color depth settings.](#)

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### STORAGE AND DRIVES

#### Primary Storage

2 TB 5400 rpm SATA<sup>8</sup>

1 TB 5400 rpm SATA<sup>8</sup>

500 GB 5400 rpm SATA<sup>8</sup>

128 GB SATA TLC SSD + 1 TB 5400 rpm SATA<sup>8</sup>

256 GB PCIe Value SSD + 1 TB 5400 rpm SATA<sup>8</sup>

#### Primary M.2 Storage

128 GB M.2 SATA-3 SSD<sup>8</sup>

256 GB PCIe® NVMe™ Value M.2 SSD<sup>8</sup>

512 GB PCIe® NVMe™ Value M.2 SSD<sup>8</sup>



### Technical Specifications

8. 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.

#### MEMORY

##### Maximum Memory

16 GB DDR4-2666 SDRAM<sup>9</sup>

##### Memory

16 GB DDR4-2666 SDRAM (2 X 8 GB)<sup>9</sup>

8 GB DDR4-2666 SDRAM (1 x 8 GB)<sup>9</sup>

4 GB DDR4-2666 SDRAM (1 x 4 GB)<sup>9</sup>

##### Memory Slots

2 SODIMM

DDR4 SODIMMS, system runs at 2666

Supports Dual Channel Memory

9. 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.

#### NETWORKING/COMMUNICATIONS

##### WLAN

Intel® Dual Band Wireless-AC AX201 802.11a/b/g/n/ac (2x2) Wi-Fi 6 and Bluetooth® 5 Combo, non-vPro™<sup>10</sup>

Realtek RTL8822CE 802.11ac (2x2) Wi-Fi 5 and Bluetooth® 5 Combo<sup>11</sup>

##### Ethernet

Integrated 10/100/1000 NIC<sup>12</sup>

10. 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.

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

12. 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.



### Technical Specifications

#### AUDIO/MULTIMEDIA

##### Audio

HP Audio Center

Dual Speakers

Single digital microphone

Camera

720p HD camera<sup>6</sup>

##### Optical Drive

DVD+/-RW Double-Layer Writer<sup>13,14</sup>

Support Zero-Power ODD

Support non-ODD config

Support M-disc

6. HD content required to view HD images.

13. Sold separately or as an optional feature.

14. Unit shipped with either "DVD+/-RW SuperMulti DL" or "DVD Writer Drive." Units undergoing repairs may be returned with a "DVD+/-RW SuperMulti DL."

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

##### Keyboard

Full Size Textured island-style Keyboard with numeric key pad

Full Size 2-coat paint island-style Backlit Keyboard with numeric key pad<sup>15</sup>

##### Pointing Device

Touchpad with multi-touch gesture support

##### Function Keys

ESC

F1 – help

F2 – Brightness Down

F3 - Brightness Up

F4 - Display Switching

F5 - Backlight Toggle

F6 – Audio Mute

F7 – Volume Down

F8 - Volume Up

F9 - Plays the previous track of an audio CD or the previous section of a DVD or a Blu-ray Disc (BD).

F10 - Starts, pauses, or resumes playback of an audio CD, a DVD, or a BD.

F11 – Plays the next track of an audio CD or the next section of a DVD or a BD.

F12 - airplane mode

15. Backlit keyboard is an optional feature.



## Technical Specifications

### SOFTWARE AND SECURITY

#### Software

Buy Office (Sold separately)

HP Support Assistant<sup>16</sup>

HP Recovery Manager

Skype

Native Miracast Support<sup>17</sup>

#### Security Management

TPM 2.0<sup>18</sup>

Kensington Security Lock<sup>19</sup>

Windows Defender<sup>20</sup>

16. HP Support Assistant requires Windows and Internet access.

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

18. Firmware TPM is version 2.0 implemented by Intel Platform Trust Technology (PTT)

19. Security lock is sold separately.

20. Windows Defender Opt In, Windows 10, and internet connection required for updates.

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### POWER

HP Smart 65 W EM Smart AC power adapter<sup>21</sup>

HP Smart 65 W Smart AC power adapter<sup>21</sup>

#### Primary Battery

HP Long Life 3-cell, 41 Wh Li-ion<sup>22,23</sup>

#### Power Cord

1M length Power Cord

1M length Power Cord + Japan plug adapter

#### Battery life

Up to 11 hours and 30 minutes<sup>23</sup>

21. Availability may vary by country.

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

23. 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 <http://www.bapco.com> for additional details.





## Technical Specifications

### WEIGHTS & DIMENSIONS

**Product Weight**

Starting at 5.2 lb<sup>24</sup>

Starting at 2.36 kg<sup>24</sup>

**Package Weight**

Starting at 6.9 lb

Starting at 3.13 Kg

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

16.33 x 10.7 x 0.96 in

41.48 x 27.2 x 2.45 cm

24. Weight will vary by configuration.

### PORTS/SLOTS

**Ports**

2 USB 3.1 Gen 1

1 USB 2.0

1 HDMI 1.4<sup>25</sup>

1 RJ-45

1 AC power

1 Headphone/microphone combo jack

**Expansion Slots**

support SD/SDHC/SDXC

Push-Pull Insertion/Removal

25. HDMI cable 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. 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>26</sup>

26. 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

### ENVIRONMENTAL & INDUSTRY

<b>Eco-Label Certifications &amp; declarations</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• IT ECO declaration</li> <li>• US ENERGY STAR®</li> <li>• Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit <a href="http://www.epeat.net">http://www.epeat.net</a> for more information.</li> </ul>		
<b>System Configuration</b>	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.		
<b>Energy Consumption (in accordance with US ENERGY STAR® test method)</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
Normal Operation (Short idle)	5.81 W	6.17 W	5.99 W
Normal Operation (Long idle)	3.58 W	3.50 W	3.62 W
Sleep	0.30 W	0.29 W	0.29 W
Off	0.19 W	0.20 W	0.19 W
	<p>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.</p>		
<b>Heat Dissipation*</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
Normal Operation (Short idle)	20 BTU/hr	21 BTU/hr	20 BTU/hr
Normal Operation (Long idle)	12 BTU/hr	12 BTU/hr	12 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
	Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		
<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	<b>Sound Power (L<sub>WAd</sub>, bels)</b>		<b>Sound Pressure (L<sub>pAm</sub>, decibels)</b>
Typically Configured – Idle	2.8		25
Fixed Disk – Random writes	2.8		26
<b>Longevity and Upgrading</b>	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> <li>• 3 USB ports</li> <li>• 1 PC card slot (type I/II)</li> <li>• 1 ExpressCard/54 slot</li> </ul>		



### Technical Specifications

	<ul style="list-style-type: none"> <li>• 1 IEEE 1394 Port</li> <li>• 2 SODIMM memory slots</li> <li>• Optional expansion base docking station</li> <li>• 1 multi-bay II storage port</li> <li>• Interchangeable HDD</li> </ul> <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater the 1ppm by weight Cadmium greater than 20ppm by weight</p> <p>Battery size: Not Applilcable Battery type: Not Applilcable</p>		
Additional Information	<ul style="list-style-type: none"> <li>• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.</li> <li>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>• This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the &lt;Silver&gt; level, see <a href="http://www.epeat.net">http://www.epeat.net</a></li> <li>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li> <li>• This product contains 2.3% post-consumer recycled plastic (by wt.)</li> <li>• This product is 95.5% recycle-able when properly disposed of at end of life.</li> </ul>		
<b>Packaging Materials</b>	<b>External:</b>	PAPER/Paperboard	42 g
		PAPER/Corrugated	274 g
	<b>Internal:</b>	PLASTIC/Polypropylene - PP	5 g
		PLASTIC/Polyethylene Expanded - EPE	64 g
		PLASTIC/Polyethylene low density - LDPE	14 g
<b>Material Usage</b>	<p>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 <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf</a>):</p> <ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Certain Azo Colorants</li> <li>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics</li> <li>• Cadmium</li> <li>• Chlorinated Hydrocarbons</li> <li>• Chlorinated Paraffins</li> <li>• Formaldehyde</li> <li>• Halogenated Diphenyl Methanes</li> <li>• Lead carbonates and sulfates</li> <li>• Lead and Lead compounds</li> </ul>		



### Technical Specifications

	<ul style="list-style-type: none"> <li>• Mercuric Oxide Batteries</li> <li>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.</li> <li>• Ozone Depleting Substances</li> <li>• Polybrominated Biphenyls (PBBs)</li> <li>• Polybrominated Biphenyl Ethers (PBBEs)</li> <li>• Polybrominated Biphenyl Oxides (PBBOs)</li> <li>• Polychlorinated Biphenyl (PCB)</li> <li>• Polychlorinated Terphenyls (PCT)</li> <li>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.</li> <li>• Radioactive Substances</li> <li>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li> </ul>
<b>Packaging Usage</b>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> <li>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> <li>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> <li>• Design packaging materials for ease of disassembly.</li> <li>• Maximize the use of post-consumer recycled content materials in packaging materials.</li> <li>• Use readily recyclable packaging materials such as paper and corrugated materials.</li> <li>• Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
<b>End-of-life Management and Recycling</b>	<p>HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="http://www.hp.com/go/reuse-recycle">http://www.hp.com/go/reuse-recycle</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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: <a href="http://www.hp.com/go/recyclers">http://www.hp.com/go/recyclers</a>. 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.</p>
<b>HP Inc. Corporate Environmental Information</b>	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report  <a href="http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html">http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</a>          Eco-label certifications  <a href="http://www8.hp.com/us/en/hp-information/environment/ecolabels.html">http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</a>          ISO 14001 certificates:  <a href="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</a>          and  <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</a></p>



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## Technical Specifications

### COMPATIBILITY

HP USB-C/A Universal Dock G2	5TW13AA
HP USB Essential Keyboard and Mouse	H6L29AA
HP Essential Messenger Case (up to 17.3")	H1D25AA
HP Keyed Cable Lock 10mm	T1A62AA

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### CERTIFICATION AND COMPLIANCE

ENERGY STAR® certified  
EPEAT® 2019 Silver<sup>27</sup>

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

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### FACETS

<b>Maximum Resolution</b>	1920 x 1080
<b>Screen Size, imperial</b>	17.3 (diagonal)
<b>Weight, Metric</b>	2.36
<b>Weight, Imperial</b>	5.2

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### SYSTEM UNIT

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

Nominal Operating Voltage	19V
Average Operating Power	Win 10
Integrated graphics	6.05 W
Max Operating Power	Discrete < 65 W UMA

#### Temperature

Operating	32° to 95° F (0° to 35° C) (Not writing optical) 41° to 95° F (5° to 35° C) (Writing optical)
Non-operating	-4° to 140° F (-20° to 60° C)

#### Relative Humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%

#### Shock

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

#### Random Vibration

Operating	1.043 grms
Non-operating	3.5 grms



## Technical Specifications

### Altitude (unpressurized)

Operating	-15 m to 3048 m (-50 ft to 10000 ft)
Non-operating	-15 m to 12192 m (-50 ft to 40000 ft)

### Planned Industry Standard Certifications

UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR®	Selected models <sup>28</sup>
EPEAT®	EPEAT® 2019 Silver in U.S. <sup>29</sup>
ICES	Yes
Australia	No
NZ A-Tick Compliance	No
CCC	No
Japan VCCI Compliance	No
KC	No
BSMI	No
CE Marking Compliance	Yes
BNCI or BELUS	Yes
CIT	Yes
GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	No

28. Configurations of the HP ProBook 430 G7 that are ENERGY STAR® certified<sup>2</sup> are identified as HP ProBook 430 G7 ENERGY STAR on HP websites and on <http://www.energystar.gov>.

29. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit <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.

#### 17.3 FHD AG WLED UWVA 72% cg 300 nits flat LED backlight (1920 x 1080)

<b>Outline Dimensions (W x H x D)</b>	399.95 x 251.01 mm max. (Including PCB & bracket)
<b>Active Area</b>	381.888 x 214.812
<b>Weight</b>	550 max.
<b>Diagonal Size</b>	17.3"
<b>Thickness</b>	Flat 4.0 mm max
<b>Interface</b>	eDP1.3 w/o PSR
<b>Surface Treatment</b>	Anti-glare (AG)
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	600:1 (typ)
<b>Refresh Rate</b>	60 Hz
<b>Brightness</b>	300 nit typ
<b>Pixel Resolution</b>	1920 x 1080 (FHD)
<b>Backlight</b>	LED
<b>Format of LCD Pixel Arrangement</b>	RGB
<b>Color Gamut Coverage</b>	72%
<b>Color Depth</b>	6 bits+Hi-FRC
<b>Viewing Angle</b>	UWVA 85/85/85/85

#### 17.3 HD+ AG WLED SVA 60% cg 220 nits flat LED backlight (1600 x 900)

<b>Outline Dimensions (W x H x D)</b>	398.6 x 251 (max.)
<b>Active Area</b>	382.08 x 214.92 (mm)
<b>Weight</b>	550 g max.
<b>Diagonal Size</b>	17.3 (inch)
<b>Thickness</b>	4.0 mm max
<b>Interface</b>	eDP1.3 w/o PSR
<b>Surface Treatment</b>	Anti-glare (AG)
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	300:1 (typ)
<b>Refresh Rate</b>	60 Hz
<b>Brightness</b>	220 nit typ
<b>Pixel Resolution</b>	1600 x 900 (HD+)
<b>Backlight</b>	LED
<b>Format of LCD Pixel Arrangement</b>	RGB
<b>Color Gamut Coverage</b>	60%
<b>Color Depth</b>	6 bits+Hi-FRC
<b>Viewing Angle</b>	SVA 40/40/15/30



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 Technical Specifications
**STORAGE AND DRIVES**

<b>500 GB 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.21 lbs (95 g)
	<b>Rotation speed</b>	5400 rpm
	<b>Cache Buffer</b>	Up to 128 MB
	<b>Height</b>	0.28 in (7 mm)
	<b>Width</b>	2.75 in (69.85 mm)
	<b>Interface</b>	ATA-8, SATA 3.0
	<b>Transfer Rate</b>	600 MB/s
	<b>Seek Time</b>	Single Track: 2ms; Average: 12 ~ 13 ms; Maximum: 18 ~ 22 ms
	<b>Logical Blocks</b>	976,773,168
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]
	<b>Security Features</b>	ATA Security
<b>Features</b>	S.M.A.R.T., NCQ, Ultra DMA	
<b>1 TB 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.21 lbs (95 g)
	<b>Rotation speed</b>	5400 rpm
	<b>Cache Buffer</b>	Up to 128 MB
	<b>NAND Type/Size</b>	0.28 in (7 mm)
	<b>Height</b>	2.75 in (69.85 mm)
	<b>Width</b>	ATA-8, SATA 3.0
	<b>Interface</b>	600 MB/s
	<b>Transfer Rate</b>	Single Track: 2ms Average: 12 ~ 13 ms Maximum: 18 ~ 22 ms
	<b>Seek Time</b>	1,953,525,168
	<b>Logical Blocks</b>	32° to 140° F (0° to 60° C) [case temp]
	<b>Operating Temperature</b>	ATA Security
<b>Security Features</b>	S.M.A.R.T., NCQ, Ultra DMA	
<b>2 TB 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	117 g Max
	<b>Rotation speed</b>	5400 rpm
	<b>Cache Buffer</b>	Up to 128 MB
	<b>Height</b>	0.374 in (9.5 mm) Max
	<b>Width</b>	2.75 in (69.85 mm)
	<b>Interface</b>	ATA-8, SATA 3.0
	<b>Transfer Rate</b>	600 MB/s
	<b>Seek Time</b>	Single Track: 2ms Average: 12 ~ 13 ms





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 Technical Specifications

		Maximum: 18 ~ 22 ms
<b>Logical Blocks</b>		3,907,029,168
<b>Operating Temperature</b>		32° to 140° F (0° to 60° C) [case temp]
<b>Security Features</b>		ATA Security
<b>Features</b>		S.M.A.R.T., NCQ, Ultra DMA

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<b>256 GB 2280 M2 PCIe NVMe Value Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256 GB
	<b>NAND Type</b>	TLC
	<b>Height</b>	0.09 in (2.3 mm)
	<b>Width</b>	0.87 in (22 mm)
	<b>Interface</b>	PCIe NVMe Gen3x2
	<b>Maximum Sequential Read</b>	Up to 1500 MB/s
	<b>Maximum Sequential Write</b>	Up to 1000 MB/s
	<b>Logical Blocks</b>	500,118,192
	<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [ambient temp]
<b>Features</b>	TRIM, L1.2	

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<b>512 GB 2280 M2 PCIe NVMe Value Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512GB
	<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>	PCIe NVMe Gen3x4
	<b>Maximum Sequential Read</b>	Up to 1500 MB/s
	<b>Maximum Sequential Write</b>	Up to 1000 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>	DIPM; TRIM; DEVSLP	

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<b>128 GB 2280 M2 SATA-3 TLC Solid State Drive</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	128 GB
	<b>NAND Type</b>	TLC
	<b>Height</b>	0.09 in (2.3 mm)
	<b>Width</b>	0.87 in (22 mm)
	<b>Interface</b>	ATA-8, SATA 3.0



### Technical Specifications

<b>Maximum Sequential Read</b>	Up To 500 MB/s
<b>Maximum Sequential Write</b>	Up To 500 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

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## Technical Specifications

### NETWORKING/COMMUNICATIONS

<b>Realtek RTL8822CE 802.11ac (2 x 2) Wi-Fi® and Bluetooth® 5<sup>1</sup></b>	<b>Wireless LAN Standards</b>	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
	<b>Interoperability</b>	Wi-Fi® certified
	<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>• 802.11b/g/n 2.402 – 2.482 GHz</li> <li>• 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</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 &amp; 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 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>• 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: +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> </ul>



## Technical Specifications

<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• 802.11 ac VHT80(5GHz): +11.5dBm minimum</li> <li>• 802.11 ac VHT160(5GHz): +11.5dBm minimum</li> <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>	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 with CNVi Interface
<b>Dimensions</b>	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
<b>Weight</b>	1. Type 2230: 2.8 g 2. Type 126: 1.3 g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<b>Operating</b> 14° to 158° F (-10° to 70° C) <b>Non-operating</b> -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating</b> 10% to 90% (non-condensing) <b>Non-operating</b> 5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating</b> 0 to 10,000 ft (3,048 m) <b>Non-operating</b> 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Amber – Radio OFF LED OFF – Radio ON

### HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 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)



## Technical Specifications

<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 + 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>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.
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

<b>Intel Wi-Fi 6<sup>5</sup> AX201 and Bluetooth<sup>®</sup> 5.0 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) non-vPro</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>	Wi-Fi modules
<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>•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>	<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> </ul>



## Technical Specifications

	<ul style="list-style-type: none"> <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 10mW</li> <li>• Radio disabled 8 mW</li> </ul>
<b>Power Management</b>	ACPI 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> <li>• 802.11ax, MCS11(HT40): -59dBm maximum</li> <li>• 802.11ax, MCS11(VHT160): -58.5dBm 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>	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
<b>Weight</b>	1. Type 2230: 2.8 g 2. Type 126: 1.3 g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<b>Operating</b> 14° to 158° F (-10° to 70° C) <b>Non-operating</b> -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating</b> 10% to 90% (non-condensing) <b>Non-operating</b> 5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating</b> 0 to 10,000 ft (3,048 m) <b>Non-operating</b> 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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>	4.0/4.1/4.2/5.0/5.1 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz

Not all configuration components are available in all regions/countries.  
c06457771 — DA16590 – EMEA and NA — Version 5 — April 22, 2021



## Technical Specifications

<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 + 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>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) <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. 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
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. 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.

#### POWER

<b>HP 65 W Smart AC adapter</b>	<b>Dimensions (H x W x D)</b>	90.0 x 51 x 28.5 mm
	<b>Weight</b>	230g +/- 10g Not including power cord. Power cord varies by country.
	<b>Input</b>	100 to 240 VAC
		<b>Input Efficiency</b> 87.74 % at 115 Vac and 88.4 % at 230 Vac
		<b>Input frequency range</b> 48 to 63 Hz
		<b>Input AC current</b> 1.7 A at 90 V
	<b>Output</b>	<b>Output power</b> 65 W
		<b>DC output</b> 19.5 V
		<b>Hold-up time</b> 5 msec at 115 V 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°C to 35°C)
		<b>Non-operating (storage) temperature</b> -4°F to 185°F (-20°C to 85°C)
		<b>Altitude</b> 0 to 16,400 ft (0 to 5000 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>HP 65 W EM Smart AC adapter</b>	<b>Dimensions</b>	102 x 55 x 30 mm
	<b>Weight</b>	250 g +/- 10 g Not including power cord. Power cord varies by country.
	<b>Input</b>	100 to 240 VAC
		<b>Input Efficiency</b> 87.74 % at 115 Vac and 88.4 % at 230Vac
		<b>Input frequency range</b> 48 ~ 63 Hz
		<b>Input AC current</b> Max. 1.7 A at 90 Vac
	<b>Output</b>	<b>Output power</b> 65 W



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Technical Specifications

	<b>DC output</b>	19.5 V
	<b>Hold-up time</b>	5 ms at 115 VAC input
	<b>Output current limit</b>	<11.0 A
<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.	

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<b>HP 3-cell Long Life Li-Ion (41 WHr)</b>	<b>Dimensions</b>	6.0 x 186.35 x 90.2 mm (0.236 x 7.33 x 3.55 inch)
	<b>Weight</b>	0.19 kg (0.418 lb)
	<b>Cells/Type</b>	3cell Lithium-Ion Polymer cell / 515974 Prismatic cell 496080
	<b>Voltage</b>	11.55 V / 11.4 V / 11.34 V
	<b>Amp-hour capacity</b>	3.63 Ah / 3.6 Ah / 3.62 Ah
	<b>Watt-hour capacity</b>	41 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>Warranty</b>	1-year
	<b>Optional Travel Battery Available</b>	No

1. Recharges the battery up to 50% within 30 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 50% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.

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## Technical Specifications

### Country of Origin

China

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

Type	Description	Part Number
<b>Cases</b>	HP Essential Messenger Case (up to 17.3")	H1D25AA
	HP Business Backpack (up to 17.3")	2SC67AA
	HP Business Slim Top Load (up to 17.3")	2UW02AA
<b>Input/Output</b>	HP USB Essential Keyboard and Mouse	H6L29AA
	HP Ultra Mobile Wireless Mouse	H6F25AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Travel Mouse	G1K28AA
<b>Memory</b>	HP 4GB DDR4 3200 Memory	286H5AA
	HP 8GB DDR4 3200 Memory	286H8AA
	HP 16GB DDR4 3200 Memory	286J1AA
<b>Power</b>	HP 65W Smart Power Adapter	H6Y89AA
	HP 65W Slim AC Adapter	H6Y82AA
<b>Security</b>	HP Keyed Cable Lock 10mm	T1A62AA
	HP Sure Key Cable Lock	6UW42AA



### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
December 4, 2019	V1 to V2	Added	Battery Life
December 13, 2019	V2 to V3	Added	Environmental Section
April 20, 2020	V3 to V4	Updated	Firmware TPM footnote
April 22, 2021	V4 to V5	Updated	Memory modules
	V5 to V6		

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