Overview

HP EliteBook 1050 G1

Left

1. Speakers
2. Power button

3. USB 3.0 Charging Port (left), USB 3.0 (right)
4. Security lock slot (Lock sold separately.)

Not all configuration components are available in all regions/countries
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Overview

Right

1. Ambient light sensor

2. IR sensors

3. IR camera (Optional)

4. Web cam (Optional)

5. Web cam (Optional)

6. Web cam LED

7. Power connector

8. (2) USB Type-C™ with Thunderbolt™ ports (Supporting DisplayPort 1.3, USB 3.1 Gen2, PCIe Gen 3 devices)

9. HDMI 2.0 (Cable not included.)

10. Audio-out/Audio-in combo jack

11. SD card reader

12. Fingerprint sensor (Optional)

13. Glass clickpad

Overview

AT A GLANCE

- Windows 10 Pro 64, Home 64 Plus, Pro 64 Plus, or FreeDOS
- Full performance industrial design, Aluminum chassis with HP's pike silver color and premium logo. Backlight keyboard in full aluminum deck, chemically strengthened glass touchpad, and collaboration keys. HP Spill Resistant Keyboard with Durakeys, touchpad buttons with Duracoat finish. Diamond cut edges for touchpad and finger print sensor
- Designed to pass 12 MIL-STD-810G testing [1]
- Powerful NVIDIA® discrete graphics: NVIDIA® GeForce® GTX 1050 (optional)
- Intel® Integrated graphics: Intel® HD Graphics 630 integrated on Core™ i7
- Choice of 8th generation Intel® Core™ i7 hexa-core with vPro™ or Intel® Core™ i5 quad-core with vPro™ technology
- Up to two SODIMMs, for system memory up to 32 GB DDR4-2667 MHz
- Supports multi-display, including up to three (3) displays without a docking solution, with hybrid graphics enabled
- Two (2) Thunderbolt™ 3 ports (supporting DP 1.3, USB 3.1, PCIe Gen 3 devices) on the new USB-CTM connector for high speed data/video/audio transfer support [2]
- Bang and Olufsen audio optimized for high fidelity audio with immersive surround sound with a discrete amp, deep, rich bass and crystal clear dialog without distortion at high volume
- Long life battery solution with a 4-cell (64 WHr) or 6-cell (96 WHr)
- Widescreen 39.6 cm (15.6")-inch diagonal LED-backlit display: FHD (1920x1080, 400 nit) with ultrawide viewing angle, anti-glare, and ambient light sensor; FHD (1920x1080, 650 nit) with ultrawide viewing angle, anti-glare, HP SureView; UHD (3840x2160, 400 nit) with ultrawide viewing angle, anti-glare, and ambient light sensor
- Optional HD webcam and IR camera
- Wireless connectivity options:
- Intel® Dual Band Wireless-AC 9560 802.11 AC/a/b/g/n (2x2) WiFi® and Bluetooth® 5.0 combo adaptor (vPro™) or,
- Intel® Dual Band Wireless-AC 9560 802.11 AC/a/b/g/n (2x2) WiFi® and Bluetooth® 5.0 combo adaptor (non-vPro™)
- Two (2) dedicated M.2 drive slots
- Security features including HP Client Security Manager, HP SureClick, HP WorkWise, HP SureView, and HP SureStart Gen 4
- Low halogen HP BIOS technology, including HP Sure Start to identify and recover from unknown BIOS attacks

1. MIL-STD-810G testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) 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.
2. Thunderbolt™3 ports supports DisplayPort 1.3, USB 3.1 Gen 2, and PCIe Gen 3 devices over the new USB-C port connector. The port is compatible with existing DisplayPort displays, devices, and cables. Install all the latest drivers for your Thunderbolt™ device before connecting the device to the Thunderbolt™ port. Thunderbolt™ cable and Thunderbolt™ device (sold separately) must be compatible with Windows®. To determine whether your device is Thunderbolt™ Certified for Windows, see https://thunderbolttechnology.net/products.

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

Features
PRODUCT NAME

HP EliteBook 1050 G1

OPERATING SYSTEM

Preinstalled	Windows 10 Pro 64[1]
	Windows 10 Pro 64 (National Academic only) [1,2]
	Windows 10 Home 64 [1]
	Windows 10 Home Single Language 64 [1]
	FreeDOS 2.0

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com/.

2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.

PROCESSORS

Intel® Core™ i5-8300H with Intel® UHD Graphics 630 Graphics (2.3 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4,5]

Intel® Core™ i5-8400H vPro™ processor with Intel® UHD Graphics 630 Graphics (2.5 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [2,3,4]

Intel® Core™ i7-8750H with Intel® UHD Graphics 630 Graphics (2.2 GHz base frequency, up to 4.1 GHz with Intel® Turbo Boost Technology, 9 MB L3 cache, 6 cores) [2,3,4]

Intel® Core™ i7-8850H vPro™ processor with Intel® UHD Graphics 630 Graphics (2.6 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 9 MB L3 cache, 6 cores) [2,3,4]

Processor Family
8th Generation Intel® Core™ i7 processor (i7-8850H and i7-8750H models) [4]
8th Generation Intel® Core™ i5 processor (i5-8400H and i5-8300H models) [4]

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

CHIPSET

Chipset is integrated with processor.

Not all configuration components are available in all regions/countries
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Features

GRAPHICS

Integrated
Intel® UHD Graphics 630 [6]

Discrete
NVIDIA® GeForce® GTX 1050 (4 GB DDR5 dedicated) [7]

6. HD content required to view HD images.
7. 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).

DISPLAY

39.6 cm (15.6") diagonal FHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB with Ambient light sensor (1920 x 1080) [6,8,9]

39.6 cm (15.6") diagonal FHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB for HD camera with Ambient light sensor (1920 x 1080) [6,8,9]

39.6 cm (15.6") diagonal FHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB for HD camera and IR camera with Ambient light sensor (1920 x 1080) [6,8,9]

39.6 cm (15.6") diagonal UHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB with Ambient light sensor (3840 x 2160) [6,8,9]

39.6 cm (15.6") diagonal UHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB for HD camera with Ambient light sensor (3840 x 2160) [6,8,9]

39.6 cm (15.6") diagonal UHD IPS eDP + PSR anti-glare LED-backlit, 400 cd/m², 100% sRGB for HD camera and IR camera with Ambient light sensor (3840 x 2160) [6,8,9]

39.6 cm (15.6") diagonal FHD IPS eDP + PSR anti-glare LED-backlit with privacy screen, 650 cd/m², 100% sRGB (1920 x 1080) [6,8,9]

39.6 cm (15.6") diagonal FHD IPS eDP + PSR anti-glare LED-backlit with privacy screen, 650 cd/m², 100% sRGB for HD camera and IR camera (1920 x 1080) [6,8,9]

6. HD content required to view HD images.
8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
9. Sold separately or as an optional feature.

Not all configuration components are available in all regions/countries
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Features

Docking station model	Total number of supported displays (incl. the notebook display)	Max.resolutions supported	Dock Connectors	Technical limitations
HP UltraSlim Docking Station	3	Dual 2.5K @ 60Hz	2xDP, 1xVGA	Dual 2.5k only with both displays into DP
HP Elite 120W TB3 Dock	3	Dual 4K @ 60Hz	2xDP, 1xVGA, 1xTB,	Dual 4k only with one display in to DP and + TB port or USB-C alt mode + TB port
HP Elite USB-C Dock G4	3	Dual 2K @ 60Hz	1xUSB-C alt-mode	
HP USB-C Universal Dock	3	Single 4K @ 60Hz (3840 x 1440)	1xHDMI, 2xDP	
HP USB-C Travel Dock	2	Dual 4K @ 60Hz	2xDP	Single external display Only HDMI or VGA at the time
HP USB-C Mini Dock	2	Single 5K @ 60Hz	1xHDMI, 1xVGA	Single external display Only HDMI or VGA at the time

STORAGE AND DRIVES

Primary M.2 Storage
SATA
512 GB M.2 SATA FIPS 140-2 SSD TLC [10]
256 GB SATA SED (Opal 2) TLC [10]

PCIe
256 GB PCIe® NVMe™ M.2 SSD TLC [10]
512 GB PCIe® NVMe™ M.2 SSD TLC [10]
1 TB PCIe® NVMe™ M.2 SSD TLC [10]
2 TB PCIe® NVMe™ M.2 SSD TLC [10]
256 GB PCIe® NVMe™ M.2 SED SSD TLC Opal 2 [10]
512 GB PCIe® NVMe™ M.2 SED SSD TLC Opal 2 [10]

Secondary Storage
SATA
512 GB M.2 SATA FIPS 140-2 SSD TLC [10]
256 GB SATA SED (Opal 2) TLC [10]

PCIe
256 GB PCIe® NVMe™ M.2 SSD TLC [10]
512 GB PCIe® NVMe™ M.2 SSD TLC [10]
1 TB PCIe® NVMe™ M.2 SSD TLC [10]
2 TB PCIe® NVMe™ M.2 SSD TLC [10]
256 GB PCIe® NVMe™ M.2 SED SSD TLC Opal 2 [10]
512 GB PCIe® NVMe™ M.2 SED SSD TLC Opal 2 [10]

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

Not all configuration components are available in all regions/countries
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Features

MEMORY

Maximum Memory
32 GB DDR4-2666 SDRAM [11]

Memory
8 GB DDR4-2666 SDRAM (1 x 8 GB) [11]
8 GB DDR4-2666 SDRAM (2 x 4 GB) [11]
16 GB DDR4-2666 SDRAM (2 X 8 GB) [11]
16 GB DDR4-2666 SDRAM (1 X 16 GB) [11]
32 GB DDR4-2666 SDRAM (2 X 16 GB) [11]

Memory Slots
2 SODIMM
Both slots are upgradeable
System runs at 2666
Supports Dual Channel Memory

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

NETWORKING/COMMUNICATIONS

WLAN
Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, vPro™ [12]
Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 Combo, non-vPro™ [12]

NFC
HP Module with NXP NFC Controller NPC300 I2C NCI

Miracast
Support for Miracast [13]

12. WLAN is an optional or ad-on feature and requires internet service and sold separately. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.
13. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

Not all configuration components are available in all regions/countries
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Features

AUDIO/MULTIMEDIA

Audio
HP Bang & Olufsen Audio
HP Noise Cancellation Software
HP Clear Sound Amp
Camera Privacy Shutter
Skype for Business Certification
Intel SST Audio
Microphone (Dual Array)
Microphone (World Facing)

Camera
720p HD camera [6]
HD IR webcam [6,14]

6. HD content required to view HD images.
14. Internet access required.

Not all configuration components are available in all regions/countries
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Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
DuraKeys
Optional backlit

Pointing Device
Glass ClickPad with chemically etched surface, gesture support, two-way scroll, two-finger zoom (pinch)

Function Keys
F1 - Display switching
F2 - Sure View (if supported otherwise blank)
F3 - Brightness <down>
F4 - Brightness <up>
F5 - Audio mute (with an LED)
F6 - Volume <down>
F7 - Volume <up>
F8 - Mic mute (with an LED)
F9 - Backlit (if supported otherwise blank)
F10 - NumLock (with an LED)
F11 - Wireless (with an LED)
F12 - Calendar
Share screen (with an LED)
Pick Up/Accept/ Answer/Hold (with an LED)
Hang Up/Decline/ Reject (with an LED)

Not all configuration components are available in all regions/countries
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Features

SOFTWARE AND SECURITY

Preinstalled Software

BIOS

HP BIOSphere Gen4 [14]

HP DriveLock & Automatic DriveLock

BIOS Update via Network

Master Boot Record Security

Power On Authentication

Secure Erase [15]

Absolute Persistence Module [16]

Pre-boot Authentication

HP Wireless Wakeup

Software

HP Native Miracast Support [12]

HP Velocity

HP ePrint Driver + JetAdvantage [17]

HP Hotkey Support - CMIT

HP Recovery Manager

HP Jumpstart

HP Support Assistant [18]

HP Noise Cancellation Software

HP WorkWise [31]

HP PhoneWise [25]

Buy Office (Sold separately)

Manageability Features

HP Driver Packs [19]

HP System Software Manager (SSM)

HP BIOS Config Utility (BCU)

HP Client Catalog

HP Manageability Integration Kit Gen2 [20]

Ivanti Management Suite [21]

Client Security Software

HP Client Security Suite Gen4 [22] including:

HP Security Manager [23] (including Credential Manager, HP Password Manager, HP Spare Key)

HP Fingerprint Sensor [27]

HP Device Access Manager

HP Power On Authentication

Microsoft Defender [24]

Features

Security Management

Secure Erase [18]

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)

SATA 0,1 port disablement (viaBIOS)

RAID configurations [28]

Serial, USB enable/disable (viaBIOS)

Power-on password (viaBIOS)

Setup password (viaBIOS)

Support for chassis padlocks and cable lock devices

Integrated hood sensor

HP Sure Click [32]

HP Sure Start Gen4 [26]

HP Sure Run [29]

HP Sure Recover [30]

Security
TPM
Model:

Version:

Revision:

FIPS 140-2 Compliant:

IPv6 Certification:

No

MD5 Hash: Please follow the instructions below to access MD5 Hash.

UEFI version:

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

14. HP BIOSphere Gen4 requires Intel® or AMD 8th Gen processors. Features may vary depending on the platform and configurations.

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

16. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/company/legal/agreements/ computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

Features

17. HP ePrint Driver requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see www.hp.com/go/eprintcenter). Print times and connection speeds may vary.

18. HP Support Assistant requires Windows and Internet access.

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

20. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html

21. Ivanti Management Suite subscription required.

22. HP Client Security Suite Gen 4 requires Windows and Intel® or AMD 8th generation processors.

23. HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.

24. Microsoft Defender requires Windows 10. Opt in and internet connection required for updates.

25. HP PhoneWise Client may not be available with HP Workwise. For supported platforms and HP PhoneWise system requirements see www.hp.com/go/HPPhoneWise.

26. HP Sure Start Gen4 is available on HP EliteBook products equipped with Intel® 8th generation processors.

27. HP Fingerprint Sensor sold separately or as an optional feature.

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

29. HP Sure Run is available on HP Elite products equipped with 8th generation Intel® or AMD® processors.

30. HP Sure Recover is available on HP Elite PCs with 8th generation Intel® or AMD processors and requires an open, wired network connection. Not available on platforms with multiple internal storage drives, Intel® Optane™. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.

31. HP WorkWise smartphone app is available as a free download on the Google Play. As of September 2017, HP WorkWise will no longer support iOS or iPhone® devices

32. HP Sure Click is available on select HP platforms and supports Microsoft® Internet Explorer, Google Chrome, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode. Check http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-0922ENW for all compatible platforms as they become available.

Features

POWER

Power Supply
HP Smart 150 W Slim External AC power adapter

Primary Battery
HP Long Life 6-cell, 95.6 Wh Li-ion polymer [33]
HP Long Life 4-cell, 64 Wh Li-ion polymer [33]

Power Cord
1.0m 3-wire plug (with ground pin)

Battery Life
Up to 16 hours [39]

33. Supports HP Fast Charging.
39. Windows 10 MM14 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Weight
Starting at 4.54 lb [34]
Starting at 2.06 kg [34]

Dimensions (w x d x h)
14.17 x 9.65 x 0.74 in
36 x 25.4 x 1.89 cm

34. Weight will vary by configuration.

Not all configuration components are available in all regions/countries
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Features

PORTS/SLOTS

Ports

2 USB 3.1 Type-C™ with Thunderbolt™ support
1 USB 3.0 (charging)
1 USB 3.0
1 HDMI 2.0 (with Discrete graphics) [35]
1 HDMI 1.4 (with Integrated graphics) [35]
1 Headphone/microphone combo jack
1 AC power port

Expansion Slots

1 SD Media Reader Slot
Supports SD, SDHC, SDXC

35. Cables are not included.

SERVICE AND SUPPORT

HP Services offers 1 year and 90 day limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. 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. Service levels and response times for HP Care Packs may vary depending on your geographic location. 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 [36]

36. 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. 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.

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Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	**Nominal Operating Voltage**	19V
	Average Operating Power	Win 10
	Integrated graphics	
	Discrete Graphics	
	Max Operating Power	< 150W
Temperature	**Operating**	32° to 95° F (0° to 35° C) (not writing optical)
		-41° to 95° F (5° to 35° C) (writing optical)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	**Operating**	10% to 90%, non-condensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	**Operating**	Half sine wave shock: 40G, 2ms duration
	Non-operating	Half sine wave shock: 240G, 2ms duration
Random Vibration	**Operating**	Nominal 0.75 grms
	Non-operating	Nominal 1.50 grms
Altitude (unpressurized)	**Operating**	-50 to 10,000 ft (-15.24 to 3,048 m)
	Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	**UL**	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR 6.0®	Selected models[1]
	EPEAT	Gold[2]
	ICES	Planned
	Australia /	Yes
	NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Planned
	CIT	Planned
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Planned
	SABS	Planned
	UKRSERTCOMPUTER	Planned

1. Configurations of the HP EliteBook 1050 G1 that are ENERGY STAR® qualified are identified as HP EliteBook 1050 G1 ENERGY STAR on HP websites and on http://www.energystar.gov.
2. EPEAT® registered where applicable. EPEAT registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at www.hp.com/go/options.

Not all configuration components are available in all regions/countries
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Technical Specifications

DISPLAYS

Panel LCD 15.6 inch FHD (1920x1080) Anti-Glare WLED UWVA 72percent cg 400nits eDP 1.3 + PSR slim N.B.

Outline Dimensions (W x H x D)	350.96 x 216.75 (mm) max.
Active Area	344.16 x 193.59 (mm) typ.
Weight	370 g (max)
Diagonal Size	15.6 (inch)
Thickness	3.2 (mm) max.
Interface	eDP 1.3 + PSR (2 lane)
Surface Treatment	Anti-glare (AG)
Touch Enabled	N/A
Contrast Ratio	600:1 (typical)
Refresh Rate	60 Hz
Brightness	400 nit typical
Pixel Resolution	1920 X 1080 (FHD)
Format	RGB
Backlight	LED
Color Gamut Coverage	72% (sRGB)
Color Depth	6bit (Hi FRC supportive w/ condition to enable)
Viewing Angle	85/85/85/85 (Left/Right/Down/Up) (typical)

Technical Specifications

Panel LCD 15.6 inch FHD (1920x1080) Anti-Glare WLED UWVA 72percent cg 650nits eDP 1.4+PSR ultraslim NB Privacy

Outline Dimensions (W x H x D)	350.96 x 216.75 (mm) max.
Active Area	344.16 x 193.59 (mm) typ.
Weight	320 g (max)
Diagonal Size	15.6 (inch)
Thickness	2.6typ.2.8max (mm)
Interface	eDP 1.3 + PSR (2 lane)
Surface Treatment	Anti-glare (AG)
Touch Enabled	N/A
Contrast Ratio	Sharing mode: 600:1 (typ.) Privacy mode: 150:1 (typ.) 110:1(min.)
Refresh Rate	120 Hz
Brightness	650 nit typical
Pixel Resolution	1920 X 1080 (FHD)
Format	RGB
Backlight	LED
Color Gamut Coverage	Sharing mode: 72% (sRGB) Privacy mode: 60% (sRGB)
Color Depth	6bit + FRC
Viewing Angle	Sharing mode: 85/85/85/85 Privacy mode: 50/50/85/85

Technical Specifications

Panel LCD 15.6 inch UHD (3840x2160) Anti-Glare WLED UWVA 72percent cg 400nits eDP 1.3 + PSR ultraslim N.B.

Outline Dimensions (W x H x D)	350.96 x 216.75 (mm) max.
Active Area	344.2176 x 193.6224 (mm) typ.
Weight	320 g (max)
Diagonal Size	15.6 (inch)
Thickness	2.6 (mm) max.
Interface	eDP 1.3 + PSR (4 lane)
Surface Treatment	Anti-glare (AG)
Touch Enabled	N/A
Contrast Ratio	1200:1 (typical)
Refresh Rate	60 Hz
Brightness	400 nit typical
Pixel Resolution	3840 x 2160 (UHD)
Format	RGB
Backlight	LED
Color Gamut Coverage	72% (sRGB)
Color Depth	6bit (Hi FRC supportive w/ condition to enable)
Viewing Angle	85/85/85/85 (Left/Right/Down/Up) (typical)

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

Technical Specifications

STORAGE

SSD 1TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided

Form Factor	M.2 2280
Capacity	1TB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Weight	0.02 lb (<10 g)
Interface	PCIe NVMe Gen3X4
Maximum Sequential Read	2900 MB/s ～ 3000 MB/s
Maximum Sequential Write	Up to 2000 MB/s
Logical Blocks	2,000,409,264
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	ATA Security,TRIM; L1.2

SSD 256GB 2280 M2 PCIe-3x4 SS NVMe TLC

Form Factor	M.2 2280
Capacity	256 GB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Weight	0.02 lb (<10 g)
Interface	PCIe NVMe Gen3X4
Maximum Sequential Read	2580 MB/s ～ 2600 MB/s
Maximum Sequential Write	1000 MB/s ～ 1100 MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	ATA Security,TRIM; L1.2

SSD 256GB 2280 M2 SATA-3 Self Encrypted OPAL2 Three Layer Cell

Form Factor	M.2 2280
Capacity	256 GB
NAND Type	TLC
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Weight	0.02 lb (<10 g)
Interface	ATA-8, SATA 3.0
Maximum Sequential Read	530 MB/s ～ 560 MB/s
Maximum Sequential Write	500 MB/s ～ 530 MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

Technical Specifications

	Features	ATA Security; TCG Opal 2.0, DIPM; TRIM; DEVSLP
SSD 256GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	2580 MB/s～ 2600 MB/s
	Maximum Sequential Write	1000 MB/s～ 1100 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (Option); TCG Opal 2.0; TRIM; L1.2
SSD 2TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided	**Form Factor**	M.2 2280
	Capacity	2 TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up to 2900MB/s
	Maximum Sequential Write	Up to 2100 MB/s
	Logical Blocks	3,907,029,168
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security,TRIM; L1.2
SSD 512GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	2800 MB/s～ 2900 MB/s
	Maximum Sequential Write	1000 MB/s～ 1800 MB/s
	Logical Blocks	1,000,215,215

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Technical Specifications

	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security,TRIM; L1.2

SSD 512GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	2 TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up to 2900MB/s
	Maximum Sequential Write	Up to 2100 MB/s
	Logical Blocks	3,907,029,168
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security,TRIM; L1.2

SSD 512GB 2280 M2 SATA-3 Three Layer Cell Federal Information Processing Standard	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	ACS-3, SATA 3.2
	Maximum Sequential Read	Up to 530MB/s
	Maximum Sequential Write	Up to 400MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TCG Opal 2.0; FIPS; DIPM; TRIM; DEVSLP

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

Technical Specifications

POWER

AC Adapter 150 Watt Smart PFC Slim Barrel 4.5mm - Vesta	Dimensions	6.02 x 2.60 x .87 in ((153 x 66 x 22 mm)	
	Weight	0.71 lbs (320 g)	
	Input	100 to 240 VAC	
		Input Efficiency	88% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	2.9 A at 90 VAC, 1.45 A at 180 VAC
	Output	Output power	150W
		DC output	19.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<16A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 95° F (0° to 35° C)
		Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
		Altitude	32° to 104° F (0° to 40° C)
		Humidity	'-4° to 149° F (-20° to 65° C)
		Storage Humidity	0 to 10,000 ft (0 to 3,048 m)
	EMI and Safety Certifications	CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.	

Battery ZG 4 Cell WHr 64 Long Life -PL Fast Charge	Dimensions (H x W x L)	7.9 x 3.49 x 0.32 in (20.08 x 8.86 x 0.81cm)	
	Weight	0.619lb (281g)	
	Cells/Type	4-cell; Polymer	
	Energy	Voltage	15.4V
		Amp-hour capacity	4.155Ah
		Watt-hour capacity	64Wh
	Temprature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
	Fuel Gauge LED	No	
	Optional Travel Battery Available	No	

	Dimensions (H x W x L)	13.02 x 3.51 x 0.319 in (33.08 x 8.92 x0.81cm)

Technical Specifications

	Weight	1.12lb (420g)	
	Cells/Type	6-cell; Polymer	
	Energy	**Voltage**	11.55V
		Amp-hour capacity	8.31Ah
		Watt-hour capacity	95Wh
Battery ZG 6 Cell WHr 95 Long Life -PL Fast Charge	**Temprature**	**Operating (Charging)**	32° to 122°F (0° to 50° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
	Fuel Gauge LED	No	
	Warranty	3 year	
	Optional Travel Battery Available	No	

* 3-year platform warranty is required for a 3-year Long Life Battery warranty.

COUNTRY OF ORIGIN

China

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

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Summary of Changes

Date of change:	Version History:		Description of change:
	v1 to v2		