

## Informacije o proizvodu (EN)

HP laptop 250 G10 i7-1335U/16/512GB (AD1W0ET)



Tehnoteka je online destinacija za upoređivanje cena i karakteristika bele tehnike, potrošačke elektronike i IT uređaja kod trgovinskih lanaca i internet prodavnica u Srbiji. Naša stranica vam omogućava da istražite najnovije informacije, detaljne karakteristike i konkurentne cene proizvoda.

Posetite nas i uživajte u ekskluzivnom iskustvu pametne kupovine klikom na link:

<https://tehnoteka.rs/p/hp-laptop-250-g10-i7-1335u16512gb-ad1w0et-akcija-cena/>

### Overview

#### HP 250 G10 Notebook PC



#### Left

1. Internal Dual Digital Microphone (2)
2. Webcam
3. Camera Shutter
4. Webcam LED
5. Clickpad
6. Audio Combo Jack
7. SuperSpeed USB Type-C® 5Gbps signaling rate<sup>1</sup> (Supports data transfer only and does not support charging or external monitors)
8. HDMI Port (Cable Sold Separately)
9. SuperSpeed USB Type-A 5Gbps signaling rate<sup>1</sup> port (USB 3.2 Gen 1)

### Overview



#### Right

1. Power Button
2. Power Connector
3. SuperSpeed USB Type-A 5Gbps signaling rate 1 port (USB 3.2 Gen 1)
4. Fingerprint Reader (Select Models)

### Overview

#### At a Glance

- Preinstalled with Windows 11 Pro, Windows Home or FreeDOS
- Choice of 13th generation Intel® Core™, Intel® Pentium®, or Intel® Celeron® processors
- Choice of 39.62 cm (15.6") diagonal HD and Ultra Wide Viewing Angle FHD 300 nit display
- NVIDIA® GeForce® MX550 (2 GB GDDR6 dedicated) (Optional)
- Optimize your video calls with an FHD camera(optional) and temporal noise reduction that adjusts the lighting to your environment.
- Fast dual channel DDR4 SODIMM memory up to 32 GB
- Enhanced security features including discrete TPM 2.0 for RPL, Firmware TPM for ADL-N and optional Fingerprint reader.
- Weight with basic configurations starting at 3.3 lb / 1.52 kg
- Support wireless options for connectivity on the go including gigabit-speed up to Wi-Fi® 6
- Supports fast charging (50% in 45 minutes) with no impact on battery recharge cycles
- Full size, optional backlit keyboard and spill resistant, clickpad with Precision Touchpad Supported certified
- Camera shutter door to ensure privacy
- Undergoes MIL-STD 810H tests<sup>1</sup>

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

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

## Technical Specifications

### PRODUCT NAME

HP 250 G10 Notebook PC

### OPERATING SYSTEMS

#### Preinstalled

Windows 11 Pro <sup>1</sup>  
 Windows 11 Pro Education<sup>1</sup>  
 Windows 11 Home – HP recommends Windows 11 Pro for business<sup>1</sup>  
 Windows 11 Home Single Language – HP recommends Windows 11 Pro for business<sup>1</sup>  
 Windows 11 Home Education – HP recommends Windows 11 Pro for business<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>1,2,3,4</sup>	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency		Base Frequency	
						P-cores	E-cores	P-cores	E-cores
Intel® Core™ i7-1360P	12	4	8	16	18 MB	5.0 GHz	3.7 GHz	2.2 GHz	1.6 GHz
Intel® Core™ i7-1355U	10	2	8	12	12 MB	5.0 GHz	3.7 GHz	1.7 GHz	1.2 GHz
Intel® Core™ i5-1340P	12	4	8	16	12 MB	4.6 GHz	3.4 GHz	1.9 GHz	1.4 GHz
Intel® Core™ i5-1335U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz
Intel® Core™ i5-1334U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz
Intel® Core™ i3-1315U	6	2	4	8	10 MB	4.5 GHz	3.3 GHz	1.2 GHz	0.9 GHz

Processor <sup>1,2,3,4</sup>	Cores	Threads	L3 Cache	Max Frequency				Base Frequency
				Max 1-core Turbo (GHz)	Max 2-core Turbo (GHz)	Max 4-core Turbo (GHz)	Max 8-core Turbo (GHz)	
Intel® Core™ Core i3-N305	8	8	6 MB	3.8GHz	3.7GHz	3.5GHz	3.0GHz	1.8GHz
Intel® Pentium® N200	4	4	6 MB	3.7GHz	3.6GHz	3.2GHz	N/A	1.0GHz
Intel® Celeron® N100	4	4	6 MB	3.4GHz	3.4GHz	2.9GHz	3.0GHz	0.8GHz

### Technical Specifications

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

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

5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See [www.intel.com/technology/turboboost](http://www.intel.com/technology/turboboost) for more information.

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

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## CHIPSET

Chipset is integrated with processor

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## GRAPHICS

### Integrated

Intel® Iris® X<sup>e</sup> Graphics<sup>7,8</sup>

Intel® UHD Graphics<sup>8</sup>

### Discrete

NVIDIA® GeForce® MX550 (2 GB DDR6 dedicated)<sup>9</sup>

### Supports

Support HD decode, DX12, HDMI 1.4b<sup>8</sup>

7. Intel® Iris® X<sup>e</sup> Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® X<sup>e</sup> Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

8. HD content required to view HD images.

9. Integrated graphics depends on processor. NVIDIA® Optimus™ technology requires an Intel processor, plus an NVIDIA® GeForce® discrete graphics configuration and is available on Windows 10 Pro OS. With NVIDIA® Optimus™ technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

### Technical Specifications

#### DISPLAY

##### Non-Touch

39.6 cm (15.6") diagonal FHD UWVA eDP + PSR anti-glare Low Blue Light, narrow bezel bent, 300 nits, 100% sRGB (1920 x 1080) <sup>8,10,11</sup>

39.6 cm (15.6") diagonal FHD UWVA edp anti-glare, narrow bezel bent, 250 nits, 45% NTSC (1920x1080) <sup>8,10,11</sup>

39.6 cm (15.6") diagonal FHD SVA edp anti-glare , narrow bezel bent, 250 nits, 45% NTSC (1920x1080) <sup>8,10,11</sup>

39.6 cm (15.6") diagonal HD SVA eDP anti-glare, narrow bezel bent, 250 nits, 45% NTSC (1366 x 768) <sup>8,10,11</sup>

##### HDMI

Port supports resolutions up to 1920 x 1200 external resolution @60 Hz

##### Display Size (Diagonal)

15.6"

39.6 cm (15.6")

8. HD content required to view HD images.

10. Sold separately or as an optional feature.

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

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#### STORAGE AND DRIVES

##### Primary M.2 Storage

1 TB PCIe® NVMe™ M.2 QLC Solid State Drive <sup>12</sup>

1 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC <sup>12,13</sup>

512 GB PCIe® NVMe™ M.2 QLC Solid State Drive <sup>12</sup>

256 GB PCIe® NVMe™ M.2 QLC Solid State Drive <sup>12</sup>

128 GB PCIe® NVMe™ M.2 TLC M.2 Solid State Drive <sup>12</sup>

12. 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.

13. Available only to HK (Hong Kong), TW(Taiwan) and CN (China).

### Technical Specifications

#### MEMORY

##### Maximum Memory

32 GB DDR4-3200 MT/s SDRAM <sup>14,15</sup>

##### Memory

32 GB DDR4-3200 MT/s SDRAM (2 X 16 GB) <sup>14,15</sup>

16 GB DDR4-3200 MT/s SDRAM (1 X 16 GB) <sup>14,15</sup>

16 GB DDR4-3200 MT/s SDRAM (2 X 8 GB) <sup>14,15</sup>

8 GB DDR4-3200 MT/s SDRAM (1 x 8 GB) <sup>14,15</sup>

8 GB DDR4-3200 MT/s SDRAM (2 x 4 GB) <sup>14,15</sup>

4 GB DDR4-3200 MT/s SDRAM <sup>14,15</sup>

##### Memory Slots

2 SODIMM (RPL-Core i 3/5/7) <sup>14,15</sup>

All slots are customer non-accessible / non-upgradeable

Support Dual Channel Memory

1 SODIMM (ADL-N i3/Pentium/Celeron) <sup>14,15</sup>

Support Single Channel Memory

14. All slots are non-accessible / non-upgradeable.

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

### Technical Specifications

#### NETWORKING/COMMUNICATIONS

##### WLAN

Realtek 8852BE-VS (1X1) Wi-Fi® 6 Bluetooth® 5.3 WLAN Wireless Card <sup>16</sup>

Realtek 8852BE (2X2) Wi-Fi® 6 Bluetooth® 5.3 WW WLAN Wireless Card <sup>16</sup>

##### Miracast

Compatible with Miracast-certified devices (For Win11) <sup>17</sup>

16. 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.

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

#### AUDIO/MULTIMEDIA

##### Audio

2 Integrated stereo speakers

Integrated Microphone

##### Camera

720p HD camera with Temporal Noise Reduction <sup>8</sup>

1080p FHD camera with Temporal Noise Reduction <sup>8</sup>

8. HD content required to view HD images.

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

##### Keyboard

Full Size Textured island-style Keyboard and optional Backlit and spill resistant <sup>18</sup>

##### Pointing Device

Touchpad with multi-touch gesture support (PTP certified)

##### Function Keys

F1 - Open " How to get help in Windows 11" webpage

F2 - Brightness Down

F3 - Brightness Up

F4 - Display Switching

F5 - Blank

F6 - Mute

F7 - Volume Down

F8 -Volume Up

F9 - Previous

F10 - Play/Pause

F11 - Next

F12 - Airplane mode

## Technical Specifications

18. Backlit keyboard is an optional feature.

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### SOFTWARE AND SECURITY

#### Software

Express VPN

Microsoft Office (Microsoft office sold separately. Internet access required for activation)

WPS Office

Dropbox Promotion <sup>19</sup>

HP QuickDrop <sup>20</sup>

sMedio True DVD for HP

MyHP

Hp Support Assistant <sup>21</sup>

HP PC Hardware Diagnostics Windows

#### Manageability Features

HP SSRM (HP Support Sent Recovery Media) <sup>22</sup>

Windows Push Button Reset Recovery<sup>23</sup>

#### Security Management

McAfee® LiveSafe™ <sup>24</sup>

19. 100 GB of free Dropbox storage for 12 months from date of registration. For complete details and terms of use, including cancellation policies, visit the Dropbox website at <https://www.dropbox.com/help/space/hp-promotion>. Internet service required and not included.

20. HP Quick Drop requires Internet access and Windows 10 and higher PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.

21. HP Sure Admin requires Windows 10 or 11 Pro or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.

22. Sold separately or as an optional feature.

23. Must activate within 180 days of Windows activation.

24. 30-day McAfee® LiveSafe™ trial included. Internet access required and not included. Subscription required after expiration. See <http://www.McAfee.com> for more details.

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## Technical Specifications

### POWER

#### Power Supply

HP Smart 65 W External AC power adapter <sup>25</sup>

HP Smart 65 W EM External AC power adapter<sup>25</sup>

HP Smart 45 W External AC power adapter <sup>25</sup>

#### Battery

HP Long Life 3-cell, 41 Wh Li-ion Polymer <sup>26,27</sup>

#### Power Cord

1M (3.28 feet) length power cord

#### Battery Life

Up to 8 hours and 24 minutes with 41 whr battery(HP Long Life 3-Cell, 41 Whr Polymaer, UMA graphic, Intel U15, display set to 200 nits, 8G memory, 256 GB SSD)<sup>28</sup>

#### Battery Weight

1.85 lb

0.407kg

25. Availability may vary by country.

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

27. 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.

28. MM18 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.

### WEIGHTS & DIMENSIONS

#### Product Weight

Starting at 3.3 lb <sup>29</sup>

Starting at 1.52 kg<sup>29</sup>

#### Product Dimensions (W x D x H)

14.17 x 9.29 x 0.73 in

36 x 23.6 x 1.86 cm

#### Packaging Dimensions (W x D x H) <sup>30</sup>

12-15" boxes (305mm height): 1200mm x 1000mm x 1080mm

29. Weight will vary by configuration. Does not include power adapter.

30. 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](#).

### Technical Specifications

#### PORTS/SLOTS

2 SuperSpeed USB Type-A 5Gbps signaling rate

1 SuperSpeed USB Type-C® 5Gbps signaling rate(Supports data transfer only and does not support charging or external monitors)

1 HDMI v1.4b <sup>31</sup>

1 AC Power

1 Headphone/microphone combo jack

31. HDMI cable sold separately

#### SERVICE AND SUPPORT

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>32</sup>

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

## Technical Specifications

### SYSTEM UNIT

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

Nominal Operating Voltage	19V
Average Operating Power	5.69W

#### Integrated graphics

Discrete Graphics	Nvidia MX550 (Selected SKU)
Max Operating Power	ADL-N/RPL-U <45W RPL-P/RPL-U discrete <65W

#### Temperature

Operating	32° to 95° F (0° to 35° C)
Non-operating	41° to 95° F (5° to 35° C) (writing optical)

#### Relative Humidity

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

#### Shock

Operating	40 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine

#### Random Vibration

Operating	1.043 grams
Non-operating	3.5 grams

#### Altitude (unpressurized)

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

#### Planned Industry Standard Certifications

Regulatory Model Number	TPN-Q286
CSA/UL 62368-1	Yes
ENERGY STAR®	Certified <sup>33</sup>
EPEAT®	EPEAT® Gold in the United States <sup>34</sup>
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	Yes

Related commodity should comply with ISO 9241 Standards.

China CCC/SRRC	Yes
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	Yes
EAEU Compliance	Yes
Saudi Arabian Compliance	Yes
TCO	No
WW RoHS	Yes
Low Blue Light	Yes

33. Configurations of the HP 250 G10 Notebook PC that are ENERGY STAR® qualified are identified as HP 250 G10 Notebook PC ENERGY STAR on HP websites and on <http://www.energystar.gov>.

## Technical Specifications

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

### DISPLAYS

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

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

<b>15.6 in FHD (1920 x 1080) Anti-Glare UWVA Low Blue Light sRGB NWBZ 300 eDP 1.4+PSR2 100 flat LCD Panel</b>	<b>Outline Dimensions (W x H x D)</b>	350.960 x 215.840 max.
	<b>Active Area</b>	344.160 x 193.590 typ.
	<b>Weight</b>	310g max.
	<b>Diagonal Size</b>	15.6 inch
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	1000:1 typ
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	300 nits <sup>1</sup>
	<b>Pixel Resolution - Format</b>	1920 x 1080 (FHD)
	<b>Backlight</b>	WLED
	<b>Pixel Resolution</b>	RGB
	<b>Color Gamut Coverage</b>	sRGB 100%
	<b>Color Depth</b>	8
	<b>Viewing Angle</b>	UWVA 89 / 89 / 89 / 89
	<b>Low Blue Light</b>	Yes
	<b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b>	2.69 (max) / 3.4 (max)

<b>Panel LCD 15.6-in FHD (1920x1080) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim</b>	<b>Outline Dimensions (W x H)</b>	350.960 x 216.750 max
	<b>Active Area</b>	344.160 x 193.590 typ.
	<b>Weight</b>	360g max
	<b>Diagonal Size</b>	15.6 inch
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	300:1 (typ)
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	250 nits <sup>1</sup>
	<b>Pixel Resolution - Format</b>	1920 x 1080 (FHD)
	<b>Backlight</b>	WLED
	<b>Pixel Resolution</b>	RGB
	<b>Color Gamut Coverage</b>	NTSC 45%
	<b>Color Depth</b>	6
	<b>Viewing Angle</b>	SVA 45/45/15/30

## Technical Specifications

<b>Low Blue Light</b>	No
<b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b>	2.67 max / 3.33 max

<b>Panel LCD 15.6-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ slim</b>	<b>Outline Dimensions (W x H)</b>	350.960 x 216.750 max.
	<b>Active Area</b>	344.160 x 193.590 typ.
	<b>Weight</b>	370g max
	<b>Diagonal Size</b>	15.6 inch
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	600:1 typ
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	250nits <sup>1</sup>
	<b>Pixel Resolution - Format</b>	1920 x 1080 (FHD)
	<b>Backlight</b>	WLED
	<b>Pixel Resolution</b>	RGB
	<b>Color Gamut Coverage</b>	NTSC 45%
	<b>Color Depth</b>	6
	<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>	2.88 max / 3.54 max	

<b>Panel LCD 15.6-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ ultraslim</b>	<b>Outline Dimensions (W x H)</b>	351.030 x 216.750 max
	<b>Active Area</b>	344.230 x 193.540 typ
	<b>Weight</b>	370g max
	<b>Diagonal Size</b>	15.6 inch
	<b>Surface Treatment</b>	Anti-Glare
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	300:1 typ
	<b>Refresh Rate</b>	60Hz
	<b>Brightness</b>	250nits <sup>1</sup>
	<b>Pixel Resolution - Format</b>	1366 x 768 (HD)
	<b>Backlight</b>	WLED
	<b>Pixel Resolution</b>	RGB
	<b>Color Gamut Coverage</b>	NTSC 45%
	<b>Color Depth</b>	6
	<b>Viewing Angle</b>	SVA 45/45/15/30
	<b>Low Blue Light</b>	No

### Technical Specifications

<b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b>	2.49 max / 2.98 max
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## Technical Specifications

**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 128GB 2230 PCIe NVMe QLC (SSD 128GB 2230 PCIe NVMe QLC)</b>	<b>Form Factor</b>	M.2 2230
	<b>Capacity</b>	128GB
	<b>NAND Type</b>	QLC
	<b>Interface</b>	PCIe NVMe
	<b>Logical Blocks</b>	250,069,680
	<b>Features</b>	Pyrite
	<b>Maximum Sequential Read</b>	up to 1600MB/s $\pm$ 20%
	<b>Maximum Sequential Write</b>	up to 900MB/s $\pm$ 20%

<b>SSD 1TB 2280 PCIe NVMe QLC (1TB 2280 PCIe NVMe QLC 2nd Solid State Drive)</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	1TB
	<b>NAND Type</b>	QLC
	<b>Interface</b>	PCIe NVMe
	<b>Logical Blocks</b>	2,000,409,264
	<b>Features</b>	Pyrite
	<b>Maximum Sequential Read</b>	up to 2300MB/s $\pm$ 20%
	<b>Maximum Sequential Write</b>	up to 2000MB/s $\pm$ 20%

<b>SSD 256GB 2280 PCIe NVMe QLC (SSD 256GB 2280 PCIe NVMe QLC)</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256GB
	<b>NAND Type</b>	QLC
	<b>Interface</b>	PCIe NVMe
	<b>Logical Blocks</b>	500,118,192
	<b>Features</b>	Pyrite
	<b>Maximum Sequential Read</b>	up to 2300MB/s $\pm$ 20%
	<b>Maximum Sequential Write</b>	up to 1280MB/s $\pm$ 20%

<b>SSD 512GB 2280 PCIe NVMe QLC</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512GB
	<b>NAND Type</b>	QLC
	<b>Interface</b>	PCIe NVMe
	<b>Logical Blocks</b>	1,000,215,216
	<b>Features</b>	Pyrite
	<b>Maximum Sequential Read</b>	up to 2300MB/s $\pm$ 20%
	<b>Maximum Sequential Write</b>	up to 1400MB/s $\pm$ 20%

## Technical Specifications

<b>SSD 1 TB 2280 PCIe NVMe Value</b>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	1TB
	<b>NAND Type</b>	TLC
	<b>Interface</b>	PCIe NVMe Gen4X4
	<b>Maximum Sequential Read</b>	3200 MB/s ±20%
	<b>Maximum Sequential Write</b>	2700 MB/s ±20%
	<b>Logical Blocks</b>	2,000,409,264
	<b>Features</b>	Pyrite 2.0; TRIM; L1.2
	<b>Maximum Sequential Read</b>	up to 2300MB/s ±20%
	<b>Maximum Sequential Write</b>	up to 2000MB/s ±20%

1. Available only to HK (Hong Kong), TW (Taiwan) and CN (China).

## NETWORKING/COMMUNICATIONS

<b>Realtek RTL8852BE 802.11ax 2x2 Wi-Fi + 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>	•802.11b/g/n/ax 2.402 – 2.482 GHz •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
	<b>Data Rates</b>	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: max 300Mbps • 802.11ac : max 866.7Mbps • 802.11ax : max 1201Mbps
	<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	<b>Security<sup>2</sup></b>	• IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication

## Technical Specifications

	<ul style="list-style-type: none"> <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> <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 <ul style="list-style-type: none"> <li>• 802.11ax, MCS11(HE40): -57dBm maximum</li> <li>• 802.11ax, MCS11(HE80): -54dBm 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
<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 : 2.8g 2. Type 126: 1.3g

## Technical Specifications

<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 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1 Compliant/5.2 Compliant/5.3 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH)
	BLE : 0~39 (2 MHz/CH)
<b>Signaling Data Rate</b>	Legacy : 3 Mbps 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.

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. 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).

**Realtek RTL8852BE-VS 802.11ax 1x1 Wi-Fi 6+ Bluetooth® 5.3 Wireless Card (802.11ax 1x1)<sup>1</sup>**

<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

**Interoperability** Wi-Fi certified modules

## Technical Specifications

<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: max 150Mbps</li> <li>• 802.11ac : max 433Mbps</li> <li>• 802.11ax : max 600Mbps</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> <li>• EAP</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 : +17dBm minimum</li> <li>• 802.11g : +16dBm minimum</li> <li>• 802.11a : +17dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +14dBm minimum</li> <li>• 802.11n HT40(5GHz) : +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz) : +12dBm 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

## Technical Specifications

<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 •802.11ax, MCS11(HE40): -57dBm maximum •802.11ax, MCS11(HE80): -54dBm maximum
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure  Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	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 : 2.8g 2. Type 126: 1.3g
<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 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Technology Card**

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1 Compliant/5.2 Compliant/5.3 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.

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

### Technical Specifications

6 (802.11ax) is backwards compatible with prior 802.11 specs.

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).

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## Technical Specifications

## 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

<b>HP 65W Smart AC adapter</b>	<b>Dimensions (H x W x D)</b>	3.543 x 2.008 x 1.122 in (9.0 x 5.1 x 2.85 cm)	
	<b>Weight</b>	0.55 lb (250 g) max (Not including power cord. Power cord varies by country.)	
	<b>Input</b>	100-240Vac	
		<b>Input Efficiency</b>	88 % at 115 Vac and 89 % at 230Vac
		<b>Input frequency range</b>	47-63 Hz
		<b>Input AC current</b>	Max. 1.7 A at 90 Vac
	<b>Output</b>	<b>Output power</b>	65W
		<b>DC output</b>	19.5V
		<b>Hold-up time</b>	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		<b>Output current limit</b>	< 11.0A
	<b>Connector</b>	4.5mm Barrel Type	
	<b>Environmental Design</b>	<b>Operating temperature</b>	32°F to 95°F (0°to 35°C)
		<b>Non-operating (storage) temperature</b>	-4°F to 185°F (-20°to 85°C)
		<b>Altitude</b>	0 to 16,400 ft (0 to 5000m)
		<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 - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1 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 GEMS and RCM, BIS, BSMI, UAE, UKCA DoC		

<b>HP 45W Smart AC adapter</b>	<b>Dimensions (H x W x D)</b>	3.74 x 1.772 x 1.043 in (9.5x4.5x2.65cm)	
	<b>Weight</b>	0.44 lb (200 g) max (Not including power cord. Power cord varies by country.)	
	<b>Input</b>	100-240Vac	
		<b>Input Efficiency</b>	87.74 % at 115 Vac and 88.4 % at 230Vac
		<b>Input frequency range</b>	47-63 Hz
		<b>Input AC current</b>	Max. 1.4 A at 90 Vac
	<b>Output</b>	<b>Output power</b>	45W
		<b>DC output</b>	19.5V
		<b>Hold-up time</b>	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		<b>Output current limit</b>	< 8.0A

### Technical Specifications

<b>Connector</b>	4.5mm Barrel Type
<b>Environmental Design</b>	<p><b>Operating temperature</b> 32°F to 95°F (0°to 35°C)</p> <p><b>Non-operating (storage) temperature</b> -4°F to 185°F (-20°to 85°C)</p> <p><b>Altitude</b> 0 to 16,400 ft (0 to 5000m)</p> <p><b>Humidity</b> 20% to 95%</p> <p><b>Storage Humidity</b> 10% to 95%</p>
<b>EMI and Safety Certifications</b>	<p>CE Mark - full compliance with LVD and EMC directives</p> <p>Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1</p> <p>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 GEMS and RCM, BIS, BSMI, UAE, UKCA DoC</p>

<b>65W EM Adapter</b>	<b>Dimensions (H x W x D)</b>	4.016 x 2.165 x 1.181 in (10.2x5.5x3cm)
	<b>Weight</b>	0.58 lb (265 g) max (Not including power cord. Power cord varies by country.)
	<b>Input</b>	100-240Vac
	<b>Input Efficiency</b>	88 % at 115 Vac and 89 % at 230Vac
	<b>Input frequency range</b>	47-63 Hz
	<b>Input AC current</b>	Max. 1.7 A at 90 Vac
	<b>Output</b>	<p><b>Output power</b> 65W</p> <p><b>DC output</b> 19.5V</p> <p><b>Hold-up time</b> 100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input</p> <p><b>Output current limit</b> &lt; 11.0A</p>
	<b>Connector</b>	4.5mm Barrel Type
	<b>Environmental Design</b>	<p><b>Operating temperature</b> 32°F to 95°F (0°to 35°C)</p> <p><b>Non-operating (storage) temperature</b> -4°F to 185°F (-20°to 85°C)</p> <p><b>Altitude</b> 0 to 16,400 ft (0 to 5000m)</p> <p><b>Humidity</b> 20% to 95%</p> <p><b>Storage Humidity</b> 10% to 95%</p>
	<b>EMI and Safety Certifications</b>	<p>CE Mark - full compliance with LVD and EMC directives</p> <p>Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1</p> <p>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 GEMS and RCM, BIS, BSMI, UAE, UKCA DoC</p>

## Technical Specifications

<b>HP 3-cell Long Life Li-Ion (41 Wh)<sup>1</sup></b>	<b>Weight</b>	0.185 kg (0.407 lb)
	<b>Cells/Type</b>	3cell Lithium-Ion Polymer cell / 515974
	<b>Energy</b>	<b>Voltage</b> 11.25V
		<b>Amp-hour capacity</b> 3.648Ah
		<b>Watt-hour capacity<sup>1</sup></b> 41.04Wh
	<b>Temperature</b>	<b>Operating (Charging)</b> 32° to 113° F (0° to 45° C)
		<b>Operating (Discharging)</b> 14° to 122° F (-10° to 60° C)
		<b>Optional Travel Battery Available</b> No

## AUDIO

<b>HD Stereo Codec</b>	Realtek ALC3247
<b>Audio I/O Ports</b>	Audio Jack at Left. Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port
<b>Internal Speaker Amplifier</b>	2W class D amplifier from ALC3247
<b>Multi-streaming Capable</b>	multi-streaming enable
<b>Sampling</b>	streams to be sent to/from the front and rear jacks or integrated speaker.
<b>Wavetable Syntheses</b>	DAC: 24bit, 48KHz ADC: 16bit; 48kHz
<b>Analog Audio</b>	DAC: 24bit, 48KHz ADC: 16bit; 48kHz
<b># of Channels on Line-Out</b>	2
<b>Internal Speaker</b>	Yes

## FINGERPRINT READER

<b>Sensor vendor</b>	ELAN EFS80SW
<b>Sensor type</b>	Capacitive
<b>DPI resolution</b>	508 DPI
<b>Scan area</b>	80 x 80 pixels
<b>False Rejection Rate</b>	FRR=≤ 3%
<b>False Acceptance Rate</b>	< 1:100K
<b>Mobile Voltage Operation</b>	3.0V to 3.6V
<b>Operating Temperature</b>	-4°F ~ 176°F (-20°C ~ 80°C)
<b>Current Consumption</b>	50mA Peak
<b>Image</b>	
<b>Low Latency Wait For Finger</b>	300uA
<b>Capture Rate</b>	50 frame/ sec
<b>ESD Resistance</b>	IEC 61000-4-2 4B (+15KV)
<b>Detection Matrix</b>	508 DPI / 4 mm x 4mm

## 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<sup>a</sup> 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>• 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>• Ocean-bound plastic in speaker</li> <li>• 10% post-consumer recycled plastic</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>	<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>		
<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 (Sort idle)	7.068 W	7.332 W	7.092 W
Normal Operation (Long idle)	1.464 W	1.536 W	1.452 W
Sleep	1.464 W	1.536 W	1.452 W
Off	0.192 W	0.252 W	0.192 W
	<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>		
<b>Heat Dissipation*</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
Normal Operation (Short idle)	24.2 BTU/hr	25.1 BTU/hr	24.3 BTU/hr
Normal Operation (Long idle)	5.0 BTU/hr	5.3 BTU/hr	5.0 BTU/hr
Sleep	5.0 BTU/hr	5.3 BTU/hr	5.0 BTU/hr
Off	0.7 BTU/hr	0.9 BTU/hr	0.7 BTU/hr



### Technical Specifications

	<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>	Sound Power (L <sub>WAd</sub> , bels)	Sound Pressure (L <sub>pAm</sub> , decibels)	
Typically Configured – Idle	2.4	16.1	
Fixed Disk – Random writes	2.4	16.1	
Optical Drive – Sequential reads	N/A	N/A	
<b>Longevity and Upgrading</b>	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the		
	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
<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 96.8% recycle-able when properly disposed of at end of life.</li> </ul>		
<b>Packaging Materials</b>	<b>External:</b>	PAPER/Corrugated	245 g
		PAPER/Paperboard	50 g
		PAPER/Molded Pulp	56 g
	<b>Internal:</b>	PLASTIC/Polyethylene low density - LDPE	10 g
	The plastic packaging material contains at least 100.0% recycled content.		
	The corrugated paper packaging materials contains at least 35.6% 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>		

### Technical Specifications

	To obtain a copy of the HP RoHS Compliance Statement, see <a href="#">HP RoHS position statement</a> .
<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/supplychain/gen_specifications.html">http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html</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> <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="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>

### Technical Specifications

	<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>
<p><b>HP, Inc. Corporate Environmental Information</b></p>	<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></p> <p>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></p> <p>ISO 14001 certificates:  <a href="http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842">http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842</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>
<p><b>footnotes</b></p>	<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>• Plastic cushions are made from &gt;90% recycled plastic.</li> </ul>

### COUNTRY OF ORIGIN

China

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

Type	Description	Part Number
<b>Audio</b>	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
<b>Cases</b>	HP 115 15.6 Laptop Backpack	8DV45AA#ACJ
	HP 215 15.6 Laptop Backpack	35L98AA#ACJ
	HP 225 15.6 Laptop Backpack	2P7U6AA#ACJ
	HP 235 15.6 Laptop Backpack	35M00AA#ACJ
	HP 315 15.6 Laptop Backpack	35L97AA#ACJ
	HP Prelude G2 15.6 Backpack	1E7D6AA
	HP Prelude G2 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 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 18L 15.6 Iron Gray Laptop Backpack	6H2D9AA
HP Travel 25L 15.6 Iron Gray Laptop Backpack	6H2D8AA	
<b>Adapter</b>	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP HDMI to VGA Adapter	H4F02AA
<b>Keyboard/Combo</b>	HP 125 WD USB Keyboard	266C9AA
	HP 320K WD USB Keyboard	9SR37AA
	HP 155 Wired Mouse and Keyboard Combo	5B8C0AA#ACJ
	HP 225 Antimicrobial Wired Mouse and Keyboard Combo	286K3AA#AB2
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
<b>Mouse</b>	HP 125 USB-A Wired Mouse	265A9AA
	HP 128 USB Laser Wired Mouse	265D9AA
	HP 155 USB-A Wired Mouse	5B8B7AA#ACJ
	HP 320M USB-A Wired Mouse	9VA80AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA
	HP USB Premium Wireless Mouse	1JR31AA
	HP 435 Bluetooth 5.0 + Wireless 2.4GHz Multi-Device Wireless Mouse	3B4Q5AA

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

<b>Power</b>	HP 65W 4.5 mm Smart AC Power Adapter	H6Y89AA
<b>Commodity</b>	HP USB DVD-Writer EXT ODD	F2B56AA
<b>Video</b>	HP 325 FHD USB-A Webcam	53X27AA

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### Change Log

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
March 21, 2023	V1 to V2	Added	Environmental Data and update call out in Overview section
March 30, 2023	V2 to V3	Updated	Ports and Slots section
April 19, 2023	V3 to V4	Updated	At a Glance section
May 18, 2023	V4 to V5	Updated	Storage and Drives section
April 24, 2024	V5 to V6	Updated	Memory Section
April 15, 2024	V6 to V7	Added	Processor Section
August 9, 2024	V7 to V8	Updated	Weights & Dimensions Section
February 24, 2025	V8 to V9	Added	Storage and Drives Section

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