

### Overview

### HP EliteBook 635 Aero G11 Notebook PC



#### Front

- 1. Internal Microphone (2)
- 2. Webcam LED
- 3. Webcam
- 4. Camera Shutter
- 5. Touchpad

### Overview



#### Sides

1. Super Speed USB Type-A® 5Gbps signaling rate port
2. Headphone/mic combo jack
3. Super Speed + USB Type-C® 10Gbps signaling rate port  
USB Power Delivery DisplayPort™ 1.4
4. Super Speed+ USB Type-C® 10Gbps signaling rate port  
USB Power Delivery DisplayPort™ 1.4
5. HDMI 2.1
6. Super Speed+ USB Type-A® 10Gbps signaling rate

### Technical Specifications

#### PRODUCT NAME

HP EliteBook 635 Aero G11 Notebook PC

#### OPERATING SYSTEMS

##### Preinstalled

- Windows 11 Home - HP recommends Windows 11 Pro for business
- Windows 11 Home Single Language - HP recommends Windows 11 Pro for business
- Windows 11 Pro <sup>1</sup>
- Windows 11 Pro Education
- Windows 11 Pro (Windows 11 Enterprise or 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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

#### PROCESSORS

Processor <sup>2,3,4,5,6</sup>	Cores	Threads	L3 Cache	Max Boost Frequency	Base Frequency
AMD Ryzen™ 7-8840U	8 cores	16	16 MB	5.10 GHz	3.30 GHz
AMD Ryzen™ 7-8840HS	8 cores	16	16 MB	5.10 GHz	3.30 GHz
AMD Ryzen™ 5-8640U	6 cores	12	16 MB	4.90 GHz	3.50 GHz

##### Processor Family

- AMD Ryzen™ 7 processor
- AMD Ryzen™ 5 processor

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. AMD's numbering is not a measurement of clock speed.
3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
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>.
6. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Performance varies by use, configuration, and other factors.

### Technical Specifications

#### GRAPHICS

**Integrated**

AMD Radeon™ Graphics

#### DISPLAY

**Non-Touch**

33.8 cm (13.3") diagonal, WQXGA (2560 x 1600), Bent, LCD, UWVA, anti-glare, 400 nits

33.8 cm (13.3") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, 400 nits, low power, sRGB 100%<sup>7,8</sup>

**Display Size (Diagonal)**

33.8 cm (13.3")

**Screen to Body Ratio**

90.16%

**Aspect Ratio**

16.10

**Max Hinge Open Angle**

135°

7. HD content required to view HD images.

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

#### DOCKING (SOLD SEPARATELY)

<b>Docking station model #1</b>	HP Thunderbolt™ 120W G4 Dock
<b>Docking station model #2</b>	HP USB-C Dock G5
<b>Docking station model #3</b>	HP USB-C G5 Essential Dock
<b>Docking station model #4</b>	HP USB-C/A Universal Dock G2

For additional aftermarket options and docking specs please see page 32.

#### STORAGE AND DRIVES<sup>9</sup>

**Primary Storage**

512GB PCIe® Gen4x4 NVMe™ SSD Value

1TB PCIe® Gen4x4 NVMe™ SSD Value

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

#### MEMORY<sup>10</sup>

**Maximum Memory**

32GB LPDDR5-6400 (64Gb FBGA315 x 4pcs) Memory

### Technical Specifications

#### Memory

16GB LPDDR5-6400 (32Gb FBGA315 x 4pcs) Memory

10. 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

Mediatek RZ616 Wi-Fi 6E<sup>11</sup> +Bluetooth® 5.3 Wireless Card M.2 2230 AIM-T 160MHz PCI-e+USB WW WLAN

Realtek 8852BE M.2 2230 Wi-Fi 6\* +Bluetooth® 5.3 Wireless Card WW WLAN

11. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

**NOTE\***: Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs

### AUDIO/MULTIMEDIA

#### Audio

2 Integrated stereo speakers  
Integrated dual array microphone

#### Speaker Power

2W/4ohm Per speaker

#### Camera

5MP+Infrared camera

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

#### Keyboard

HP Standard Notebook Keyboard spill-resistant, Backlit

#### Pointing Device

Clickpad with Image Sensor

#### Function Keys

F1 - Emoji Keyboard  
F2 - Brightness Down  
F3 - Brightness Up  
F4 - Backlight Toggle (for backlit keyboard) or Blank  
F5 - Speaker Mute  
F6 - Volume Down  
F7 - Volume Up  
F8 - Mic Mute  
F9 - Play/Pause  
F10 - Home  
F11 - End  
F12 - myHP

### Technical Specifications

#### SOFTWARE AND SECURITY

##### Software

Adobe Offer<sup>12</sup>  
Bing Search for IE11  
Buy Office (sold separately)  
HP Connection Optimizer  
HP PC Hardware Diagnostics UEFI  
HP PC Hardware Diagnostics Windows  
HP Privacy Settings  
HP Smart Support<sup>13</sup>  
HP Support Assistant<sup>14</sup>  
myHP<sup>15</sup>  
HSA Fusion  
HSA Telemetry for Consumer  
Poly Lens

##### Manageability Features

HP Cloud Recovery<sup>16</sup>  
Secured-Core PC Enable<sup>17</sup>  
Windows Hello Enhanced Sign-In Security (ESS)

##### Security- TPM

1st Source  
Model: NA (fTPM)  
TCG TPM 2.0 - Microsoft Pluton fTPM 2.0  
Firmware Version: 6.3.1.615  
FIPS 140-2 Compliant: FIPS mode is off

##### BIOS

Absolute Persistence Module  
HP DriveLock  
HP Secure Erase<sup>18</sup>

##### IPv6 Support

Yes

##### FirstNet Certified

Does the BIOS implement the ISO/IEC 19678:2015 (formerly NIST 800-147) guidelines?: Yes  
UEFI version: 2.7  
Class: 3

12. Click on Adobe icon in the start menu to take advantage of a 30 day trial membership of select Adobe software. The software is tied to the device and is not transferrable. You may also choose to enter your payment details to auto-renew and continue to use the software beyond the 30 day trial. See Adobe for complete details.

13. HP Smart Support requires the HP agent to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>. HP Services Scan is provided thru Windows Update and will check entitlement on each hardware device to determine if an HP agent-enabled service has been purchased, and will download applicable software automatically. The HP agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access is required. For full system requirements or to disable this feature, please visit <http://www.hpdaas.com/requirements>.

14. HP Support Assistant is available on Windows. For more information, please visit <http://www.support.hp.com/help/hp-support-assistant>.

### Technical Specifications

15. MyHP requires Windows 10 or higher OS.

16. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, network connection. **NOTE:** You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: <https://support.hp.com/us-en/computer>

17. Secured-Core PC Enable requires an Intel® vPro®, Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.

18. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special Publication 800-88r "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

### Technical Specifications

#### POWER

##### Power Supply

HP Standard 65W USB Type-C® adapter<sup>19</sup>

##### Battery

HP Long Life 3 cell, 43 Whr Polymer<sup>20,21</sup>

##### Battery Recharge Time

Supports battery HP Fast Charge: approximately 50% in 30 minutes<sup>22</sup>

##### Power Cord

3-wired plug- 1.0m<sup>23</sup>

##### Battery life

Up to 11.5 hours with 43 Whr battery

19. Availability may vary by country.

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

21. MM25 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See [www.bapco.com](http://www.bapco.com) for additional details.

22. Recharges your battery up to 50% within 30 minutes when the system is off or in standby mode.

- Power adapter minimum of 65 watts required for battery capacities 56Whr or less.
- Power adapter minimum of 100 watts required for battery capacities greater than 56Whr and less than 83Whr.
- Power adapter minimum of 120 watts required for battery capacities greater than 83Whr and less than 100Whr.

Upon initial startup, it is necessary to use a minimum 45 W adapter.

23. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.

#### WEIGHTS & DIMENSIONS

##### Product Weight

Starting weight from 0.99 kg (UMA).

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

297.3mm x 211.2mm x 8.4 (front) /15.16mm (rear)

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

16"-17" boxes (345mm height): 1200mm x 1000mm x 1200mm

12"-15" boxes (305mm height): 1200mm x 1000mm x 1080mm<sup>24,25</sup>

24. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details. For detailed packaging information, access the [HP Commercial Notebooks Packaging Guide](#).

25. Front height measurement is near the front edge where the chassis bottom cover taper begins. Back height measurement is near the back edge where the chassis bottom cover taper ends.

### Technical Specifications

#### PORTS/SLOTS

##### Left side

- 1 Super Speed USB Type-A® 5Gbps signaling rate port Power charging
- 1 Headphone/mic combo jack

##### Right side

- 1 Super Speed USB Type-A® 10Gbps signaling rate port Power charging
- 1 HDMI 2.1
- 1 Super Speed+ USB Type-C® 10Gbps signaling rate port USB Power Delivery DisplayPort™ 1.4
- 1 Super Speed+ USB Type-C® 10Gbps signaling rate port USB Power Delivery DisplayPort™ 1.4

### Technical Specifications

#### ENVIRONMENTAL DATA

<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>• US Federal Energy Management Program (FEMP)</li> <li>• EPEAT® Gold registered in the United States. See <a href="http://www.epeat.net">http://www.epeat.net</a> for registration status in your country.</li> <li>• TCO Certified</li> <li>• China Energy Conservation Program (CECP)</li> <li>• China State Environmental Protection Administration (SEPA)</li> <li>• Taiwan Green Mark</li> <li>• Korea Eco-label</li> <li>• Japan PC Green label*</li> </ul>																						
<b>Sustainable Impact Specifications</b>	<ul style="list-style-type: none"> <li>• <a href="#">Product Carbon Footprint</a></li> <li>• Ocean-bound plastic in Speaker</li> <li>• 25% post-consumer recycled plastic</li> <li>• 80% recycled metal</li> <li>• Low halogen</li> <li>• Outside Box and corrugated cushions are 100% sustainably sourced and recyclable</li> <li>• Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable.</li> <li>• Bulk packaging available</li> </ul>																						
<b>System Configuration</b>  <b>Energy Consumption (in accordance with US ENERGY STAR® test method)</b>	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.</p> <table border="1" data-bbox="483 1071 1524 1291"> <thead> <tr> <th></th> <th>115VAC, 60Hz</th> <th>230VAC, 50Hz</th> <th>100VAC, 50Hz</th> </tr> </thead> <tbody> <tr> <td>Normal Operation (Short idle)</td> <td>4.91 W</td> <td>5.01 W</td> <td>4.79 W</td> </tr> <tr> <td>Normal Operation (Long idle)</td> <td>2.93 W</td> <td>2.97 W</td> <td>3.11 W</td> </tr> <tr> <td>Sleep</td> <td>0.44 W</td> <td>0.52 W</td> <td>0.45 W</td> </tr> <tr> <td>Off</td> <td>0.30 W</td> <td>0.35 W</td> <td>0.30 W</td> </tr> </tbody> </table> <p><b>NOTE:</b> 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>				115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz	Normal Operation (Short idle)	4.91 W	5.01 W	4.79 W	Normal Operation (Long idle)	2.93 W	2.97 W	3.11 W	Sleep	0.44 W	0.52 W	0.45 W	Off	0.30 W	0.35 W	0.30 W
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	<p>* <b>NOTE:</b> Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>																						
<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	<b>Sound Power (L<sub>WA</sub>d, bels)</b>		<b>Sound Pressure (L<sub>pAm</sub>, decibels)</b>																				
Typically Configured – Idle	2.6		26																				
Fixed Disk – Random writes	2.8		28																				
Optical Drive – Sequential reads	N/A		N/A																				

### Technical Specifications

<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</p> <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
<b>Additional Information</b>	<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 (EPEAT) standard at the Gold level, see <a href="http://www.epeat.net">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 is 92.7% recycle-able when properly disposed of at end of life.</li> </ul>		
<b>Packaging Materials</b>	<b>External:</b>	PAPER/Corrugated	298 g
		PAPER/Paperboard	43 g
		PAPER/Paper	6 g
		PAPER/Molded Pulp	97 g
		WOOD/Wood	12 g
	The plastic packaging material contains at least 0.00% recycled content.		
	The corrugated paper packaging materials contains at least 57.0% recycled content.		
<b>RoHS Compliance</b>	<p>HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.</p> <p>We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.</p> <p>We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.</p> <p>To obtain a copy of the HP RoHS Compliance Statement, see <a href="#">HP RoHS position statement</a>.</p>		
<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="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c05998906">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c05998906</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>• Bis(2-Ethylhexyl) phthalate (DEHP)</li> <li>• Benzyl butyl phthalate (BBP)</li> </ul>		

### Technical Specifications

	<ul style="list-style-type: none"> <li>• Dibutyl phthalate (DBP)</li> <li>• Diisobutyl phthalate (DIBP)</li> <li>• Formaldehyde</li> <li>• Halogenated Diphenyl Methanes</li> <li>• Lead carbonates and sulfates</li> <li>• Lead and Lead compounds</li> <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 offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="https://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c05403198">https://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c05403198</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="#">HP Product Disassembly Instruction Website</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>Sustainable Impact Report  <a href="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843</a></p> <p>Eco-label certifications  <a href="https://www.hp.com/us-en/sustainable-impact/document-reports.html#filters_documents_reports==document_type-type_energy_star,type_epeat,type_tcoISO">https://www.hp.com/us-en/sustainable-impact/document-reports.html#filters_documents_reports==document_type-type_energy_star,type_epeat,type_tcoISO</a></p> <p>ISO 14001 certificates:  <a href="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932</a></p>

### Technical Specifications

<b>footnotes</b>	<ul style="list-style-type: none"><li>• Percentage of ocean-bound plastic contained in each component varies by product</li><li>• Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</li><li>• External power supplies, WWAN modules, power cords, cables and peripherals excluded.</li><li>• 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.</li><li>• Fiber cushions made from 100% recycled wood fiber and organic materials.</li><li>• Disclaimer: recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.</li></ul>
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### Technical Specifications

#### SERVICE AND SUPPORT

1-year warranty 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.

### System Unit

#### SYSTEM UNIT

<b>Stand-Alone Power Requirements (AC Power)</b>	
Nominal Operating Voltage	19.5V
Max Operating Power	UMA 65W
<b>Temperature</b>	
Operating	Operating: 0° to 35° C ( 32° to 95° F)No sustained direct exposure to sunlight, System performance may be reduced above 32°C (89.6°F)
Non-operating	Non-operating: -20° to 60° C ( -4° to 140° F)No sustained direct exposure to sunlight, System performance may be reduced above 32°C (89.6°F)
<b>Relative Humidity</b>	
Operating	Operating: 10% to 90 % (non-condensing)
Non-operating	Non-operating: 5% to 95 %, 38.7° C (101.6° F) maximum wet bulb temperature
<b>Shock</b>	
Operating	Operating: 40 G, 2 ms, half-sine
Non-operating	Non-operating: 240 G, 2 ms, half-sine
<b>Random Vibration</b>	
Operating	Operating: 1.043 grms
Non-operating	Non-operating: 3.500 grms
<b>Altitude (unpressurized)</b>	
Operating	Operating: 3048 m (10000 ft)
Non-operating	Non-Operating: 12192 m (40000 ft)
<b>Planned Industry Standard Certifications</b>	
Regulatory Model Number	TPN-C179
UL 62368-1	Yes
ENERGY STAR®	Yes
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
China CCC/SRRC	Yes
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
TCO	Yes
EPEAT® Gold	Yes
WW RoHS	Yes
MIL-STD 810H Testing	Yes <sup>27</sup>
<p>27. MIL STD 810H testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.</p>	

### Displays

#### DISPLAYS

##### 13.3 in WQXGA (2560 x 1600) Anti-Glare UWVA sRGB NB2Y 400 eDP 1.4+PSR2 100 flat LCD Panel

<b>Outline Dimensions (W x H)</b>	291.38mm x 187.7mm (W/O PCB) (max) 291.38mm x 195.8mm (W/ PCB) (max)
<b>Active Area</b>	286.08mm x 178.8mm (typ)
<b>Weight</b>	210g (max)
<b>Diagonal Size</b>	13.3"
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	1000: 1 (typ)
<b>Refresh Rate</b>	60Hz (typ)
<b>Brightness</b>	400nits <sup>1</sup> (typ)
<b>Pixel Resolution - Format</b>	2560 x 1600 (WQXGA)
<b>Backlight</b>	WLED
<b>Pixel Resolution</b>	RGB
<b>Color Gamut Coverage</b>	sRGB 100%
<b>Color Depth</b>	8bits
<b>Viewing Angle</b>	UWVA 85/85/85/85
<b>Low Blue Light</b>	No
<b>Power Consumption (W, EBL@ 150nits max/ 200nits max))</b>	1.79 (max) / 2.18 (max)

##### 13.3 in WUXGA (1920 x 1200) Anti-Glare UWVA sRGB NB2Y 400 eDP 1.4+PSR2 100 flat LCD Panel

<b>Outline Dimensions (W x H)</b>	291.34mm x 187.68mm (W/O PCB) (max) 291.34mm x 195.80mm (W/ PCB) (max)
<b>Active Area</b>	286.0416mm x 178.776mm (typ)
<b>Weight</b>	210g (max)
<b>Diagonal Size</b>	13.3"
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	800: 1 (typ)
<b>Refresh Rate</b>	60Hz (typ)
<b>Brightness</b>	400nits <sup>1</sup> (typ)
<b>Pixel Resolution - Format</b>	1920 x 1200 (WUXGA)
<b>Backlight</b>	WLED
<b>Pixel Resolution</b>	RGB
<b>Color Gamut Coverage</b>	sRGB 100%
<b>Color Depth</b>	8bits
<b>Viewing Angle</b>	UWVA 85/85/85/85
<b>Low Blue Light</b>	No
<b>Power Consumption (W, EBL@ 150nits max/ 200nits max))</b>	1.67 (max) / 2.1 (max)

### Storage and Drives

#### STORAGE AND DRIVES

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

<b>SSD 512GB 2280 PCIe NVMe Value</b>	<b>Form Factor</b> <b>Capacity</b> <b>NAND Type</b> <b>Interface</b> <b>Maximum Sequential Read</b> <b>Maximum Sequential Write</b> <b>Logical Blocks</b> <b>Features</b>	M.2 2280 512 GB Value PCIe NVMe Gen4X4 4400 MB/s $\pm$ 20% 4400 MB/s $\pm$ 20% 1,000, 215, 216 Pyrite 2.0; TRIM; L1.2
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<b>SSD 1TB 2280 PCIe NVMe Value</b>	<b>Form Factor</b> <b>Capacity</b> <b>NAND Type</b> <b>Interface</b> <b>Maximum Sequential Read</b> <b>Maximum Sequential Write</b> <b>Logical Blocks</b> <b>Features</b>	M.2 2280 1TB Value PCIe NVMe Gen4X4 4500 MB/s $\pm$ 20% 4500 MB/s $\pm$ 20% 2,000, 409, 264 Pyrite 2.0; TRIM; L1.2
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### Power

### NETWORKING/COMMUNICATIONS

<b>MediaTek RZ616 Wi-Fi 6E Bluetooth® 5.3 Wireless Ward (802.11ax 2x2, AMD AIM-T)<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 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11j IEEE 802.11k IEEE 802.11mc IEEE 802.11r IEEE 802.11v IEEE 802.11w
<b>Interoperability</b>	Wi-Fi certified
<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 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.925 – 7.125 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, (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> <li>• 802.11ax: MCS0 ~ MCS11, (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>2</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and WiFi certified 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 (personal) 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>3</sup></b>	2.4GHz (MIMO, typical): <ul style="list-style-type: none"> <li>• 802.11b: +18dBm</li> <li>• 802.11g: +16.5dBm</li> <li>• 802.11n/ac/ax (HT20/VHT20/HE20): +16dBm</li> <li>• 802.11n/ac/ax (HT40/VHT40/HE40): +12.5dBm</li> </ul>



### Technical Specifications

	<p>5GHz (MIMO, typical):</p> <ul style="list-style-type: none"> <li>• 802.11a: +13dBm</li> <li>• 802.11n/ac/ax (HT20/VHT20/HE20): +13.5dBm</li> <li>• 802.11n/ac/ax (HT40/VHT40/HE40): +12.5dBm</li> <li>• 802.11ac/ax (VHT80/HE80): +11.5dBm</li> <li>• 802.11ax HE160: +11.5dBm</li> </ul> <p>6GHz LPI mode (MIMO, typical)::</p> <ul style="list-style-type: none"> <li>• 802.11a: 0dBm</li> <li>• 802.11ax HE20: +1dBm</li> <li>• 802.11ax HE40: +4dBm</li> <li>• 802.11ax HE80: +7dBm</li> <li>• 802.11ax HE160: +7.5dBm</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode: 2.5 W</li> <li>• Receive mode: 2 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>	<p>2.4GHz (SISO):</p> <ul style="list-style-type: none"> <li>• 802.11b, 11Mbps: -82dBm maximum</li> <li>• 802.11g, 54Mbps: -71dBm maximum</li> <li>• 802.11n, MCS7: -64dBm maximum</li> <li>• 802.11ac, MCS9: -52dBm maximum</li> <li>• 802.11ax, MCS11(HT40): -49dBm maximum</li> </ul> <p>5GHz (SISO):</p> <ul style="list-style-type: none"> <li>• 802.11a, 54Mbps: -71dBm maximum</li> <li>• 802.11n, MCS07: -64dBm maximum</li> <li>• 802.11ac, MCS9: -52dBm maximum</li> <li>• 802.11ax, MCS11(HE80/HE160): -46dBm maximum</li> </ul> <p>6GHz (SISO):</p> <ul style="list-style-type: none"> <li>• 802.11a, 54Mbps: -71dBm maximum</li> <li>• 802.11n, MCS7: -64dBm maximum</li> <li>• 802.11ac, MCS9: -52dBm maximum</li> <li>• 802.11ax, MCS11(HE160): -46dBm maximum</li> </ul>
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	1. Type 2230: 2.3 x 22.0 x 30.0 mm
<b>Weight</b>	1. Type 2230: 2.8g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology</b>	
<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps BLE: 1 Mbps data rate; throughput up to 0.2 Mbps Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth component shall operate as a Class 1.5 Bluetooth device with a maximum transmit power of + 14 dBm and 10 dBm for BR and EDR, respectively.

### Technical Specifications

<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</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.407 ETS 300 328 Low Voltage Directive CE Mark
<b>Bluetooth Profiles Supported</b>	Bluetooth® 4.1-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) BT5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range Windows BT profiles support BT5.3 Periodic Advertisement interval Encryption key size control enhancements

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
2. Check latest software/driver release for updates on supported security features.
3. 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.
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>Realtek RTL8852BE 802.11ax 2x2 Wi-Fi 6* Bluetooth® 5.3 Wireless Card (802.11ax 2x2, supporting gigabit data rate) <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 802.11ax 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 certified 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)</li> <li>5.15 – 5.25 GHz</li> <li>5.25 – 5.35 GHz</li> <li>5.47 – 5.725 GHz</li> <li>5.825 – 5.850 GHz</li> </ul>
<b>Data Rates</b>	<ul style="list-style-type: none"> <li>•802.11b: 1, 2, 5.5, 11 Mbps</li> <li>•802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>•802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>•802.11n: max 300Mbps</li> <li>•802.11ac: max 866.7Mbps</li> <li>• 802.11ax: max 1201Mbps</li> </ul>
<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
<b>Security<sup>2</sup></b>	<ul style="list-style-type: none"> <li>•IEEE and WiFi certified 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>3</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>• 802.11ax HE40(2.4GHz): +10dBm minimum</li> <li>• 802.11ax HE80(5GHz): +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode: 2.5 W</li> <li>• Receive mode: 2 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 • 802.11 ax, MCS11 (HE40): -57dBm maximum • 802.11 ax, MCS11 (HE80): -54dBm maximum
<b>Antenna type</b>	High efficiency antenna with spatial diversity. Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	1. Type 2230: 2.3 x 22.0 x 30.0 mm
<b>Weight</b>	1. Type 2230: 2.8g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>LED Activity</b>	LED Amber – Radio OFF; LED OFF – Radio ON
<b>HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology</b>	
<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1/5.3 Wireless Card Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps BLE: 1 Mbps data rate; throughput up to 0.2 Mbps Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx): 330 mW_x000D_ Peak (Rx): 230 mW_x000D_ Selective Suspend: 17 mW_x000D_
<b>Bluetooth Software Supported Link Topology</b>	Microsoft Windows Bluetooth Software
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249  ETSI 300 328, ETSI 301 893

### Technical Specifications

<b>Bluetooth Profiles Supported</b>	<ul style="list-style-type: none"> <li>Bluetooth® 4.1-ESR 5/6/7 Compliance</li> <li>LE Link Layer Ping</li> <li>LE Dual Mode</li> <li>LE Link Layer</li> <li>LE Low Duty Cycle Directed Advertising</li> <li>LE L2CAP Connection Oriented Channels</li> <li>Train Nudging &amp; Interlaced Scan</li> <li>BT4.2 ESR08 Compliance</li> <li>LE Secure Connection- Basic/Full</li> <li>LE Privacy 1.2 –Link Layer Privacy</li> <li>LE Privacy 1.2 –Extended Scanner Filter Policies</li> <li>LE Data Packet Length Extension</li> <li>FAX Profile (FAX)</li> <li>Basic Imaging Profile (BIP)2</li> <li>Headset Profile (HSP)</li> <li>Hands Free Profile (HFP)</li> <li>Advanced Audio Distribution Profile (A2DP)</li> <li>BT5.1</li> <li>ESR9/10 Compliance</li> <li>LE Advertisement Extensions</li> <li>Channel Selection Algo</li> <li>Limited High Duty Cycle Non-Connectable Advertising</li> <li>2Mbps LE</li> <li>LE Long Range</li> </ul>
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1. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.  
\*Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
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. 1. Check latest software/driver release for updates on supported security features.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11 b (CKK modulation) and a packet error rate of 10% for 802.11 a/g (OFDM modulation).

### Power

#### POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.

HP 3-cell Long Life Li-Ion (43Whr)		
<b>Weight</b>	0.17kg +/-10 g (0.374 lb)	
<b>Cells/Type</b>	3cell Lithium-Ion Polymer cell / 446872	
<b>Energy</b>	<b>Voltage</b>	11.55V
	<b>Amp-hour capacity</b>	3.75Ah
	<b>Watt-hour capacity</b>	43.3Wh
<b>Temperature</b>	<b>Operating (Charging)</b>	32° to 113 °F (0°C ~ 45°C)
	<b>Operating (Discharging)</b>	14° to 140 °F (-10°C ~ 60°C)
	<b>Optional Travel Battery Available</b>	No

AC Adapter 65 Watt nPFC Standard USB type C Straight 1.8m		
<b>Weight</b>	240g ± 10g	
<b>Input</b>	100~240VAC	
	<b>Input Efficiency</b>	81.50% min at 115 Vac/ 230 Vac @5.00V 86.70% min at 115 Vac/ 230 Vac @9.00V 88.00% min at 115 Vac/ 230 Vac @12.00V 89.00% min at 115 Vac/ 230 Vac @15.00V 89.00% min at 115 Vac/ 230 Vac @20.00V
	<b>Input frequency range</b>	47 ~ 63Hz
	<b>Input AC current</b>	Max. 1.6 A at 90 Vac
<b>Output</b>	<b>Output power</b>	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
	<b>DC output</b>	5V/9V/12V/15V/20V
	<b>Hold-up time</b>	100% load 5ms at 115 Vac input
	<b>Output current limit</b>	<8.0A
	<b>AC Inlet Type</b>	C6
	<b>DC Cable Connector</b>	USB Type-C
	<b>DC Cable Material</b>	PVC
<b>Connector</b>	C6	
<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%

### Technical Specifications

	<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 - IEC60950-1 and IEC62368-1: 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC	

### Audio

#### AUDIO

<b>Codec</b>	<b>Realtek ALC3315</b>
<b>Audio I/O Ports</b>	3.5mm Headset: CTIA only; Headphone-out
<b>Multi-streaming Capable</b>	Following MSFT Behavior
<b>Sampling</b>	DAC: Supports resolutions from 16-bit to 24-bit;48.0 kHz to 48.0 kHz ADC: Supports resolutions from 16-bit to 24-bit;44.1 kHz to 48.0 kHz
<b>Internal Speaker</b>	Yes

### Docking

#### DOCKING (SOLD SEPARATELY)

##### HP Thunderbolt™ 120W G4 Dock

**Total number of supported displays** 4

(including the notebook display)

##### Max. Resolutions supported

Quad 4K @60Hz.  
Dual 8K single cable@30 for Thunderbolt hosts or USB-C hosts DisplayPort 1.4 with Display Stream Compression in High-Resolution Mode.

##### Dock Connectors

2 x HDMI 2.0, 1 x USB-C Alt Mode, 1 x Thunderbolt 4, 2 x DisplayPort 1.4

##### Technical limitations

**Maximum resolution and display support is dependent on the maximum capability of the notebook.**

##### Thunderbolt Hosts:

Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host.

Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz.

Non-Thunderbolt hosts:

**The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is**

(1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port.

Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.

##### HP USB-C Dock G5

**Total number of supported displays** 3

(including the notebook display)

##### Max. Resolutions supported

Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port.  
High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port.

##### Dock Connectors

1x HDMI 2.0, 2x DisplayPort 1.4

##### Technical limitations

**Maximum resolution and display support is dependent on the maximum capability of the notebook.**

**Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.**

Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode.

The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.

### Technical Specifications

#### HP USB-C G5 Essential Dock

**Total number of supported displays**  
(including the notebook display)

3

**Max. Resolutions supported**

Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port.  
High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port.

**Dock Connectors**

1x HDMI 2.0, 2x DisplayPort 1.4

**Technical limitations**

**Maximum resolution and display support is dependent on the maximum capability of the notebook.**

**Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.**

Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode.  
The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.

#### HP USB-C/A Universal Dock G2

**Total number of supported displays**  
(including the notebook display)

3

**Max. Resolutions supported**

Multi-Function Mode: (3) 4K DCI @ 30Hz on any port.  
High-Resolution Mode: (3) 4K DCI @ 30Hz on any port.

**Dock Connectors**

1x HDMI 2.0, 2x DisplayPort 1.2

**Technical limitations**

**Maximum resolution and display support is dependent on the maximum capability of the notebook.**

The best resolution for dual or triple displays is 4K UHD@ 60Hz.  
For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the host.

### AMO

#### AFTER MARKET OPTIONS

<i>Category</i>	<i>Description</i>	<i>Part Number</i>
<b>Adapter</b>	HP HDMI to VGA Adapter	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to RJ45 Adapter G2	4Z527AA
<b>Cases</b>	HP Prelude 15.6 Backpack	1E7D6AA
	HP Prelude 15.6 Top Load	1E7D7AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 15.6 iron gray Laptop Backpack	6H2D8AA
<b>Commodity</b>	HP USB DVD-Writer External ODD	F2B56AA
<b>Docking</b>	HP Thunderbolt™ 120W G4 Dock	4J0A2AA
	HP Thunderbolt™ 280W G4 Dock w/Combo Cable	4J0G4AA
	HP USB-C™ 120W G5 Dock	5TW10AA
	HP USB-C™ G2 Travel Dock	7PJ38AA
	HP USB-C™ G5 Essential Dock	72C71AA
	HP USB-C™/A 120W G2 Universal Dock	5TW13AA
<b>Video</b>	HP USB-A 325 Webcam	53X27AA
	HP Streaming 965 Webcam	695J5AA
	HP 625 Webcam	6Y7L1AA

### Change Log

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
May 15, 2024	V1 to V2	Updated	Ports Section
May 16, 2024	V2 to V3	Update	Processor 8650U corrected to 8640U
June 10, 2024	V3 to V4	Added	System unit Section
June 11, 2024	V4 to V5	Added	Display Section
June 25, 2024	V5 to V6	Removed Updated	Display Section Software & Security Section
June 27, 2024	V6 to V7	Removed	After Market Options
July 9, 2024	V7 to V8	Added	Display Section
July 15, 2024	V8 to V9	Updated	Weight and Dimensions Section

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