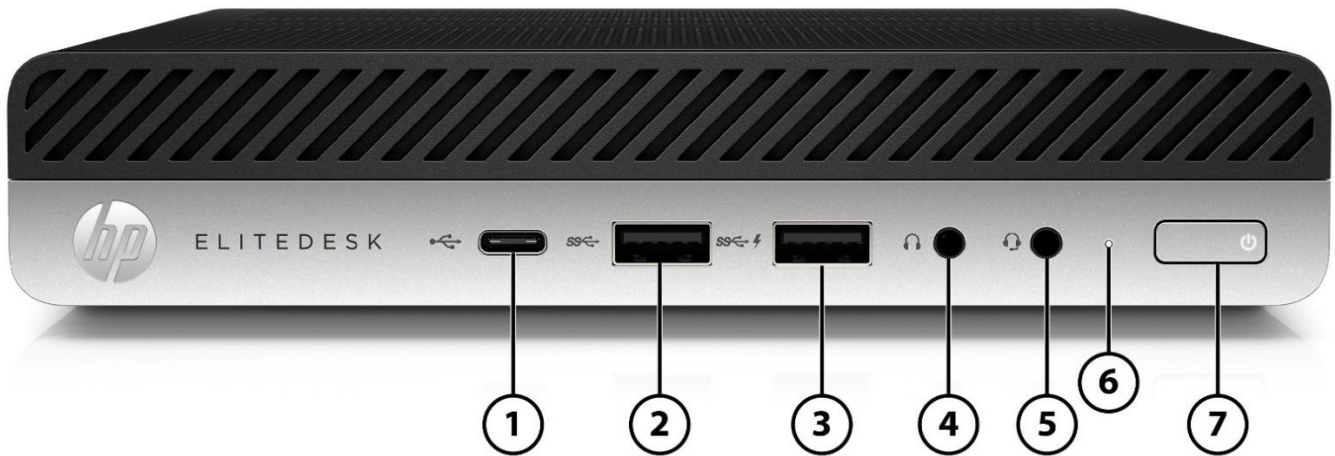


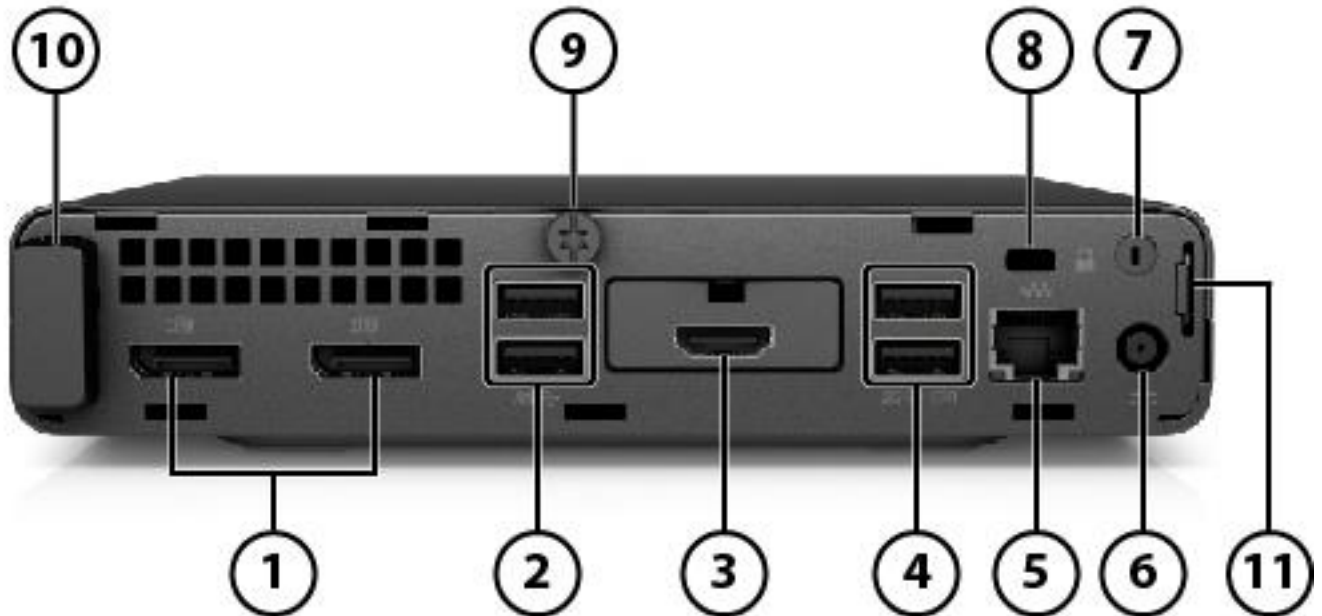
HP EliteDesk 800 G5 Desktop Mini Business PC



1. USB Type-C™ 3.1 Gen 2 port (charge support up to 5V/3A)
2. USB 3.1 Gen 2 Type A
3. USB 3.1 Gen 1 Type A (charging port)
4. Headphone Jack
5. Universal Audio Jack with CTIA headset support
6. Hard Drive activity light
7. Dual-state power button

Overview

HP EliteDesk 800 G5 Desktop Mini Business PC

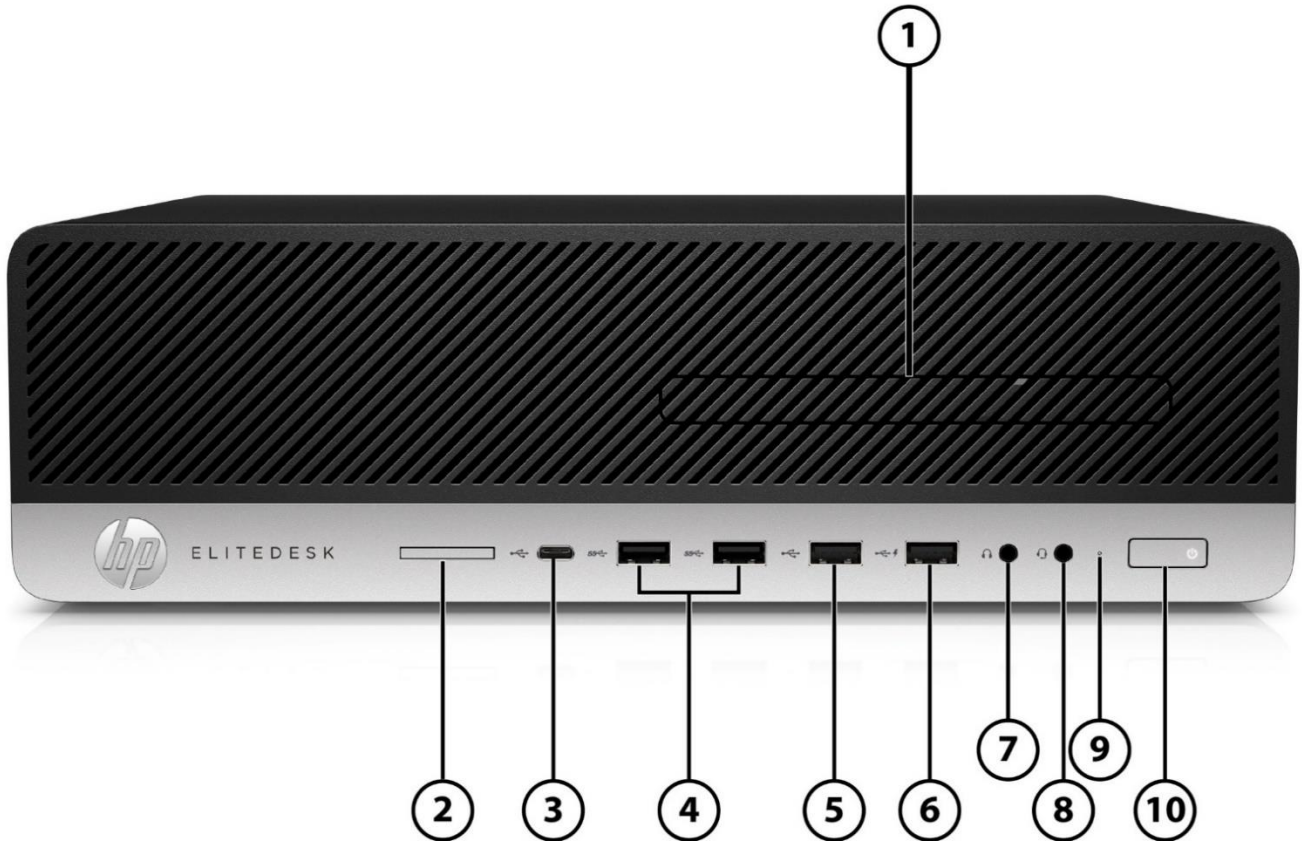


- | | |
|--|---|
| <ol style="list-style-type: none"> 1. DisplayPort™ 1.2 2. USB 3.1 Gen 2 Type A 3. Configurable Option card slot (Choice of DisplayPort™ 1.2, HDMI™ 2.0, VGA, USB Type-C™ with alt mode display, USB Type-C™ with Power Delivery, Discrete Graphics Option Card with DisplayPort™ 1.4, Thunderbolt 3.0, Serial Port, Fiber NIC) (not all options are available on 65W and 95W processors) 4. USB 3.1 Gen 1 Type A
allows for wake from S4/S5 with keyboard/mouse when connected and enabled in BIOS | <ol style="list-style-type: none"> 5. RJ-45 Network connector 6. Power connector 7. WLAN External Antenna Punchout 8. Standard lock slot (10mm) 9. Cover Release Thumbscrew 10. WLAN Internal Antenna 11. Padlock Loop |
|--|---|

Not Shown

- Slots**
- (1) Internal M.2 2230 connector for WLAN
 - (2) Internal M.2 SSD storage (2230 or 2280 connector)
- Bays**
- (1) 2.5- inch SATA drive Bay (not available on 95W processor)
- Mounting Support for**
- VESA Sleeve Standalone
 - Quick Release Bracket
 - B300/B500 Mounting bracket
 - Integrated Work Center

HP EliteDesk 800 G5 Small Form Factor Business PC

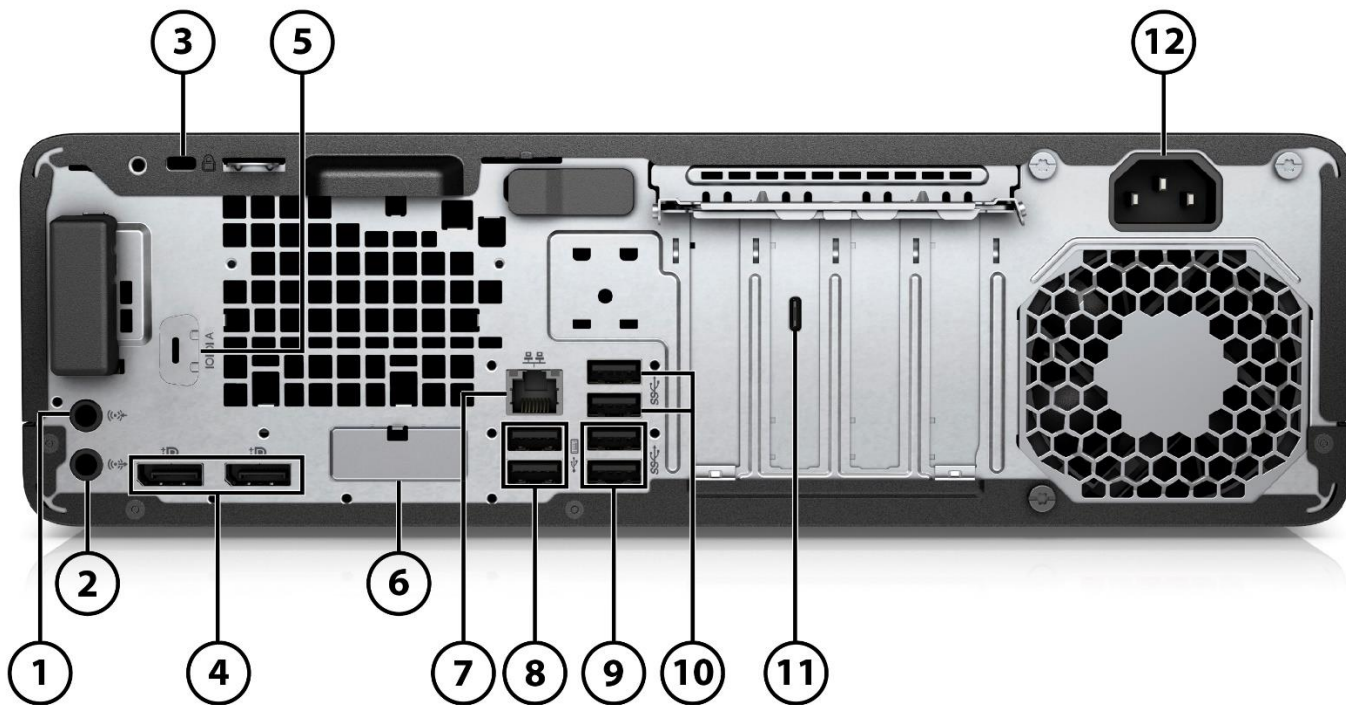


1. Slim optical drive (optional)
2. SD 4 Card Reader (optional)
3. USB Type-C™ port (charge support up to 5V/3A)
4. USB 3.1 Gen2 ports (2)
5. USB 2.0 port
6. USB 2.0 (charge support up to 5V/1.5A)
7. Headphone connector
8. Universal Audio Jack with CTIA headset support
9. Hard drive activity light
10. Dual-state power button

Overview

HP EliteDesk 800 G5 Small Form Factor Business PC

(Rear Image)



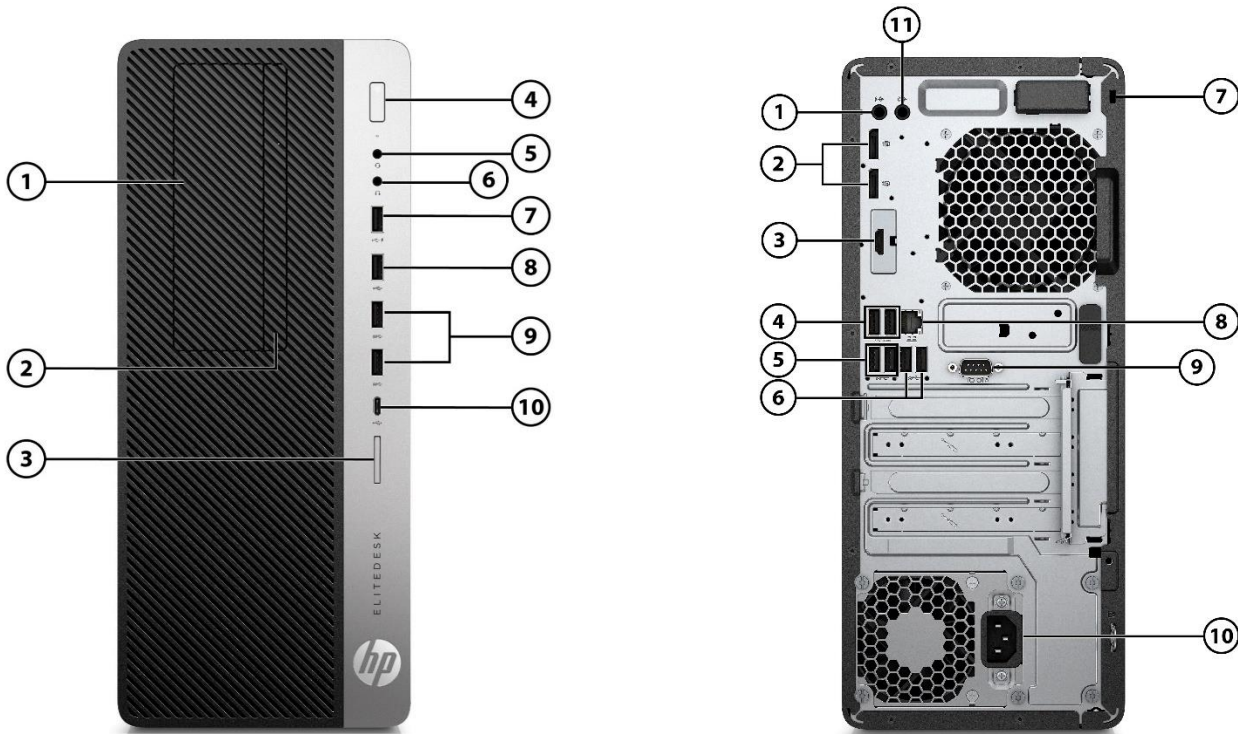
- | | |
|--|---|
| 1. Audio-in connector | 7. RJ-45 (network) jack |
| 2. Audio-out connector for powered audio devices | 8. USB 2.0 ports with wake from S4/S5 (2) |
| 3. Standard lock slot | 9. USB 3.1 Gen2 ports (2) |
| 4. Dual-Mode DisplayPort™ 1.2 (2) | 10. USB 3.1 Gen1 ports (2) |
| 5. Optional serial port - shown here not installed | 11. Optional Thunderbolt PCIe card - shown here installed |
| 6. Optional port (DisplayPort™ 1.2, HDMI 2.0a, VGA or USB-C™) (USB-C™ option has alt mode DisplayPort™ 1.2 or 15W output) - shown here not installed | |

Not shown

- | | |
|---|---|
| Slots | Bays |
| (2) PCI Express x16 graphics connectors; one wired as an x4 | (1) 2.5" internal storage drive bay |
| (2) PCI Express x1 | (2) 3.5" internal storage drive bay (convertible to 2.5") |
| (2) internal M.2 SSD storage (2230 or 2280 connector) | (1) 9.5 mm slim optical drive bay |
| (1) internal M.2 WLAN (2230 connector) | |

Overview

HP EliteDesk 800 G5 Tower Business PC



1. 5.25-inch Half-Height Drive Bay (behind bezel)
2. Slim optical drive (optional)
3. SD 4 Card Reader (optional)
4. Dual-state power button
5. Universal Audio Jack with CTIA headset support
6. Headphone connector
7. USB 2.0 port (charge support up to 5V/1.5A)
8. USB 2.0 port
9. USB 3.1 Gen2 ports (2)
10. USB Type-C™ port (charge support up to 5V/3A)

1. Audio-out jack for powered audio devices
2. Dual-Mode DisplayPort™ 1.2 (DP++) (2)
3. Optional port (DisplayPort™ 1.2, HDMI 2.0a, VGA or USB-C™) (USB-C™ option has alt mode DisplayPort™ 1.2 or 15W output) – Shown here HDMI installed
4. USB 2.0 ports with wake from S4/S5 (2)
5. USB 3.1 Gen2 ports (2)
6. USB 3.1 Gen1 ports (2)
7. Standard lock slot
8. RJ-45 (network) jack
9. Optional serial port – shown here installed
10. Power cord connector
11. Audio-in jack

Not shown

Slots

- (2) PCI Express x16 graphics connectors; one wired as an x4
- (2) PCI Express x1
- (2) internal M.2 SSD storage (2230 or 2280 connector)
- (1) internal M.2 WLAN (2230 connector)

Bays

- (1) 2.5" internal storage drive bay
- (2) 3.5" internal storage drive bay (convertible to 2.5")
- (1) 5.25" half-height drive bay
- (1) 9.5mm slim optical drive bay

Overview

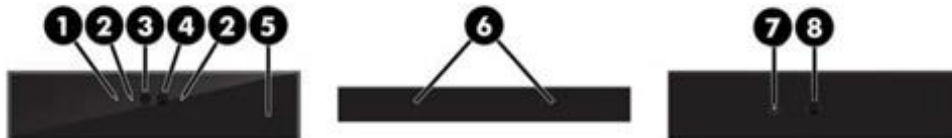
HP EliteOne 800 G5 23.8-in All-in-One*



1. Camera (optional)

2. Speakers (optional)

Infrared (IR) and dual facing camera (optional)



1. Camera light

3. Full High Definition (FHD) camera

5. Rear camera adjustment wheel

7. Camera light

2. IR camera light

4. IR camera

6. Digital microphones

8. FHD camera

Full High Definition (FHD) camera (optional)



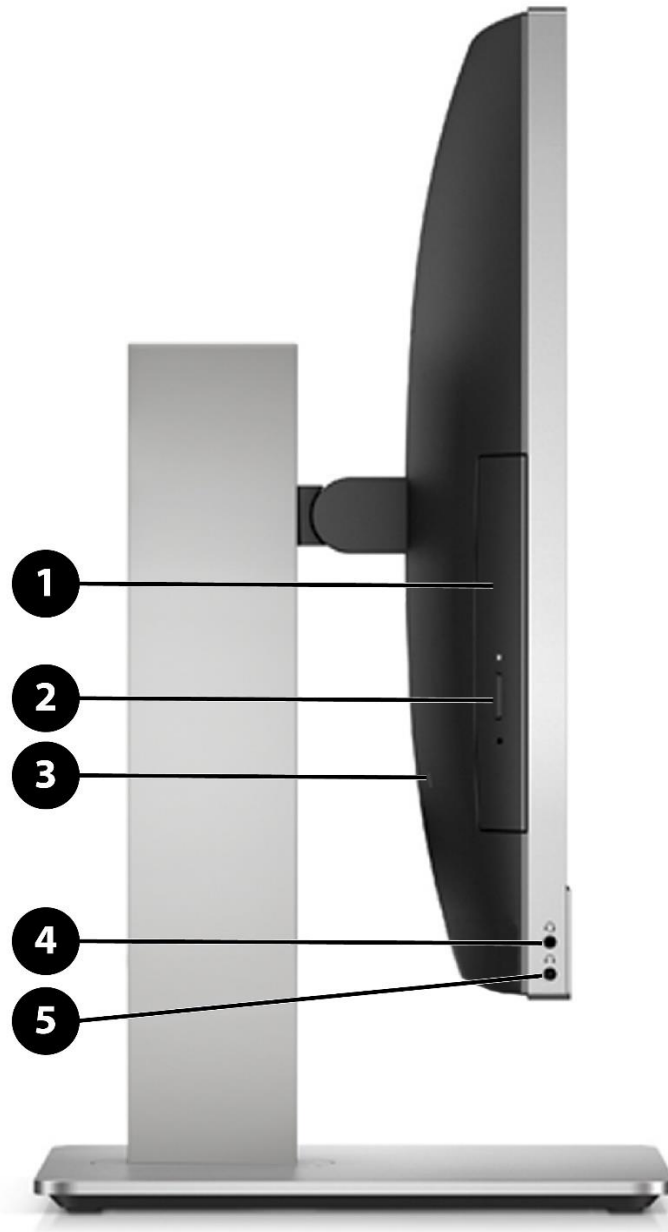
1. Camera light

2. FHD camera

3. Digital microphones

*Available Options: Touch, Non-Touch, HP Sure View, and Discrete Graphics

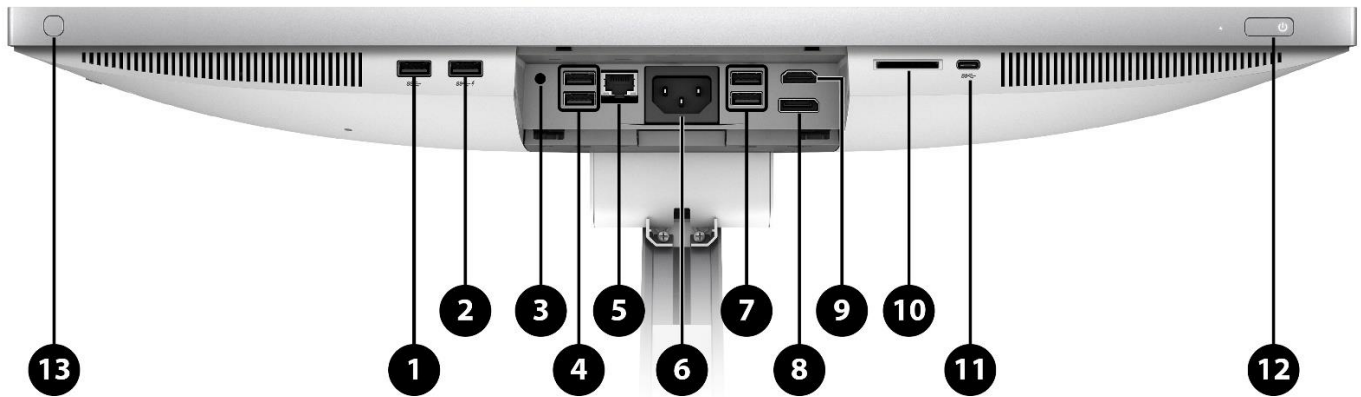
HP EliteOne 800 G5 23.8-in All-in One



- | | |
|---|---|
| 1. Optical disc drive (optional) | 4. Universal Audio Jack with CTIA headset support |
| 2. Optical disc drive eject button (optional) | 4. Headphone connector |
| 3. Standard lock slot (10 mm) | |

Overview

HP EliteOne 800 G5 23.8-in All-in-One



Bottom components and rear ports (behind security cover)

1. USB 3.1 Gen 2 Type-A port
2. USB 3.1 Gen 2 Type-A port (charge support up to 5V/1.5A)
3. Audio line-out connector
4. USB 3.1 Gen 1 Type-A ports (2)
5. RJ-45 (network) jack
6. Power connector
7. USB 3.1 Gen 2 Type-A ports (2) wake capable
8. Dual-Mode DisplayPort™1.2 (DP++)
9. HDMI 2.0a connector
10. SD card reader 4.0 (optional)
11. USB 3.1 Type-C™ Gen 2 port (charge support up to 5V/3A)
12. Dual-state power button
13. Sure View Button (optional)

Not shown

Slots

- (1) internal M.2 PCIe x1 connector for optional wireless NIC
- (2) internal M.2 PCIe x4 connector for optional m.2 SSD

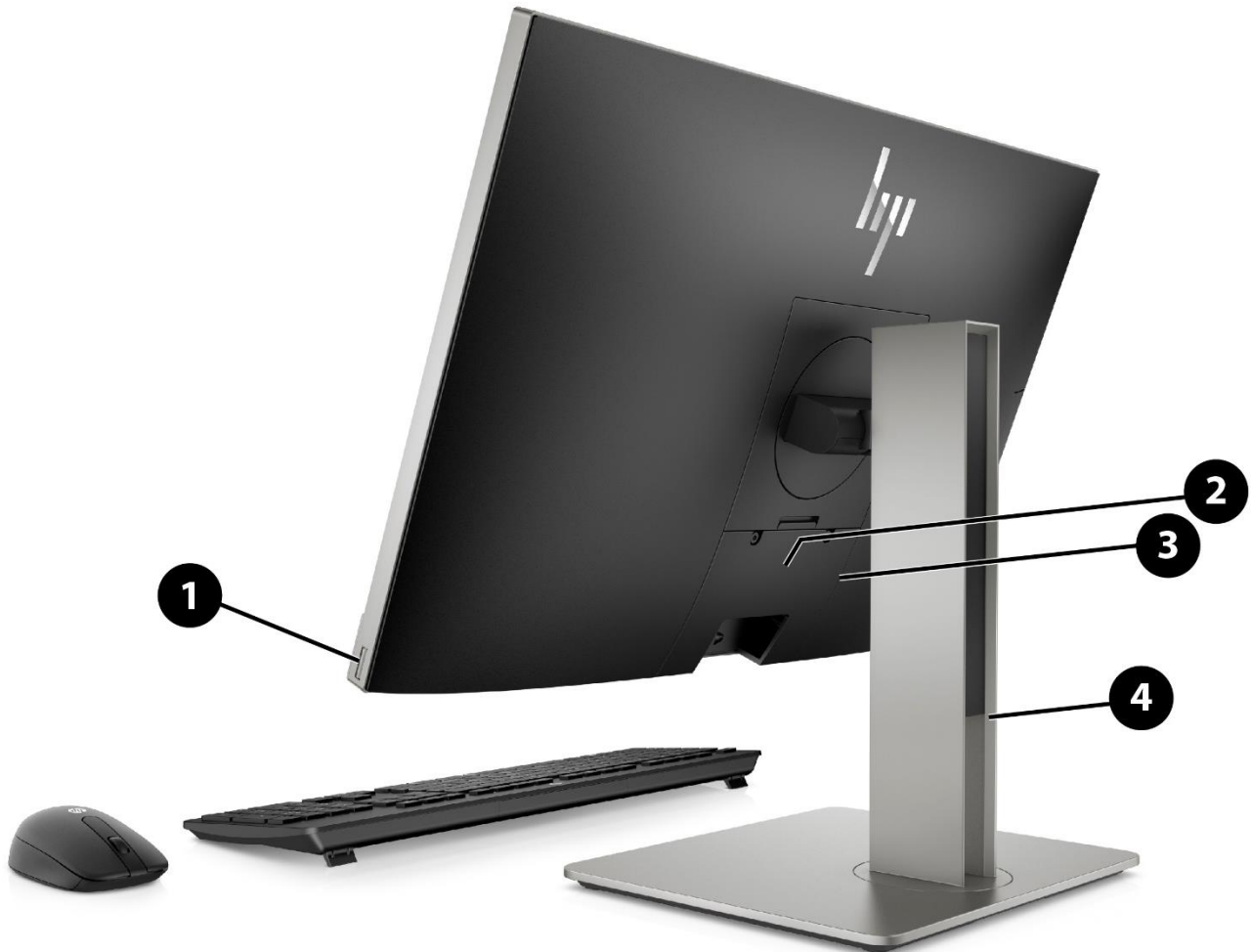
Bays

- (1) 2.5" internal storage drive bay

VESA

Support for VESA 100 mounting system on back of PC chassis (mounting hardware sold separately)

HP EliteOne 800 G5 23.8-in All-in-One



Rear and side components

- | | |
|----------------------------------|---------------------------------------|
| 1. Fingerprint sensor (optional) | 3. Standard lock slot (10 mm) |
| 2. Rear port cover | 4. Adjustable height stand (optional) |

Features

AT A GLANCE

- Choice of four form factors: Tower, Small Form Factor, Desktop Mini and All-In-One (touch/non-touch)
- HP developed and engineered UEFI V2.6 BIOS supporting security, manageability and software image stability
- Intel® Q370 chipset supporting Intel® 9th and select 8th generation Core™ processors, featuring integrated Intel® UHD Graphics and Intel® vPro™ Technology (available with Core i5, Core i7 and Core i9 processors) ^{1,4}
- Processors up to 95W on TWR, SFF and DM
- Intel® Optane™ Memory H10 with Solid State Storage
- Intel® UHD graphics as well as optional discrete graphics configure systems to up to 7 displays (TWR, SFF and DM 35W)²
- Intel® Ethernet Connection I219LM GbE LOM integrated network connection
- Intel® Wi-Fi 6 + BT5 (802.11AX 2x2)
- DDR4 Synchronous Dynamic Random Access Memory (SDRAM) (Transfer rates up to 2666 MT/s)
- Support for up to three monitors via two standard DisplayPort™ 1.2 connectors and an optional third video port connector which provides the following choices: HDMI 2.0, VGA, DisplayPort™ 1.2, or USB Type-C™ with DisplayPort™ 1.2 for all platforms; USB Type-C™ with DisplayPort™ 1.2 and Power Delivery (PD) from Display for 800 G5 DM 35W (see Ports section for port availability by platform). AiO supports up to two additional monitors via DisplayPort™ or HDMI connectors.²
- Configurable 3rd rear I/O with video port (HDMI 2.0, DisplayPort™ 1.2, VGA, Type-C™ with DisplayPort™ 1.2) or Thunderbolt 3.0 (port on DM, PCIe card on TWR, SFF)
- Configurable AMD® Radeon and NVIDIA® GeForce® VR ready discrete graphics on TWR⁵
- Compatibility with HP Mini-In-One 24 Display (800 G5 DM with 100W USB-C +PD option card)
- Models can be configured with multiple data drives in a RAID array
- Skype for Business certified (AiO)
- Audio by Bang & Olufsen (AiO)
- Intel® Unite™ available (AiO, Desktop Mini)
- Intel® Unite™ must be configured at the factory
- EN 60601-1-2: 2015 compliant (AiO)
- Enhanced Security With:
 - HP Sure Click
 - HP Sure Start Gen5
 - HP Sure Run
 - HP Sure Recover
 - HP Sure View Gen3 (AiO)
 - HP Manageability Integration Kit Gen3
 - HP BIOSphere Gen5
 - HP Sure Sense
 - HP Client Security Manager Gen5
 - Notification with HP Image Assistant Gen3
 - HP Multi-Factor Authenticate Gen3, features include fingerprint sensor (optional) and IR webcam (optional) both Windows Hello certified (AiO)
- High efficiency energy saving power supply options
- ENERGY STAR® certified. EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See <http://www.epeat.net> for registration status by country⁶. Search keyword generator on HP's 3rd party option store for solar generator accessories at <http://www.hp.com/go/options>.
- CCC, CECP and SEPA Certified (TWR/SFF/DM/AiO)
- CECP Certified (AiO)
- TCO Edge for AiO
- PC chassis and all internal components and modules are manufactured with low halogen content ³
- Dust filter available for all platforms (except 65W and 95W Desktop Mini, 35W Desktop Mini with Discrete Graphics)
- Protected by HP Services, including limited warranties up to 3-3-3 (terms and conditions vary by country; certain restrictions and exclusions apply); Care Packs available with up to 5 years Next Business Day Onsite Hardware Support
- Compliance with CE (Class B) / FCC (Class B) / UL (UL609501) / CSA (CSA C22.2 No.60950-1-07) / ICES-003 / CCC / VCCI (Class B) / KCC (Class B)

Features

1. Multi core 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
2. DisplayPort™ multi-stream monitors 'daisy-chained' together.
3. External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.
4. Some functionality of vPro technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependant on 3rd party software providers. Compatibility of this generation of Intel vPro technology-based hardware with with future "virtual appliances" is yet to be determined."
5. VR-ready as optional feature, requires specific configuration to support.
6. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit <http://www.epeat.net> for more information.

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

PRODUCT NAME

HP EliteDesk 800 G5 Tower Business PC
 HP EliteDesk 800 G5 Small Form Factor Business PC
 HP EliteDesk 800 G5 Desktop Mini Business PC
 HP EliteOne 800 G5 23.8-inch All-in-One

OPERATING SYSTEM

Preinstalled	Windows® 10 Pro 64 ¹
	Windows® 10 Pro 64 (National Academic License) ²
	Windows® 10 Home 64 ¹
	Windows® 10 Home Single Language 64 ¹
	FreeDos
Web-supported only	Windows® 10 Enterprise 64 ¹

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.

NOTE: Your product does not support Windows 8 or Windows 7. 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

	DM	SFF	TWR	AiO
Intel® Q370 PCH-H- vPro™	X	X	X	X

Features

PROCESSORS

Intel® 9th Generation Core™ Processors	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Core™ i9 9900 Processor with Intel® UHD Graphics 630 (3.1GHz, up to 4.9 GHz with Intel® Turbo Boost, 16MB cache, 8 cores) 65W ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	X
Intel® Core™ i9 9900K Processor with Intel® UHD Graphics 630 (3.6GHz, up to 5.0 GHz with Intel® Turbo Boost, 16MB cache, 8 cores) 95W ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	
Intel® Core™ i9 9900T Processor with Intel® UHD Graphics 630 (2.1GHz, up to 4.4 GHz with Intel® Turbo Boost, 16MB cache, 8 cores) 35W ^{1,2} Supports Intel® vPro™ Technology ³	X			
Intel® Core™ i7 9700 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.7 GHz with Intel® Turbo Boost, 12 MB cache, 8 cores) 65W ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	X
Intel® Core™ i7 9700K Processor with Intel® UHD Graphics 630 (3.6 GHz, up to 4.9 GHz with Intel® Turbo Boost, 12MB cache, 8 cores) 95W ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	
Intel® Core™ i7 9700T Processor with Intel® UHD Graphics 630 (2.0Hz, up to 4.3 GHz with Intel® Turbo Boost, 12MB cache, 8 cores) 35W ^{1,2} Supports Intel® vPro™ Technology ³	X			
Intel® Core™ i5 9600 processor with Intel® UHD Graphics 630 (3.1 GHz, up to 4.8 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	X
Intel® Core™ i5 9600K processor with Intel® UHD Graphics 630 (3.7 GHz, up to 4.6 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) 95W ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	
Intel® Core™ i5 9600T processor with Intel® UHD Graphics 630 (2.3 GHz, up to 3.9 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™ Technology ³	X			
Intel® Core™ i5 9500 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.1 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™ Technology ³	X	X	X	X
Intel® Core™ i5 9500T processor with Intel® UHD Graphics 630 (2.2 GHz, up to 3.7 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™ Technology ³	X			
Intel® Core™ i5 9400 processor with Intel® UHD Graphics 630 (2.9 GHz, up to 4.1 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)	X	X	X	X
Intel® Core™ i5 9400T processor with Intel® UHD Graphics 630 (1.8 GHz, up to 3.4 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)	X			
Intel® Core™ i5 8400 processor with Intel® UHD Graphics 630 (2.8 GHz, up to 4.0 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)	X	X	X	X
Intel® Core™ i5 8400T processor with Intel® UHD Graphics 630 (1.7 GHz, up to 3.3 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)	X			
Intel® Core™ i3 9300 processor with Intel® UHD Graphics 630 (3.7 GHz, 8 MB cache, 4 cores) ¹	X	X	X	X
Intel® Core™ i3 9300T processor with Intel® UHD Graphics 630 (3.2 GHz, 8 MB cache, 4 cores) ¹	X			

QuickSpecs

HP EliteDesk 800 G5 and HP EliteOne 800 G5 Business Desktops PCs

Features

Intel® Core™ i3 9100 processor with Intel® UHD Graphics 630 (3.6 GHz, 6 MB cache, 4 cores) ¹	X	X	X	X
Intel® Core™ i3 9100T processor with Intel® UHD Graphics 630 (3.1 GHz, 6 MB cache, 4 cores) ¹	X			
Intel® 8th Generation Core™ Processors	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Core™ i7 8700 processor with Intel® UHD Graphics 630 (3.2 GHz, up to 4.6 GHz with Intel® Turbo Boost, 12 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™Technology ³	X	X	X	X
Intel® Core™ i7 8700T processor with Intel® UHD Graphics 630 (2.4 GHz, up to 4.0 GHz with Intel® Turbo Boost, 12 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™Technology ³	X			
Intel® Core™ i5 8500 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.1 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™Technology ³	X	X	X	X
Intel® Core™ i5 8500T processor with Intel® UHD Graphics 630 (2.1 GHz, up to 3.5 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) ^{1,2} Supports Intel® vPro™Technology ³	X			
Intel® Core™ i3 8100 processor with Intel® UHD Graphics 630 (3.6 GHz, 6 MB cache, 4 cores) ¹	X	X	X	X
Intel® Core™ i3 8100T processor with Intel® UHD Graphics 630 (3.61GHz, 6 MB cache, 4 cores) ¹	X			
Intel® Pentium® Processors	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Pentium® Gold G5420 processor with Intel® UHD Graphics 610 (3.8 GHz, 4 MB cache, 2 cores) ¹	X	X	X	X
Intel® Pentium® Gold G5420T processor with Intel® UHD Graphics 610 (3.2 GHz, 4 MB cache, 2 cores) ¹	X			
Intel® Pentium® Gold G5600 processor with Intel® UHD Graphics 630 (3.9 GHz, 4 MB cache, 2 cores) ¹	X	X	X	X
Intel® Pentium® Gold G5600T processor with Intel® UHD Graphics 630 (3.3GHz, 4 MB cache, 2 cores) ¹	X			
Intel® Pentium® Gold G5620 processor with Intel® UHD Graphics 630 (4.0 GHz, 4 MB cache, 2 cores) ¹	X	X	X	X
Intel® Celeron™ Processors	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Celeron® G4930 processor with Intel® UHD Graphics 610 (3.2 GHz, 2 MB cache, 2 cores) ¹	X	X	X	X
Intel® Celeron® G4930T processor with Intel® UHD Graphics 610 (3.0 GHz, 2 MB cache, 2 cores) ¹	X			

1: Multi-core 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.

2: Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See <http://www.intel.com/technology/turboboost> for more information.



Features

3. Some functionality of vPro technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependant on 3rd party software providers. Compatibility of this generation of Intel vPro technology-based hardware with with future "virtual appliances" is yet to be determined.

GRAPHICS

Integrated Intel® Graphics

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® UHD Graphics 630 (integrated on 9 th gen Core i9/i7/i5/i3, Pentium® Gold G5600, G5500)	X	X	X	X
Intel® UHD Graphics 610 (integrated on 9 th gen Pentium® Gold G5400, Celeron® G4900)	X	X	X	X

Optional Discrete Graphics Solutions

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
NVIDIA® GeForce® RTX 2080 8GB FH 3DP HDMI Graphics Card*			X	
NVIDIA® GeForce® RTX 2070 8GB FH 3DP HDMI Graphics Card*			X	
NVIDIA® GeForce® RTX 2070 Super 8GB Graphics Card			X	
NVIDIA® GeForce® RTX 2060 6GB FH Graphics Card*			X	
NVIDIA Quadro P1000 4GB Graphics Card			X	
NVIDIA® Quadro P620 2GB Graphics Card		X	X	
NVIDIA® Quadro P400 2GB Graphics Card		X	X	
NVIDIA® GeForce® GT 730 2GB DP DVI Graphics Card		X	X	
AMD® Radeon™ RX 580 8GB FH 3DP 1HDMI Graphics Card*			X	
AMD® Radeon™ RX 560X 4GB GDDR5**	X			X
AMD® Radeon™ RX 550 4GB 1DP 1HDMI Graphics Card		X	X	
AMD® Radeon™ R7 430 2GB GDDR5 64bit DP+VGA***		X	X	
AMD® Radeon™ R7 430 2GB GDDR5 64bit 2DP		X	X	
AMD® Radeon™ 520 1GB VGA +DP			X	

*Requires 500W chassis

**Only available on the Touch Version All-in-One

***Not available in all regions

NOTE: As of 2019, AMD Radeon™ RX 560 is renamed to AMD Radeon™ RX 560X

Adapters and Cables

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP DisplayPort™ Cable	X	X	X	X
HP DisplayPort™ to DVI-D Adapter	X	X	X	X
HP DisplayPort™ to HDMI 4K Adapter	X	X	X	X
HP DisplayPort™ to VGA Adapter	X	X	X	X
HP USB-C™ to USB 3.0	X	X	X	X
HP USB to Serial Port Adapter	X	X	X	X
HP USB-C™ to HDMI 4K Adapter	X			
HP DisplayPort to HDMI True 4K Adapter				X
HP DVI Cable				X
HP HDMI Standard Cable Kit (HDMI)				X

Features

HP DVI Cable Kit				X
HP HDMI to VGA Adapter				X
HP UHD USB Graphics Adapter				X

Features

STORAGE

3.5 inch SATA Hard Disk Drives (HDD)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
500GB 7200RPM 3.5in SATA HDD		X	X	
1TB 7200RPM 3.5in SATA HDD		X	X	
2TB 7200RPM 3.5in SATA HDD		X	X	

2.5 inch SATA Hard Disk Drives (HDD)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
500GB 7200RPM 2.5in SATA HDD	X	X	X	X
1TB 7200RPM 2.5in SATA HDD	X	X	X	X
2TB 5400RPM 2.5in SATA HDD	X	X	X	X
500GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD*	X	X	X	X
500GB 7200RPM 2.5in Self Encrypted Federal Information Processing Standard SATA HDD*	X	X	X	X

NOTE*: Storage Drivelock does not work with Self Encrypting or Optane based storage.

2.5 inch Solid State Drives (SSD)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
256GB 2.5in SATA Three Layer Cell SSD	X	X	X	X
512GB 2.5in SATA Three Layer Cell SSD	X	X	X	X
256GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	X	X
512GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	X	X
256GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD*	X	X	X	X
512GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD*	X	X	X	X

NOTE*: Storage Drivelock does not work with Self Encrypting or Optane based storage.

M.2 PCIe NVMe Solid State Drives (SSD)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
256GB M.2 2280 PCIe NVMe SSD	X	X	X	X
512GB M.2 2280 PCIe NVMe SSD	X	X	X	X
1TB M.2 2280 PCIe NVMe SSD		X	X	
128GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	X	X
256GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	X	X
512GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	X	X
1TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	X	X
2TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	X	X
256GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	X	X
512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	X	X
256GB Intel® Optane™ Memory H10 with Solid State Storage*	X	X	X	X
512GB Intel® Optane™ Memory H10 with Solid State Storage*	X	X	X	X

NOTE*: Storage Drivelock does not work with Self Encrypting or Optane based storage.

Features

Optical Disc Drives

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP 9.5mm Slim DVD-ROM Drive		X	X	X
HP 9.5mm Slim DVD Writer Drive		X	X	X
HP 9.5mm Slim Blu-Ray Writer Drive		X	X	X

Removable

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
SSD 256GB M.2 PCIe NVMe TLC Removable			X	
SSD 512GB M.2 PCIe NVMe TLC Removable			X	
SSD 1TB M.2 PCIe NVMe TLC Removable			X	

Media Card Reader

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
SD 4.0 with 5-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II)		X	X	X

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

MEMORY

Memory Type

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
DDR4-2666 (Transfer rates up to 2666 MT/s), 64 GB, 2 SODIMM	X			X
DDR4-2666 (Transfer rates up to 2666 MT/s), 128 GB, 4 DIMM		X	X	

Memory Configuration

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
4 GB (1 x 4 GB)	X	X	X	X
8 GB (2 x 4 GB)	X	X	X	X
8 GB (1 x 8 GB)	X	X	X	X
16 GB (2 x 8 GB)	X	X	X	X
16 GB (1 x 16 GB)	X	X	X	X
32 GB (2 x 16 GB)	X	X	X	X
32 GB (4 x 8 GB)		X	X	
32 GB (1 x 32 GB)	X	X	X	X
64 GB (4 x 16 GB)		X	X	
64 GB (2 x 32 GB)	X	X	X	X
128 GB (4 x 32 GB)		X	X	

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

Memory modules support data transfer rates up to 2666 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

NOTE: All memory slots are customer accessible / upgradeable.

Features

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® I219-LM Gigabit Network Connection LOM (standard)	X	X	X	X
Intel® Ethernet I210-T1 PCIe x1 Gb Network Interface Card (optional)		X	X	

Wireless¹

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Wi-Fi 6 AX200 + BT5 (802.11AX 2x2 vPro, supporting gigabit file transfer speed)	X	X	X	X
Intel® Wi-Fi 6 AX200 + BT5 (802.11AX 2x2 non-vPro, supporting gigabit file transfer speed)	X	X	X	X
Intel Wireless-AC 9560 802.11ac 2x2 Wi-Fi + BT5 (vPro, supporting gigabit file transfer speeds)	X	X	X	X
Intel Wireless-AC 9560 802.11ac 2x2 Wi-Fi + BT5 (non-vPro, supporting gigabit file transfer speeds)	X	X	X	X
Realtek RTL8822BE 802.11ac 2x2 Wi-Fi + BT4.2		X	X	X
Realtek RTL8821CE 802.11ac 1x1 Wi-Fi + BT4.2				X

1. Wireless access point and Internet service required and not included. Availability of public wireless access points limited. The specifications for the 802.11ax WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the PC to communicate with 802.11ax WLAN devices. Wi-Fi 6 requires a wireless router, sold separately, that supports 802.11ax (Wi-Fi 6). Only available in countries where 802.11ax is supported.

KEYBOARDS AND POINTING DEVICES

Keyboards

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP USB Premium Keyboard	X	X	X	X
HP USB Conferencing Keyboard	X	X	X	X
HP Wireless Collaboration Keyboard	X	X	X	X
HP USB Collaboration Keyboard	X	X	X	X
HP USB and PS/2 Washable Keyboard ¹	X	X	X	X
HP USB Smart Card (CCID) Keyboard	X	X	X	X
HP USB Business Slim Keyboard	X	X	X	X
HP USB Keyboard	X	X	X	X
HP PS/2 Business Slim Keyboard ¹		X	X	
HP Wireless Business Slim Keyboard and Mouse	X	X	X	X
HP USB Business Slim Antimicrobial Keyboard ²	X	X	X	X

Mouse

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP PS/2 Mouse ¹		X	X	
HP USB Optical Mouse	X	X	X	X
HP USB Premium Mouse	X	X	X	X
HP USB 1000dpi Laser Mouse	X	X	X	X
HP USB and PS/2 Washable Mouse ¹	X	X	X	X
Antimicrobial USB Mouse ²	X	X	X	X

Features

HP USB Hardened Mouse ²	X	X	X	X
HP USB Fingerprint Reader Mouse		X	X	X
HP USB Grey Mouse ²	X	X	X	X

1. PS/2 port not available on EliteOne 800 G5 AiOs and not available on any EliteDesk 800 G5 DMs

2. Not available in all regions

SECURITY

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
TPM 2.0 (FW: 7.85) endpoint security controller (Infineon SLB9670) Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.	X	X	X	X
Solenoid Lock & Intrusion Sensor		X	X	
Intrusion Sensor for DM/AiO (integrated in the PCA, can be enabled/disabled through BIOS)	X			X
Support for chassis cable lock devices	X (10 mm or smaller)	X	X	X
Support for chassis padlocks devices	X	X	X	
HP Fingerprint Sensor (standard on 800 G5 AiO touch models and optional on non-touch models)				X
SATA port disablement (via BIOS)	X	X	X	X
Serial, USB enable/disable (via BIOS)	X	X	X	X
Intel® Identify Protection Technology (IPT) ¹	X	X	X	X
Serial, parallel, USB enable/disable (via BIOS)	X	X	X	X
Optional USB Port Disable at factory (user configurable via BIOS)	X	X	X	X
Removable media write/boot control	X	X	X	X
Power-on password (via BIOS)	X	X	X	X
Setup password (via BIOS)	X	X	X	X

1. Models configured with Intel® Core™ processors have the ability to utilize advanced security protection for online transactions. IPT, used in conjunction with participating web sites, provides double identity authentication by adding a hardware component in addition to the usual user name and password. IPT is initialized through an HP Client Security module.

Features

PORTS

I/O Ports – Standard

	DM	SFF	TWR	AiO
USB 2.0	N/A	2 including 1 fast charging (front); 2 including wake from S4/S5 (rear)	2 including 1 fast charging (front); 2 including wake from S4/S5 (rear)	N/A
USB 3.1 Gen 1	1 front, 2 rear	2 rear	2 rear	2 rear
USB 3.1 Gen 2	1 front, 2 rear	2 front; 2 rear	2 front; 2 rear	4 rear
USB Type-C™ 3.1 Gen 2 (15W)	1 front; 1 rear (option)	1 front; 1 rear (option)	1 front; 1 rear (option)	1 rear
Video	2 DisplayPort™ 1.2 (rear) 1 Configurable video port (rear) (Choice of DisplayPort™ 1.2, HDMI™ 2.0a, VGA, or USB Type-C™ with alt mode display port and power delivery) For models with discrete graphics: 1 DisplayPort™ 1.4 (rear)	2 DisplayPort™ 1.2 (rear) 1 Configurable video port (rear) (Choice of DisplayPort™ 1.2, HDMI™ 2.0a, VGA, or USB Type-C™ with alt mode display or 15W output)	2 DisplayPort™ 1.2 (rear) 1 Configurable video port (rear) (Choice of DisplayPort™ 1.2, HDMI™ 2.0a, VGA, or USB Type-C™ with alt mode display port or 15W output)	For models with integrated graphics: 1 DisplayPort™ 1.2 (rear) 1 HDMI™ 2.0a (rear) For models with discrete graphics: 1 DisplayPort™ 1.4 (rear) 1 HDMI™ 2.0a (rear)
Audio	1 Headphone (front), 1 Universal Audio Jack with CTIA headset support (front))	1 Headphone (front), 1 Universal Audio Jack with CTIA headset support (front)); 1 Audio-out (rear), 1 Audio-in (rear)	1 Headphone (front), 1 Universal Audio Jack with CTIA headset support (front)); 1 Audio-out (rear), 1 Audio-in (rear)	1 Line out (rear) 1 CTIA UAJ (side) 1 Audio out (side)
Network Interface	RJ45	RJ45	RJ45	RJ45

I/O Ports – Optional

	DM	SFF	TWR	AiO
Serial (RS-232)	1 (rear)(option)	1 (rear) (option)	1 (rear) (option)	N/A
Serial (RS-232) and PS/2 combination	N/A	1 (rear) (option)	1 (rear) (option)	N/A

Features

I/O Ports – Internal Ports	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Internal SATA storage connector(s)	N/A	3	4	2
Internal SATA storage connector (Data and Power)	1	N/A	N/A	N/A

NOTE: For Desktop Mini with M.2 Storage config, there will be no SATA drive bracket. If you plan to use or upgrade the storage with any 2.5" SATA drive, please select a DM SATA Drive Bracket (available as both factory configured and after market option).

Slots	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
M.2 PCIe	(1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280/2230 Combo (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280/2230 Combo (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280/2230 Combo (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280/2230 Combo (for storage)
PCI Express v3.0 x1	N/A	2	2	N/A
PCI Express v3.0 x16 (wired as x4)	N/A	1	1	N/A
PCI Express v3.0 x16	N/A	1	1	N/A

NOTE: The TWR can support a single graphics card up to 75W. When configured with dual graphics cards support is limited to 35W for each.

Bays	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
5.25" Half Height (External)	N/A	N/A	1	N/A
9mm Slim Optical Disc Drive (ODD)	N/A	1	1	1
SD Card Reader	N/A	1	1	1
2.5" Internal Storage Drive	1	1	1	1
3.5" Internal Storage Drive	N/A	2	2	N/A

SATA 2.5" internal storage drive cannot be selected if 2nd M.2, discrete graphic card, or 95W processor is selected.

Features

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

BIOS

- HP BIOSphere Gen5 ¹⁷
- HP DriveLock & Automatic DriveLock²⁰
- BIOS Update via Network
- Master Boot Record Security
- Power On Authentication
- HP Secure Erase ¹⁸
- Absolute Persistence Module ¹⁹
- RAID Configurations³³
- Pre-boot Authentication
- HP Wireless Wakeup

Software

- HP Native Miracast Support ¹⁵
- HP Hotkey Support - CMIT
- HP Recovery Manager
- HP JumpStarts
- HP Privacy Settings
- HP Setup Integrated OOBE
- HP Support Assistant ²¹
- HP Noise Cancellation Software
- HP PC Hardware Diagnostics Windows
- Buy Office (sold separately)
- Intel® Unite (optional for AiOs and DMs)
- HP Sure View Gen3 (AiO)

Manageability Features

- HP Driver Packs ²²
- HP System Software Manager (SSM)
- HP BIOS Config Utility (BCU)
- HP Client Catalog
- HP Image Assistant Gen4
- HP Manageability Integration Kit Gen3 ²³
- Ivanti Management Suite ²⁴
- HP Cloud Recovery³⁹

Client Security Software

- HP Client Security Suite Gen5 ²⁵ including:
 - HP Security Manager ²⁶ (including Credential Manager, HP Password Manager, HP Spare Key)
 - HP Fingerprint Sensor ³¹
 - HP Device Access Manager
 - HP Power On Authentication
 - HP Sure Sense
 - Windows Defender ²⁷

Features

Security Management

HP Secure Erase¹⁸

TPM 2.0 (FW: 7.85) endpoint security controller (Infineon SLB9670) Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.

SATA 0,1 port disablement (viaBIOS)

RAID configurations³³

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 Gen2³⁸

HP Sure Start Gen5³⁰

HP Sure Run³⁵

HP Sure Recover³⁶

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

17. HP BIOSphere Gen5 requires Intel® or AMD® 9th Gen processors. Features may vary depending on the platform and configurations.

18. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Supported on Elite platforms with BIOS version F.03 or higher.

19. 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.

20. Storage Drivelock does not work with Self Encrypting or Optane based storage.

21. HP Support Assistant requires Windows and Internet access.

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

23. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.

24. Ivanti Management Suite subscription required.

25. HP Client Security Manager Gen5 requires Windows and is available on select HP Pro and Elite PCs. See product specifications for details.

26. 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.

27. Windows Defender Opt in Windows 10 and internet connection required for updates.

30. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.

31. HP Fingerprint Sensor available on 800 G5 AiO touch models and optional on 800 G5 AiO non-touch models

33. RAID configuration is optional and requires two equivalent hard drives.

34. RAID 1 is pre-installed and functionality will require a second hard drive.

35. HP Sure Run is available on HP Elite products equipped with 8th and 9th generation Intel® or AMD® processors.

36. 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.

38. HP Sure Click is available on most HP PCs and supports Microsoft® Internet Explorer, Google Chrome, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.

39. HP Cloud Recovery is available for HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired 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/document/c05115630>.

Features

ENVIRONMENTAL & INDUSTRY

ENERGY STAR® certified models available

EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See <http://www.epeat.net> for registration status by country¹. Search keyword generator on HP's 3rd party option store for solar generator accessories at <http://www.hp.com/go/options>.

Low halogen (chassis, all internal components and modules)²

TAA compliant models available

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

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

UNIT ENVIRONMENT AND OPERATING CONDITIONS

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

Temperature Range Operating: 50° to 95° F (10° to 35° C)¹
Non-operating: -22° to 140° F (-30° to 60° C)

Relative Humidity Operating: 10% to 90% (non-condensing at ambient)
Non-operating: 5% to 95% (non-condensing at ambient)

Maximum Altitude
(unpressurized) Operating: 5000m
Non-operating: 50000ft (15240 m)

1. Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.

Features

HP EliteDesk 800 Desktop Mini G5 series

Eco-Label Certifications & declarations	<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"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 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 http://www.hp.com/go/options. <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop."		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	13.27 W	13.51 W	13.11 W
Normal Operation (Long idle)	13.11 W	13.27 W	12.88 W
Sleep	0.75 W	0.81 W	0.75 W
Off	0.69 W	0.74 W	0.68 W
	<p>NOTE: Energy efficiency data listed is for an ENERGY STAR® certified 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® certified 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>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	45 BTU/hr	46 BTU/hr	45 BTU/hr
Normal Operation (Long idle)	45 BTU/hr	45 BTU/hr	44 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	2 BTU/hr	3 BTU/hr	2 BTU/hr
	<p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)		Sound Pressure (L _{pAm} , decibels)
Typically Configured – Idle	3		20
Fixed Disk – Random writes	3.9		22
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <p>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight</p>		

Features

	Battery size: CR2032 (coin cell) Battery type: Lithium		
Additional Information	<ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard, 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 http://www.hp.com/go/options • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 0% post-consumer recycled plastic (by wt.) • This product is 95.1% recycle-able when properly disposed of at end of life. 		
Packaging Materials	External:	PAPER/Corrugated	322 g
	Internal:	PLASTIC/EPE (Expanded Polyethylene)	33 g
		PLASTIC/Polyethylene low density	5 g
Material Usage	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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf): <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) 		

Features

<p>Packaging Usage</p>	<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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
<p>End-of-life Management and Recycling</p>	<p>HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle 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: http://www.hp.com/go/recyclers. 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>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>

HP EliteDesk 800 Small Form Factor G5 series

<p>Eco-Label Certifications & declarations</p>	<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"> • IT ECO declaration • US ENERGY STAR®
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Features

	<p>• EPEAT® 2019 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 http://www.hp.com/go/options.</p> <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop."		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	10.78 W	10.98 W	10.905 W
Normal Operation (Long idle)	9.863 W	10.063 W	9.988 W
Sleep	1.088 W	1.388 W	1.173 W
Off	0.602 W	0.599 W	0.601 W
	<p>NOTE: 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>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	15.4926 BTU/hr	15.6294 BTU/hr	15.0138 BTU/hr
Normal Operation (Long idle)	13.8168 BTU/hr	14.364 BTU/hr	13.5432 BTU/hr
Sleep	1.2996 BTU/hr	1.4364 BTU/hr	1.2996 BTU/hr
Off	1.197 BTU/hr	1.2996 BTU/hr	1.1628 BTU/hr
	<p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)	
Typically Configured – Idle	3.2	23	
Fixed Disk–Random writes	3.6	25	
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <p>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater the 1ppm by weight Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p>		

Features

Additional Information	<ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard, 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 http://www.hp.com/go/options • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 0% post-consumer recycled plastic (by wt.) • This product is 95.1% recycle-able when properly disposed of at end of life. 		
Packaging Materials	External:	PAPER/Corrugated	1158 g
	Internal:	PLASTIC/EPE (Expanded Polyethylene)	320 g
		PLASTIC/Polyethylene low density	28 g
Material Usage	<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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) 		
Packaging Usage	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. 		

Features

End-of-life Management and Recycling	<p>HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle 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: http://www.hp.com/go/recyclers. 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>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</p> <p>Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</p> <p>ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>
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Features

HP EliteDesk 800 Tower G5 series

Eco-Label Certifications & declarations	<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"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 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 http://www.hp.com/go/options. <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	15.02 W	14.68 W	14.94 W
Normal Operation (Long idle)	14.34 W	13.38 W	14.12 W
Sleep	1.20 W	1.11 W	1.25 W
Off	0.70 W	0.72 W	0.69 W
	<p>NOTE: 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>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	51.3684 BTU/hr	50.2056 BTU/hr	51.0948 BTU/hr
Normal Operation (Long idle)	49.0428 BTU/hr	45.7596 BTU/hr	48.2904 BTU/hr
Sleep	4.104 BTU/hr	3.7962 BTU/hr	4.275 BTU/hr
Off	2.394 BTU/hr	2.4624 BTU/hr	2.3598 BTU/hr
	<p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)		Sound Pressure (L _{pAm} , decibels)
Typically Configured – Idle	3.2		23
Fixed Disk–Random writes	3.6		26
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater the 1ppm by weight Cadmium greater than 20ppm by weight</p>		

Features

	<p>Battery size: CR2032 (coin cell) Battery type: Lithium</p>		
Additional Information	<ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product EPEAT® 2019 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 http://www.hp.com/go/options. • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 0% post-consumer recycled plastic (by wt.) • This product is 95.1% recycle-able when properly disposed of at end of life. <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
Packaging Materials	External:	PAPER/Corrugated	1170 g
	Internal:	PLASTIC/EPE (Expanded Polyethylene)	378 g
		PLASTIC/Polyethylene low density	17 g
Material Usage	<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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) 		

Features

Packaging Usage	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	<p>HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle 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: http://www.hp.com/go/recyclers. 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>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>

HP EliteOne 800 G5 23.8-in All-in-One

Eco-Label Certifications & declarations	<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"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 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 http://www.hp.com/go/options. <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
System Configuration	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop.</p>		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	31.86	31.868	31.626
Normal Operation (Long idle)	14.466	14.483	14.389

Features

Sleep	4.049	4.082	3.971
Off	0.644	0.649	0.623
	NOTE: 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.		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	108.6426	108.6699	107.8447
Normal Operation (Long idle)	49.3291	49.387	49.0665
Sleep	13.8071	13.9196	13.5411
Off	2.196	2.2131	2.1244
	NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)	
Typically Configured – Idle	2.9	21.0	
Fixed Disk – Random writes	3.7	22.8	
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include: storage, Memory and processor. Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater the 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium		
Additional Information	<ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard, 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 http://www.hp.com/go/options • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 0% post-consumer recycled plastic (by wt.) • This product is 95.1% recycle-able when properly disposed of at end of life. 		
Packaging Materials	External:	PAPER/Corrugated	
	Internal:	PLASTIC/EPE (Expanded Polyethylene)	
		PLASTIC/Polyethylene low density	
Material Usage	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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):		
	<ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants 		

Features

	<ul style="list-style-type: none"> • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
<p>Packaging Usage</p>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
<p>End-of-life Management and Recycling</p>	<p>HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle 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: http://www.hp.com/go/recyclers. 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>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>

Features

HP EliteDesk 800 G5 Desktop Mini Business PC

Eco-Label Certifications & declarations	<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"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 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 http://www.hp.com/go/options. <p>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.</p>		
System Configuration	<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>		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	13.279	13.514	13.115
Normal Operation (Long idle)	13.116	13.275	12.889
Sleep	0.753	0.817	0.751
Off	0.69	0.746	0.689
	<p>NOTE: 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>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	45.2814	46.0827	44.7222
Normal Operation (Long idle)	44.7256	45.2678	43.9515
Sleep	2.5677	2.7860	2.5609
Off	2.3529	2.5439	2.3495
	<p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L _{WAd} , bels)		Sound Pressure (L _{pAm} , decibels)
Typically Configured – Idle			
Fixed Disk – Random writes			
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater the 1ppm by weight Cadmium greater than 20ppm by weight</p>		

Features

	<p>Battery size: CR2032 (coin cell) Battery type: Lithium</p>	
Additional Information	<ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard, 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 http://www.hp.com/go/options • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 0% post-consumer recycled plastic (by wt.) • This product is 95.1% recycle-able when properly disposed of at end of life. 	
Packaging Materials	External:	<p>PAPER/Corrugated 322 g</p>
	Internal:	<p>PLASTIC/EPE (Expanded Polyethylene) 32 g</p>
		<p>PLASTIC/Polyethylene low density 5 g</p>
Material Usage	<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 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) 	
Packaging Usage	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. 	

Features

End-of-life Management and Recycling

HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

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: <http://www.hp.com/go/recyclers>. 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.

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

Features

SERVICE AND SUPPORT**HP EliteDesk 800 G5 Tower Business PC**

On-site Warranty¹⁵: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day¹⁶ service for parts and labor and includes free support 24 x 7¹⁷. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: <http://www.hp.com/go/cpc>.¹⁸

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

18. 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.

HP EliteDesk 800 G5 Small Form Factor Business PC

On-site Warranty¹⁵: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day¹⁶ service for parts and labor and includes free support 24 x 7¹⁷. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: <http://www.hp.com/go/cpc>.¹⁸

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

18. 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.

Features

HP EliteDesk 800 G5 Desktop Mini Business PC

On-site Warranty¹⁵: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day¹⁶ service for parts and labor and includes free support 24 x 7¹⁷. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: <http://www.hp.com/go/cpc>.¹⁸

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

18. 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.

HP EliteOne 800 G5 All-in-One Business PC

On-site Warranty¹⁵: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day¹⁶ service for parts and labor and includes free support 24 x 7¹⁷. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: <http://www.hp.com/go/cpc>.¹⁸

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

18. 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.

CERTIFICATION AND COMPLIANCE

Energy Efficiency Compliance

ENERGY STAR[®] certified; EPEAT[®] 2019 registered where applicable. EPEAT[®] registration varies by country. See <http://www.epeat.net> for registration status by country ¹⁹

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

PROCESSORS

Intel® 8th and 9th Generation Core™ Processors

All HP EliteDesk 800 G5 Business PC models featuring this technology include processors that are part of the Intel® Stable Image Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP EliteDesk and EliteOne 800 G5 Business PC.

Intel® Advanced Management Technology (AMT) v12 – An advanced set of remote management features and functionality which provides network administrators the latest and most effective tools to remotely discover, heal, and protect networked client systems regardless of the system's health or power state. AMT 12 includes the following advanced management functions:

- Support for configuration of Intel AMT 12.0 new capabilities
- No reset after provisioning
- Support changes to BIOS table 130
- Support for Microsoft Windows Server 2012 R2
- Support for New Microsoft SQL Server Versions including Standard and Enterprise editions
- Support for Intel SSD Prop 2500 Series
- Support for Intel Enterprise Digital Fence
- The Platform Discovery Utility can now discover these additional Intel products:
- Intel SSD Pro 2500 Series; Enterprise Digital Fence
- Intel Identity Protection Technology with One Time Password; Public Key Infrastructure; Multi Factor Authentication
- Intel Identity Protection Technology with Intel WiGig
- New Profile Editor and Profile Editor Plugin Interface
- New Required Permissions for Solutions Framework

Technical Specifications – Display Panel Specifications

DISPLAY PANEL SPECIFICATIONS**23.8" diagonal IPS widescreen WLED backlit anti-glare LCD (1920 x 1080) non-touch or optional touch Projected Capacitive Touch supports up to 10 touch-points**

Type	IPS WLED Backlit LCD
Active area (mm)	527.04 x 296.46
Native Resolution (HxV)	1920 x 1080
Refresh Rate	60 Hz @ 1920 x 1080
Aspect ratio	16:9
Pixel pitch (HxV)(mm)	0.2745 x 0.2745
Contrast ratio (typical)	1000:1
Brightness (typical)	250nits
Viewing angle (typical) (HxV)	178 ° x 178 °
Backlight lamp life (to half brightness)	30,000 hours minimum
Color support	Up to 16.7 million colors with the use of FRC technology
Color gamut (typical)	NTSC 72%
Anti-glare	Yes*
Response Time	14ms (Typical)
Default color temperature	Warm (6500K)

23.8" diagonal IPS widescreen WLED backlit anti-glare LCD (1920 x 1080) with HP Sure View (optional)

Type	IPS WLED Backlit LCD
Active area (mm)	527.04 x 296.46
Native Resolution (HxV)	1920 x 1080
Refresh Rate	60 Hz @ 1920 x 1080
Aspect ratio	16:9
Pixel pitch (HxV)(mm)	0.2745 x 0.2745
Contrast ratio (typical)	1000:1
Brightness (typical)	285 nits (non-Privacy); 400 nits (Privacy)
Viewing angle (typical) (HxV)	178° x 178° (non-Privacy); 80° x 178° (Privacy)
Backlight lamp life (to half brightness)	30,000 hours minimum
Color support	Up to 16.7 million colors with the use of FRC technology
Color gamut (typical)	NTSC 72%
Anti-glare	Yes*
Response Time	14ms (Typical)
Default color temperature	Warm (6500K)

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

2. For All in One only

Intel® HD Graphics (integrated)

Technical Specifications – Display Panel Specifications

Adjustable Height Stand:	Height - Vertical/Landscape Adjustment	101mm (±2 mm)
	Portrait Adjustment	54mm (±2 mm)
	Tilt Angle	-5° to +20° (±3°) in landscape and portrait
	Rotation (Swivel)	90° (±1°)
	Pivot	Clockwise 90°
Recline Stand:	Height - Vertical Adjustment	178 mm (±2 mm)
	Tilt Angle	-5° to +65° (+/-3°)
	Rotation (swivel)	360° swivel

Technical Specifications – Graphics

GRAPHICS**HP EliteDesk 800 G5 Desktop Mini Business PC**

Intel® HD Graphics (integrated)

VGA Controller

Integrated

DisplayPort™ 1.2

Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics

HDMI (optional)

Supports HDMI 2.0a features

Supports HDCP 2.2

Supports audio over HDMI

VGA (optional)

VGA output

USB-C™ DP Alt Mode (optional)

DisplayPort over the optional USB-C™ module

Memory

The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.

Maximum Color Depth

up to 10 bits/color

HEVC 10b Enc/Dec HW

VP9 10b Dec HW

Graphics/Video API Support

HDR

Rec. 2020

DX12

Max. Resolution (VGA)

2048 x 1536@60Hz

Max. Resolution (HDMI)

4096 x 2160@60Hz

Max. Resolution (DP)

4096 x 2160@60Hz

AMD® Radeon™ RX 560X**Architecture**

Discrete GPU

AMD® GPU drives the integrated panel and all of the graphics output ports

DisplayPort

Multimode capable; supports HDCP, HDR, Display Port Audio (6 streams max), DisplayPort HBR3 link rates and Multi-Stream Technology for a maximum of 5 displays (including the integrated panel and all attached displays)

HDMI

Supports HDMI 2.0b features

Supports HDCP 2.2, HDR

Memory

4GByte, 128bit wide GDDR5

Maximum Color Depth

up to 12 bits/color

Graphics/Video API Support

DirectX 12

OpenCL 2.0

OpenGL 4.5

AMD® Unified Video Decoder (UVD)

Rear I/O connector

1 DP

Max. Resolution (VGA)

2048 x 1536@60Hz

Max. Resolution (HDMI)

4096 x 2160@60Hz

Max. Resolution (DP)

5120 x 2880@60Hz

Technical Specifications – Graphics

HP EliteDesk 800 G5 Tower Business PC

Intel® UHD Graphics (integrated)

VGA Controller

Integrated

DisplayPort™ 1.2

Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics

HDMI (optional)

Supports HDMI 2.0a features

Supports HDCP 2.2

Supports BT2020 and HDR playback (7th Gen processors only)

VGA (optional)

VGA output

USB-C™ DP Alt Mode (optional)

DisplayPort over the optional USB-C™ module

Memory

The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.

Maximum Color Depth

up to 10 bits/color

HEVC 10b Enc/Dec HW

VP9 10b Dec HW

Graphics/Video API Support

HDR

Rec. 2020

DX12

640x480 60 Hz/640x480 67Hz

640x480 72Hz

640x480 75Hz

720x400 70Hz

800x600 60Hz

800x600 75Hz

1024x768 60Hz

1024x768 75Hz

1280x960 60Hz

1280x720 60Hz

1280x1024 60Hz

1280x1024 75Hz

1440x900 60Hz

1440x900 75Hz

1680x1050 60Hz

1920x1080 60Hz

3440x1440 60Hz (Native Resolution)

3440x1440 30Hz

Max. Resolution (VGA)

2048 x 1536@60Hz

Max. Resolution (HDMI)

4096 x 2160@60Hz

Max. Resolution (DP)

4096 x 2160@60Hz

Technical Specifications – Graphics

NVIDIA® GeForce® GT730 2GB DP DVI PCIe x8 GFX

Engine Clock	902 MHz
Memory Clock	1250 MHz
Memory Size(width)	2 GB (64-bit)
Memory Type	256Mx32 GDDR5
Max. Resolution(DVI)	2560 x 1600 x 30 bpp @ 60Hz (Dual Link)
Max. Resolution(DP)	4096 x 2160 x 24 bpp @ 60 Hz (DP1.2)
Multi Display Support	Up to 2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DL DVI-I + DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	35 W
PCB form-factor with bracket	2-pin fan connector for fan sink power/speed control

NVIDIA® GeForce® RTX 2060 6 GB Graphics Card

Engine Clock	1680 MHz
Memory Clock	7000 MHz
Memory Size(width)	6 GB(192-bit)
Memory Type	256M x 32 GDDR6
Max. Resolution(DVI)	2560x1600@60Hz
Max. Resolution(HDMI)	4096x2160@60Hz
Max. Resolution(DP)	7680x4320@60Hz
Multi Display Support	3 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DVI+HDMI+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<170W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

AMD® Radeon™ RX 550X 4 GB FH PCIe x16

Engine Clock	1183MHz
Memory Clock	6 Gbps
Memory Size(width)	4 GB(128-bit)
Memory Type	GDDR5
Max. Resolution(HDMI)	4096x2160 @ 60Hz
Max. Resolution(DP)	5120x2880 @ 60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	HDMI, DPx2
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP (low profile) PCB with FH/LP bracket

Technical Specifications – Graphics

AMD® Radeon™ RX 580 8GB GDDR5 Graphics Card

Engine Clock	1266 MHz
Memory Clock	4000 MHz
Memory Size(width)	8 GB (256-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	4096x2160@60Hz
Max. Resolution(DP)	5120x3200@60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	HDMI + DPx3
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<150W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

NVIDIA® GeForce® RTX 2080 8GB GDDR6

Engine Clock	1710 MHz
Memory Clock	7000 MHz
Memory Size(width)	8GB (256-bit)
Memory Type	256M x 32 GDDR6
Max. Resolution(Virtual Link)	3840 x 2160@60Hz
Max. Resolution(HDMI)	4096 x 2160@60Hz
Max. Resolution(DP)	7680 x 4320@60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DPx3 + HDMI + Virtual Link
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<250W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

NVIDIA® GeForce® RTX 2070 8GB GDDR6

Engine Clock	1620 MHz
Memory Clock	7000 MHz
Memory Size(width)	8GB (256-bit)
Memory Type	256M x 32 GDDR6
Max. Resolution(Virtual Link)	3840 x 2160@60Hz
Max. Resolution(HDMI)	4096 x 2160@60Hz
Max. Resolution(DP)	7680 x 4320@60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DPx2 + HDMI + DVI+Virtual Link
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<210W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

Technical Specifications – Graphics

NVIDIA® GeForce® RTX 2070 Super 8GB Graphics Card

Engine Clock	1770 MHz
Memory Clock	7000 MHz
Memory Size(width)	8 GB(256-bit)
Memory Type	256M x 32 GDDR6
Max. Resolution(Virtual Link)	3840*2160@60Hz
Max. Resolution(HDMI)	7680x4320@60Hz
Max. Resolution(DP)	4 displays
Multi Display Support	Yes
HDCP Compliance	DPx3 + HDMI + Virtual Link(USB-C)
Rear I/O connectors(bracket)	Active fan-sink (Active cooling with dynamic speed)
Cooling(active/passive)	Total 250W (with USB-C)/215 W (GFX)
Total power consumption(W)	ATX (Full height) PCB with ATX dual slot bracket
PCB form-factor with bracket	1770 MHz

NVIDIA® Quadro P620 2GB Graphics Card

Engine Clock	1354 MHz
Memory Clock	2500 MHz
Memory Size(width)	2GB (128-bit)
Memory Type	128M x 32 GDDR5
Max. Resolution(DP)	5120x2880@60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	mDPx4
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<40W
PCB form-factor with bracket	LP PCB with LP bracket

NVIDIA® Quadro® P1000 4GB Graphics Card

Engine Clock	1455 MHz
Memory Clock	2500 MHz
Memory Size(width)	4 GB (128-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	Not Available
Max. Resolution(DP)	5120x2880@60Hz
Multi Display Support	4 independent displays
HDCP Compliance	Yes, HDCP 2.2
Rear I/O connectors(bracket)	4x mDP 1.4
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	47W
PCB form-factor with bracket	Single Slot, Low Profile

Technical Specifications – Graphics

NVIDIA® Quadro P400 2GB Graphics Card

Engine Clock	1252 MHz
Memory Clock	2000 MHz
Memory Size(width)	2GB (64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	5120x2880@60Hz
Multi Display Support	3 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	mDPx3
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<30W
PCB form-factor with bracket	LP PCB with LP bracket

AMD® Radeon™ R7 430 2GB VGA+DP 64bit Graphics Card

Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	2 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	2048x1536
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

AMD® Radeon™ R7 430 2GB GDDR5 2DP 64 bit Graphics Card

Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	2 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	yes
Rear I/O connectors(bracket)	DPx2
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

Technical Specifications – Graphics

HP EliteDesk 800 G5 Small Form Factor Business PC

Intel® HD Graphics (integrated)	
VGA Controller	Integrated
DisplayPort™ 1.2	Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics
HDMI (optional)	Supports HDMI 2.0a features Supports HDCP 2.2 Supports audio over HDMI
VGA (optional)	VGA Output
USB-C™ DP Alt Mode (optional)	DisplayPort over the optional USB-C™ module
Memory	The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.
Maximum Color Depth	up to 10 bits/color HEVC 10b Enc/Dec HW VP9 10b Dec HW
Graphics/Video API Support	HDR Rec. 2020 DX12
Max. Resolution (VGA)	2048 x 1536@60Hz
Max. Resolution (HDMI)	4096 x 2160@60Hz
Max. Resolution (DP)	4096 x 2160@60Hz

AMD® Radeon™ R7 430 2GB VGA+DP 64bit Graphics Card

Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	1 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	2048x1536
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

AMD® Radeon™ R7 430 2GB GDDR5 2DP 64 bit Graphics Card

Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	1 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	yes
Rear I/O connectors(bracket)	DPx2
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)

Technical Specifications – Graphics

Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket
NVIDIA® GeForce® GT730 2GB DP DVI PCIe x8 GFX	
Engine Clock	902 MHz
Memory Clock	1250 MHz
Memory Size(width)	2 GB (64-bit)
Memory Type	256Mx32 GDDR5
Max. Resolution(DVI)	2560 x 1600 x 30 bpp @ 60Hz (Dual Link)
Max. Resolution(DP)	4096 x 2160 x 24 bpp @ 60 Hz (DP1.2)
Multi Display Support	Up to 2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DL DVI-I + DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	35 W
PCB form-factor with bracket	2-pin fan connector for fan sink power/speed control

AMD® Radeon™ RX550 4 GB PCIe x16	
Engine Clock	1183MHz
Memory Clock	6 Gbps
Memory Size(width)	4 GB(128-bit)
Memory Type	GDDR5
Max. Resolution(HDMI)	4096x2160 @ 60Hz
Max. Resolution(DP)	5120x2880 @ 60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	HDMI, DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP (low profile) PCB with FH/LP bracket

AMD Radeon™ 520 1GB Graphics Card	
Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	1 GB (32-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	2048x1536@60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

Technical Specifications – Graphics

HP EliteOne 800 G5 23.8-in All-in-One

Intel® UHD Graphics (integrated)

VGA Controller

Integrated

DisplayPort™ 1.2

Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays (including the integrated panel and all attached displays)

HDMI

Supports HDMI 2.0a features

Supports HDCP 2.2

Supports audio over HDMI

Memory

The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.

Maximum Color Depth

up to 10 bits/color

HEVC 10b Enc/Dec HW

VP9 10b Dec HW

Graphics/Video API Support

HDR

Rec. 2020

DX12

Max. Resolution (VGA)

2048 x 1536@60Hz

Max. Resolution (HDMI)

4096 x 2160@60Hz

Max. Resolution (DP)

4096 x 2160@60Hz

AMD® Radeon™ RX 560X

Architecture

Discrete GPU

AMD® GPU drives the integrated panel and all of the graphics output ports

DisplayPort

Multimode capable; supports HDCP, HDR, Display Port Audio (6 streams max), DisplayPort HBR3 link rates and Multi-Stream Technology for a maximum of 5 displays (including the integrated panel and all attached displays)

HDMI

Supports HDMI 2.0b features

Supports HDCP 2.2, HDR

Memory

4GByte, 128bit wide GDDR5

Maximum Color Depth

up to 12 bits/color

Graphics/Video API Support

DirectX 12

OpenCL 2.0

OpenGL 4.5

AMD® Unified Video Decoder (UVD)

Rear I/O connector

1 DP

Max. Resolution (VGA)

2048 x 1536@60Hz

Max. Resolution (HDMI)

4096 x 2160@60Hz

Max. Resolution (DP)

5120 x 2880@60Hz

Technical Specifications – Storage

STORAGE

500 GB 7200RPM 3.5in SATA HDD

Capacity	500 GB
Rotational Speed	7,200 rpm
Interface	SATA 6.0 Gb/s
Buffer Size	32 MB
Logical Blocks	976,773,168
Seek Time	11 ms (Average)
Height	1 in/2.54 cm
Width	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

1 TB 7200RPM 3.5in SATA HDD

Capacity	1 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	64 MB
Logical Blocks	1,953,525,168
Seek Time	11 ms (Average)
Height	1 in/2.54 cm
Width (nominal)	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

2 TB 7200RPM 3.5in SATA HDD

Capacity	2 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	64 MB
Logical Blocks	1,953,525,168
Seek Time	11 ms (Average)
Height	1.028 in/26.11 mm
Width (nominal)	4.0 in/101.6 mm
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

500 GB 7200RPM 2.5in SATA HDD

Capacity	500 GB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	32 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.267 in/6.8 mm (nominal)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

1 TB 7200RPM 2.5in SATA HDD

Capacity	1 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	32 MB
Logical Blocks	1,953,525,168
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (nominal)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

2 TB 5400RPM 2.5in SATA HDD

Capacity	2 TB
Rotational Speed	5,400 rpm
Interface	SATA 6 Gb/s
Buffer Size	128 MB
Logical Blocks	3,907,050,336
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (nominal)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

500 GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD

Capacity	500 GB
Architecture	Self-Encrypting (SED) Solid State Drive with SATA interface
Interface	SATA 6 Gb/s
Buffer Size	32 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.267 in/6.8 mm (nominal)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

500 GB 7200RPM 2.5in Self Encrypted Federal Information Processing Standard SATA HDD

Capacity	500 GB
Architecture	Self-Encrypting (SED) Solid State Drive with SATA interface
Interface	SATA 6 Gb/s
Buffer Size	32 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.267 in/6.8 mm (nominal)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

500 GB 5400RPM 2.5in SATA SSHD

Capacity	500 GB
Rotational Speed	5,400 rpm
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash
Interface	SATA 6 Gb/s
Buffer Size	64 MB
NAND Flash	8 GB
Seek Time	12 ms (Average)
Height	0.267 in/6.8 mm (nominal)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

1 TB 5400RPM 2.5in SATA SSHD

Capacity	1 TB
Rotational Speed	5,400 rpm
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash
Interface	SATA 6 Gb/s
Buffer Size	64 MB
NAND Flash	8 GB
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (nominal)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

2 TB 5400RPM 2.5in SATA SSHD

Capacity	2 TB
Rotational Speed	5,400 rpm
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash
Interface	SATA 6 Gb/s
Buffer Size	128 MB
NAND Flash	8 GB
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (nominal)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

128 GB 2.5in SATA Three Layer Cell SSD

Drive Weight	<50g
Capacity	128 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 380MB/s
Logical Blocks	250,069,680
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

256 GB 2.5in SATA Three Layer Cell SSD

Drive Weight	<62g
Capacity	256 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 450MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB 2.5in SATA Three Layer Cell SSD

Drive Weight	<50g
Capacity	512 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

256 GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD

Drive Weight	<50g
Capacity	256 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM; TCG-OPAL2.0 security

Technical Specifications – Storage

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD

Drive Weight	<50g
Capacity	512 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM; TCG-OPAL2.0 security

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

256 GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD

Drive Weight	<40g
Capacity	256 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM; FIPS 140-2 security

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

512 GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD

Drive Weight	<45g
Capacity	512 GB
Height	7mm
Length	100.45mm
Width	69.85mm
Interface	SATA 3.0 (6Gb/s)
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	DIPM; TRIM; FIPS 140-2 security

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

128 GB M.2 2280 PCIe NVMe SSD

Drive Weight	< 10g
Capacity	128GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 1400MB/s
Maximum Sequential Write	Up to 395MB/s
Logical Blocks	250,069,680
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

256 GB M.2 2280 PCIe NVMe SSD

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 1600MB/s
Maximum Sequential Write	Up to 780MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

Technical Specifications – Storage

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB M.2 2280 PCIe NVMe SSD

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 1600MB/s
Maximum Sequential Write	Up to 860MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

1 TB M.2 2280 PCIe NVMe SSD

Drive Weight	< 10g
Capacity	1 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 1800MB/s
Maximum Sequential Write	Up to 1800MB/s
Logical Blocks	2,000,409,264
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

128 GB M.2 2280 PCIe NVMe Three Layer Cell SSD

Drive Weight	< 10g
Capacity	128 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2800MB/s
Maximum Sequential Write	Up to 600MB/s
Logical Blocks	250,069,680

Technical Specifications – Storage

Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

256 GB M.2 2280 PCIe NVMe Three Layer Cell SSD

Drive Weight	< 10g
Capacity	256GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2700MB/s
Maximum Sequential Write	Up to 1000MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB M.2 2280 PCIe NVMe Three Layer Cell SSD

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2900MB/s
Maximum Sequential Write	Up to 1100MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

1 TB M.2 2280 PCIe NVMe Three Layer Cell SSD

Drive Weight	< 10g
Capacity	1 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4

Technical Specifications – Storage

Maximum Sequential Read	Up to 3480MB/s
Maximum Sequential Write	Up to 3037MB/s
Logical Blocks	2,000,409,264
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

256 GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2700MB/s
Maximum Sequential Write	Up to 1000MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2900MB/s
Maximum Sequential Write	Up to 1100MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications – Storage

256GB Intel® Optane™ Memory H10 with Solid State Storage

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 1450MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

512 GB Intel® PCIe® NVMe™ QLC + 32 GB Intel® Optane™

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3x4
Maximum Sequential Read	Up to 2400MB/s
Maximum Sequential Write	Up to 1300MB/s
Logical Blocks	1,000,215,215
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

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. Not available with eMMC Base Units. Intel® Optane™ SSD is sold separately. Intel® Optane™ SSD system acceleration does not replace or increase the DRAM in your system. Available for HP commercial desktops and notebooks and for select HP workstations and requires a SATA HDD, 7th Gen or higher Intel® Core™ processor or Intel® Xeon® processor E3-1200 V6 product family or higher, BIOS version with Intel® Optane™ supported, Windows 10 version 1703 or higher, M.2 type 2280-S1-B-M connector on a PCH Remapped PCIe Controller and Lanes in x2 or x4 configuration with B-M keys that meet NVMe™ Spec 1.1, and an Intel® Rapid Storage Technology (Intel® RST) 15.5 driver.

Technical Specifications – Storage

HP 9.5mm Slim DVD-ROM Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	Up to 0.31 lb (140g) without bezel
Read Speeds	DVD+R/-R/+RW/ -RW/+R DL /-R DL Up to 8X DVD-ROM Up to 8X CD-ROM, CD-R Up to 24X CD-RW Up to 24X
Access time (typical reads, including settling)	Random: DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full stroke: DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC \pm 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

HP 9.5mm Slim DVD Writer Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 8.5 GB DL or 4.7 GB standard
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.31 lb (140 g)
Write Speeds	DVD-R DL - Up to 6X DVD+R - Up to 8X DVD+RW - Up to 8X DVD+R DL - Up to 6X DVD-R - Up to 8X DVD-RW - Up to 6X CD-R - Up to 24X CD-RW - Up to 10X DVD-RW, DVD+RW - Up to 8X
Read Speeds	DVD-R DL, DVD+R DL - Up to 8X DVD+R, DVD-R - Up to 8X DVD-ROM DL, DVD-ROM - Up to 8X CD-ROM, CD-R - Up to 24X CD-RW - Up to 24X
Access time (typical reads, including settling)	Random DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full Stroke DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical) Stop Time 6 seconds (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC \pm 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)

Technical Specifications – Storage

Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)
HP 9.5mm Slim Blu-Ray Writer Drive	
Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 128 GB QL, 100 GB TL, 50 GB DL or 25 GB standard SL
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.29 lb (132 g)
Write Speeds	BD-R SL/DL Up to 6X BD-R TL/QL Up to 4X BD-R Up to 6X BD-RE Up to 2X DVD-R Up to 8X DVD-R DL - Up to 6X DVD-RW Up to 6X DVD+R Up to 8X DVD+R DL - Up to 6X DVD+RW Up to 8X DVD-RAM Up to 5X CD-R Up to 24X CD-RW Up to 10X
Read Speeds	BD-ROM Up to 6X BD-R Up to 6X BD-RE SL/DL Up to 6X BD-RE TL Up to 4X DVD-ROM Up to 8X DVD-R SL/DL Up to 8X DVD-R Up to 8X DVD-RW Up to 8X DVD+R SL/DL Up to 8X DVD+R Up to 8X DVD+RW Up to 8X BDMV (AACs Compliant Disc) Up to 6x/2x (Read/Play) DVD-RAM Up to 5x DVD-Video (CSS Compliant Disc) Up to 8x/4x (Read/Play) CD-R/RW/ROM Up to 24x CD-DA (DAE) Up to 24X/10X (Read/Play)
Access time (typical reads, including settling)	Random BD-ROM: 205 ms (typical), DVD-ROM: 185 ms (typical), CD-ROM: 165 ms (typical) Full Stroke BD-ROM: 350 ms (typical), DVD-ROM: 345 ms (typical), CD-ROM: 340 ms (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC -1200 mA typical, 2000 mA maximum
Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

Technical Specifications – Networking and Communications

NETWORKING AND COMMUNICATIONS

Intel® i219LM 10/100/1000 Integrated NIC	
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K
Power consumption	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status

Technical Specifications – Networking and Communications

Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel® i210 10/100/1000 NIC	
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K
Power consumption	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection

Technical Specifications – Networking and Communications

IT Manageability	<p>Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)</p> <p>PXE 2.1 Remote Boot</p> <p>Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))</p> <p>Comprehensive diagnostic and configuration software suite</p> <p>Virtual Cable Doctor for Ethernet cable status</p>
Security & Manageability	<p>Intel® vPro™ support with appropriate Intel® chipset components</p>

Intel Wi-Fi 6 AX200 + BT5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds) vPro	
Wireless LAN Standards	<p>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</p>
Interoperability	<p>Wi-Fi certified</p>
Frequency Band	<p>802.11b/g/n/ax</p> <ul style="list-style-type: none"> • 2.402 – 2.482 GHz <p>802.11a/n/ac/ax</p> <ul style="list-style-type: none"> • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) • 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	<p>Direct Sequence Spread Spectrum OFDMA, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM</p>
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	<p>Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)</p>
Roaming	<p>IEEE 802.11 compliant roaming between access points</p>
Output Power²	<ul style="list-style-type: none"> • 802.11b: +18.5dBm minimum • 802.11g: +17.5dBm minimum

Technical Specifications – Networking and Communications

	<ul style="list-style-type: none"> • 802.11a: +18.5dBm minimum • 802.11n HT20(2.4GHz): +15.5dBm minimum • 802.11n HT40(2.4GHz): +14.5dBm minimum • 802.11n HT20(5GHz): +15.5dBm minimum • 802.11n HT40(5GHz): +14.5dBm minimum • 802.11ac VHT80(5GHz): +11.5dBm minimum • 802.11ac VHT160(5GHz): +11.5dBm minimum • 802.11ax VHT160(5GHz) : +10dBm minimum 	
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW 	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	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(HT40): -59dBm maximum 802.11ax, MCS11(VHT160): -58.5dBm maximum	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230: 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	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)	
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.	

Technical Specifications – Networking and Communications

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel Wi-Fi 6 AX200 + BT5 (802.11 ax 2x2, non-vPro, supporting gigabit file transfer speeds) non-vPro	
Wireless LAN Standards	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
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n/ax • 2.402 – 2.482 GHz 802.11a/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

Technical Specifications – Networking and Communications

Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) 	
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM	
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI 	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power²	<ul style="list-style-type: none"> • 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ac VHT160(5GHz) : +11.5dBm minimum 	
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW 	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	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	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230: 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)

Technical Specifications – Networking and Communications

Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	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)	
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.	
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW	
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)	
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)	

Technical Specifications – Networking and Communications

Intel Thunder Peak 9260 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo vPro	
Wireless LAN Standards	<ul style="list-style-type: none"> IEEE 802.11a IEEE 802.11bsd IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	<ul style="list-style-type: none"> 802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz 802.11a/n/ac <ul style="list-style-type: none"> • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum OFDMA, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none"> • 802.11b: +18.5dBm minimum • 802.11g: +17.5dBm minimum • 802.11a: +18.5dBm minimum • 802.11n HT20(2.4GHz): +15.5dBm minimum • 802.11n HT40(2.4GHz): +14.5dBm minimum • 802.11n HT20(5GHz): +15.5dBm minimum • 802.11n HT40(5GHz): +14.5dBm minimum • 802.11ac VHT80(5GHz): +11.5dBm minimum • 802.11ac VHT160(5GHz): +11.5dBm minimum
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW

Technical Specifications – Networking and Communications

Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	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	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230: 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	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)	
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.	
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW	
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)	
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping	

Technical Specifications – Networking and Communications

	<ul style="list-style-type: none"> 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)
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel Thunder Peak 9260 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo Non vPro	
Wireless LAN Standards	<ul style="list-style-type: none"> IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	<ul style="list-style-type: none"> 802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz 802.11a/ac <ul style="list-style-type: none"> • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)

Technical Specifications – Networking and Communications

Roaming	IEEE 802.11 compliant roaming between access points	
Output Power²	<ul style="list-style-type: none"> • 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ac VHT160(5GHz) : +11.5dBm minimum 	
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW 	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	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	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230: 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	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)	
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.	

Technical Specifications – Networking and Communications

Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Realtek RTL8822BE 802.11ac 2x2 Wi-Fi + BT4.2	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz

Technical Specifications – Networking and Communications

Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) 	
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM	
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI 	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power²	<ul style="list-style-type: none"> • 802.11b: +14dBm minimum • 802.11g: +12dBm minimum • 802.11a: +12dBm minimum • 802.11n HT20(2.4GHz): +12dBm minimum • 802.11n HT40(2.4GHz): +12dBm minimum • 802.11n HT20(5GHz): +10dBm minimum • 802.11n HT40(5GHz): +10dBm minimum • 802.11ac VHT80(5GHz): +10dBm minimum 	
Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW 	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	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	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230 : 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Technical Specifications – Networking and Communications

HP Integrated Module with Bluetooth® 4.0/4.1/4.2 Wireless Technology	
Bluetooth® Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	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)
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software
Power Management Certifications	Microsoft Windows ACPI, and USB Bus Support ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Realtek 802.11a/b/g/n/ac (1x1) WiFi and Bluetooth® 4.2 Combo	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h

Technical Specifications – Networking and Communications

	IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	• 802.11b : +14dBm minimum • 802.11g : +12dBm minimum • 802.11a : +12dBm minimum • 802.11n HT20(2.4GHz) : +12dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +10dBm minimum • 802.11n HT40(5GHz) : +10dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	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
Antenna type	High efficiency antenna.

Technical Specifications – Networking and Communications

	One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230 : 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
HP Integrated Module with Bluetooth® 4.0/4.1/4.2 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	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)	
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.	
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW	
Electrical Interface	USB 2.0 compliant	
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)	

Technical Specifications – Input/Output Devices

I/O DEVICES

HP Conferencing Keyboard			
1.	Function Keys	6.	End/Decline a Call
2.	F11 Lync or Skype for Business Contact list[1]	7.	Answer a Call
3.	F12 Lync or Skype for Business Calendar[2]	8.	Microphone Mute
4.	Share Screen	9.	Volume Up/Down
5.	Stop Webcam	10.	Audio Mute
<p>1. Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Contact list 2. Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Calendar</p>			

Technical Specifications – Input/Output Devices

HP USB Premium Keyboard		
Physical Characteristics	Keys	104, 105 layout (depending upon country)
	Dimensions (L x W x H)	17.04 x 5.55 x 0.52 in (433 x 141 x 13.2 mm)
	Weight	1.54 lb. (698g)
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	35mA (All LED on)
	System interface	USB Type A plug connector
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±10g nominal peak force with tactile feedback
	Switch life	10 million keystrokes (Life tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft. (1.8 m)
	Microsoft PC 99 - 2001	Mechanically compliant
Environmental	Acoustics	43-dBA maximum sound pressure level
	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	-22° to 140° F (-30° to 60° C)
	Operating humidity	10% to 90% (non-condensing at ambient)
	Non-operating humidity	20% to 80% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence
Approvals	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC	
Ergonomic compliance	TUVGS	
Kit contents	Keyboard, QSP	
Warranty Card	Product Notice	

Technical Specifications – Input/Output Devices

Skylab USB Wired Keyboard		
Physical Characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	171.97 x 68.35 x 8.27 in (436.8± 1.5 x 137.6± 1.0 x 21.0± 1.0 cm)
	Weight	1.32 lb. (0.6± 0.08 kg)
Electrical	Operating voltage	4.4-5.25VDC
	Power consumption	50-mA maximum (with 5 VDC power supplied and three LEDs ON)
	System interface	USB
	ESD	Contact Discharge: 2, 4,6,8KV Air Discharge: 2, 4, 8,10,12.5KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±10g nominal peak force with tactile feedback
	Switch life	10 million keystrokes (Life tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft. (1.8 m)
	Microsoft PC 99 - 2001	Mechanically compliant
Environmental	Acoustics	43-dBA maximum sound pressure level
	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	Minus 30 degrees to 60 degrees Celsius
	Operating humidity	10% to 90% (non-condensing at ambient)
	Non-operating humidity	20% to 80% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence
Approvals	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	
Kit contents	Keyboard, Installation Guide, Warranty card, Safety and Comfort Guide	

HP USB Premium Mouse		
Dimensions (H x L x W)	4.21 x 2.64 x 1.52 in (107 x 67 x 38.7 mm)	

Technical Specifications – Input/Output Devices

Weight	0.19lb (90g)	
Environmental	Operating temperature	50° to 122°F (10° to 50° C)
	Non-operating temperature	-22° to 140°F (-30° to 60° C)
	Operating humidity	10% to 90% (non-condensing at ambient)
	Non-operating humidity	20% to 80% (non-condensing at ambient)
	Operating shock	50 g, 6 surfaces
	Non-operating shock	80 g, 6 surfaces
	Operating vibration	2 g peak acceleration
	Non-operating vibration	4 g peak acceleration
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	12mA
Mechanical	Connector	USB 2.0
	Type	3D mouse (3 keys and wheel)
	Resolution	800, 1200, 1600 DPI
	Sensor	Pixart PAN3606DL
Tracking speed	Tracking acceleration	8G(max), 1G=9.8m/s ²
	Cable length	6 ft. (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC

HP USB Mouse		
Dimensions (H x L x W)	37mm x 115mm x cccccccc62.9mm	
Weight	90 +10g/- 5 g	
Color	Black	
Connector	USB	
Mechanical	Resolution	800 DPI sensitivity
	Buttons	Two primary buttons and clickable scroll wheel

Technical Specifications – Audio/Multimedia

AUDIO/MULTIMEDIA

HP EliteDesk 800 G5 Tower Business PC

Type	Integrated
HD Stereo Codec	Conexant CX20632
Audio I/O Ports	Front: 1 - Headset connector supports a CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port 1 - Headphone port Rear: 1 - Line-out 1 - Line-in which is retaskable as a Microphone Input All ports are 3.5mm and support stereo
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

HP EliteDesk 800 G5 Small Form Factor Business PC

Type	Integrated
HD Stereo Codec	Conexant CX20632
Audio I/O Ports	Front: 1 - Headset connector supports a CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port 1 - Headphone port Rear: 1 - Line-out 1 - Line-in which is retaskable as a Microphone Input All ports are 3.5mm and support stereo
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

Technical Specifications – Audio/Multimedia

HP EliteDesk 800 G5 Desktop Mini Business PC

Type	Integrated
HD Stereo Codec	Conexant CX20632
Audio I/O Ports	Front: 1 - Headset connector supports a CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port 1 - Headphone port
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

HP EliteOne 800 G5 23.8-in All-in-One

Bang & Olufsen Audio

Type	Integrated
HD Stereo Codec	Conexant CX5001
Audio I/O Ports	Side headset connector supports a CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port Side headphone connector supports a headphone connections Rear line out connector
Internal Speaker Amplifier	2W per channel class D stereo amplifier for the internal speakers only
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speakers.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes - Stereo

Technical Specifications – Integrated Webcam and Microphone

INTEGRATED WEBCAM AND MICROPHONE

Integrated Webcam and Microphone

Optional integrated 2 MP Full HD RGB webcam & microphone; maximum resolution of 1920 x 1080

Optional integrated 2 MP Full HD RGB dual-facing webcam with IR sensor (user-facing) & microphone; maximum resolution of 1920 x 1080

NOTE: All HP devices which carry the Bang & Olufsen brand are custom-tuned with Bang & Olufsen's acoustical engineers for precise sound experience in business use.

INTEGRATED FINGERPRINT SENSOR

Sensor type: Touch

Fingerprint matching: Performed on device

Anti-Spoofing: Yes

Windows Hello Support: Yes

Encryption: On sensor

FIPS Compliant: No

Technical Specifications – Power

POWER**HP EliteDesk 800 G5 Tower Business PC****Unit Environment and Operating Conditions**

Temperature Range	Operating: 5°C ~45°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

HP EliteDesk 800 G5 SFF Business PC**Unit Environment and Operating Conditions**

Temperature Range	Operating: 5°C ~45°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

HP EliteDesk 800 G5 Desktop Mini Business PC (35W)**Unit Environment and Operating Conditions**

Temperature Range	Operating: 5°C ~35°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

HP EliteDesk 800 G5 Desktop Mini Business PC (65W)**Unit Environment and Operating Conditions**

Temperature Range	Operating: 5°C ~35°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

HP EliteDesk 800 G5 Desktop Mini Business PC (95W)**Unit Environment and Operating Conditions**

Temperature Range	Operating: 5°C ~35°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

Technical Specifications – Power

HP EliteOne 800 G5 23.8-in All-in-One

Unit Environment and Operating Conditions

Temperature Range	Operating: 5°C ~45°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 90% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

	DM	SFF	TWR	AiO
External Power Supplies	65W EPS, 88% average efficiency at 115V & 89% at 230Vac 90W EPS, 88% average efficiency at 115V & 89% at 230Vac 150W EPS, 88% average efficiency at 115V & 89% at 230Vac	N/A	N/A	N/A
80 PLUS Gold	N/A	N/A	500W active PFC / 80 PLUS Gold 87/90/87% efficient at 20/50/100% load (115V)	180W active PFC / 80 PLUS Gold* 87/90/87% efficient at 20/50/100% load (115V) <small>*Available on models with integrated graphics</small>
80 PLUS Platinum	N/A	250W active PFC / 80 PLUS Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	250W active PFC / 80 PLUS Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	210W active PFC / 80 PLUS Platinum* 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V) <small>*Available on models with discrete graphics</small>
Operating Voltage Range	90Vac~264Vac	90Vac~264Vac	90Vac~264Vac	90Vac~264Vac
Rated Voltage Range	100Vac~240Vac	100Vac~240Vac	100Vac~240Vac	100Vac~240Vac
Rated Line Frequency	50HZ~60HZ	50HZ~60HZ	50HZ~60HZ	50HZ~60HZ
Operating Line Frequency	47HZ~63HZ	47HZ~63HZ	47HZ~63HZ	47HZ~63HZ
Rated Input Current	65W≤1.6A 90W≤1.2A 150W≤2.2A	250W≤3A	500W≤6A 250W≤3A	210W≤3A 180W≤2.5A
Rated Input Current with Energy Efficient* Power Supply	65W≤1.6A 90W≤1.2A 150W≤2.2A	250W≤3A	500W≤6A 250W≤3A	210W≤3A 180W≤2.5A
DC Output	+19.5VV	+12V	+12V	+12V

DM

SFF

TWR

AiO

Technical Specifications – Power

Current Leakage (NFPA 99: 2102)	Less than 500 microamps of leakage current at 120 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	Less than 500 microamps of leakage current at 120 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	Less than 500 microamps of leakage current at 120 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	Less than 500 microamps of leakage current at 120 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.
Power Supply Fan	N/A	70mm variable speed	70mm variable speed	N/A
Power cord length	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)
External Power Adapter	External power supply	Internal power supply	Internal power supply	Internal power supply
Dimensions	65W: 113.5mm x 55mm x 30mm 90W: 132mm x 57mm x 30mm 150W: 160mm x 80mm x 40mm	165mm x 95mm x 73mm	500W : 165mm x 140mm x 73mm 250W : 165mm x 95mm x 73mm	135mm x 100mm x 19.52mm
Total Cord Length	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)

Technical Specifications – Power

The harmonic input current requirements must be met under the following operating conditions:

Load Requirements: 50% and 100%

Input Voltage: 230Vac/50Hz.

For active power factor correction the power factor at 50% & 100% loads shall be greater than 0.9 over the entire nominal input voltage range (100-127VAC and 200-240VAC).

Condition	Standard Efficiency	82/85/82%	85/88/85%	87/90/87%	90/92/89%	Input Voltage
10% of Rated Load	-	75%	81%	84%	84%	115Vac/60HZ
20% of Rated Load	-	82%	85%	87%	90%	115Vac/60HZ
50% of Rated Load	-	85%	88%	90%	92%	115Vac/60HZ
	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.95	
100% of Rated Load	70%	82%	85%	87%	89%	115Vac/60HZ
	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.9	230Vac/50HZ

Technical Specifications – Weights and Dimensions

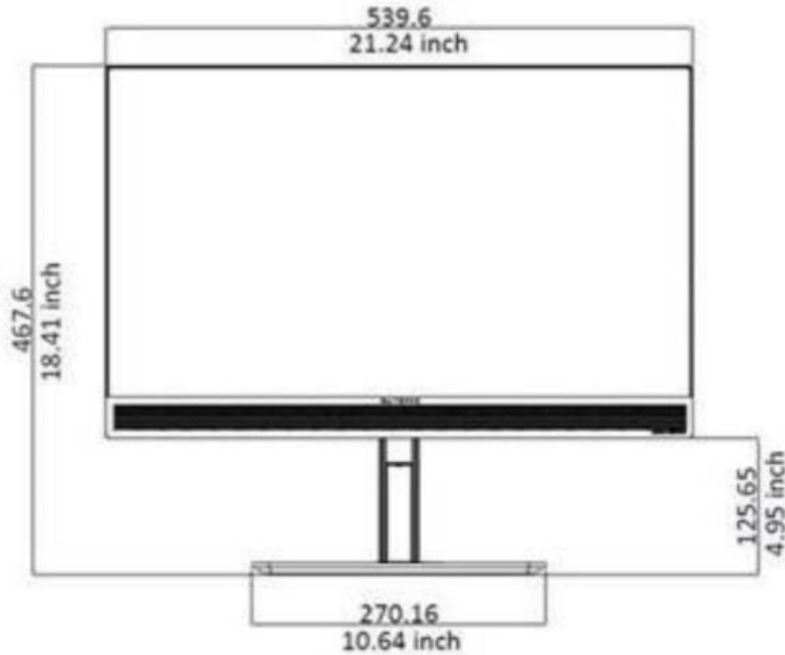
WEIGHTS & DIMENSIONS

	DM	SFF	TWR	AiO
Chassis (W x D x H)	6.97 x 6.89 x 1.35 in 177x175x34mm	13.3 x 12.13 x 3.94 in 338 x 308 x 100 mm	6.1 x 14.6 x 14.4 in 154 x 370 x 365 mm	See table below.
System Volume	63.4 cu in 1.05L	63.4 cu in 10.4 L	1269 cu in 20.8 L	See table below.
System Weight	2.31 lb 1.05 kg	13.5 lb 6.13 kg	21.74 lb 9.86 kg	See table below.
Max Supported Weight (desktop orientation)	0	77 lb 35 kg	77 lb 35 kg	See table below.
Stand Dimensions	160x117x18.5mm	151.8x200x37.2mm	N/A	See table below.
Packaging (W x D x H)	19.57 x 5.04 x 8.78 in 497 x 128 x 223mm	15.71 x 19.65 x 9.06 in 399 x 499 x 230 mm	11.77 x 18.82 x 20.35 in 299 x 478 x 517 mm	See table below.
Shipping Weight	2.95 kg 6.49 lb	9 kg 19.82 lb	11.34 kg 24.98 lb	See table below.
Multipack Packaging (10 units)	20.28x16.54x25 in 515x420x636 mm			
Palletization Profile	18-units per layer 5 or 6 layers max depending on details of air freight 90 or 108 units per pallet depending on details of air freight 45.354 x 39.13 x 57.80 in, 1152 x 994 x 1468 mm (include pallet)	6 units per layer 10 layers max 60 units per pallet 1200*1000*2438 mm (include the pallet)	8 units per layer 4 layers ax 32 units per pallet 1200*1000*2203 mm (include the pallet)	10-units per layer 4-layers max 40-units per pallet (sea) 1200 x 1000 x 2470 mm

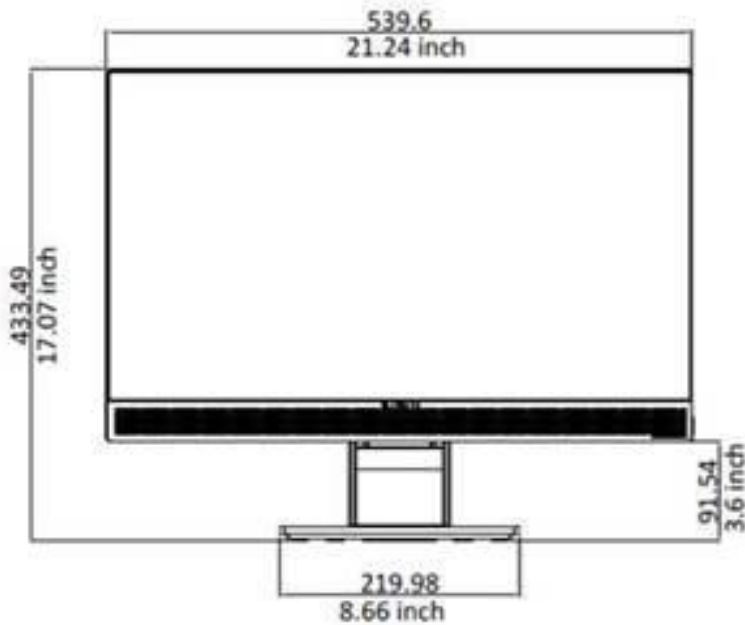
Technical Specifications – Weights and Dimensions

STANDS AND DIMENSIONS

HP EliteOne G5 AIO Adjustable Height Stand



HP EliteOne G5 AIO Recline Stand



Technical Specifications – Weights and Dimensions

ALL-IN-ONE WEIGHTS AND DIMENSIONS

Weight with Touch Panel

Product Weight Unboxed	Without Stand 13.29 lbs. 6.03kg	Adjustable Height Stand 19.24 lbs. 8.73kg	Recline Stand 21.12lbs 9.58kg
Shipping Weight Boxed	Without Stand 20.64-21.15lbs 9.4-9.45kg	Adjustable Height Stand 26.68 lbs. 12.1kg	Recline Stand 28.66-28.88 lbs. 13-13.1kg
Shipping Weight Pallet	Without Stand (10units) 233.73lbs 106kg	Adjustable Height Stand (10units) 293.21lbs 133 kg	Recline Stand (10units) 313.06lbs 142kg

Weight without Touch Panel

Product Weight Unboxed	Without Stand 13.51-13.62 lbs. 6.13-6.18kg	Adjustable Height Stand 19.46-19.68lbs 8.93 kg	Recline Stand 21.34-21.44 lbs. 9.68-9.73kg
Shipping Weight Boxed	Without Stand 20.86-21.06lbs 9.5-9.55kg	Adjustable Height Stand 26.89-27.12 lbs. 12.2-12.3 kg	Recline Stand 28.88lbs 13.1kg
Shipping Weight Pallet	Without Stand 21.2 x 2.12 x 13.46 in 539.6 x 53.8 x 341.79 mm	Adjustable Height Stand 0 degrees 21.2 x 7.1 x 18.4 in 539.6 x 180.28 x 467.7 mm	Recline Stand 0 degrees 21.2 x 10.3 x 10.63 in 539.6 x 261.8 x 269.98 mm

Dimensions (W x D x H)

Product Dimensions	Without Stand 21.2 x 2.12 x 13.46 in 539.6 x 53.8 x 341.79 mm	Adjustable Height Stand 0 degrees 21.2 x 7.1 x 18.4 in 539.6 x 180.28 x 467.7 mm	Recline Stand 0 degrees 21.2 x 10.3 x 10.63 in 539.6 x 261.8 x 269.98 mm
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Shipping Dimensions

Shipping Dimensions Boxed	Without Stand 27.17 x 10.08 x 21.46(H) in 690 x 256 x 545(H) mm	Adjustable Height Stand 27.17 x 10.08 x 26.22(H) in 690 x 256 x 666(H) mm	Recline Stand 27.17 x 10.08 x 26.22(H) in 690 x 256 x 666(H) mm
Shipping Dimensions Pallet	Without Stand (10 units) 47.24 x 39.37 x 24.02(H) in 1200 x 1000 x 610(H) mm	Adjustable Height Stand (10 units) 47.24 x 39.37 x 28.94(H) in 1200 x 1000 x 735(H) mm	Recline Stand (10 units) 47.24 x 39.37 x 28.94(H) in 1200 x 1000 x 735(H) mm

Technical Specifications – Miscellaneous Features

MISCELLANEOUS FEATURES

Management Features

- Advanced Configuration and Power Management Interface (ACPI). Allows the system to wake from a low power mode. Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system.
- Intel® Wired for Management support; industry wide initiative to make Intel® architecture based PCs, servers and mobile computers more inherently manageable out-of-the-box and over the network
- Dual State Power Button; acts as both an on/off button and a suspend-to-sleep button

Serviceability Features

- Dual colored power LED on front of computer to indicate either normal or fault condition
- Diagnostic LED Explanation Table:
 - Power LED will blink red 2 to 5 times, then blink white 2 or more times, then repeat (with beep tones for each blink initially):
 - 2 red + 2 white User must provide file for BIOS recovery (USB storage typically)
 - 2 red + 3 white User must enter a key sequence to proceed with recovery by policy
 - 2 red + 4 white BIOS recovery is in progress
 - 3 red + 2 white Memory could not be initialized
 - 3 red + 3 white Graphics adaptor could not be found
 - 3 red + 4 white Power supply failure / not connected
 - 3 red + 5 white Processor not installed
 - 3 red + 6 white Current processor does not support an enabled feature
 - 4 red + 2 white Processor has exceeded its temperature threshold / system thermal shutdown
 - 4 red + 3 white System internal temperature has exceeded its threshold
 - 5 red + 2 white System controller firmware is not valid
 - 5 red + 3 white System controller detected BIOS is not executing
 - 5 red + 4 white BIOS could not complete initialization / PCA failure
 - 5 red + 5 white System controller rebooted the system after a health or recovery timer triggered
- HP PC Hardware Diagnostics UEFI:
 - This utility enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support
- System/Emergency ROM
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software
- 5 Aux Power LED on System PCA
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- DIMM Connectors for easy Upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive, CD & Diskette Removal (For MT, SFF, and DM only)
- Green Pull Tabs, and Quick Release Latches for easy Identification

Technical Specifications – Miscellaneous Features

Additional Features

Tower Orientation

Description

Product can be oriented as either a desktop (horizontal) or a tower (vertical) for MT, SFF, and DM only

Drive Lock

Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided.

Boot Sectors Protection

MBR and GPT sectors of the hard drive are critical to booting the operating system. By saving the MBR or GPT data (depending on the how the OS was installed), the BIOS will be able to monitor for changes and allow the user to override them with the backup copy at boot-up.

Drive Protection System

DPS Access through F10 Setup during Boot

A diagnostic hard drive self- test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user. Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced

The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures

SMART Technology (Self-Monitoring, Analysis and Reporting Technology)

Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted

SMART I - Drive Failure Prediction

Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count

SMART II - Off-Line Data Collection

By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure

SMART III - Off-Line Read Scanning with Defect Reallocation

IOEDC: I/O Error Detection Circuitry

SMART IV - End-to-End CRC for hard drives

Detects errors in Read/Write buffers on HDD cache RAM

Technical Specifications – After Market Options

AFTER MARKET OPTIONS

Graphics Solutions	DM	SFF	TWR	AiO	Part Number
AMD® Radeon™ RX 550X 4GB LP Display Port Card		X			5LH79AA
AMD® Radeon™ R7 430 2GB 2 Display Port Card		X	X		5JW82AA
AMD® Radeon™ R7 430 2GB Display Port VGA 64bit Card (China Only)		X	X		5JW81AA
NVIDIA GeForce GT730 DP 2GB PCIe x8 GFX		X	X		Z9H51AA
HP DisplayPort To HDMI True 4k Adapter	X	X	X	X	2JA63AA
HP DVI Cable Kit	X	X	X	X	DC198A
HP HDMI Standard Cable Kit	X	X	X	X	T6F94AA
HP DisplayPort Cable Kit	X	X	X	X	VN567AA
HP DisplayPort To VGA Adapter	X	X	X	X	AS615AA
HP DisplayPort To DVI-D Adapter	X	X	X	X	FH973AA

Desktop Mini Accessories	DM	SFF	MT	AiO	Part Number
HP Desktop Mini G3 Port Cover Kit	X				1ZE52AA
HP G4 Mini 2.5-inch SATA Drive Bay Kit	X				3TK91AA
HP Desktop Mini LockBox V2	X (95W and discrete GPU skus not supported)				3EJ57AA
HP Desktop Mini DVD-Writer ODD Expansion Module	X (Either one)				K9Q83AA
HP Desktop Mini I/O Expansion Module					K9Q84AA
HP Desktop Mini Security/Dual VESA Sleeve v2	X (95W and discrete GPU skus not supported)				2JA32AA
HP Desktop Mini Security/Dual VESA Sleeve v2 with Power Supply Holder	X (95W and discrete GPU skus not supported)				7DB36AA
HP B300 PC Mounting Bracket	X				2DW53AA
HP B300 PC Mounting Bracket with Power Supply Holder	X				7DB37AA
HP B500 PC Mounting Bracket	X				2DW52AA
HP Desktop Mini Vertical Chassis Stand	X				G1K23AA
HP DM VESA Power Supply Holder Kit v2	X				7DB38AA
HP Quick Release Bracket 2	X			X	6KD15AA
HP Single Monitor Arm	X			X	BT861AA

QuickSpecs

HP EliteDesk 800 G5 and HP EliteOne 800 G5 Business Desktops PCs

Technical Specifications – After Market Options

Data Storage Drives	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP 256GB SATA TLC Non-SED Solid State Drive	X (95W and discrete GPU skus not supported, cannot use in conjunction with Thunderbolt 3 and Fiber NIC and any Fiber NIC option card)	X	X	X	P1N68AA
HP PCIe NVME TLC 256GB SSD M.2 Drive	X	X	X	X	1CA51AA
HP PCIe NVME TLC 512GB SSD M.2 Drive	X	X	X	X	X8U75AA
HP PCIe NVME TLC 512GB SSD PCIe Drive		X	X		Z4L70AA
HP 500GB 7200PRM SATA 6.0Gb/s 3.5" Hard Drive		X	X		QK554AA
HP 1TB 7200rpm SATA 6Gb/s 3.5" Hard Drive		X	X		QK555AA
HP 500GB SATA 6Gb/s 7200 HDD		X	X		LQ036AA
HP 1TB SATA 6Gb/s 7200 HDD		X	X		LQ037AA
HP 3.5" Removable SATA HDD Frame/Carrier			X		RY102AA
HP 9.5mm G3 800/600 Tower DVD-Writer (need to be confirmed)			X		1CA52AA

Input Devices	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP USB (Grey) SmartCard CCID Keyboard		X	X		J7H70AA
HP USB Antimicrobial Business Slim Keyboard and Mouse (China Only)		X	X	X	Z9H50AA
HP USB Business Slim CCID SmartCard Keyboard	X	X	X	X	Z9H48AA
HP USB Business Slim (Grey) Keyboard (EMEA Only)	X	X	X	X	Z9H49AA
HP USB Business Slim Keyboard	X	X	X	X	N3R87AA
HP USB Business Slim Keyboard and Mouse and Mousepad		X	X	X	T4E63AA
HP USB Collaboration Keyboard	X	X	X		Z9N38AA
HP USB Conferencing Keyboard				X	K8P74AA
HP USB Keyboard	X	X	X	X	QY776AA
HP USB Keyboard and Mouse Healthcare Edition	X	X	X	X	1VD81AA
HP USB Premium Keyboard	X	X	X	X	Z9N40AA
HP USB PS/2 Washable Keyboard & Mouse	X	X	X	X	BU207AA
HP Wireless Business Slim Keyboard and Mouse	X	X	X	X	N3R88AA
HP Wireless Collaboration Keyboard	X	X	X		Z9N39AA
HP Wireless Premium Keyboard		X	X	X	Z9N41AA
HP PS/2 Business Slim Keyboard		X	X		N3R86AA
HP USB Grey v2 Mouse (EMEA only)	X	X	X	X	Z9H74AA
HP USB Premium Mouse	X	X	X	X	1JR32AA
HP PS/2 Mouse		X	X		QY775AA
HP USB 1000dpi Laser Mouse	X	X	X	X	QY778AA



Technical Specifications – After Market Options

HP USB Hardened Mouse	X	X	X	X	P1N77AA
HP USB Mouse	X	X	X	X	QY777AA

System Memory	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP 4GB DDR4-2666 DIMM		X	X		3TK85AA
HP 8GB DDR4-2666 DIMM		X	X		3TK87AA
HP 16GB DDR4-2666 DIMM		X	X		3TK83AA
HP 4GB DDR4-2666 SODIMM	X			X	3TK86AA
HP 8GB DDR4-2666 SODIMM	X			X	3TK88AA
HP 16GB DDR4-2666 SODIMM	X			X	3TK84AA

Multimedia Devices	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP Business Headset v2	X	X	X	X	T4E61AA
HP S101 Speaker Bar	X	X	X		5KC42AA

Security Devices	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP Business PC Security Lock v3 Kit		X	X		3XJ17AA
HP 800 G3 (SFF) Solenoid Lock and Intrusion Sensor		X			1CA50AA
HP Dual Head Keyed Cable Lock		X	X		T1A64AA
HP Keyed Cable Lock 10mm	X	X	X	X	T1A62AA
HP Master Keyed Cable Lock 10mm		X	X	X	T1A63AA

Stands and Accessories	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP ProOne G4 Height Adjustable Stand				X	4CX34AA

QuickSpecs

HP EliteDesk 800 G5 and HP EliteOne 800 G5 Business Desktops PCs

Technical Specifications – After Market Options

I/O Devices	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
HP DisplayPort Port Flex IO	X (discrete GPU skus not supported)	X	X		3TK72AA
HP Fiber NIC (100Mbps) Port Flex IO	X (95W and discrete GPU skus not supported)				3TK73AA
HP HDMI Port Flex IO (400/600/800)	X (discrete GPU skus not supported)	X	X		3TK74AA
HP Thunderbolt 3.0 Port Flex IO	X (95W and discrete GPU skus not supported)				3TK77AA
HP Thunderbolt 3.0 PCIe Card		X	X		4CX35AA
HP Type-C™ USB 3.1 Gen2 Port Flex IO	X (discrete GPU skus not supported)	X	X		3TK78AA
HP Type-C USB 3.1 Gen2 Port with 100W PD Flex IO	X (95W and discrete GPU skus not supported)				6VF54AA
HP VGA Port Flex IO	X (discrete GPU skus not supported)	X	X		3TK80AA
HP Serial Port Flex IO	X (discrete GPU skus not supported)				3TK76AA
HP Internal Serial Port (600/705/800)		X	X		3TK82AA
HP PCIe x1 Parallel Port Card		X	X		N1M40AA

NOTE: For more detail on HP I/O Devices please refer to the [HP FLEX IO Option Cards QuickSpecs](http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06042607). URL is: <http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06042607>

Communication Devices	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
Intel® 9260 802.11ac non-vPro™ PCIe x1 Card		X	X		3TK89AA
Realtek 8822BE 802.11ac PCIe x1 Card		X	X		3TK90AA

Intel® Optane Memory	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>	<u>Part Number</u>
Intel® Optane Memory 16GB (Cache)	X	X	X	X	1WV97AA



Change Log

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Date	Version History	Action	Description of Change
July 11, 2019	From v1 to v2	Update	Environmental tables for DM/SFF updated
July 19, 2019	From v2 to v3	Update	DM rear call outs image updated AMO section updated
July 31, 2019	From v3 to v4	Update	Weights and dimensions table updated TPM description updated Typo in 2TB M.2 SSD description corrected
August 15, 2019	From v4 to v5	Update	NOTE added in AMO section under I/O Devices
August 20, 2019	From v5 to v6	Update	Cable lock slot upgraded to Standard Intel® Core™ i5 8500 made able to DM
September 17, 2019	From v6 to v7	Update	Note added to Graphics
September 20, 2019	From v7 to v8	Update	Intel® Wi-Fi 6 AX200 corrected
October 2, 2019	From v8 to v9	Update	RTX 2080, RTX 2070, RTX 2060 names corrected
October 8, 2019	From v9 to v10	Update	Second bullet added to At a Glance section
October 15, 2019	From v10 to v11	Update	HP ProOne 600/400 G4 VESA Plate removed from AMO
October 18, 2019	From v11 to v12	Update	AiO call outs re-arranged for back and side images, adding Standard lock slot
October 31, 2019	From v12 to v13	Update	EPEAT references updated / Power Factor table added to Power Supply / 256 GB M.2 2280 PCIe NVMe SSD added to Storage
November 20, 2019	From v13 to v14	Update	AMD Radeon 520 1GB DP/VGA added to Graphics
November 26, 2019	From v14 to v15	Update	AMD® Radeon™ RX 550X 4GB LP Display Port Card set only for SFF in AMO / and NVIDIA® Quadro P620 2GB Graphics Card set for SFF in Graphics section
January 24, 2020	From v15 to v16	Update	AMO section updated
February 3, 2020	From v16 to v17	Update	HP Fiber NIC (100Mbps) Port Flex IO- AMO Section Update
February 19, 2020	From v17 to v18	Update	Drivelock note and disclaimer added SFF Environmental data corrected
February 26, 2020	From v18 to v19	Update	Processor I7-9700 specs corrected
March 3, 2020	From v19 to v20	Update	Core i5-9400, Core i5-9400T, Core i5-8400, Core i5-8400T processors, and "Removable" in Storage section added.
March 4, 2020	From v20 to v21	Update	NVIDIA GeForce RTX2070 Super 8GB and NVIDIA Quadro P1000 4GB added
April 15, 2020	From v21 to v22	Update	SFF Chassis dimensions format corrected
June 16, 2020	From v22 to v23	Update	TPM function specs in Security and Security Management (Software)sections updated
August 4, 2020	From v23 to v24	Correction	HP Type-C USB 3.1 Gen2 Port with PD Flex IO in AMO section
August 26, 2020	From v24 to v25	Addition	DVD-R DL - Up to 6X, DVD+R DL - Up to 6X, DVD-R SL/DL Up to 8X and DVD+R SL/DL Up to 8X on the read/write speed on the blue ray write drive specs on Storage section

Change Log

September 9, 2020	From v25 to v26	Correction	Multi Display Supports 4 display correction in NVIDIA® GeForce® RTX 2070 Super 8GB Graphics Card specs
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