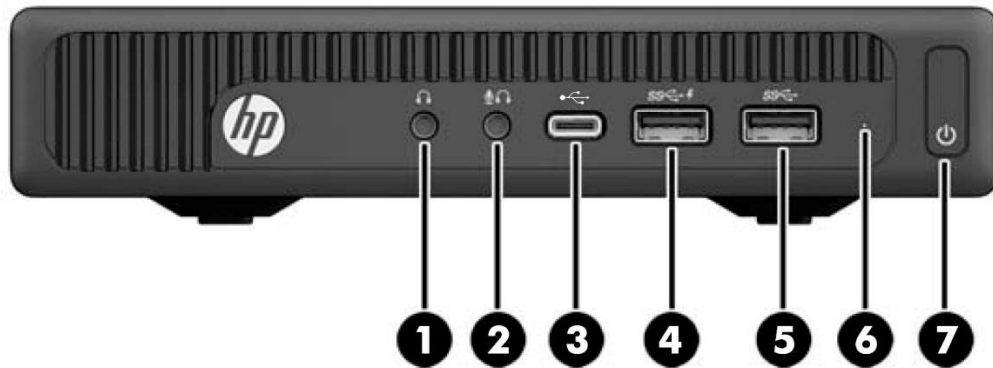


Overview

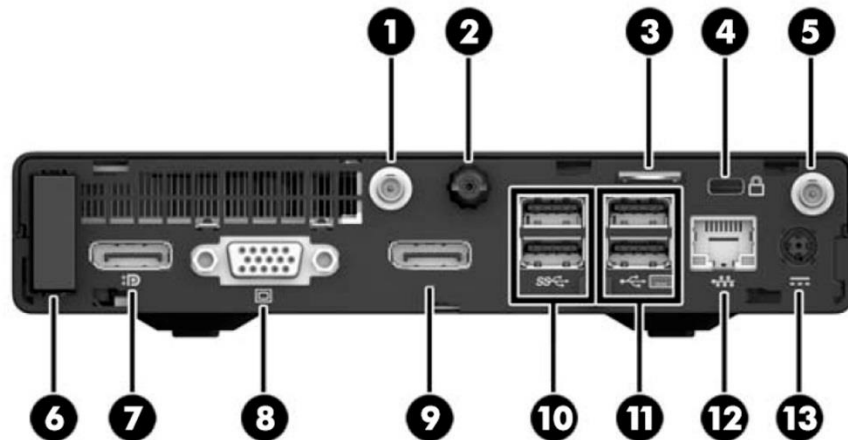
HP EliteDesk 800 G2 Desktop Mini Business PC



- | | |
|---|----------------------------|
| 1. Headphone Connector | 5. USB 3.0 port |
| 2. Microphone or Headphone Connector
(software selectable, default mode is microphone) | 6. HDD indicator |
| 3. USB Type-C™ port | 7. Dual-State Power Button |
| 4. USB 3.0 -Charging | |

Overview

HP EliteDesk 800 G2 Desktop Mini Business PC



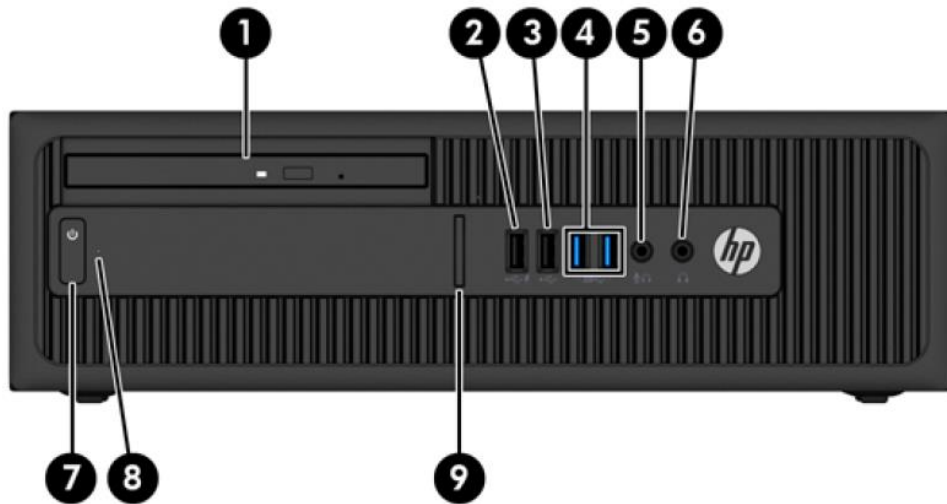
- | | |
|--|--|
| 1. Optional External Antenna Connector | 8. VGA Monitor Connector |
| 2. Thumbscrew | 9. Choice of DisplayPort (shown), HDMI, or Serial Connector |
| 3. Padlock Loop | 10. (2) USB 3.0 Ports (blue) |
| 4. Ultra-slim cable lock | 11. (2) USB 3.0 ports (blue), allows for wake from S4/S5 with keyboard/mouse when connected and enabled in BIOS. |
| 5. Optional External Antenna Connector | 12. RJ-45 Network Connector |
| 6. Antenna Cover | 13. Power Connector |
| 7. DisplayPort Monitor Connector | |

Not Shown

- Slots** (1) internal M.2 PCIe x1 connector for optional wireless NIC
(1) internal M.2 PCIe x4 connector for optional Turbo Drive SSD drive
- Bays** (1) 2.5" internal HDD storage drive bay
- VESA** Support for VESA 100 mounting system on bottom of PC chassis

Overview

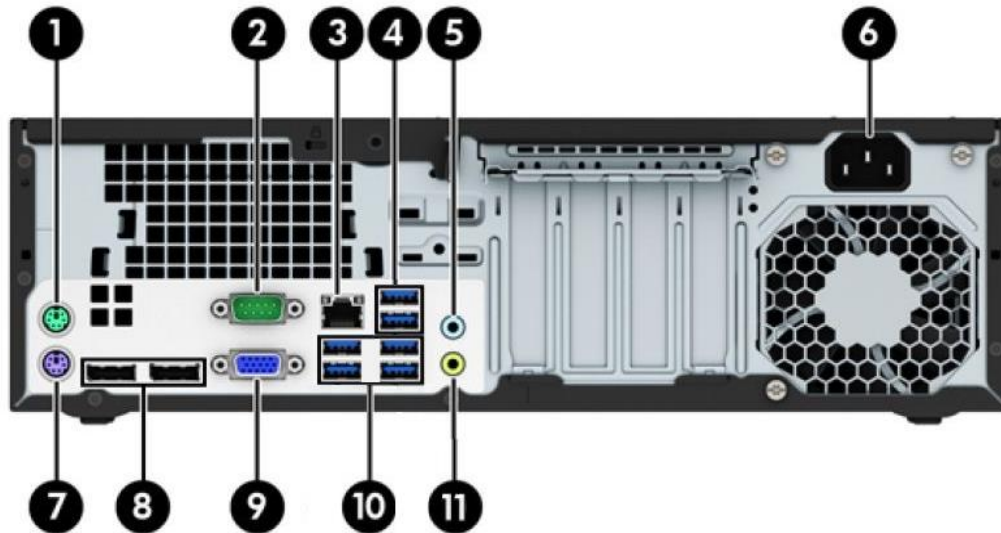
HP EliteDesk 800 G2 Small Form Factor Business PC



- | | |
|---------------------------------------|--------------------------------|
| 1. Slim Optical Drive (optional) | 6. Headphone Connector |
| 2. USB 2.0 Fast Charging Port (black) | 7. Dual-State Power Button |
| 3. USB 2.0 Port (black) | 8. Hard Drive Activity Light |
| 4. (2) USB 3.0 Ports (blue) | 9. SD 4 Card Reader (optional) |
| 5. Microphone/Headphone Connector | |

Overview

HP EliteDesk 800 G2 Small Form Factor Business PC



- | | |
|--|--|
| 1. PS/2 Mouse Connector (green) | 7. PS/2 Keyboard Connector (purple) |
| 2. Serial Connector | 8. (2) DisplayPort Monitor Connectors |
| 3. RJ-45 Network Connector | 9. VGA Monitor Connector |
| 4. (2) USB 3.0 Ports with Wake from S4/S5 feature (blue) | 10. (4) USB 3.0 Ports (blue) |
| 5. Line-In Audio Connector (blue) | 11. Line-Out Connector for powered audio devices (green) |
| 6. Power Cord Connector | |

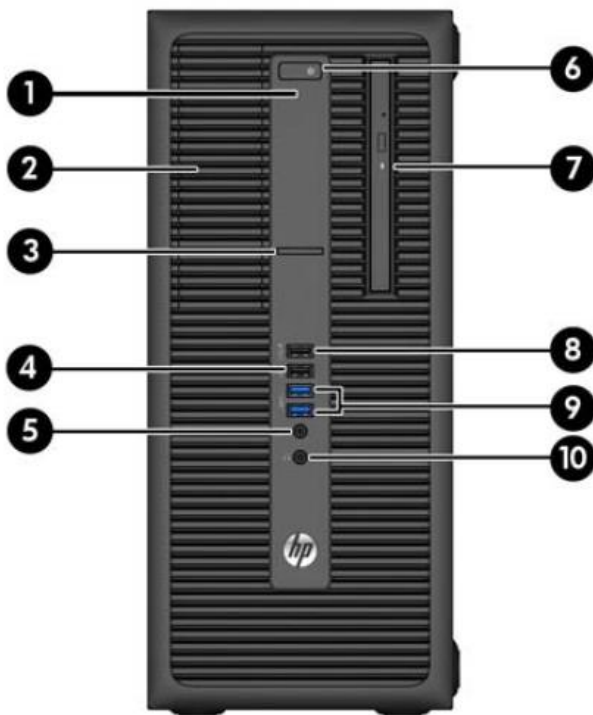
NOTE: An optional second serial port and an optional parallel port are available from HP.

Not Shown

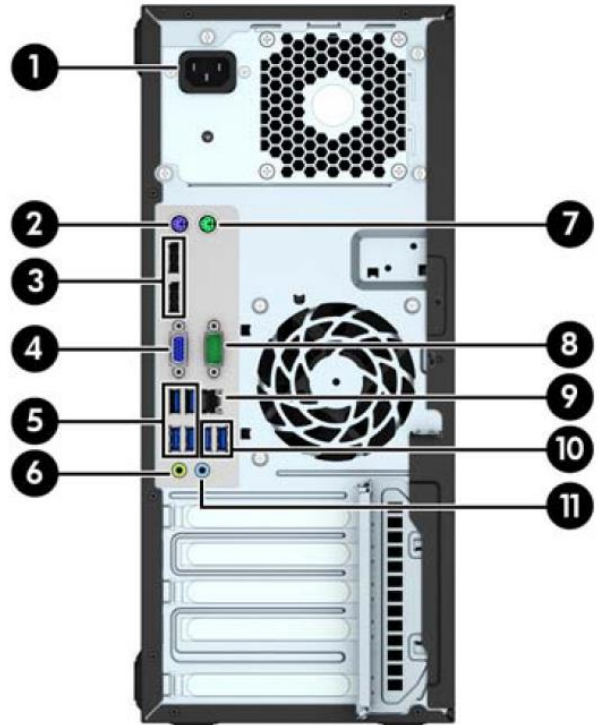
- | | |
|-------|---|
| Slots | (2) PCI Express x16 graphics connectors; one wired as a x4
(2) PCI Express x1 accessory connectors |
| Bays | (1) 2.5" internal storage drive bay
(2) 3.5" internal storage drive bay |

Overview

HP EliteDesk 800 G2 Tower Business PC



1. Hard Drive Activity Light
2. 5.25-inch Half-Height Drive Bay (behind bezel)
3. SD 4 Card Reader (optional)
4. USB 2.0 Port (black)
5. Microphone/Headphone Connector
6. Dual-State Power Button
7. Slim Optical Drive (optional)
8. USB 2.0 Fast Charging (powered) Port (black)
9. (2) USB 3.0 Ports (blue)
10. Headphone Connector



1. Power Cord Connector
2. PS/2 Keyboard Connector (purple)
3. (2) DisplayPort Monitor Connectors
4. VGA Monitor Connector
5. (4) USB 3.0 Ports (blue)
6. Line-Out Connector for powered audio devices
7. PS/2 Mouse Connector (green)
8. Serial Connector
9. RJ-45 Network Connector
10. (2) USB 3.0 Ports with Wake from S4/S5 feature (blue)
11. Line-In Audio Connector (blue)

NOTE: An optional second serial port and an optional parallel port are available from HP.

Not Shown

- Slots
- (2) PCI Express x16 graphics connectors; one wired as a x4
 - (2) PCI Express x1 accessory connectors

Overview

- (1) PCI (optional)
- Bays (1) 2.5" internal storage drive bay
(2) 3.5" internal storage drive bays

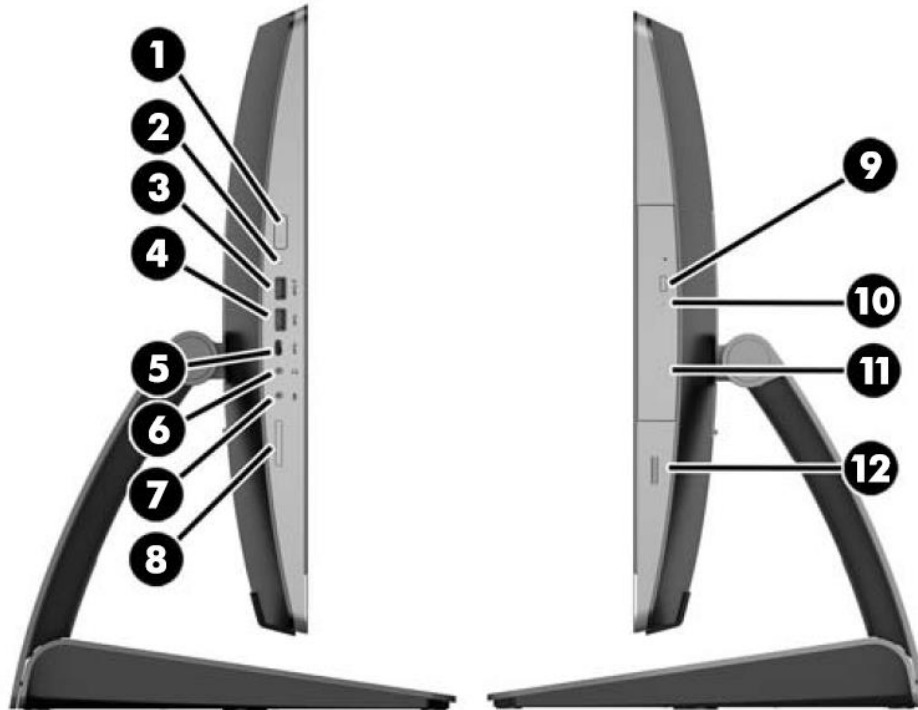
HP EliteOne 800 G2 All-in-One Business PC (23.0" Touch and Non-Touch)



- | | |
|---|--|
| 1. Dual microphone array (with webcam) | 4. Webcam (standard but deselectable) |
| 2. Webcam activity LED (with webcam) | 5. 23" diagonal 16:9 widescreen LED-backlit LCD display (available with or without projected capacitive touch panel) |
| 3. Webcam privacy shutter slide switch (with optional webcam) | 6. High-performance stereo speakers (standard but deselectable) |

Overview

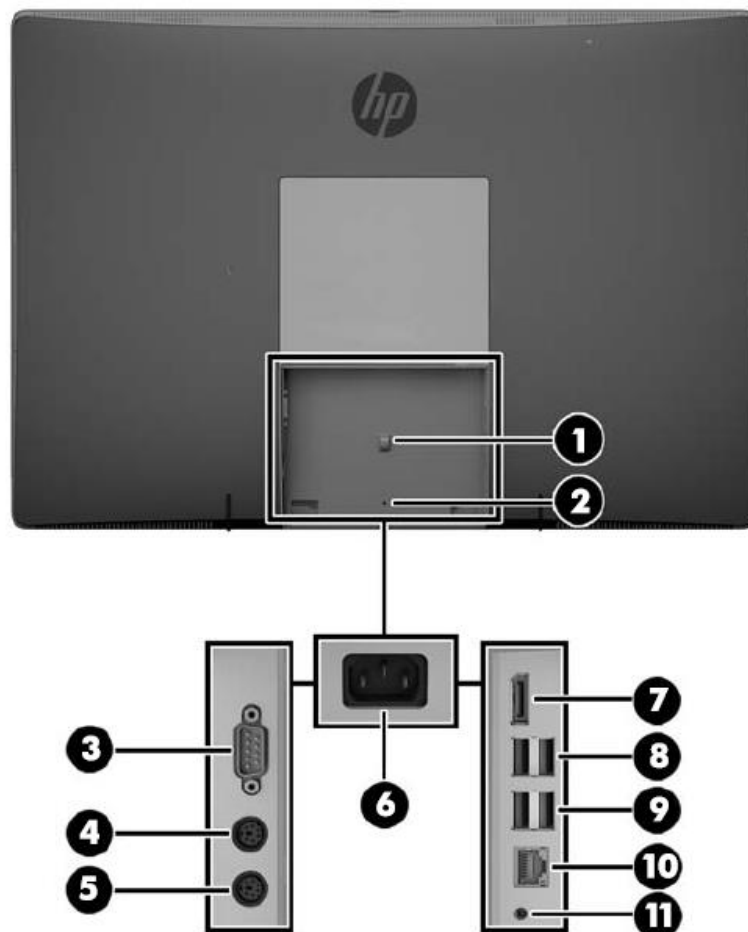
HP EliteOne 800 G2 All-in-One Business PC



- | | |
|------------------------------------|--|
| 1. Power button | 7. Microphone/Headphone/Line-In jack |
| 2. Hard disk drive activity LED | 8. HP SD card reader (optional) |
| 3. USB 3.0 port, fast-charging | 9. Optical disc drive eject button (with optional optical disk drive) |
| 4. USB 3.0 port | 10. Optical disc drive activity LED (with optional optical disk drive) |
| 5. USB Type-C™ port, fast-charging | 11. Tray-load optical disc drive (optional) |
| 6. Headphone jack | 12. Fingerprint reader (touch model only) |

Standard Features and Configurable Components

HP EliteOne 800 G2 All-in-One Business PC



REAR/PORTS (BEHIND SECURITY COVER)

- | | | | |
|----|------------------------------------|-----|--|
| 1. | Power cable retention loop | 7. | DisplayPort connector |
| 2. | Port cover security screw hole | 8. | (2) USB 3.0 ports |
| 3. | Serial port (optional) | 9. | (2) USB 3.0 ports with wake-up functionality |
| 4. | PS/2 keyboard connector (optional) | 10. | RJ-45 Gigabit Ethernet port |
| 5. | PS/2 mouse connector (optional) | 11. | Stereo audio line out |
| 6. | Power connector | | |

Not Shown

- Slots (1) internal M.2 PCIe x1 connector for optional wireless NIC
(1) internal M.2 PCIe x4 connector for optional Turbo Drive SSD
- Bays (2) 2.5" internal storage drive bay

Standard Features and Configurable Components

- VESA Support for VESA 100 mounting system on bottom of PC chassis*
*Mounting hardware sold separately (see [Accessories section](#)).

Standard Features and Configurable Components

At A Glance

1- DisplayPort multi-stream monitors 'daisy-chained' together

- Choice of four form factors: Desktop Mini, Small Form Factor, Tower and All-in-One
- Windows 10, Windows 8.1, Windows 7, FreeDOS 2.0
- UEFI BIOS developed and engineered by HP for better security, manageability and software image stability
- Choice of four form factors: Desktop Mini, Small Form Factor, Tower and All-in-One (touch/non touch)
- Intel® Q170 chipset supporting Intel 6th generation Core™ processors, featuring integrated Intel HD Graphics and Intel® vPro™ Technology (available with select processors)
- Processor support up to 65W on all form factors
- Intel® HD graphics or optional discrete graphics (except desktop mini)
- Intel® Ethernet Connection I219LM GbE LOM integrated network connection
- DDR4 Synchronous Dynamic Random Access Memory (SDRAM)
- Multi-independent monitor support via VGA (TWR/SFF/DM only), HDMI (DM only) and digital DisplayPort video interfaces with multi-stream (Dual DisplayPort connectors on TWR/SFF/DM only); AiO supports multi-stream (up to two external displays) via DisplayPort¹
- DTS Studio Sound™ Standard on the Desktop Mini, Small Form Factor, Tower²
- Audio by Bang and Olufsen utilizing HP Clear Sound Amp on the All-in-One
- High efficiency energy saving power supply options
- AiO, SFF and TWR models can be configured with multiple data drives in a RAID array
- ENERGY STAR® certified. EPEAT® Gold registered where applicable/supported. See www.epeat.net for registration status by country.
- CCC, CECP and SEPA Certified
- Optimized for Skype for Business
- TCO AiO and TCO Edge
- Low halogen³
- Arsenic-free
- 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
- Lengthy purchase lifecycles and image stability

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

1 DisplayPort multi-stream monitors 'daisy-chained' together

2 For DTS patents, see <http://patents.dts.com>. Manufactured under license from DTS Licensing Limited. DTS, the Symbol, & DTS and the Symbol together are registered trademarks, and DTS Studio Sound is a trademark of DTS, Inc. © DTS, Inc. All Rights Reserved.

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

CHIPSET

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® Q170 PCH-H vPro™	X	X	X	X

PROCESSORS

Intel® 6th Generation Core™ i7 Processors	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
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Standard Features and Configurable Components

Intel® Core™ i7-6700 Processor 65W Up to 4.0 GHz Max. Turbo Frequency (3.4 GHz base frequency) 8 MB cache, 4 cores, 8 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)	X (65W model only)	X	X	X
Intel® Core™ i7-6700T Processor 35W Up to 3.6 GHz Max. Turbo Frequency (2.8 GHz base frequency) 8 MB cache, 4 cores, 8 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)	X (35W model only)			

Intel® 6th Generation Core™ i5 Processors

	DM	SFF	TWR	AiO
Intel® Core™ i5-6600 Processor 65W Up to 3.9 GHz Max. Turbo Frequency (3.3 GHz base frequency) 6 MB cache, 4 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)	X (65W model only)	X	X	X
Intel® Core™ i5-6500 Processor 65W Up to 3.6 GHz Max. Turbo Frequency (3.2 GHz base frequency) 6 MB cache, 4 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)	X (65W model only)	X	X	X
Intel® Core™ i5-6600T Processor 35W Up to 3.5 GHz Max. Turbo Frequency (2.7 GHz base frequency)	X (35W model only)			

Standard Features and Configurable Components

6 MB cache, 4 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)				
<u>Intel® Core™ i5-6500T Processor</u> 35W Up to 3.1 GHz Max. Turbo Frequency (2.5 GHz base frequency) 6 MB cache, 4 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)	X (35W model only)			

Intel® 6th Generation Core™ i3 Processors

(Planned to be available November, 2015)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
<u>Intel® Core™ i3-6320 Processor</u> 51W 3.9 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	X	X
<u>Intel® Core™ i3-6300 Processor</u> 51W 3.8 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	X	X
<u>Intel® Core™ i3-6100 Processor</u> 51W 3.7 GHz base frequency 3 MB cache, 2 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	X	X
<u>Intel® Core™ i3-6300T Processor</u> 35W 3.3 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® HD Graphics 530	X (35W model only)			

Standard Features and Configurable Components

Supports DDR4 memory up to 2133 MT/s data rate				
Intel® Core™ i3-6100T Processor 35W 3.2 GHz base frequency 3 MB cache, 2 cores, 4 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (35W model only)			

Intel® 6th Generation Pentium® Processors

(Planned to be available November, 2015)

	DM	SFF	TWR	AiO
Intel® Pentium® G4520 Processor 51W Up to 3.6 GHz Base Frequency 3 MB cache, 2 cores, 2 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	X	X
Intel® Pentium® G4500 Processor 51W Up to 3.5 GHz Base Frequency 3 MB cache, 2 cores, 2 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	X	X
Intel® Pentium® G4400 Processor 51W/54W** Up to 3.3 GHz Base Frequency 3 MB cache, 2 cores, 2 threads Intel® HD Graphics 510 Supports DDR4 memory up to 2133 MT/s data rate	X (65W model only)	X	XX (65W model only)	X X X
Intel® Pentium® G4500T Processor 35W Up to 3.0 GHz Base Frequency 3 MB cache, 2 cores, 2 threads Intel® HD Graphics 530 Supports DDR4 memory up to 2133 MT/s data rate	X (35W model only)			
Intel® Pentium® G4400T Processor 35W Up to 2.9 GHz Base Frequency 3 MB cache, 2 cores, 2 threads	X (35W model only)			

Standard Features and Configurable Components

Intel® HD Graphics 510 Supports DDR4 memory up to 2133 MT/s data rate				
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***Note:** 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. 64-bit computing system required. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

**** Intel® Pentium® G4400** has a source die of 2+2 and 4+2. The 2+2 will run at 51W, while the 4+2 fused-down version will run at 54W.

GRAPHICS

System Integrated Graphics

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® HD Graphics on all models (integrated on processor)	X	X	X	X

Optional Discrete Graphics Solutions

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
AMD Radeon™ R9 350 2GB DH PCIe x16			X	
AMD Radeon™ R9 360 2GB GDDR5 x16				X
AMD Radeon R5 320 1GB PCIe x16 Card (China only)			X	
NVIDIA GeForce GT 730 2GB PCIe x8		X	X	
NVIDIA GeForce GT 720 2GB PCIe x16 (China only)			X	
NVIDIA Quadro NVS 310 1GB PCIe x16		X	X	
NVIDIA GeForce GTX 960 2GB PCIe x16			X	

ADAPTERS AND CABLES

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP DisplayPort Cable	X	X	X	X
HP DisplayPort Cable 2nd	X	X	X	
HP DisplayPort to DVI-D Adapter	X	X	X	X
HP DisplayPort to DVI-D Adapter 2nd	X	X	X	
HP DisplayPort to HDMI 4K Adapter	X	X	X	X
HP DisplayPort to HDMI 4K Adapter 2nd	X	X	X	
HP DisplayPort to VGA Adapter	X	X	X	X
HP DisplayPort to VGA Adapter 2nd	X	X	X	
HP USB-C™ to USB 3.0	X	X	X	X
HP USB to Serial Port Adapter	X			
HP PCI Expansion Slot			X	
HP 700mm DisplayPort Cable	X			

STORAGE*, **



Standard Features and Configurable Components

2.5 inch 5.4k RPM Hard Disk Drives

	<u>DM**</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
2TB SATA HDD	X			
2TB SATA HDD 2nd	X			

2.5 inch 7.2k RPM Hard Disk Drives

	<u>DM**</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
1TB SATA (Planned to be available 12/07/15)	X	X	X	X
1TB SATA 2 nd (Planned to be available 12/07/15)	X	X	X	X
1TB 7200 RPM SATA 6G 2.5 HDD	X	X	X	X
500GB SATA	X	X	X	X
500GB SATA 2nd	X	X	X	X

3.5" SATA 7.2k RPM Hard Disk Drives

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
2TB SATA		X	X	
2TB SATA 2 nd		X	X	
1TB SATA		X	X	
1TB SATA 2nd		X	X	
500GB SATA		X	X	
500GB SATA 2nd		X	X	

2.5 inch Solid State Hybrid Drives (SSHD)

	<u>DM**</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
1TB SATA 6G 2.5 8G SSHD	X	X	X	X
1TB SATA 6G 2.5 8G 2nd SSHD	X	X	X	X
500GB SATA 6G 2.5 8G SSHD	X	X	X	X
500GB SATA 6G 2.5 8G SSHD 2nd	X	X	X	X

3.5 inch Solid State Hybrid Drives (SSHD)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
1TB 7200 RPM SATA 8GB		X	X	

2.5 inch Solid State Drives (SSD)

	<u>DM**</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
512GB SATA 3D SSD	X	X	X	X
512GB SATA 2nd 3D SSD	X	X	X	X
256GB SATA SSD	X	X	X	X
256GB SATA SSD 2nd	X	X	X	X
256GB SATA 3D SSD	X	X	X	X
256GB SATA 3D SSD 2nd	X	X	X	X
180GB SATA (Intel® Pro 2500)	X	X	X	X
180GB SATA (Intel® Pro 2500) 2nd	X	X	X	X

Standard Features and Configurable Components

128GB SATA SSD	X	X	X	X
128GB SATA SSD 2nd	X	X	X	X
128GB SATA 3D SSD	X	X	X	X
128GB SATA 3D SSD 2nd	X	X	X	X
120GB SATA SSD (Intel® Pro 2500)	X	X	X	X
120GB SATA SSD (Intel® Pro 2500) 2nd	X	X	X	X
128GB SATA Value SSD	X	X	X	X
256GB SATA Value SSD	X	X	X	X
128GB SATA 2.5 TLC SSD	X	X	X	X
256GB SATA 2.5 TLC SSD	X	X	X	X
512GB SATA 2.5 TLC SSD	X	X	X	X

2.5 inch Self-encrypting Solid State Drives (SED)

	<u>DM**</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
1TB SATA 6G 2.5 Opal 2 SED SSD (Planned to be available 12/07/15)	X	X	X	X
256GB SATA Opal2 SED SSD	X	X	X	X
256GB SATA Opal2 SED SSD 2nd	X	X	X	X
180GB SATA Opal2 SED SSD (Intel® Pro 2500)	X	X	X	X
180GB SATA Opal2 SED SSD (Intel® Pro 2500) 2nd	X	X	X	X
128GB SATA Opal2 SED SSD	X	X	X	X
128GB SATA Opal2 SED SSD 2nd	X	X	X	X
120GB SATA Opal2 SED SSD (Intel® Pro 2500)	X	X	X	X
120GB SATA Opal2 SED SSD (Intel® Pro 2500) 2nd	X	X	X	X
500GB SATA Opal2 SED SSD		X	X	
500GB SATA Opal 2 SED SSD 2nd		X	X	
1TB SATA 6G Opal2 SED SSD		X	X	
1TB SATA 6G Opal2 SED SSD 2nd		X	X	
512GB SATA 6G Opal2 SED SSD		X	X	
512GB SATA 6G Opal2 SED SSD 2nd		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 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

****NOTE:** Desktop Mini second HDD only available when the first storage drive is an M2 drive.

PCIe Cards

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP 512GB Turbo Drive G2 SSD-PCIe Card		X	X	

Standard Features and Configurable Components

HP 256GB Turbo Drive SSD-PCIe Card		X	X	
HP 256GB Turbo Drive G2 SSD-PCIe Card		X	X	
HP 256GB Turbo Drive SSD - M.2 PCIe Card	X			X
HP 256GB Turbo Drive G2 SSD- M.2 PCIe Card	X			X
HP 128GB Turbo Drive SSD-PCIe Card		X	X	
HP 128GB Turbo Drive G2 SSD-PCIe Card		X	X	
HP 128GB Turbo Drive SSD - M.2 PCIe Card	X			X
HP 128GB Turbo Drive G2 SSD- M.2 PCIe Card	X			X

Optical Disc Drives

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP 9.5mm Slim Desktop DVD-ROM ODD Drive		X	X	
HP 9.5mm Slim Desktop BDXL Blu-Ray Drive		X	X	
HP 9.5mm Slim Desktop SuperMulti DVDRW Drive		X	X	
HP 9.5mm Slim 800 G2 AIO DVD-ROM Drive				X
HP 9.5mm Slim 800 G2 AIO SuperMulti DVD Drive				X
HP 9.5mm Slim 800 G2 AIO BDXL Blu-Ray Drive				X

Media Card Reader (optional)*

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
5-in 1 PCIe Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II)				X
SD4 with 5-in-1 Interface from SD option to PCA is USB (Supports SD, SDXC, SDHC, UHS-I, UHS-II)		X	X	

*Card sold separately

MEMORY

Form Factor	Type	Maximum	# of Slots
Desktop Mini	DDR4-2133 (Transfer rates up to 2133 MT/s)	32 GB	2 SODIMM
Small Form Factor	DDR4-2133 (Transfer rates up to 2133 MT/s)	64 GB	4 DIMM
Tower	DDR4-2133 (Transfer rates up to 2133 MT/s)	64 GB	4 DIMM
All-in-One	DDR4-2133 (Transfer rates up to 2133 MT/s)	32 GB	2 SODIMM

Standard Features and Configurable Components

Both slots are customer accessible / upgradeable.

- 2,048 MB (2048 MB x 1)
- 4,096 MB (4096 MB x 1)
- 8,192 MB (4096 MB x 2)
- 8,192 MB (8192 MB x 1)
- 16,384 MB (8192 MB x 2)
- 32,768 (16,384 MB x 2) – Maximum for DM and AiO
- 65,536 (16,384 MB x 2)– Maximum for SFF and TWR

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 2133 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Intel® I219LM Gigabit Network Connection LOM (standard)	X	X	X	X
Intel® Ethernet I210-T1 PCIe x1 Gb Network Interface Card (optional)		X	X	

Wireless*

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Broadcom BCM943228Z 802.11n M.2 Bluetooth® NIC	X			X
Broadcom BCM943228Z 802.11n M.2 Bluetooth® Disabled NIC	X			X
Broadcom BCM943228Z 802.11n PCIe Bluetooth® NIC		X	X	
Broadcom BCM943228Z 802.11n PCIe Bluetooth® Disabled NIC		X	X	
Intel® 8260 802.11ac M.2 Bluetooth® Disabled NIC	X			X
Intel® 8260 802.11ac PCIe-CL Bluetooth® NIC		X	X	
Intel® 8260 802.11ac PCIe-CL Bluetooth® Disabled NIC		X	X	
Intel® 3165 802.11ac M.2 Bluetooth® NIC	X			
Intel® 3165 802.11ac M.2 Bluetooth® Disabled NIC	X			
Intel® 7265 802.11n M.2 Bluetooth® NIC	X			
Intel® 7265 802.11n M.2 Bluetooth® Disabled NIC	X			
Intel® 7265 802.11n PCIe Bluetooth® Disabled NIC		X	X	
Intel® 7265 802.11ac PCIe Bluetooth® NIC		X	X	
Intel® 7265 802.11ac PCIe Bluetooth® Disabled NIC		X	X	

Standard Features and Configurable Components

*Wireless access point and internet service required. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices

Audio/Multimedia

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HD audio with Realtek ALC221 codec (all ports are stereo)	X	X	X	
HP Clear Sound Amp				X
Audio by Bang and Olufsen utilizing HP Clear Sound Amp which supports the integrated high-performance stereo 2.2W internal speakers, microphone array, headphone jack, line-out jack and a microphone jack that is re-taskable to second headphone or line in.				X
DTS Studio Sound™ audio management technology	X	X	X	
Microphone* and headphone front ports (3.5mm)	X	X	X	
Line-out and Line-In rear Ports* (3.5mm)		X	X	X - Line-out only
Headphone side ports (3.5mm)				X
Headphone/Microphone/Line-in side port (3.5mm)				X
Multi-streaming capable*	X	X	X	X
Internal speaker (standard)	X	X	X	
High performance integrated stereo speakers				X
Integrated 2.0 MP webcam (up to 30 frames/sec) & dual microphone array (optional)				X

Standard Features and Configurable Components

DTS Studio Sound™ Technology (DM, SFF, & TWR only)

Introduction

DTS Studio Sound™ provides an outstanding audio and entertainment experience for all PC applications related to music, movies and games. Utilizing DTS’s revolutionary 3D audio technology, DTS Studio Sound™ provides an immersive and realistic listening experience for a two speaker playback environment. DTS Studio Sound™ offers a wide surround effect and natural positioning of audio for both 2D and 3D content and delivers immersive surround complete with deep, rich enveloping bass and crystal clear dialog. It also delivers high-frequency definition for crisp detail in any listening environment, ensuring users a premium and natural entertainment experience across any speaker configuration (desktop speakers or headphones).

DTS Studio Sound™ (DM, SFF, & TWR only)

Features

- Outstanding multimedia audio experience
- Immersive surround sound from two speakers or headphones
- Extracts acoustic placement cues from original audio signal and adds near and far depth to the sound field to maximize 3D surround effect
- Custom-tuned solutions to provide superior natural sound from desktop speakers and headphones
- Maximum volume from small speakers
- Deep, rich bass and crystal clear dialog
- Intuitive user interface with presets for ease of use

* The side microphone port is re-taskable as a line-in, microphone-in or headphone-out port. The rear audio jack is line-out only. External speakers must be powered externally.

Display (All-in-One models only)

23"diagonal IPS widescreen WLED backlit anti-glare LCD display
Orientation designed to operate in portrait or landscape mode
Non-touch or optional touch
Projected capacitive touch supports up to 10 touch-points

Display Panel	Type	IPS WLED Backlit LCD
	Touch Active Area (mm)	509.18 x 286.42*
	Screen opening (mm)	511.6 x 288.7**
	Native Resolution (HxV)	1920 x 1080
	Aspect ratio	16:9
	Pixel pitch (HxV)(mm)	0.265 x 0.265
	Contrast ratio (typical)	1000:1
	Brightness (typical)	Touch - 225nits (cd/m2)/ Non-Touch 250nits (cd/m2)

Standard Features and Configurable Components

Viewing angle (typical) (HxV)	178 ° x 178 °
Backlight lamp life (to half brightness)	30,000 hours minimum
Color support	Over 16 million colors
Color gamut (typical)	72%
Anti-glare	Yes**
Default color temperature	Warm (6500K)
Response Time	14 ms

*With Projected Capacitive Touch Panel

**Without Projected Capacitive Touch Panel

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

Easel Stand	Tilt Angle	+10° to +70°
Adjustable Height Stand:	Vertical/Landscape Adjustment	125 mm (±3 mm)
	Portrait Adjustment	34 mm (±3 mm)
	Tilt Angle	-5° to +20°(±3°) in landscape and portrait
	Rotation	360° swivel and portrait or landscape orientation
Recline Stand:	Vertical Adjustment	25 mm (±3 mm)
	Tilt Angle	-5° to +65° (+/-3°)
	Rotation	360° swivel

WEBCAM & MIC (All-in-One models only)

Optional integrated 2 MP webcam & dual microphone array; maximum resolution of 1920 x 1080

Standard Features and Configurable Components

KEYBOARDS AND POINTING DEVICES

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

*Optional PS/2 port required on All-in-One

Mice	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
HP PS/2 Mouse*		X	X	X
HP USB Mouse	X	X	X	X
HP USB 1000dpi Laser Mouse	X	X	X	X
HP USB and PS/2 Washable Mouse	X	X	X	X
HP USB Antimicrobial Mouse	X	X	X	X
HP USB Hardened Mouse	X	X	X	X

*Optional PS/2 port required on All-in-One

HP BIOS

Key features of the HP BIOS include:

- Deployment and manageability – HP BIOS provides several technologies that help integrate the HP Elite 800 G2 Business PC into the enterprise, such as PXE, remote configuration, remote control, and F10 Setup support for 12 languages.
- Update your BIOS via the cloud or standardize on a BIOS version hosted on Enterprise network.
- Select models feature either Intel® Standard Manageability or Intel® Core™ vPro™ Processor Technology.
- Stability – HP BIOS supports the HP stable product roadmap by releasing only critical BIOS changes to the factory and advanced change notification.
- UEFI specification 2.1
- Absolute Persistence agent – For tracking and tracing services, available in select countries, separate software and purchase of a subscription is required.
- Thermal and power management – The HP BIOS provides and enables thermal and power management technologies so component temperatures are managed for high reliability and to assist in operating the HP Business Desktop computer in any enterprise environment.
- Acoustic performance – Industry leading acoustic emissions across the range of operating conditions.
- Serviceability – HP BIOS provides diagnostic and detailed service information.

Standard Features and Configurable Components

- Upgrades and recovery – HP BIOS provides numerous ways to upgrade HP Business Desktop computers, including BIOS updates from within DOS (DOSFlash), BIOS updates from within Windows (HPQFlash), HP Client Manager, and fail-safe recovery. In addition, the HP Business Desktop BIOS Utilities tool enables replicated BIOS setup throughout the Enterprise; it is available from within the BIOS software and from the support website.
- HP BIOS uses PKI signing of the BIOS for trusted BIOS upgrades and recovery.

Additional HP BIOS Features:

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- Administrator password – Also known as the setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS version cannot be changed and changes cannot be made to BIOS settings using F10 setup or under the OS.
- Advanced Configuration and Power Interface (ACPI) – Represents a significant innovation in power and configuration management, allowing operating systems and applications to manage power based on activity and usage. HP Elite models use ACPI to provide power conservation features.

S5 Max Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 1W in S5 (when turned off). When S5 Max Power Savings feature is enabled power to slots is turned off along with WOL functionality.

Sure Start (not available on all systems)

- BIOS Integrity checking – Sure Start protection ensures that only trusted BIOS code is executed and not rootkits, viruses and malware. Verification is done upon boot up, shutdown and while on.
- Sure Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability.
- Protecting beyond BIOS – Integrity checking and repair is extended to other data that should be protected such as network configuration parameters (network name), platform specific information (i.e. system IDs) and other code the system needs to boot.
- Audit enabled – System Audit via Sure Start Event Logs capture data such as incident, repair date and time for troubleshooting and investigating.

SECURITY

	<u>DM</u>	<u>SFF/TWR</u>	<u>AIO</u>
Trusted Platform Module, SLB9670TT1.2FW4.40 (TPM) 1.2 (Common Criteria EAL4+ certified), Field upgradeable to 2.0	X	X	X
SATA port disablement (via BIOS)	X	X	X
Drive lock	X	X	X
RAID configurations		X	X
Intel® Identify Protection Technology (IPT) ¹	X	X	X

Standard Features and Configurable Components

Serial, parallel, USB enable/disable (via BIOS)	X	X	X
Optional USB Port Disable at factory (user configurable via BIOS)	X	X	X
Removable media write/boot control	X	X	X
Power-On password (via BIOS)	X	X	X
Setup password (via BIOS)	X	X	X
HP Chassis (1 bay) Security Kit		TWR only	
Solenoid Hood Lock		X	
Intrusion Sensor	X	X	X
Support for chassis padlocks devices	X	X	
Support for chassis cable lock devices	X	X	X

¹Models 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

ENVIRONMENTAL & REGULATORY

ENERGY STAR® certified configurations available

EPEAT® Gold registered where applicable/supported. See <http://www.epeat.net> for registration status by country.

Low halogen (chassis, all internal components and modules)

TAA compliant models available

Standard Features and Configurable Components

PORTS

I/O Ports – Standard

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
USB 2.0	N/A	2 (front) including 1 fast charging;	2 (front) including 1 fast charging;	N/A
USB 3.0	2 (front); 4 (rear)	2 (front); 6 (rear)	2 (front); 6 (rear)	2 (side) including 1 fast charging, 4 (rear)
USB Type-C™ 3.0 port	1 (front)			1 (side)
Serial (RS-232)	(optional)*	1	1	1 (optional)
PS/2	N/A	1 keyboard (purple) 1 mouse (green)	1 keyboard (purple) 1 mouse (green)	(Optional legacy card) 1 keyboard (purple) 1 mouse (green)
Video	1 VGA 2* DisplayPort with multi-stream 2nd DisplayPort (optional) 1 HDMI (optional)	1 VGA 2 DisplayPort with multi-stream	1 VGA 2 DisplayPort with multi-stream	1 DisplayPort with multi-stream
Audio	Front: headphone/mic	Front: headphone/mic Rear: line in/out 3.5mm diameter	Front: headphone/mic Rear: line in/out 3.5mm diameter	Side: headphone/line-out, headphone/mic/line-in Rear: line out 3.5mm diameter
Network Interface	RJ-45	RJ-45	RJ-45	RJ-45

*Replaces 1 DisplayPort 1.2

I/O Ports – Optional

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
2nd Serial (RS-232)	N/A	1	1	N/A
Parallel	N/A	1	1	N/A

I/O Ports — Internal ports

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
DM SATA storage connector	1	N/A	N/A	N/A
AiO SATA storage connector	N/A	N/A	N/A	2

Standard Features and Configurable Components

Internal SATA storage connector(s)	N/A	3	5	N/A
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SLOTS

	<u>DM</u>	<u>SFF</u>	<u>TWR</u>	<u>AiO</u>
Turbo Drive (M.2 PCIe)	1 ea. M.2 PCIe x1-2230 (for WLAN) 1 ea. M.2 PCIe x4-2280 (for storage)	N/A	N/A	1 ea. M.2 PCIe x1-2230 (for WLAN) 1 ea. M.2 PCIe x4-2280 (for storage)
PCI Express x1 (v3.0)	N/A	2 ea. 2.5" low profile 6.6" length 10W max. power	2 ea. 4.2" full height 6.6" length 10W max. power	N/A
PCI Express x16 (v3.0) (wired as a x4)	N/A	1 ea. 2.5" low profile 6.6" length 35W max. power	1 ea. 4.2" full height 6.6" length 35W max. power	N/A
PCI Express x16 (v3.0)	N/A	1 ea. 2.5" low profile 6.6" length 35W max. power	1 ea. 4.2" full height 6.6" length 75W max. power	N/A
Optional PCI	N/A	N/A	1 ea. 4.2" full height 6.6" length	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 ODD	N/A	N/A	1 ea.	N/A
9mm Slim ODD	N/A	1 ea.	1 ea.	1 ea.
Secure Digital (SD) 4 Reader	N/A	1 ea.	1 ea.	N/A
2.5" internal storage drive	1 ea.	1 ea.	1 ea.	2 ea.
3.5" internal storage drive	N/A	2 ea.	2 ea.	N/A

SERVICE AND SUPPORT

On-site Warranty ¹: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day ² service for parts and labor and includes free support ³ 24 x 7. 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. ⁴ To choose the right level of service for your HP product, visit HP Care

Standard Features and Configurable Components

Pack Central: www.hp.com/go/cpc

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 2: 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.

NOTE 3: 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.

NOTE 4: 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.

Standard Features and Configurable Components

OPERATING SYSTEMS

Preinstalled

Windows 10 Pro 64*

Windows 10 Home 64*

Windows 8.1 Pro 64**

Windows 8.1 64**

Windows 7 Professional 64 (available through downgrade rights from Windows 10 Pro)***

Windows 7 Professional 32 (available through downgrade rights from Windows 10 Pro)***

Windows 7 Professional 64**

Windows 7 Professional 32**

Pre-installed (Other)

FreeDOS 2.0

Web-supported

Windows 10 Pro 64

Windows 10 Home 64

Windows 8.1 Pro 64

Windows 8.1 64

Windows 7 Professional 64

Windows 7 Professional 32

Windows 10 Enterprise 64

Windows 8.1 Enterprise 64

Windows 7 Enterprise 64

Windows 7 Enterprise 32

*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.microsoft.com>.

**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. See <http://www.microsoft.com>.

***This system is preinstalled with Windows 7 Pro software and also comes with a license and media for Windows 10 Pro software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

Standard Features and Configurable Components

SOFTWARE AND SECURITY

BIOS

HP BIOSphere with Sure Start¹
HP DriveLock
HP BIOS Protection²
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Secure Erase³
Hybrid Boot (Windows 8.1 & higher)
Measured Boot (Windows 8.1 & higher)
Secure Boot (Windows 8.1 & higher)
Absolute Persistence Module⁴

Multimedia

Cyberlink Power DVD, BD
Cyberlink Power2Go (Secure Burn)

Communication

Intel® Wireless Display (WiDi) Software for Windows⁵
Native Miracast Support⁶

HP Value Add Software

HP ePrint Driver⁷
HP Recovery Disc Creator (Windows 7 only)
HP Recovery Manager
HP Support Assistant
Windows 10 Welcome App

3rd Party

Foxit PhantomPDF Express for HP

Microsoft Products

Buy Office
Bing Search
Skype

Standard Features and Configurable Components

Manageability

HP SoftPaq Download Manager (SDM)

HP System Software Manager (SSM)⁸

HP BIOS Config Utility (BCU)⁸

HP Client Catalog⁸

HP CIK for Microsoft SCCM⁸

LANDESK Management⁸

HP BIOS Config Utility (BCU)⁸

Discover HP Touchpoint Manager⁹

For more information on HP Client Management Solutions refer to: <http://www.hp.com/go/clientmanagement>.

Client Security Software

HP Client Security Manager

Microsoft Security Essentials¹⁰

Microsoft Defender

TPM 1.2/2.0

NOTE: The Absolute Persistence agent is shipped turned off, and must be activated by customers when they purchase a subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S.

For more information on HP Client Security Software Suite, refer to <http://www.hp.com/go/clientsecurity>.

Footnotes:

1 Available only on business PCs with HP BIOS.

2 May require a manual recovery step if all copies of BIOS are compromised or deleted

3 For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

4 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.

5 Integrated Intel® Wi-Di Display is available on select configurations only and requires a separate projector, TV or monitor with an integrated or external Wi-Di receiver. For more information on Intel® Wi-Di Display visit

<http://www.intel.com/go/wirelessdisplay>

6 Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: <http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast>

7 Requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see <http://www.hp.com/go/eprintcenter>). Requires optional broadband module. Broadband use requires separately purchased service contract. Check with service provider for

Standard Features and Configurable Components

coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

8 Not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>

9 Subscription required.

10 Opt in and internet connection required for updates.

Technical Specifications – Core™ vPro™ Processors

CORE™ vPRO™ PROCESSORS

INTEL® 6th GENERATION CORE™ vPRO™ PROCESSORS

All HP Elite 800 G2 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 Elite 800 G2 Business PC, thus making these models the most stable, secure, and manageable platforms available to enterprises today.

Intel® Advanced Management Technology (AMT) v11 – 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 11 includes the following advanced management functions:

- Support for configuration of Intel AMT 11.0 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 – Graphics

GRAPHICS

Intel® HD Graphics (integrated)			
DisplayPort	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)		
Memory	The BIOS has options for selecting the dedicated memory size of 128MB, 256MB or 512MB Additional 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 Graphics Memory	Microsoft Windows 7	Windows 8.1	Windows 10
	Up to 1.7GB	Up to 1.8GB	>4 GB
	Note: the actual amount of maximum graphics memory can be less than the amounts listed above depending upon your computer’s configuration.		
Maximum Color Depth	32 bits/pixel		
Graphics/Video API Support	6th Generation Core™ processors: - Next Generation Intel® Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience - Encode/transcode HD content - Playback of high definition content including Blu-ray Disc - Superior image quality with sharper, more colorful images - DirectX Video Acceleration (DXVA) support for accelerating video processing - Full AVC/VC1/MPEG2/HEVC HW Decode - Advanced Scheduler 2.0, 1.0 - Windows 7, Windows 8.1, Windows 10, Linux OS Support - DirectX 12.1 - OpenGL 4.4 - Open CL 1.2 (Intel® HD Graphics 510) - Open CL 1.2/2.0 (Intel® HD Graphics 530)		
Supported Display Resolutions and Refresh Rates			
Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP			
Resolution		Refresh Rates	
800x600		60 Hz	
1024x768		60 Hz	
1152x864		60 Hz	
1280x600		60 Hz	
1280x720		60 Hz	
1280x800		60 Hz	
1280x960		60 Hz	
1280x1024		60 Hz	

Technical Specifications – Graphics

1360x768	60 Hz
1366x768	60 Hz
1400x1050	60 Hz
1440x900	60 Hz
1600x900	60 Hz
1600x1200*	60 Hz
1680x1050	60 Hz
1920x1080	60 Hz
1920x1200*	60 Hz
1920x1440*	60 Hz
2560x1440*	60 Hz
2560x1600*	60 Hz
3840x2160*	60 Hz

* Only supported on displays connected to the external DisplayPort connector.

AMD® Radeon™ R9 350 2GB PCIe x16

Memory	2GB 128-bit wide frame buffer operating at 1150MHz.
Controller Clock Speed	AMD® Radeon™ R9 350 GPU operating at 925 MHz
Multidisplay Support	A maximum of 4 displays are supported by the card. A maximum of 2 legacy displays (Native VGA, DVI, or displays connected with passive DisplayPort adapters are considered as legacy)
Graphics /API support	DIRECTX 12, Open GL 4.3, Open CL1.2, UVD 3
Output Connectors	1 x Dual-Link DVI-I, 2x DisplayPort; Includes DVI to VGA adapter

Supported Display Resolutions and Refresh Rates

Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.

Resolution	Refresh Rate*	VGA (DVI-VGA adapter)	DVI-D	DisplayPort	Standard
640 x 480	60, 75, 85	X	X	X	VESA DMT, CVT 0.31M3
720 x 400	70	X	X	X	IBM VGA
800 x 600	60, 75, 85	X	X	X	VESA DMT, CVT0.48M3
1024 x 768	60, 75, 85	X	X	X	VESA DMT, CVT 0.79M3
1152 x 864	60, 75, 85	X	X	X	VESA DMT, CVT 0.83MA
1280 x 720	60, 75, 85	X	X	X	VESA DMT, CVT 0.92M9, CEA-770.3
1280 x 768	60, 60RB, 75, 85	X	X	X	VESA DMT, CVT 0.98M9/0.98M9-R
1280 x 800	60, 75, 85	X	X	X	VESA DMT

Technical Specifications – Graphics

1280 x 960	60, 75, 85	X	X	X	VESA DMT
1280 x 1024	60, 75, 85	X	X	X	VESA DMT, CVT 1.31M4
1366 x 768	60, 60RB	X	X	X	VESA DMT
1440 x 900	60, 60RB	X	X	X	VESA DMT
1600 x 900	60, 60RB, 75, 85	X	X	X	VESA DMT
1680 x 1050	60, 60RB, 75	X	X	X	VESA DMT, CVT 1.76MA/1.76MA-R
1920 x 1080	60	X	X	X	VESA DMT, CVT 2.07M9, SMPTE 274M
1920 x 1200	60, 60RB, 75, 85	X	X	X	DMT, CVT 2.30MA/2.30MA-R
1600 x 1200	60, 75, 85	X	X	X	VESA DMT, 1.92M3
1920 x 1440	60, 75, 85	X	X	X	VESA DMT, CVT 2.76M3
2048 x 1536	60,75	X	X	X	CVT 3.15M3
2560 x 1440	59.951		X	X	CVT 3.69M9-R
2560 x 1600	60, 60RB		X	X	VESA DMT, CVT 4.10MA/4.10MA-R
3840 x 2160	24			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	25			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	30		X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	50			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	60			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
4096 x 2160	24			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	25			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	30			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	50			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	60			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
1920 x 1080	60		X	X	VESA (SMPTE 274M)
1920 x 1080	50		X	X	SMPTE 274M
1920 x 1080	30		X	X	SMPTE 274M
1920 x 1080	24		X	X	SMPTE 274M
1280 x 720	60		X	X	VESA (CEA-770.3)
1280 x 720	50		X	X	SMPTE 296M
720 x 480	60		X	X	MHL (CEA-770.2)

* >60 refresh rates only for analog (VGA) signaling

Technical Specifications – Graphics

NVIDIA® GeForce® GT 730 2GB PCIe x8 Graphics Card (option only for 800 G2 MT and SFF)					
Introduction	Get impressive graphics and high resolution dual-display performance in a low profile, PCI Express x8 graphics add-in card based on the NVIDIA® Kepler™ Graphics Processor. Improve your everyday PC, Web conferencing, and video or photo editing.				
Memory	2GB DDR3 64-bit wide frame buffer operating at 900 MHz				
Controller Clock Speed	NVIDIA® Kepler™ GPU operating at 902 MHz				
Multi-display Support	A maximum of 4 displays are supported by the card.				
Graphics /API support	Supports Microsoft DirectX 12, OpenGL 4.4 and OpenCL 2 APIs, Shade Model 5, UVD 4.2, VCE 2.0 DirectCompute 11				
Output Connectors	1 x Dual-Link DVI-I, 1x DisplayPort; Includes DVI to VGA adapter Display Port output is multi-mode capable, support Audio, HBR2 and MST				
Supported Display Resolutions and Refresh Rates					
Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.					
Resolution	Refresh Rate*	VGA (DVI-VGA)	DVI-D	DisplayPort	Standard
640 x 480	60, 75, 85	X	X	X	VESA DMT, CVT 0.31M3
720 x 400	70	X	X	X	IBM VGA
800 x 600	60, 75, 85	X	X	X	VESA DMT, CVT0.48M3
1024 x 768	60, 75, 85	X	X	X	VESA DMT, CVT 0.79M3
1152 x 864	60, 75, 85	X	X	X	VESA DMT, CVT 0.83MA
1280 x 720	60, 75, 85	X	X	X	VESA DMT, CVT 0.92M9, CEA-770.3
1280 x 768	60, 60RB, 75, 85	X	X	X	VESA DMT, CVT 0.98M9/0.98M9-R
1280 x 800	60, 75, 85	X	X	X	VESA DMT
1280 x 960	60, 75, 85	X	X	X	VESA DMT
1280 x 1024	60, 75, 85	X	X	X	VESA DMT, CVT 1.31M4
1366 x 768	60, 60RB	X	X	X	VESA DMT
1440 x 900	60, 60RB	X	X	X	VESA DMT
1600 x 900	60, 60RB, 75, 85	X	X	X	VESA DMT
1680 x 1050	60, 60RB, 75	X	X	X	VESA DMT, CVT 1.76MA/1.76MA-R
1920 x 1080	60	X	X	X	VESA DMT, CVT 2.07M9, SMPTE 274M
1920 x 1200	60, 60RB, 75, 85	X	X	X	DMT, CVT 2.30MA/2.30MA-R

Technical Specifications – Graphics

1600 x 1200	60, 75, 85	X	X	X	VESA DMT, 1.92M3
1920 x 1440	60, 75, 85	X	X	X	VESA DMT, CVT 2.76M3
2048 x 1536	60,75	X	X	X	CVT 3.15M3
2560 x 1440	59.951		X	X	CVT 3.69M9-R
2560 x 1600	60, 60RB		X	X	VESA DMT, CVT 4.10MA/4.10MA-R
3840 x 2160	24			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	25			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	30		X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	60			X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
4096 x 2160	24			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	25			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	30			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	60			X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
1920 x 1080	60		X	X	VESA (SMPTE 274M)
1920 x 1080	50		X	X	SMPTE 274M
1920 x 1080	30		X	X	SMPTE 274M
1920 x 1080	24		X	X	SMPTE 274M
1280 x 720	60		X	X	VESA (CEA-770.3)
1280 x 720	50		X	X	SMPTE 296M
720 x 480	60		X	X	MHL (CEA-770.2)
720 x 576	50		X	X	ITU-R BT.1358
640 x 480	60		X	X	CEA (VESA DMT)
* >60 refresh rates only for analog (VGA) signaling					

NVIDIA® NVS™ 310 Graphics Card

(Not allowed when 180W chassis and 65W processor both are selected on 400/480/490/498 MT)

Introduction

The NVIDIA® NVS™ 310 Graphics Card is a PCI Express low profile form factor graphics add-in card targeted as an active low cost graphics solution for the corporate business and enterprise markets.

The NVIDIA® NVS™ 310 graphics card is an ideal solution for customers requiring a small form factor graphics add-in card for either standard or small form factor PC designs.

Technical Specifications – Graphics

Performance and Features	The NVIDIA® NVS™ 310 Graphics Card offers 1GB of ultrafast DDR3 memory and is capable of supporting up to 2 displays. DisplayPort connector supports multimode technology to support connection to DVI-D, VGA and HDMI monitors with optional adapters in kits NR078AA, FH973AT, BP937AA, AS615AA. For a DisplayPort to DisplayPort connections use the optional DisplayPort Cable Kit VN567AA.	
Form Factor	Low Profile: 2.713 × 6.15 in	
Graphics Controller	NVIDIA® NVS™ 310	
Memory Clock	875MHz	
Memory Size	1GB DDR3	
Memory Bandwidth	14 GB/s	
Max. Power	19.5W	
Display Max. Resolution	Up to 2560 × 1600 (digital display) per display	
Display Output	Up to 2 displays in the following configurations	
	DisplayPort output:	• Drives two DisplayPort enabled digital display at resolutions up to 2560 × 1600 at 60 Hz with reduced blanking, when connected natively using the 2 DisplayPort connectors on the NVS 310 graphics card • Supports 2 monitors up to resolution of 1920 × 1200 at 60 Hz with reduced blanking using DisplayPort Multi-Stream topology technology.
	DVI-D output:	• Drives two digital display at resolutions up to 1920 × 1200 at 60 Hz with reduced blanking using DisplayPort to DVI-D single-link cable adaptors • Drives two digital display at resolutions up to 2560 × 1600 at 60 Hz with reduced blanking using DisplayPort to DVI-D dual-link cable adaptors
	HDMI output:	• NVS 310 is capable of driving two high definition (HD) panels up to resolutions of 1920 × 1080P at 60 Hz using DisplayPort to HDMI cable adaptors
	VGA display output:	• Drives two analog display at resolutions up to 1920 × 1200 at 60 Hz using DisplayPort to VGA cable adaptors

Technical Specifications – Graphics

Supported Display Resolutions and Refresh Rates				
Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP				
Resolution	Maximum Refresh Rates (Hz) by Connection			
	DisplayPort to VGA	DisplayPort to DVI-D	DisplayPort to HDMI	DisplayPort
640 x 480	85	60	60	60
800 x 600	85	60	60	60
1024 x 768	85	60	60	60
1280 x 720	85	60	60	60
1280 x 1024	85	60	60	60
1440 x 900	75	60	60	60
1600 x 1200	60	60	60	60
1680 x 1050	60	60	60	60
1920 x 1080	60-R	60-R	60	60
1920 x 1200	60-R	60-R		60
1920 x 1440				60
2048 x 1536				60

AMD® Radeon™ R9 360 Graphics (option only for 800 G2 AiO)		
Memory	2GB 128-bit wide GDDR5 frame buffer operating at 1125 MHz.	
Controller Clock Speed	AMD® Radeon™ R9 360 GPU operating at 925 MHz	
Multidisplay Support	Support for up to 4 external displays	
Graphics /API support	DIRECTX 12, Open GL 4.3, Open CL1.2, UVD 3	
Output Connectors	1 Dual-mode (DP++) DisplayPort output, which supports DP MST, HBR2 and audio on all external displays. Supports HP DP to VGA, DP to DVI and DP to HDMI adapters.	
Supported external Display Resolutions and Refresh Rates		
Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.		
Resolution	Refresh Rate	Standard
640 x 480	60	VESA DMT, CVT 0.31M3
720 x 400	60	IBM VGA
800 x 600	60	VESA DMT, CVT0.48M3
1024 x 768	60	VESA DMT, CVT 0.79M3
1152 x 864	60	VESA DMT, CVT 0.83MA
1280 x 720	60	VESA DMT, CVT 0.92M9, CEA-770.3

Technical Specifications – Graphics

1280 x 768	60, 60RB	VESA DMT, CVT 0.98M9/0.98M9-R
1280 x 800	60	VESA DMT
1280 x 960	60	VESA DMT
1280 x 1024	60	VESA DMT, CVT 1.31M4
1366 x 768	60	VESA DMT
1440 x 900	60, 60RB	VESA DMT
1600 x 900	60, 60RB	VESA DMT
1680 x 1050	60, 60RB	VESA DMT, CVT 1.76MA/1.76MA-R
1920 x 1080	60	VESA DMT, CVT 2.07M9, SMPTE 274M
1920 x 1200	60, 60RB	DMT, CVT 2.30MA/2.30MA-R
1600 x 1200	60	VESA DMT, 1.92M3
1920 x 1440	60	VESA DMT, CVT 2.76M3
2048 x 1536	60	CVT 3.15M3
2560 x 1440	59.951	CVT 3.69M9-R
2560 x 1600	60, 60RB	VESA DMT, CVT 4.10MA/4.10MA-R
3840 x 2160	24	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	25	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	30	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	50	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	60	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
4096 x 2160	24	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	25	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	30	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	50	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	60	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
1920 x 1080	60	VESA (SMPTE 274M)
1920 x 1080	50	SMPTE 274M
1920 x 1080	30	SMPTE 274M
1920 x 1080	24	SMPTE 274M
1280 x 720	60	VESA (CEA-770.3)
1280 x 720	50	SMPTE 296M
720 x 480	60	MHL (CEA-770.2)

Technical Specifications – Graphics

NVIDIA® GeForce® GTX 960 2GB PCIe x16 Graphics Card

Controller/Clock Speed	NVIDIA® GeForce® GTX960 GPU operating at up to 1178 MHz
Memory	2GB 128-bit wide frame buffer operating at up to 3505 MHz.
Multidisplay Support	A maximum of 4 displays are supported by the card.
System Interface	PCI Express x16 Gen3
Graphics /API support	DirectX 12, OpenGL 4.4
Output Connectors	3 x Display Port: - Dual Mode (DP++) - Supports DP MST, HBR2 and audio - Supports HP DP to VGA, DP to DVI and DP to HDMI adapters. 1 x HDMI : - Supports 2.0 features 1 x Dual Link DVI-I - Adds VGA support via the supplied DVI-I to VGA adapter
Power Requirements	120W max; Requires 2x3 pin power cable & 400W system power supply
Mechanical	6.9in x 4.4 in (175mmx112mm) full height double width slot

Supported Display Resolutions and Refresh Rates

Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP.

Resolution	Refresh Rate*	VGA I ADAPTER) (WITH DVI-	DVI-D	DisplayPort	HDMI	Standard Resolution
640 x 480	60, 75, 85	X	X	X	X	VESA DMT, CVT 0.31M3
720 x 400	70	X	X	X	X	IBM VGA
800 x 600	60, 75, 85	X	X	X	X	VESA DMT, CVT0.48M3
1024 x 768	60, 75, 85	X	X	X	X	VESA DMT, CVT 0.79M3
1152 x 864	60, 75, 85	X	X	X	X	VESA DMT, CVT 0.83MA
1280 x 720	60, 75, 85	X	X	X	X	VESA DMT, CVT 0.92M9, CEA-770.3
1280 x 768	60, 60RB, 75, 85	X	X	X	X	VESA DMT, CVT 0.98M9/0.98M9-R
1280 x 800	60, 75, 85	X	X	X	X	VESA DMT
1280 x 960	60, 75, 85	X	X	X	X	VESA DMT
1280 x 1024	60, 75, 85	X	X	X	X	VESA DMT, CVT 1.31M4

Technical Specifications – Graphics

1366 x 768	60, 60RB	X	X	X	X	VESA DMT
1440 x 900	60, 60RB	X	X	X	X	VESA DMT
1600 x 900	60, 60RB, 75, 85	X	X	X	X	VESA DMT
1680 x 1050	60, 60RB, 75	X	X	X	X	VESA DMT, CVT 1.76MA/1.76MA-R
1920 x 1080	60	X	X	X	X	VESA DMT, CVT 2.07M9, SMPTE 274M
1920 x 1200	60, 60RB, 75, 85	X	X	X	X	DMT, CVT 2.30MA/2.30MA-R
1600 x 1200	60, 75, 85	X	X	X	X	VESA DMT, 1.92M3
1920 x 1440	60, 75, 85	X	X	X	X	VESA DMT, CVT 2.76M3
2048 x 1536	60,75	X	X	X	X	CVT 3.15M3
2560 x 1440	59.951		X	X	X	CVT 3.69M9-R
2560 x 1600	60, 60RB		X	X	X	VESA DMT, CVT 4.10MA/4.10MA-R
3840 x 2160	24			X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	25			X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	30		X	X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	50			X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
3840 x 2160	60			X	X	CVT-RBv1/v2 (8.29M9-R), SMPTE 274M
4096 x 2160	24			X	X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	25			X	X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	30			X	X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	50			X	X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
4096 x 2160	60			X	X	CVT-RBv1/v2 (8.85M-R), SMPTE 274M
1920 x 1080	50		X	X	X	SMPTE 274M
1920 x 1080	30		X	X	X	SMPTE 274M
1920 x 1080	24		X	X	X	SMPTE 274M
1280 x 720	50		X	X	X	SMPTE 296M
720 x 576	50		X	X	X	ITU-R BT.1358

* >60 refresh rates only for analog (VGA) signaling

Technical Specifications – Hard Disk and Solid State Storage

HARD DISK AND SOLID STATE STORAGE

Introduction:

HP Serial Advanced Technology Attachment (SATA) Hard Drives maximize the performance of HP Business PCs by providing the technologies to meet your increasing storage demands with high-capacity drives offering superior reliability and performance.

SATA provides faster data transfer speeds, better system cooling airflow, more bandwidth, more headroom for speed increases in future generations and better data integrity. A next-generation technology, the SATA interface connects hard drives to the PC platform enabling easy aggregation of multiple hard drives into a single PC. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability. The HP EliteDesk 800 G2 Series Business PC supports the latest SATA 6.0Gb/s specification.

HP Drive Lock

HP Serial ATA Hard Drives offer enhanced security via a new Drive Lock. When enabled, this ATA security feature set prevents software access to user data on the drive until one or two user-defined passwords are provided.

SMART IV Technology

Self-Monitoring Analysis and Reporting Technology (SMART) hard drive technology allows hard drives to monitor their own health and to raise flags if imminent failures are predicted. If the drive determines that a failure is imminent, the SMART hard drive technology enables the intelligent manageability or management software to generate a fault alert. While the current versions of SMART hard drives do a good job monitoring the data on the hard drive media, the ever increasing emphasis on reliability and quality has promoted HP to implement SMART IV technology which constantly checks that the data flow from host interface to media and media to host interface is not compromised. This is accomplished by inserting a 2 byte parity code into every 512 byte block in the data path of the hard drive's Cache RAM. This unique parity checking performed by HP's SMART IV technology hard drives, allows for more complete error detection coverage encompassing the entire data path between the host and the hard drive.

Smart IV is also known as IOEDC: I/O Error Detection Code.

Native Command Queuing

NCQ or Native Command Queuing is a SATA protocol extension that allows the hard drive to have several write or read commands outstanding at the same time. In contrast, normal non-queued operation requires each command to be completed before the next command is issued by the host system. Queuing allows the drive to complete the commands in the order that allows for best overall throughput. It also involves an advanced method of transferring data to or from the host, called First Party Direct Memory Access (FPDMA), which allows the hard drive and the host controller to manage the data transfers for multiple outstanding commands, without involving the host processor. NCQ can contribute to better performance but the results are dependent on many factors, including the access patterns of the various applications and operating system functions that are initiating drive accesses. Enabling NCQ features in the hard drive requires AHCI support from the host system BIOS, controller, and driver. AHCI support is typically implemented in RAID configurations.

Note: GB = 1 billion bytes. Actual available capacity is less.

Technical Specifications – Hard Disk and Solid State Storage

Redundant Array of Independent Drives (RAID)

Flexible implementation:

- DriveLock is supported while in RAID mode. Users can manage the DriveLock password from within F10 Setup. Locked drives will be displayed as such in the RAID option ROM interface.
- Hard drive information can be viewed within F10 Setup while in RAID mode. Previously, the hard drives will not appear in Drive Configuration when switching to RAID mode.
- DPS Self-Test can be executed on physical hard drives while in RAID mode.
- The RAID Setup Utility (accessed through CTRL-I) can be protected by the F10 Setup password.

NOTE:

RAID 1 is the only RAID configuration offered via factory configurations. The pre-configured systems:

- Are only available on the SFF, TWR and AIO form factors. The DM form factor does not support RAID as it does not allow for multiple common storage drives.
- Are complete RAID systems and have both drives installed. If the TWR is configured with three hard disk drives, the third drive is would be un-partitioned and not part of the RAID array
- Have the necessary Option ROM configuration.
- Are pre-loaded and pre-installed with all required Intel® software.
- Include a preinstalled operating system that is mirrored mode out of the box.
- Are available only for select storage options.

120 GB SATA 2.5 Non-SED SSD

Unformatted Capacity	120 GB
Architecture	Multi-Level Cell (MLC) NAND
Interface	Serial ATA 3.0 (6.0 Gb/s)
Form Factor	2.5 inch
Height	Low profile, 7mm height
Width	69.85 mm ± 0.25
Length	100.45 mm max
Weight	Up to 78 g

Technical Specifications – Hard Disk and Solid State Storage

Bandwidth Performance	Sustained Sequential Read:	Up to 540 MB/s
	Sustained Sequential Write:	Up to 480 MB/s
Power	Power consumption:	Average: Read <3.7W; Write 3.7W; Standby <55mW
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

120GB SATA 2.5" Opal2 SED Solid State Drive (Pro 2500)

Unformatted Capacity	120 GB 234,441,648 (Total Logical Sectors)
Architecture	ATA 8 Compliant and SATA 3.0 compliant Supports Mode 2 Multiword DMA Supports Drive Failure Prediction Supports SMART Offline Read Scan Supports Mode 4 PIO Supports Mode 5 UDMA Supports HP Drive Protection System ATA 8 ACS-2 Data / TRIM Support Support DEVSLP feature Supports TRIM Command per ATA8 / ACS 2 Supports FIPS-197 features Support TCG Storage Architecture Core Specification 2.0
Interface	Serial ATA 3.0 (6.0 Gb/s)
Form Factor	2.5 inch
Height	Low profile, 7mm height
Width	69.85 mm ± 0.25
Length	100.45 mm max

Technical Specifications – Hard Disk and Solid State Storage

Weight	Up to 78 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 540 MB/s
	Sustained Sequential Write:	Up to 480 MB/s
Power	Power consumption:	Average: Read <3.7W; Write 3.7W; Standby <55mW
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

128GB SATA 2.5” 3D Non-SED Solid State Drive

Unformatted Capacity	128 GB 250,069,680 (User Addressable Sectors)
Architecture	Self-Encrypting (SED) Solid State Drive with NAND Flash and SATA interface. Fully complies with ATA/ATAPI-7 Standard (Partially Complies with ATA/ATAPI-8) Power Saving Modes: DIPM (Partial / Slumber mode) Support NCQ : Up to 32 depth Synchronous Signal Recovery
Interface	Serial ATA (6.0 Gb/s)
Form Factor	2.5 inch
Height	6.80 mm ± 0.20
Width	69.85 mm ± 0.25
Length	100.20 mm ± 0.25
Weight	Up to 54 g

Technical Specifications – Hard Disk and Solid State Storage

Bandwidth Performance	Sustained Sequential Read:	Up to 530 MB/s
	Sustained Sequential Write:	Up to 140 MB/s
Power	Power consumption:	Active: Typical 250mW; Idle: Typical 50mW
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

128GB SATA 2.5" Opal2 SED Solid State Drive

Unformatted Capacity	128 GB 250,069,680 (User Addressable Sectors)
Architecture	Self-Encrypting (SED) Solid State Drive with NAND Flash and SATA interface. Trusted Computing Group(TCG) OPAL compliant encrypted solid state drive
Interface	Serial ATA (6.0 Gb/s)
Form Factor	2.5 inch
Height	6.80 mm ± 0.20
Width	69.85 mm ± 0.25
Length	100.20 mm ± 0.25
Weight	Up to 73 g

Technical Specifications – Hard Disk and Solid State Storage

Bandwidth Performance	Sustained Sequential Read:	Up to 520 MB/s
	Sustained Sequential Write:	Up to 340 MB/s
Power	Power consumption:	Active: 0.78A / 3.891W; Idle: 0.005A / 0.026W
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

HP 128 GB 2.5” (non-SED) Solid State Drive*		
Unformatted Capacity	128 GB*	
Architecture	Multi Level Cell (MLC) NAND	
Interface	SATA 6 GB/sec	
Dimensions (W x H x D)	2.75 x 0.276 x 3.96 in (6.985 x 0.7 x 10.05 cm)	
Weight	0.16 lb (73 g)	
Bandwidth Performance	Sustained Sequential Read:	Up to 450 MB/ss
	Sustained Sequential Write:	Up to 260 MB/s
	Random Read (4KB):	up to 46K IOPs
	Random Write (4KB):	up to 56K IOPs
Latency	Read:	55ms (TYP)
	Write:	55ms (TYP)
Power	DC power requirement:	Min 4.5 V; Max 5.5 V
	Total power consumption:	160 mW (Active) ; <85 mW; (Idle)

Technical Specifications – Hard Disk and Solid State Storage

Useful Drive Life	1.2 million device hours**	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity (operating):	5% to 95%
	Shock:	1,500 G/1.0 msec
Regulations	UL, CSA, EN 60950-2000, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B, Korea KCC, CE Mark	
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.		

Intel® Pro 2500 180 GB Solid State Drive*		
Unformatted Capacity	180 GB*	
Architecture	Multi Level Cell (MLC) NAND	
Interface	SATA 3.0 (6.0 Gb/s)	
Dimensions (W x H x D)	6.98 x 0.7 x 10.05 cm	
Weight	78 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 540 MB/s
	Sustained Sequential Write:	Up to 490 MB/s
	Random Read (4KB):	up to 41K IOPs
	Random Write (4KB):	up to 80K IOPs
Latency	Read:	80 us
	Write:	85 us
Power	DC power requirement:	5 VDC 5%-100 mV ripple p-p
	Total power consumption:	195 mW (Active); 55 mW (Idle)
Useful Drive Life	72TB written, up to 40GB/day for 5 years **	
Environmental (all conditions, non-condensing)		
	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity (operating):	5% to 95%
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.		

Technical Specifications – Hard Disk and Solid State Storage

180 GB SATA Opal2 SED SSD (Intel® Pro 2500)*			
Formatted Capacity	180 GB		
Architecture	Solid State Drive with SATA interface; ATA 8 Compliant and SATA 3.0 compliant		
Interface	Serial ATA 3 (6.0 Gb/s)		
Form Factor	2.5 inch		
Height	7 mm ± 0.5		
Width	69.85 mm ± 0.25		
Length	100.45 mm Max		
Weight (typical)	Up to 78 g		
Data Transfer Rate (128k Sequential)	Sequential Read	Up to 540 MB/s	
	Sequential Write	Up to 490 MB/s	
Power Watts	Power consumption (avg):	Power-Up: 6W (max) Read: <3.7W Write: 3.7W Standby: <55mW DEVSLP: <7mW	
Environmental (all conditions, non-condensing)	Operating Temperature:		32° to 158° F (0° to 70° C)
	Relative Humidity:		5% to 95%
	Shock:		1500 G Max - operating (operating)
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.			

HP 1TB 7.2K SATA 6.0Gb/s 2.5" Hard Disk Drive

Technical Specifications – Hard Disk and Solid State Storage

Capacity	1,000,204,886,016 bytes	
Rotational Speed	7,200 rpm	
Interface	SATA 6 Gb/s	
Buffer Size	32 MB	
Logical Blocks	1,953,525,168	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track:	2.0 ms
	Average:	12 ms
	Full-Stroke:	25 ms
Height (nominal)	0.374 in/9.5 mm	
Width (nominal)	Media diameter: 2.5 in/63.5 mm	
	Physical size: 2.75 in/70 mm	
Operating Temperature	41° to 131° F (5° to 55° C)	

HP 1-TB SATA 6G 3.5" 8GB Solid State Hybrid Drive (SSHD)	
Formatted Capacity	1 TB
Spindle Speed	7,200 rpm
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash
Interface	Serial ATA (SATA)
Cache Buffer	64 MB
NAND Flash Commercial Multilevel Cell (cMLC)	8 GB
Number of Sectors	1,953,525,168

Technical Specifications – Hard Disk and Solid State Storage

Seek Time (typical reads)	Single Track:	2.0 ms
	Average:	11 ms
Height	0.783 in / 2.01 cm	
Width	4 in / 10.2 cm	
Length	5.79 in / 14.7 cm	
Weight	0.88 lb/400 g	
Operating Temperature	41° to 131° F (5° to 55° C)	

HP 1 TB* 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive

Formatted Capacity	1,000,204,886,016 bytes	
Rotational Speed	7,200 rpm	
Interface	Serial ATA 3.0 (6.0 Gb/s)	
Buffer Size	32 MB	
Logical Blocks	1,953,525,168	
Seek Time (average)	Single Track:	2.0 ms
	Average:	11 ms
	Full-Stroke:	21 ms
Height (nominal)	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)	

* For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

HP 1 TB* SATA 6G 2.5" 8GB Solid State Hybrid Drive (SSHD)*

Formatted Capacity	1 TB
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Technical Specifications – Hard Disk and Solid State Storage

Spindle Speed	5,400 rpm +/- 0.2%	
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash	
Interface	SATA 6 Gb/s	
Cache Buffer	64 MB	
NAND Flash Commercial Multilevel Cell (cMLC)	8 GB	
Number of Sectors	976,773,168	
Seek Time (typical reads)	Single Track:	2.0 ms
	Average:	12 ms
Height	0.374 +/- .008 in (9.5 +/- 0.2 mm)	
Width	2.750 +/- 0.010 in (69.85 +/- 0.25 mm)	
Length	3.951 +0.008 / -0.010 in (100.35 +0.20 / -0.25 mm)	
Weight	0.254 lb/115 g (max)	
Operating Temperature	32° to 140° F (0° to 60° C)	
* For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.		

256GB SATA 2.5" 3D Non-SED Solid State Drive

Unformatted Capacity	256 GB
	500,118,192 (User Addressable Sectors)
Architecture	Solid State Drive with NAND Flash and SATA interface. Fully complies with ATA/ATAPI-7 Standard (Partially Complies with ATA/ATAPI-8) Power Saving Modes: DIPM (Partial / Slumber mode) Support NCQ : Up to 32 depth Synchronous Signal Recovery
Interface	Serial ATA (6.0 Gb/s)
Form Factor	2.5 inch

Technical Specifications – Hard Disk and Solid State Storage

Height	6.80 mm ± 0.20	
Width	69.85 mm ± 0.25	
Length	100.20 mm ± 0.25	
Weight	Up to 54 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 540 MB/s
	Sustained Sequential Write:	Up to 280 MB/s
Power	Power consumption:	Active: Typical 250mW; Idle: Typical 50mW
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

256GB SATA 2.5” Opal2 SED Solid State Drive	
Unformatted Capacity	256 GB 500,118,192 (User Addressable Sectors)
Architecture	Self-Encrypting (SED) Solid State Drive with MLC NAND Flash and SATA interface. Trusted Computing Group(TCG) OPAL2.0 compliant encrypted solid state drive
Interface	Serial ATA (6.0 Gb/s)
Form Factor	2.5 inch
Height	6.80 mm ± 0.20
Width	69.85 mm ± 0.25

Technical Specifications – Hard Disk and Solid State Storage

Length	100.20 mm ± 0.25	
Weight	Up to 73 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 520 MB/s
	Sustained Sequential Write:	Up to 460 MB/s
Power	Power consumption:	Active average: 3.891W; Idle: 0.085W
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

256GB SATA 2.5" Non-SED Solid State Drive

Unformatted Capacity	256 GB 500,118,192 (User Addressable Sectors)
Architecture	Solid State Drive with MLC NAND Flash and SATA interface.
Interface	Serial ATA (6.0 Gb/s)
Form Factor	2.5 inch
Height	6.80 mm ± 0.20
Width	69.85 mm ± 0.25
Length	100.20 mm ± 0.25

Technical Specifications – Hard Disk and Solid State Storage

Weight	Up to 73 g	
Bandwidth Performance	Sustained Sequential Read:	Up to 520 MB/s
	Sustained Sequential Write:	Up to 460 MB/s
Power	Power consumption:	Active average: 3.891W; Idle: 0.085W
Mean Time Between Failure (MTBF)	1,500,000 hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity:	5% to 95%
	Shock:	1,500 G/0.5 ms

HP 2 TB* 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive

Formatted Capacity	2 TB	
Rotational Speed	7,200 rpm	
Interface	SATA 6Gb/s NCQ	
Cache, Multisegmented (MB)	64 MB	
Seek Time (average)	Read	<8.5 ms
	Write	<9.5 ms
Height	1.028 in/26.11 mm	
Width	4.0 in/101.6 mm	
Depth	5.787 in/146.99 mm	

Technical Specifications – Hard Disk and Solid State Storage

Weight	1.38 lb/626 g
Operating Temperature	32° to 140° F (0° to 60° C)
* For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.	

HP 500 GB 7.2K SATA 6.0Gb/s 2.5” Hard Disk Drive		
Capacity	500,107,862,016 bytes	
Rotational Speed	7,200 rpm	
Interface	SATA 6 Gb/s	
Buffer Size	16 MB	
Logical Blocks	976,773,168	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track:	2.0 ms
	Average:	12 ms
	Full-Stroke:	25 ms
Height (nominal)	0.267 in/6.8 mm	
Width (nominal)	Media diameter: 2.5 in/63.5 mm	
	Physical size: 2.75 in/70 mm	
Operating Temperature	41° to 131° F (5° to 55° C)	

500GB* 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive

Formatted Capacity	500,107,862,016 bytes
Spindle Speed	7,200 rpm
Interface	Serial ATA 3.0 (6.0 Gb/s)
Buffer Size	16 MB



Technical Specifications – Hard Disk and Solid State Storage

Logical Blocks	976,773,168
	Single Track: 2.0 ms
Seek Time (average)	Average: 11 ms
	Full-Stroke: 21 ms
Height (nominal)	1 in/2.54 cm
	Media diameter: 3.5 in/8.89 cm
Width (nominal)	Physical size: 4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

*For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

HP 500 GB SATA 6G 2.5" 8GB Solid State Hybrid Drive (SSHD)*		
Formatted Capacity	500 GB	
Spindle Speed	5,400 rpm +/- 0.2%	
Drive Type	Solid State Hybrid Drive (SSHD) technology with NAND Flash	
Interface	SATA 6 Gb/s	
Cache Buffer	64 MB	
NAND Flash Commercial Multilevel Cell (cMLC)	8 GB	
Number of Sectors	976,773,168	
Seek Time (typical reads)	Single Track:	2.0 ms
	Average:	12 ms
Height	0.268 +/- .008 in (6.8 +/- 0.2 mm)	
Width	2.750 +/- 0.010 in (69.85 +/- 0.25 mm)	
Length	3.951 +0.008 / -0.010 in (100.35 +0.20 / -0.25 mm)	
Weight	0.209 lb/95 g (max)	
Operating Temperature	41° to 131° F (5° to 55° C)	

Technical Specifications – Hard Disk and Solid State Storage

***NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

512 GB SATA 2.5" 3D Solid State Drive* (Pending specifications)

Formatted Capacity	512 GB		
Architecture			
Interface			
Form Factor			
Height			
Width			
Length			
Weight (typical)			
Data Transfer Rate (128k Sequential)	Sequential Read		
	Sequential Write		
Power Watts	Power consumption (avg):		
Environmental (all conditions, non-condensing)	Operating Temperature:		
	Relative Humidity:		
	Shock (0.5 mSec half-sine):		

***NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.

HP 128 GB Turbo Drive SSD-M.2 PCIe Card*

Unformatted Capacity	128 GB*
Interface	M.2 PCIe x4 Gen 2
Architecture	Solid State Drive M.2 PCIe Gen 2 x4 AHCI; NCQ Command Set



Technical Specifications – Hard Disk and Solid State Storage

Form Factor	M.2 2280	
Dimensions (Width x Length x Thickness)	.899 x 3.149 x .146 in (22 x 80 x 3.73 mm)	
Weight	0.017 lb (8 g) Max	
Bandwidth Performance - Performance measured using IOMeter 2008 on Windows 8 64bit. Actual performance may vary depending on use conditions and environment.	Sustained Sequential Read (128KB):	Up to 920 MB/ss
	Sustained Sequential Write (128KB):	Up to 430 MB/s
	Random Read (4KB):	up to 8500 IOPs
	Random Write (4KB):	up to 32000 IOPs
Power	Allowable voltage	3.3V ± 5%
	Total power consumption:	5.8 W (Active) ; 80 mW; (Idle)
MTBF	1.5 M hours	
Environmental (all conditions, non-condensing)	Operating Temperature:	32° to 158° F (0° to 70° C)
	Relative Humidity (operating):	5% to 95%
	Shock:	1,500 G
Regulations	Safety TUV UL CB c-UL-us	TUV
		UL CB
		c-UL-us
		TUV
	EMC/EMI	CE (EU)
		BSMI (Taiwan)
		KCC (South Korea)
		VCCI (Japan)
		C-Tick (Australia)
		FCC (USA)
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.		

Technical Specifications – Hard Disk and Solid State Storage

HP 256 GB Turbo Drive SSD-M.2 PCIe Card*			
Formatted Capacity	256 GB		
Architecture	Solid State Drive M.2 PCIe Gen 2 x4 AHCI; NCQ Command Set		
Interface	M.2 PCIe Gen 2 x4		
Form Factor	M.2 2280		
Height	7 mm ± 0.20		
Width	.8 mm ± 0.08		
Length	50 mm ± 0.15		
Weight (typical)	Up to 10 g		
Data Transfer Rate (128k Sequential)	Sequential Read	Up to 2150 MB/s	
	Sequential Write	Up to 1200 MB/s	
Power Watts	Power consumption (avg):	Power-Up: N/A Read: 4 W Write: 5.1 W Standby: 700 mW Idle: 70 mW	
Environmental (all conditions, non-condensing)	Operating Temperature:		32° to 158° F (0° to 70° C)
	Relative Humidity:		5% to 95%
	Shock (Linear 2 m/Sec half-sine):		1000 G peak (operating)
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.			

HP 512GB Turbo Drive G2 SSD-M.2 PCIe Card*
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Technical Specifications – Hard Disk and Solid State Storage

Formatted Capacity	512,288 MB		
Architecture	Solid State Drive M.2 PCIe Gen 3 x4 NVMe; NVMe 1.1a Compliant		
Interface	M.2 PCIe Gen 3 x4 NVMe		
Form Factor	M.2 2280 DS		
Height	22 mm ± 0.16		
Width	.8 mm ± 0.08		
Length	50 mm ± 0.15		
Weight (typical)	Up to 10 g		
Data Transfer Rate (128k Sequential)	Sequential Read	Up to 2150 MB/s	
	Sequential Write	Up to 1550 MB/s	
Power Watts	Power consumption (avg):	Power-Up: N/A Read: 4.3 W Write: 6.5 W Standby: 700 mW Idle: 70 mW	
Environmental (all conditions, non-condensing)	Operating Temperature:		32° to 158° F (0° to 70° C)
	Relative Humidity:		5% to 95%
	Shock (Linear 2 m/Sec half-sine):		1000 G peak (operating)
*NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8.1/10) of system disk is reserved for the system recovery software.			

Technical Specifications – Optical Drives

OPTICAL DRIVES

HP Slim SuperMulti DVD Writer Drive		
Height	12.7mm 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 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel	
Weight (max)	0.42 lb (190 g)	
Write speeds	DVD-RAM	Up to 5X
	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 24X
Read speeds	DVD-RAM	Up to 5X
	DVD-RW, DVD+RW	Up to 8X
	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 ± 5%-100 mV ripple p-p

Technical Specifications – Optical Drives

	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 Slim Blu-ray BDXL Drive

Height	12.7mm 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 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel		
Weight (max)	Up to 0.37 lb (170 g) without bezel		
		Triple-layer	Quadruple-layer
Write speeds	BD-R	Up to 4X	Up to 4X
	BD-RE	Up to 2X	Not supported
		Single-layer	Double-layer
	BD-R	Up to 6X	Up to 6X
	BD-RE	Up to 2X	Up to 2X
	DVD-R	Up to 8X	Up to 6X
	DVD-RW	Up to 6X	Not supported
	DVD+R	Up to 8X	Up to 6X
	DVD+RW	Up to 8X	Not supported
	DVD-RAM	Up to 5X	
	CD-R	Up to 24X	
	CD-RW	Up to 24X	
		Triple-layer	Quadruple-layer
	BD-R	Up to 4X	Up to 4X
	BD-RE	Up to 4X	Not supported
		Single-layer	Double-layer

Technical Specifications – Optical Drives

Read speeds	BD-ROM	Up to 6X	Up to 6X
	BD-R	Up to 6X	Up to 6X
	BD-RE	Up to 6X	Up to 6X
	DVD-ROM	Up to 8X	Up to 8X
	DVD-R	Up to 8X	Up to 8X
	DVD-RW	Up to 8X	
	DVD+R	Up to 8X	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 20X/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 $\pm$ 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)	

HP Slim DVD-ROM Drive

Height	12.7mm
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Dimensions (W x H x D)	5.04 x 0.5 x 5.0 in (128 x 12.7 x 127 mm) without bezel

Technical Specifications – Optical Drives

Weight (max)	Up to 0.37 lb (170 g) 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 (all conditions non-condensing)	Temperature	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature (operating)	84° F (29° C)

Technical Specifications – Memory

SYSTEM MEMORY SUPPORT

The HP Elite 800 G2 Business PC supports the 6th generation Intel® Core™ processor family. Based on a new PC micro-architecture, the processor is designed for a two-chip platform consisting of a processor and Platform Controller Hub (PCH). Unlike previous generations, the 6th generation Intel® Core™ processor includes an Integrated Memory Controller (IMC). The IMC supports DDR4 protocols with two independent, 64-bit wide channels each accessing one or two DIMMs.

- Two channels of non-ECC DDR4 unbuffered dual in-line memory modules (UDIMM) or DDR4 unbuffered small outline dual in-line memory modules (SO-DIMM) with a maximum of two DIMMs per channel
- Single-channel and dual-channel memory organization modes
- Data burst length of eight for all memory organization modes
- Memory data transfer rates of up to 2133 MT/s; actual supported data transfer rate determined by the configured processor.
- 64-bit wide channels
- DDR4 system memory I/O voltage of 1.2V
- Theoretical maximum memory bandwidth of:
 - 34 GB/s in dual-channel mode assuming 2133 MT/s

PLATFORM MEMORY SUPPORT

- The Small Form Factor (SFF) and Tower (TWR) platforms support up to four (4) industry-standard DDR4-SDRAM DIMMs.
- The Desktop Mini (DM) supports up to two (2) industry-standard DDR4-SDRAM SO-DIMMs.
- The All-in-One (AiO) platform supports up to two (2) industry-standard DDR4-SDRAM SO-DIMMs.

CAUTION: You must shut down the computer and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

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.

Technical Specifications – Networking and Communications

NETWORKING AND COMMUNICATIONS

Intel® I219LM Gigabit Network Connection LOM (standard)	
Connector	RJ-45
System Interface	PCIe + SMBus
Controller	Intel® I219LM Gigabit Ethernet Controller
Data rates supported	Supports operation at 10/100/1000 Mb/s data rates
IEEE Compliance	IEEE 802.3 Ethernet interface for 1000BASE-T, 100BASETX, and 10BASET applications (802.3ab, 802.3u, and 802.3i, respectively). EEE 802.3az support [Low Power Idle (LPI) mode] IEEE 802.3u auto-negotiation conformance
Performance	Jumbo Frames (up to 9 kB) 802.1Q & 802.1p Receive Side Scaling (RSS) Two Queues (Tx & Rx)
Power	- Ultra Low Power at cable disconnect (<1 mW) enables platform support for connected standby - Reduced power consumption during normal operation and power down modes - Integrated Intel® Auto Connect Battery Saver (ACBS) - Single-pin LAN Disable for easier BIOS implementation - Fully integrated Switching Voltage Regulator (iSVR) - Low Power Link-Up (LPLU)
MAC/PHY Interconnect	- PCIe-based interface for active state operation (S0 state) - SMBus-based interface for host and management traffic (Sx low power state)
Management Interface	MDC/MDIO management interface
Security & Manageability	Intel® vPro™ support with appropriate Intel chipset components

Intel® Ethernet I210-T1 Gigabit Network Adapter	
Connector	RJ-45

Technical Specifications – Networking and Communications

System Interface	PCI Express x1	
Controller	Intel® I210 Gigabit Ethernet Controller	
Memory	Integrated Dual 48K configurable transmit receive FIFO Buffers	
Data rates supported	10/100/1000 Mbps	
IEEE Compliance	802.1P 802.1Q 802.2 802.3 802.3AB 802.3u 802.3x flow control	
Bus architecture	PCI-E 2.1	
Data path width	X1, 250 MB/s, Bi-directional interface	
Data transfer mode	Bus-master DMA	
Hardware certifications	FCC, B, CE, TUV-c, TUVus Mark Canada and United States, TUV-GS Mark for European Union	
Power requirement	Aux 3.3 V, 3.0 Watts in 1000 base-T and 1.0 Watts in 100 Base-T	
Boot ROM support	Yes 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps	
Network transfer rate	10BASE-T (half-duplex) 10 Mbps	
	10BASE-T (full-duplex) 20 Mbps	
	100BASE-TX (half-duplex) 100 Mbps	
	100BASE-TX (full-duplex) 200 Mbps	
	1000BASE-T (full-duplex) 2000 Mbps (actual rate limited by PCI bus)	
Environmental	Operating Temperature:	32° to 132° F (0° to 55° C)
	Operating Humidity:	85% at 131° F (55° C)
Management	WOL, PXE, DMI, WFM 2.0	

Technical Specifications – Networking and Communications

Broadcom BCM943228Z 802.11n 2x2 DualBand Combo PCIe x1 Card*	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n 2.402 – 2.482 GHz Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels. 802.11a/n 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 Note: Indonesia no support this band)
Antenna Structure	2 transmit; 2 receive (2x2)
Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
Modulation	Direct Sequence Spread Spectrum CCK, BPSK, QPSK, 16-QAM, 64-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 - Cisco Certified Extensions, all versions through CCX4 and CCX Lite - WAPI
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between band Access Points
Output Power²	802.11b : +16dBm minimum 802.11g : +14dBm minimum 802.11a : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm minimum

Technical Specifications – Networking and Communications

	802.11n HT40(2.4GHz) : +13dBm minimum 802.11n HT20(5GHz) : +12dBm minimum 802.11n HT40(5GHz) : +12dBm minimum	
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity ⁴	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm 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 and Bluetooth® communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm Or Type 1630 : 2.3 x 16.0 x 30.0 mm	
Weight	Type 2230 : 2.8g Or Type 1630 : 2g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating Non-operating	14° to 158° F (-10° to 70° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED White - Radio ON	
1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. In Power Save Polling mode and on battery power. 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation). 5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.		
HP Integrated Module with Bluetooth® 4.0+EDR Wireless Technology		

Technical Specifications – Networking and Communications

Bluetooth® Specification	4.0+EDR Compliant		
Frequency Band	2402 to 2480 MHz		
Number of Available Channels	79 (1 MHz) available channels		
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps		
	Synchronous Connection Oriented links up to 3, 64 kbps, voice channels		
	Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric		
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.		
Receiver Sensitivity	Modulation	0.01% BER	0.001% BER
	GFSK	-80 dBm	-70 dBm
	π/4-DQPSK	-80 dBm	-70 dBm
	8DPSK	-80 dBm	-70 dBm
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW		
Range	Up to 33 ft (10 m)		
Electrical Interface	USB 2.0 compliant		
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software		
Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves		
Bluetooth® Software Supported Security	Full support of Bluetooth® Security Provisions		
Power Management	Microsoft Windows ACPI, and USB Bus Support		
Power Management Certifications	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff		
Security	All necessary regulatory approvals for supported countries, including:		
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249		
Bluetooth® Profiles Supported			
Power Management Certifications	ETS 300 328, ETS 300 826		
	Low Voltage Directive IEC950		
Certifications Bluetooth® Profiles Supported	UL, CSA, and CE Mark		
	Serial Port Profile (SPP) ¹		
	Service Discovery Application Profile (SDAP)		
	Dial-Up Networking (DUN) ^{1,2}		
	Generic Object Exchange Profile (GOEP) ^{1,2}		
	Object Push Profile (OPP) ^{1,2}		
	File Transfer Profile (FTP)		
	Synchronization Profile (SYNC)		
	Hard Copy Cable Replacement (HCRP) ^{1,2}		
	Personal Area Networking Profile (PAN) ^{1,2}		
	Human Interface Device Profile (HID) ^{1,2}		
	FAX Profile (FAX)		
	Basic Imaging Profile (BIP) ²		

Technical Specifications – Networking and Communications

	Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)
*Wireless access point and internet access required. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.	

Intel 7265 802.11ac 2x2 DualBand Combo PCIe x1 Card		
	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
	Interoperability	Wi-Fi certified
	Frequency Band	802.11b/g/n 2.402 – 2.482 GHz Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels. 802.11a/n 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 Note: Indonesia no support this band)
	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

Technical Specifications – Networking and Communications

		- IEEE 802.11i - Cisco Certified Extensions, all versions through CCX4 and CCX Lite - 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 : +16dBm minimum 802.11g : +14dBm minimum 802.11a : +14dBm minimum 802.11n HT20(2.4GHz) : +13dBm minimum 802.11n HT40(2.4GHz) : +13dBm minimum 802.11n HT20(5GHz) : +12dBm minimum 802.11n HT40(5GHz) : +12dBm minimum 802.11ac 80MHz(5GHz) : +11dBm minimum
Power Consumption		Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 60 mW (WLAN unassociated) Radio disabled: 30 mW
Power Management		ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³		802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -86dBm maximum 802.11a, 54Mbps : -72dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm 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 Or Type 1630 : 2.3 x 16.0 x 30.0 mm
Weight		Type 2230 : 2.8g Or Type 1630 : 2g
Operating Voltage		3.3v +/- 9%

Technical Specifications – Networking and Communications

	Temperature	Operating Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)	
	Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)	
	Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)	
	LED Activity	LED Amber – Radio OFF; LED White – Radio ON		
	1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).			
	HP Integrated Module with Bluetooth® 4.0+EDR Wireless Technology			
	Bluetooth® Specification	4.0+EDR Compliant		
	Frequency Band	2402 to 2480 MHz		
	Number of Available Channels	79 (1 MHz) available channels		
	Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps		
		Synchronous Connection Oriented links up to 3, 64 kbps, voice channels		
		Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric		
	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.		
	Receiver Sensitivity	Modulation	0.01% BER	0.001% BER
		GFSK	-80 dBm	-70 dBm
		π/4-DQPSK	-80 dBm	-70 dBm
		8DPSK	-80 dBm	-70 dBm
	Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW		
	Range	Up to 33 ft (10 m)		
	Electrical Interface	USB 2.0 compliant		
	Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetooth® Software		
	Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves		
Bluetooth® Software Supported Security	Full support of Bluetooth® Security Provisions			
Power Management	Microsoft Windows ACPI, and USB Bus Support			
Power Management Certifications	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff			
Security	All necessary regulatory approvals for supported countries, including:			
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249			
Bluetooth® Profiles Supported				
Power Management	ETS 300 328, ETS 300 826			

Technical Specifications – Networking and Communications

	Certifications	Low Voltage Directive IEC950
	Certifications Bluetooth® Profiles Supported	UL, CSA, and CE Mark Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2} FAX Profile (FAX) Basic Imaging Profile (BIP) ² Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Intel® 8260 2x2 Dual Band 802.11ac WLAN/ Bluetooth® Combo*		
Wireless LAN Standards	IEEE 802.11 ac/a/b/g/n	
Interoperability	Wi-Fi certification	
	WLAN + Bluetooth® Combo M.2 Card device shall meet all of the requirements to support Bluetooth® 4.1 and backwards compatible with 2.1 with EDR	
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 (Note: Indonesia does not support this band)
Antenna Interface	With antennas installed in the system, the antenna peak gain is less than +3dBi in the 2.4GHz band and less than +4dBi in the 5GHz band to allow the device to meet regulatory limits.	
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	

Technical Specifications – Networking and Communications

	802.11n: card will support rates for NSS=1 and NSS=2 for RX and TX for 20 and 40 MHz channels. Short and long guard interval shall be supported. 802.11ac: card will support rates for NSS=1 and NSS=2 for RX and TX for 80 MHz channels. 433Mbps for 1x1 and 867Mbps for 2x2.
Security	- 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 - Cisco Certified Extensions, all versions through V5 - WAPI Note: Check latest software/driver release for updates on supported security features.
Roaming	802.11r Fast Roaming
Output Power (Transmitting)	802.11b: +16dBm minimum 802.11g: +14dBm minimum 802.11a: +14dBm minimum 802.11n HT20 (2.4GHz) : +14dBm minimum 802.11n HT40 (2.4GHz) : +12dBm minimum 802.11n HT20 (5GHz) : +14dBm minimum 802.11n HT40 (5GHz) : +12dBm minimum 802.11ac 80MHz (5GHz) : +12dBm minimum Notes: 1. RF Tx power have to meet minimum criteria and with +1.5dBm tolerance but - 1.5dBm. 2. RF Parameter will be verified by R&S CMW500 via link mode. .
Power Consumption	Transmit: 2.0 Watts Receive: 1.6 Watts Idle mode (PSP): 180 mW (WLAN associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby 10mW (WLAN+BT) Radio off: 5 mW
Bluetooth® Power Consumption	Peak operating: 330 mW

Technical Specifications – Networking and Communications

	Receive: 230 mW	
	USB selective suspend: 17 mW	
Power Management	The product conforms to the ACPI and PCI Express M.2 bus methods to manage power of the WLAN components. Supports all 802.11 compliant power-save modes. These include the basic Power Save Polling (PSP) in 802.11 and Automatic Power Save Delivery (APSD) defined in 802.11e.	
Receiver Sensitivity for FER <10%	802.11b, 1Mbps: -94dBm maximum 802.11b, 11Mbps: -86dBm maximum 802.11a/g, 6Mbps: -88dBm maximum 802.11a/g, 54Mbps: -74dBm maximum 802.11n, MCS07: -69dBm maximum 802.11n, MCS15: -66dBm maximum 802.11ac, 1SS, MCS-0: -86dBm maximum 802.11ac, 1SS, MCS-9: -61dBm maximum 802.11ac, 2SS, MCS-0: -83dBm maximum 802.11ac, 2SS, MCS-9: -58dBm maximum	
	Note: 1. Rx sensitivity have to meet maximum criteria and with -1.5dBm tolerance but +1.5dBm. 2. Note: RF Parameter will be verified by R&S CMW500 via link mode.	
Form Factors	PCI Express M.2 form factor	
Operating Voltage	The card will be powered by a 3.3V, ± 9% supply from the host system.	
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)
* Wireless access point and Internet service required and not included. Availability of public wireless access points limited.		

Intel® 3165 1x1 Dual Band 802.11ac WLAN/ Bluetooth® Combo*

Wireless LAN Standards	IEEE 802.11 ac/a/b/g/n
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Technical Specifications – Networking and Communications

Interoperability	Wi-Fi certification	
	WLAN + Bluetooth® Combo M.2 Card device shall meet all of the requirements to support Bluetooth® 4.1 and backwards compatible with 2.1 with EDR	
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 (Note: Indonesia does not support this band)
Antenna Interface	With antennas installed in the system, the antenna peak gain is less than +3dBi in the 2.4GHz band and less than +4dBi in the 5GHz band to allow the device to meet regulatory limits.	
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: card will support rates for NSS=1 and NSS=2 for RX and TX for 20 and 40 MHz channels. Short and long guard interval shall be supported. 802.11ac: card will support rates for NSS=1 and NSS=2 for RX and TX for 80 MHz channels. 433Mbps for 1x.	
Security	- 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 - Cisco Certified Extensions, all versions through V5 - WAPI	
	Note: Check latest software/driver release for updates on supported security features.	
Roaming	802.11r Fast Roaming	
Output Power (Transmitting)	802.11b: +16dBm minimum 802.11g: +14dBm minimum 802.11a: +14dBm minimum 802.11n HT20 (2.4GHz) : +14dBm minimum 802.11n HT40 (2.4GHz) : +12dBm minimum 802.11n HT20 (5GHz) : +14dBm minimum	

Technical Specifications – Networking and Communications

	802.11n HT40 (5GHz) : +12dBm minimum 802.11ac 80MHz (5GHz) : +12dBm minimum
	Notes: - RF Tx power have to meet minimum criteria and with +1.5dBm tolerance but - 1.5dBm. - RF Parameter will be verified by R&S CMW500 via link mode.
Power Consumption	Transmit: 2.0 Watts
	Receive: 1.6 Watts
	Idle mode (PSP): 180 mW (WLAN associated)
	Idle mode: 50 mW (WLAN unassociated)
	Connect Standby 10mW (WLAN+BT)
	Radio off: 5 mW
Bluetooth® Power Consumption	Peak operating: 330 mW
	Receive: 230 mW
	USB selective suspend: 17 mW
Power Management	The product conforms to the ACPI and PCI Express M.2 bus methods to manage power of the WLAN components.
	Supports all 802.11 compliant power-save modes. These include the basic Power Save Polling (PSP) in 802.11 and Automatic Power Save Delivery (APSD) defined in 802.11e.
Receiver Sensitivity for FER <10%	802.11b, 1Mbps: -94dBm maximum 802.11b, 11Mbps: -86dBm maximum 802.11a/g, 6Mbps: -88dBm maximum 802.11a/g, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum 802.11ac, 2SS, MCS-9 : -58dBm maximum
	Note: - Rx sensitivity have to meet maximum criteria and with -1.5dBm tolerance but +1.5dBm. - Note: RF Parameter will be verified by R&S CMW500 via link mode.
Form Factors	PCI Express M.2 form factor

Technical Specifications – Networking and Communications

Operating Voltage	The card will be powered by a 3.3V, ± 9% supply from the host system.	
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)
* Wireless access point and Internet service required and not included. Availability of public wireless access points limited.		

Technical Specifications - Audio

AUDIO

High Definition Audio	
Type	Integrated
HD Stereo Codec	Realtek 2-channel ALC221 codec
Audio I/O Ports	Front microphone-In (150-K ohm Input Impedance)
	Rear Line-In/Microphone input (150-K ohm Input Impedance, function is configurable by audio driver)
	Rear Line-Out* (190 ohms Output Impedance, expects at least a 10-K ohm load)
	Front Headphone-Out (0.5 Ohm Output Impedance, expects at least a 32 ohm load) Front Microphone/Headphone jack is re-task able to provide Microphone input, line-in or Headphone output to support connecting two headphones to the front of the system. When configured as a second front headphone output, both front headphone outputs are always driven with the same signal.
	All ports are 3.5mm
Internal Speaker Amplifier	1.5W amplifier for the internal speaker only. External speakers must be powered externally. Rear Line-in audio port is re-taskable as either Line-in or Microphone-In.
Multi-streaming Capable	Multi-streaming can be enabled in the Realtek control panel to allow independent audio streams to be sent to/from the front and rear jacks.
Sampling	8 kHz - 192 kHz
Wavetable Syntheses	Yes – Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes
External Speaker Jack	Yes
High Definition Audio (All-in-One only)	
Type	Integrated
HD Stereo Codec	HP Clear Sound Amp
Audio I/O Ports	Side Headphone
	Side Headphone/Microphone/Line-In (function is configurable by audio driver; re-task able to provide Headphone, Microphone, or Line-In)
	Rear Line-Out

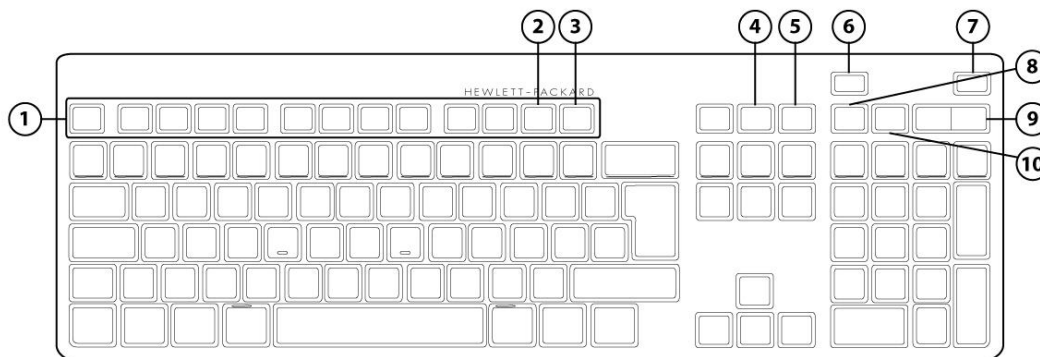
Technical Specifications - Audio

	All ports are 3.5mm
Internal Speaker Amplifier	2W amplifier for the internal speaker only. External speakers must be powered externally.
Multi-streaming Capable	Multi-streaming can be enabled in the DTS control panel
Sampling	44.1 kHz - 192 kHz
Wavetable Syntheses	Yes – Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes
External Speaker Jack	Yes

Technical Specifications - Input/Output Devices

INPUT/OUTPUT DEVICES

HP Conferencing Keyboard



1.	Function Keys	6.	End/Decline a Call
2.	F11 Lync or Skype for Business Contact list *	7.	Answer a Call
3.	F12 Lync or Skype for Business Calendar **	8.	Microphone Mute
4.	Share Screen	9.	Volume Up/Down
5.	Stop Webcam	10.	Audio Mute

*Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Contact list

**Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Calendar

Dimensions (H x L x W)	0.85 x 17.34 x 6.10 in (2.16 x 44.05 x 15.50 cm)
Weight	24.69 oz. (700 g)
Connectivity	USB cable
Keys	110 (US) Layout, 111 (EU) Layout – depending upon country
Feature Summary	Full-size ultra-quiet keyboard with numerical pad and 12 function keys One-touch simplicity for Microsoft Lync or Skype for Business calls with dedicated keys and LED light indicators
Illuminated keys	Incoming Call – Blinks Green Call in progress –Green

Technical Specifications - Input/Output Devices

	Microphone Mute – Orange Audio Mute – Orange Screen Sharing – Orange Stop Webcam – Orange
Other Call control keys	End/Decline Call Volume up and down rocker key
Microsoft Lync/Outlook	Fn+F12 – Lync or Skype for Business Calendar will open. If Lync or Skype for Business is not available will bring Outlook Calendar * Fn+F11 – Lync or Skype for Business Contact will open. If Lync or Skype for Business is not available will bring Outlook Contact list * * Fn+11 and Fn+12 function keys are not supported in Microsoft Windows 8.x Metro mode
Functions Keys	Fn+F10 – System Settings Fn+F9 – Devices Fn+F8 – Search Fn+F7 – Blank Fn+F6 – Up Brightness Adjustment Fn+F5 – Down Brightness Adjustment Fn+F4 – Display Options Fn+F3 – File Explorer Fn+F2 – System Lock Fn+F1 – System Sleep
System requirements	Available USB port Windows 7, Windows 8.x, and Windows 10 Server: Microsoft Lync Server 2010 or 2013 and Skype for Business Server 2015 Client: Microsoft Lync 2013 version 15.0.46xx or newer or Skype for Business Notes: - Limited support for Microsoft Lync 2010, Microsoft Lync 2013 Basic and Microsoft Metro Mode - Screen brightness functions supported in select HP systems
Approvals EMC Product Safety	FCC; CE; ACA(C-tick); EAC UL, CE Mark

HP USB Business Slim Keyboard

Technical Specifications - Input/Output Devices

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 Type A plug connector
	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
	Microsoft® PC 99 - 2001	Functionally compliant
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±12.5g 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)

Technical Specifications - Input/Output Devices

	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, 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 PS/2 Keyboard		
Physical Characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	18.22 x 6.47 x 1.1 in (46.28 x 16.43 x 2.79 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	Operating voltage	+ 5VDC $\pm$ 10%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	PS/2 6-pin mini din connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft PC 99 - 2001	Functionally compliant

Technical Specifications - Input/Output Devices

	Keycaps	Low-profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified 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	50-dBA maximum sound pressure level
	Operating temperature	32° to 104° F (0° to 40° C)
	Non-operating temperature	-22° to 149° F (-30° to 65° C)
	Operating humidity	15% to 80% (non-condensing at ambient)
	Non-operating humidity	15% to 90% (non-condensing at ambient)
	Operating shock	N/A
	Non-operating shock	65 inch 2.9 ms, six surface; 30g 266 inch/second; 50g 266 inch/second six surface
	Operating vibration	2-g peak acceleration
	Non-operating vibration	Starting at 5 Hz, vary the frequency of vibration from 5 to 500 Hz and back to 5 Hz at a Logarithmic sweep rate of 1 octave per minute.
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	29.93 in (76 cm) on concrete, 16-drop sequence
Approvals	CUL, ICES-003 Class B, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP PS/2 Business Slim Keyboard

Physical Characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
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Technical Specifications - Input/Output Devices

	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 (600± 80 g)
Electrical	Operating voltage	+ 4.4 – 5.25VDC
	Power consumption	50-mA maximum (with 5 VDC power supplied and three LEDs ON)
	System interface	PS/2 6-pin mini din connector
	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
	Microsoft PC 99 - 2001	Functionally compliant
	Keycaps	Low-profile design
	Switch actuation	60±12.5g 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	N/A

Technical Specifications - Input/Output Devices

	Non-operating shock	65 inch 2.9 ms, six surface; 30g 266 inch/second; 50g 266 inch/second six surface
	Operating vibration	2-g peak acceleration
	Non-operating vibration	Starting at 5 Hz, vary the frequency of vibration from 5 to 500 Hz and back to 5 Hz at a Logarithmic sweep rate of 1 octave per minute.
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	29.93 in (76 cm) on concrete, 16-drop sequence
Approvals	UL, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, KC	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	
HP Wireless Business Slim Keyboard and Mouse		
Keyboard	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 – Without Two AA Alkaline Batteries	1.23 lb (560± 80 g)
Mouse	Dimensions (H x L x W)	1.46 x 4.53 x 2.47 in (37 x 115 x 62.9 mm)
	Weight – Without Two AA Alkaline Batteries	0.15 lb (67 g)
Receiver	Dimensions (H x L x W)	0.33x 1.79 x 0.72 in (8.4 x 45.5 x 18.4 mm)
	Weight	0.21 oz (5.9 g)
	Cable Length – Minimum	6 ft (1.8 m)
	Range	32.8 ft (10 m)
System Requirements	Available USB port for the receiver CD-ROM Drive *This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.	
Approvals	Product Safety	UL; CSA /TUV (Europe only); CE Mark; CB Report
	Ergonomics	ANSI; ISO (Europe only); GS Mark (Germany only)
	EMC	FCC; CE; ACA (-tick); BSMI; KC ; VCCI

Technical Specifications - Input/Output Devices

	CE Mark	EN 55022:2010; EN 55024; EN 301489-1; EN 61000
	Design Guidelines for PCs	PC 99 – connector overmold colors; PC 2001 – full functionality
	Telecom	All local telecom requirements and approvals for intended markets
	USA	FCC Title 47 CFR, Par 15, Subpart C; other local requirements
	Country Support	US, Belgium, Switzerland, Spain, Denmark, Netherlands, France, Germany, Italy, Portugal, Sweden, Norway, Finland, UK, Poland, Czech Republic, Turkey, Greece, Austria, Bulgaria, Cyprus, Estonia, Hungary, Ireland, Latvia, Lithuania, Luxemburg, Malta, Romania, Slovakia, Slovenia, Vietnam, HK, Australia, NZ, Malaysia, Singapore, Indonesia, Philippines, Thailand, Canada, China, Japan, Korea, Taiwan, India, Venezuela, Ecuador, Russia, Ukraine, Israel, Croatia, United Arab Emirates, Peru, Brazil, Chile, Argentina, Mexico, South Africa, and up to 193 countries worldwide.
Environmental	Keyboard contains 25% post-consumer recycled plastic material.	

HP USB PS/2 Washable Keyboard

Physical Characteristics	Keys	104 (US) Layout, 105 (EU) layout – depending upon country
	Dimensions (L x W x H)	17.67x 6.62 x 1.38 in (449 x 168 x 35 mm)
	Weight	1.7 lb (0.77 kg) minimum
Electrical	Operating voltage	+ 5VDC $\pm$ 5%
	Power consumption	50-mA maximum (with three LEDs ON)
	System interface	USB Type A plug connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
	Microsoft PC 99 - 2001	Functionally compliant
Mechanical	Keycaps	Stepped -profile design
	Switch actuation	55-g nominal peak force with tactile feedback
	Switch life	20 million keystrokes
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys

Technical Specifications - Input/Output Devices

	Cable length	7 ft (2.2 m)
	Microsoft PC 99 - 2001	Mechanically compliant
	Acoustics	43-dBA maximum sound pressure level
Environmental	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	4° to 149° F (-20° to 65° C)
	Operating humidity	10% to 95% (non-condensing at ambient)
	Non-operating humidity	0% to 95% (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)	42 in (107 cm) on concrete, 16-drop sequence
Operating system support	Windows® 7, Windows Vista, Windows XP Professional	
Approvals	UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, C-Tick, KCC, USB-IF, WHQL, EN/IEC 60601-1, IP66/NEMA4X	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP USB Smart Card (CCID) Keyboard

Introduction:

Boost your security, simplify access procedures and reduce the costs associated with managing networks by preventing unauthorized access to your computers and networks using smartcard technology with the HP Smart Card (CCID) Keyboard.

The USB Smart Card (CCID) Keyboard is a full-sized keyboard that takes advantage of digital signatures and certificates to secure the environment for transactions performed on both public and private networks. The USB Smart Card (CCID) Keyboard works with all smart cards that comply with ISO standard 7816.

Smart cards are easy-to-use credit card-sized devices which require multiple forms of information to be validated before you gain access to your accounts or resources. Used worldwide, smart cards strengthen access to a network or other resource using dual-factor authentication. Implementing a two-factor authentication (or multi-factor authentication) process reduces the risk of unauthorized access by verifying and validating your identity in one of the following ways:

- Something you know – a combination of username and password or PIN
- Something you have – a smart card or security token.

Something you have (smart card) plus something you know (PIN), improves user-access security within corporate network environments. Smart cards are used in government agencies, healthcare companies and the finance industry.

Technical Specifications - Input/Output Devices

HP ProtectTools Smart Card Manager provides authentication software for the smart card. The Smart Card Reader module works with the HP ProtectTools Security Manager and enables the user to setup, use, and manage the smart card. This allows strengthened security with HP patented technology.		
Key Benefits:	- Protects against unauthorized access with smart card technology - Delivers even greater security when combined with a HP ProtectTools smart card and the HP ProtectTools Security Software - Combination of username and password or pin with a smart card or security token - Secures online transactions using digital signatures and certificates - Conforms to industry standards for ease of setup and use - Delivers long product life and quiet operation with high-impact materials and lubricated keys - Spill drain feature	
Physical Characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Form factor	USB basic smart card keyboard
	Colors	Carbonite/Silver
	Dimensions (H x W x D)	18.2 x 6.3 x 1.3 in (46.3 x 16.1 x 3.3 cm)
	Weight	2 lb (0.9 kg) minimum
Electrical	Operating voltage	+ 5VDC $\pm$ 5%
	Power consumption	100-mA maximum (with four LEDs ON)
	System interface	USB Type A plug connector
	ESD	CE level 4, 15-kV air discharge
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Microsoft PC 99 - 2001	Functionally compliant
	Languages	30+ available
	Keycaps	Standard design
	Switch actuation	55 g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (using Hasco modified tester)
	Switch type	Contamination-resistant 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

Technical Specifications - Input/Output Devices

	Non-operating vibration	4-g peak acceleration	
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence	
	Drop (in box)	42 in (107 cm) on concrete, 16-drop sequence	
SmartCard Function	Support	All ISO 7816 smart cards	
	Interface	Reads from and writes to all ISO7816-1, 2, 3, 4 memory and microprocessor smart cards (T=0, T=1)	
	Chipset	SCM STCIII	
	Standard APIs supported	PC/SC, EMV2000, CT-API	
	Power	USB Port	
		Short circuit detection (protects smart card and reader)	
		Power supply compliant with ISO7816 and EMV (5V, 60 mA)	
		Supports 3-V and 5-V cards	
	Power consumption	100-mA maximum draw	
	Communication	From card	9600 bps to 330,000 bps
		From computer	12 Mbps (USB transfer speed)
	Landing mechanism	Contact device	Friction contact
		Card insertions rating	Up to 100,000 insertion cycles
	Interface modes	CCID protocol	
	Reader performance interface	USB connection	
Approvals	Electro-magnetic standards	Europe	2004/108/EC
		USA	USAFCC part 15
Approvals	CE-Mark, UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick, MIC, EMV2000, USB-IF		
Ergonomic Compliance	ISO 9241-4, TUVGS		
Kit Contents	Keyboard, I/O Security and Documentation CD, warranty card		

HP USB 1000dpi Laser Mouse

Dimensions (H x L x W)	1.47 x 4.53 x 2.47 in (37.3 x 114.97 x 62.86 mm)	
Weight	3.360 oz (102g)	
Cable length	70.9 in (180 cm)	
System requirements	Available USB port	
Environmental	Operating Temperature	32° to 104° F (0° to 40° C)
	Non-operating Temperature	-4° to 140° F (-20° to 60° C)

Technical Specifications - Input/Output Devices

	Operating Humidity	10% to 90% (non-condensing at ambient)
Mechanical	Resolution	1000dpi
	Tracking Speed	45 cm/sec
	Cable Length	70.9 in (180 cm)

Technical Specifications – Power

POWER

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)* 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: 50,000 ft (15240 m)

*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.

POWER SUPPLY	DM	SFF	TWR	AiO
Standard Efficiency	65W* active PFC 89% average efficiency at 115V and 230V 90W active PFC 89% average efficiency at 115V and 230V *not for 65W DM	200W active PFC	280W active PFC	N/A
80 PLUS Bronze	N/A	200W active PFC 82/85/82% efficient at 20/50/100% load (115V)	280W active PFC 82/85/82% efficient at 20/50/100% load (115V)	N/A
80 PLUS Gold	N/A	N/A	N/A	160W active PFC 87/90/87% efficient at 20/50/100% load (115V) 88/91/88% efficient at 20/50/100% load (230V)

Technical Specifications – Power

80 PLUS Platinum	N/A	200W active PFC 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	400W active PFC 280W active PFC 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	200W active PFC 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)
Operating Voltage Range	90 - 264 VAC	90 - 264 VAC	90 - 264 VAC	90 - 264 VAC
Rated Voltage Range	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC	100-240V AC
Rated Line Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 HZ
Operating Line Frequency	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz
Rated Input Current	N/A	3.5A	4.4A	200W : 3A 160W : 2A
Rated Input Current with Energy Efficient* Power Supply		3A	3.6A	200W : 3A 160W : 2A
DC Output	+19.5V	+12.1V	+12.1V	+12.1V
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 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 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	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		Less than 100 microamps of leakage current at 120 Vac with the ground wire intact

Technical Specifications – Power

	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.	facility or that contact patients in normal use. Per section 10.3.5.1.		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	80mm variable speed	N/A
Power cord length	N/A	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)
External Power Adapter		N/A	N/A	N/A
Dimensions	1.77 x 1.18 x 4.25 in 45 x 30 x 108 mm	N/A	N/A	N/A
Total Cord Length	6 ft	N/A	N/A	N/A

Technical Specifications – Weights & Dimensions

WEIGHTS & DIMENSIONS

(configured with 1 HDD & 1 ODD; DM configured with 1 HDD only)				
	DM	SFF	TWR	AIO
Chassis (W x H x D)	6.9 x 1.3 x 7.0 in 175 x 34 x 177 mm	13.3 x 3.95 x 14.9 in 338 x 100 x 379 mm	6.7 x 15.3 x 16.7 in 170 x 389 x 425.4 mm	See table below.
System Volume	62.79 cu in 1.05 L	782.7 cu in 12.8 L	1711.9 cu in 28L	
System Weight*	2.9 lb 1.3 kg	16.7 lb 7.6 kg	20.8 lb 9.434 kg	
Max Supported Weight (desktop orientation)	77.0 lb 35.0 kg	77.0 lb 35.0 kg	77.0 lb 35.0 kg	
Stand Dimensions	77x 4.6 x 6.3 in 19.5 x 117 x 160 mm Weight: 47g/ .1 lbs.	1.1 x 7.0 x 7.9 in 29 x 178 x 200 mm	N/A	
Packaging (H x W x D)	7.8 x 11.4 x 19.7 in 198 x 290 x 500 mm	9.0 x 19.7 x 23.4 in 229 x 500 x 594 mm	11.6 x 19.6 x 23.6 in 295 x 499 x 599 mm	
Shipping Weight	9.0 lb. 4.1 kg	17.9 lb 8.1 kg	28.8 lb 13.1 kg	
Palletization Profile	8-units per layer 10/12 layer max 80/96 per pallet 47.126 x 39.291 x 99.252 in (including pallet)	4-units per layer 10-layer max. 40-units per pallet 47.126 x 39.291 x 88.858 in (including pallet)	4-units per layer 8-layer max. 32-units per pallet 47.126 x 39.291 x 98.622 in (including pallet)	
	Dependent on 40-Ft Std. Sea Container or 40-Ft High-cube Sea Container is used)			

ALL-IN-ONE WEIGHTS AND DIMENSIONS

Weight with Touch Panel

<i>Product Weight</i> <i>Unboxed</i>	<u>Without Stand</u> 16.95-17.39 lbs 7.69-7.89 kg	<u>Easel Stand</u> 18.48-18.92 lbs 8.38-8.58 kg	<u>Adjustable Height Stand</u> 25.34-25.78 lbs 11.49-11.69 kg	<u>Recline Stand</u> 23.72-24.17 lbs 10.76-10.96 kg
<i>Shipping Weight</i> <i>Boxed</i>	<u>Without Stand</u> 21.87 lbs 9.92kg	<u>Easel Stand</u> 23.36 lbs 10.6 kg	<u>Adjustable Height Stand</u> 31.04 lbs 14.08 kg	<u>Recline Stand</u> <u>29.42 lbs</u> <u>13.35 kg</u>



Technical Specifications – Weights & Dimensions

	<u>Without Stand</u> <u>(32 units)</u>	<u>Easel Stand</u> <u>(32 units)</u>	<u>Adjustable Height Stand</u> <u>(15 units)</u>	<u>Recline Stand</u> <u>(15units)</u>
<i>Shipping Weight</i>	732.4 lbs	780.74 lbs	498.65 lbs	<u>474.38 lbs</u>
<i>Pallet</i>	332.21 kg	354 kg	226 kg	<u>215 kg</u>

Weight without Touch Panel

	<u>Without Stand</u>	<u>Easel Stand</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand</u>
<i>Product Weight</i>	15.08-15.52 lbs	16.58-17.02 lbs	25.34-25.78 lbs	<u>21.82-22.26 lbs</u>
<i>Unboxed</i>	6.84-7.04kg	7.52-7.72 kg	11.49-11.69 kg	<u>9.90-10.10 kg</u>
	<u>Without Stand</u>	<u>Easel Stand</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand</u>
<i>Shipping Weight</i>	<u>19.97 lbs</u>	<u>21.47 lbs</u>	<u>29.15 lbs</u>	27.53 lbs
<i>Box</i>	<u>9.06kg</u>	<u>9.74 kg</u>	<u>13.22 kg</u>	12.49 kg
	<u>Without Stand (32</u>	<u>Easel Stand (32</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand</u>
<i>Shipping Weight</i>	<u>units)</u>	<u>units)</u>	<u>(15 units)</u>	<u>(15units)</u>
<i>Pallet</i>	<u>672.85 lbs</u>	<u>720.14 lbs</u>	<u>470.25 lbs</u>	445.97 lbs
	<u>305.21 kg</u>	<u>327 kg</u>	<u>213 kg</u>	202 kg

Dimensions (W x D x H)

	<u>Without Stand</u>	<u>Easel Stand 0</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand 0</u>
<i>Product Dimensions</i>	22.3 x 2.3 x 15.5 in	22.3 x 3.2 x 15.5 in	22.3 x 8.3 x 21.6 in	22.3 x 11 x 17.1 in
	567.2 x 59 x 392.7 mm	567.2 x 81 x 392.7 mm	567.2 x 210 x 549 mm	567.2 x 280 x 435 mm
		<u>Easel Stand 70</u>		<u>Recline Stand 65</u>
		<u>degrees</u>		<u>degrees</u>
		22.3 x 14 x 6.8 in		22.3 x 16.9 x 8 in
		567.2 x 355 x 173 mm		567.2 x 430 x 203 mm

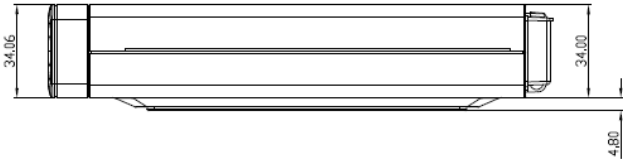
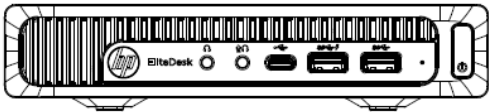
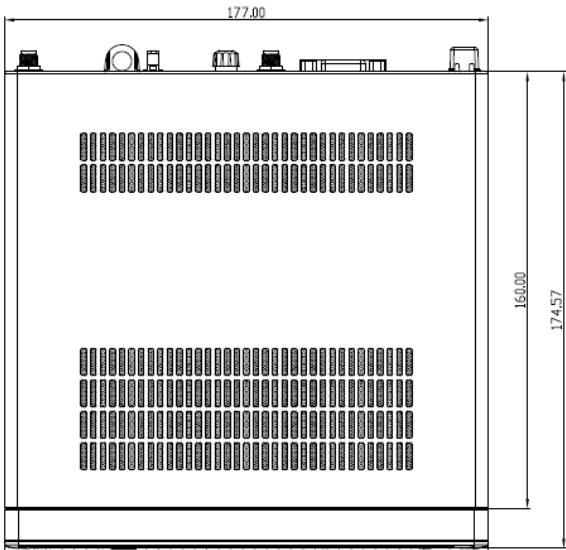
Shipping Dimensions

	<u>Without Stand</u>	<u>Easel Stand</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand</u>
<i>Shipping Dimensions</i>	26.22*6.96*19.88(H) in	26.22*6.96*19.88(H) in	26.33*11.53*20.78(H) in	26.33*11.53*20.78(H) in
<i>Boxed</i>	666*177*505(H) mm	666*177*505(H) mm	669*293*528(H) mm	669*293*528(H) mm
	<u>Without Stand</u>	<u>Easel Stand</u>	<u>Adjustable Height Stand</u>	<u>Recline Stand</u>
<i>Shipping Dimensions</i>	<u>(32 units)</u>	<u>(32 units)</u>	<u>(15 units)</u>	<u>(15units)</u>
<i>Pallet</i>	48*40*85.23(H) in	48*40*85.23(H) in	48*40*67.95(H) in	48*40*67.95(H) in

Technical Specifications – Weights & Dimensions

	1219*1016*2165(H) mm	1219*1016*2165(H) mm	1219*1016*1729(H) mm	1219*1016*1729(H) mm
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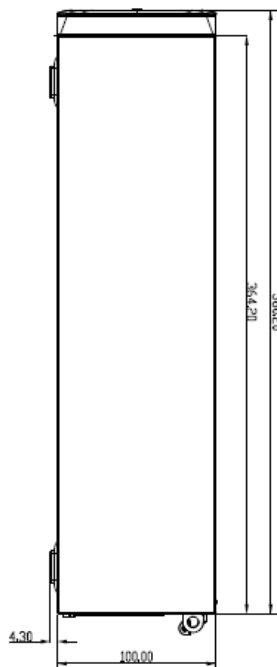
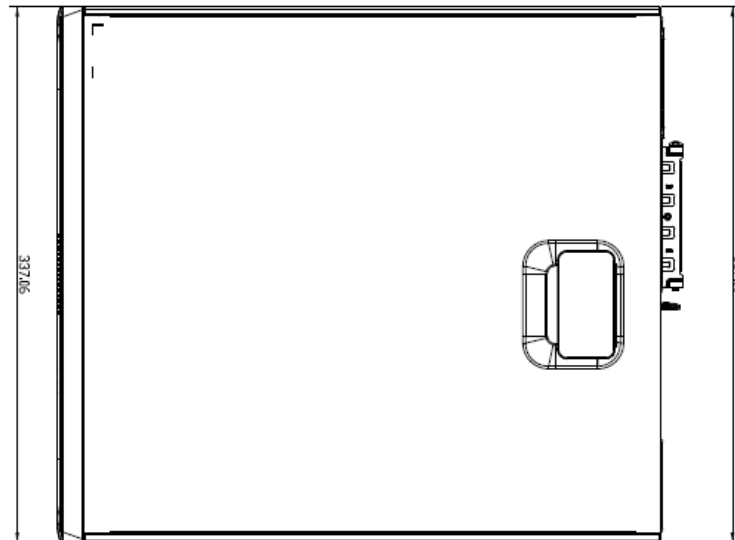
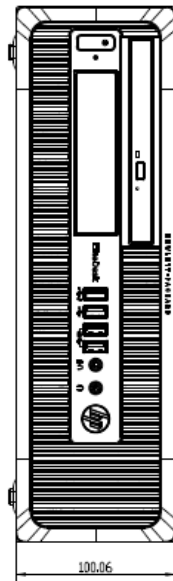
DESKTOP MINI DIMENSIONS



Technical Specifications – Weights & Dimensions

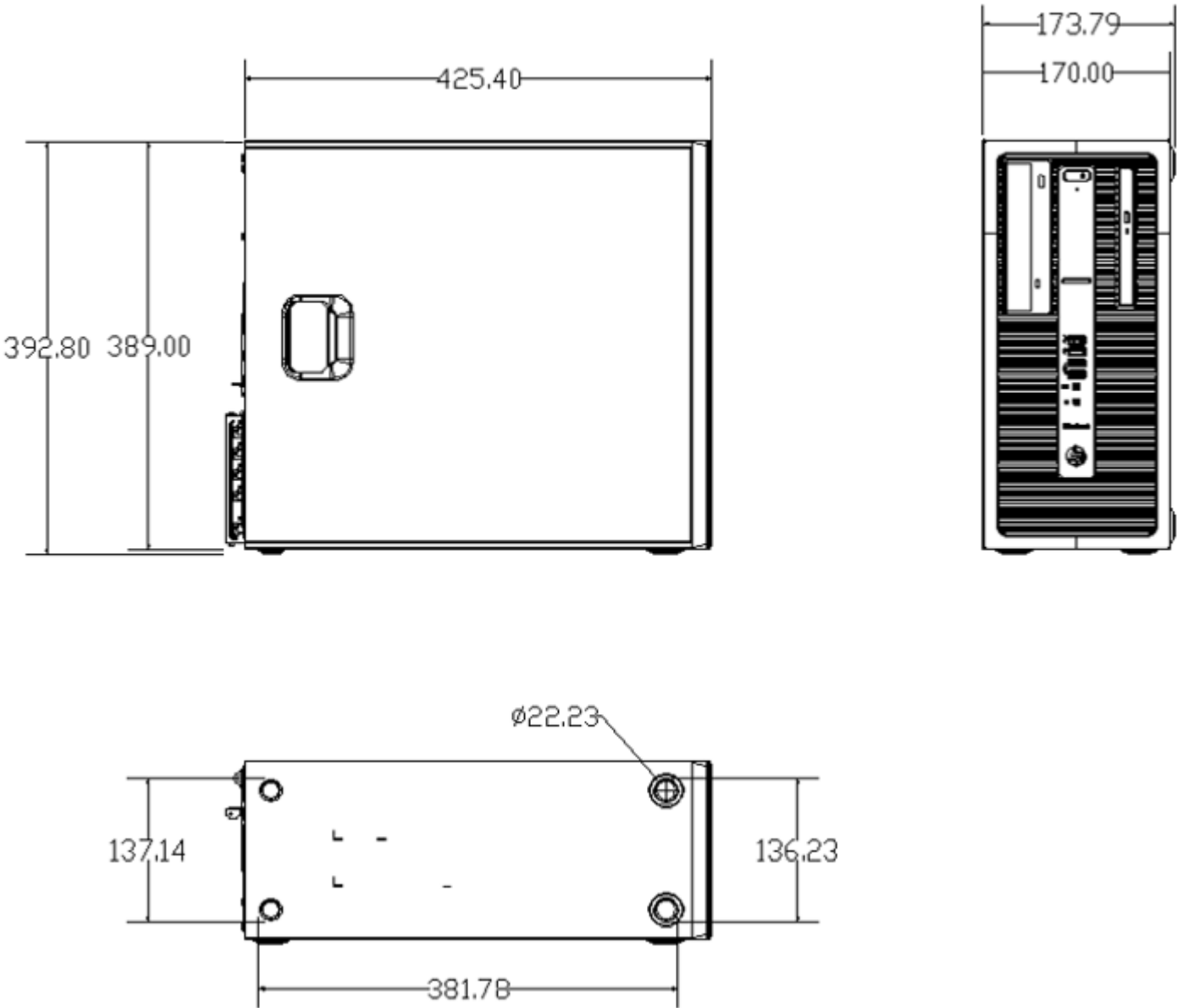
SMALL FORM FACTOR DIMENSIONS

Technical Specifications – Weights & Dimensions



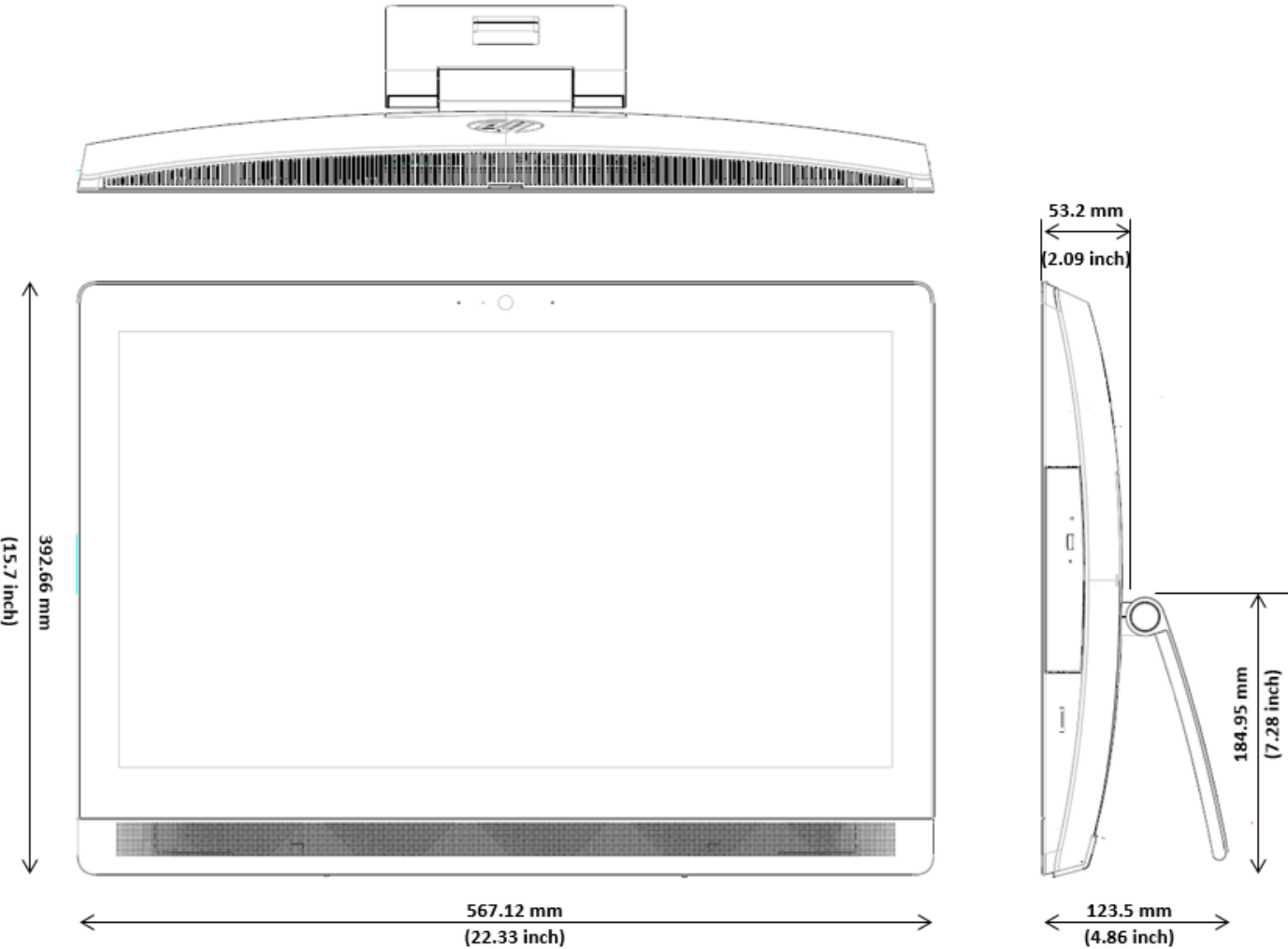
Technical Specifications – Weights & Dimensions

TOWER DIMENSIONS



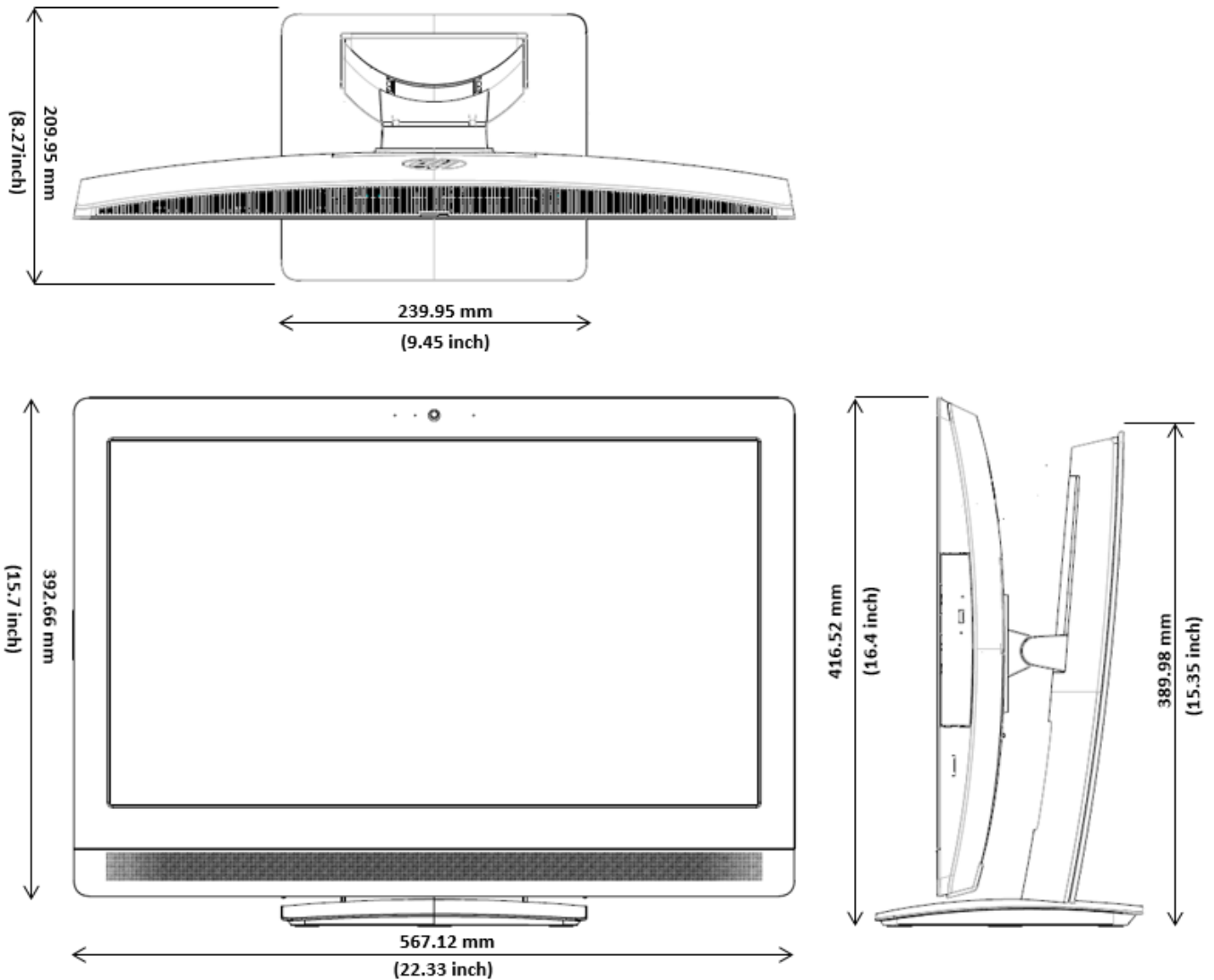
Technical Specifications – Weights & Dimensions

ALL-IN-ONE EASEL STAND DIMENSIONS



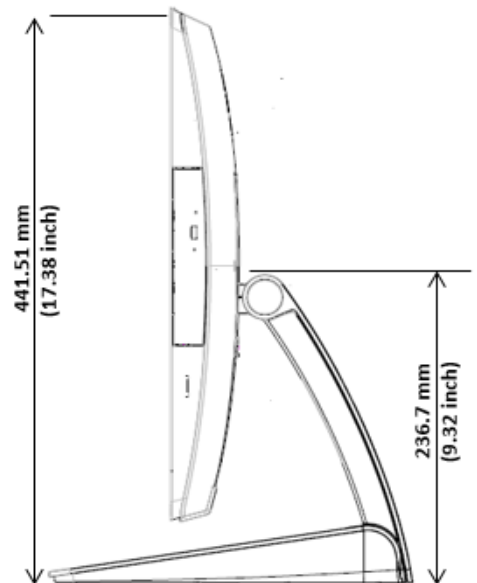
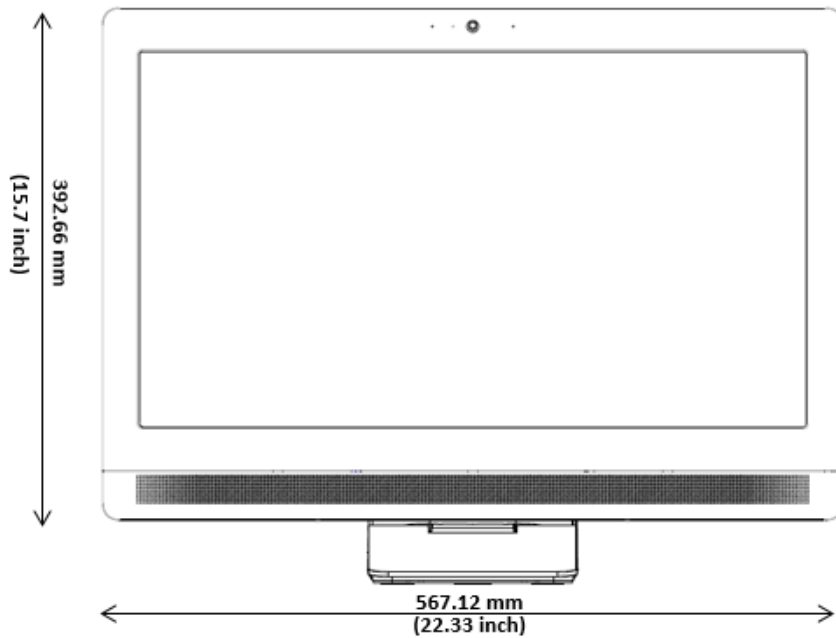
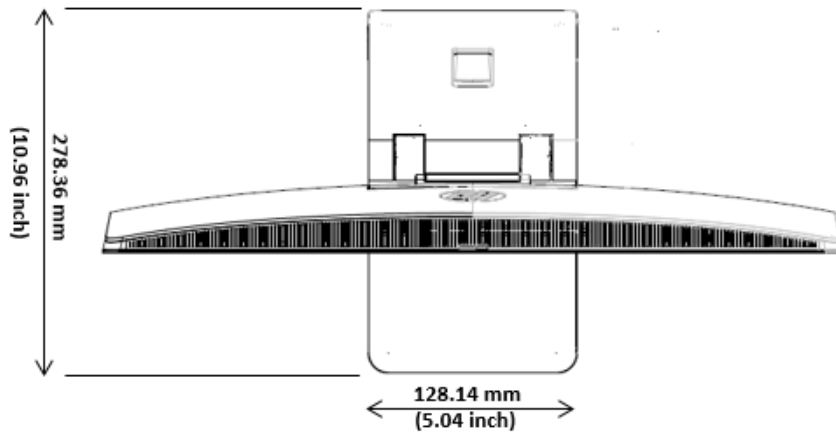
Technical Specifications – Weights & Dimensions

ALL-IN-ONE ADJUSTABLE HEIGHT STAND DIMENSIONS



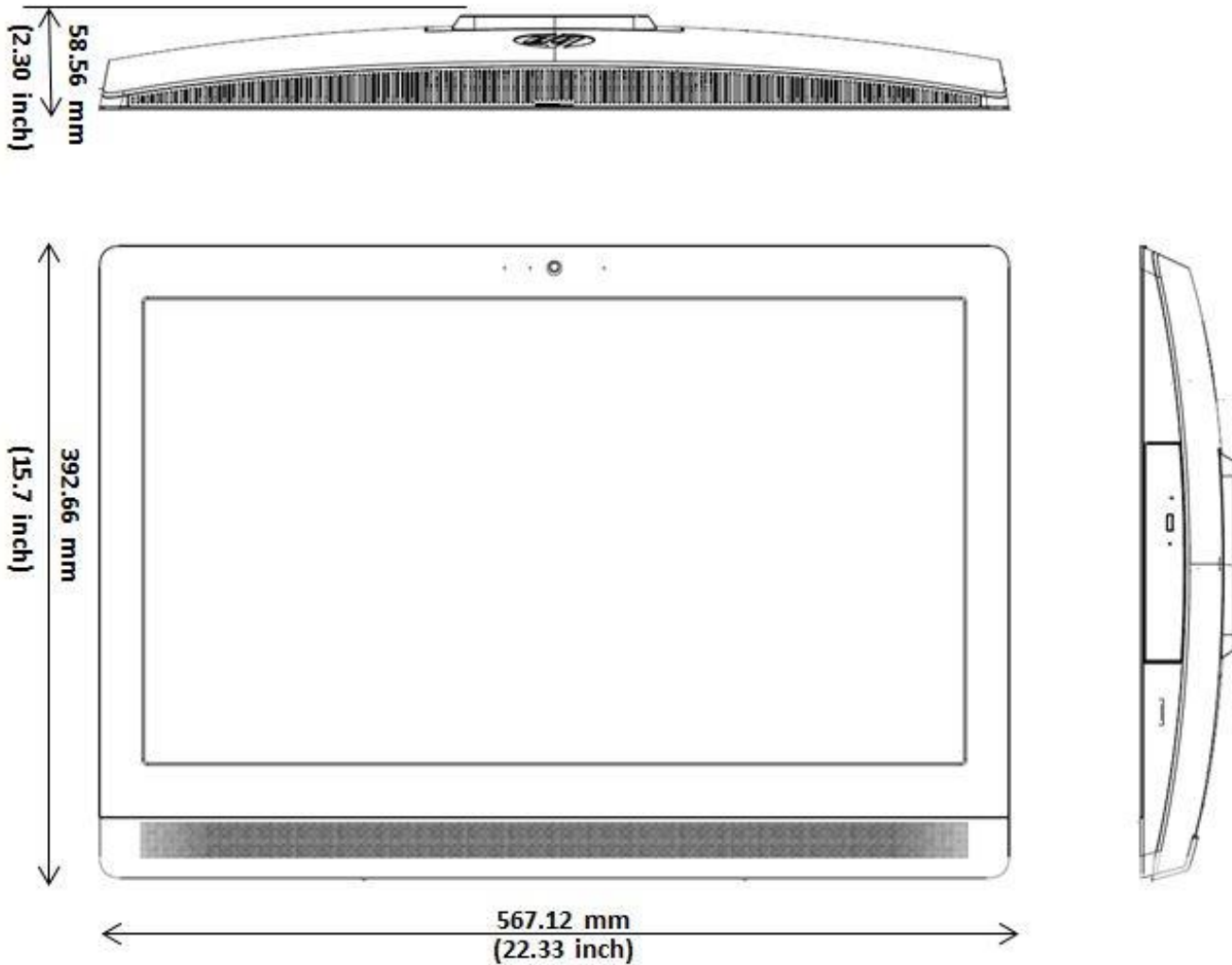
Technical Specifications – Weights & Dimensions

ALL-IN-ONE RECLINING STAND DIMENSIONS



Technical Specifications – Weights & Dimensions

ALL-IN-ONE NO STAND DIMENSIONS



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:
 - Number of 1-second red LED blinks followed by a 2-second pause, then repeats:
 - 2 - processor thermal protection activated
 - 3 - processor not installed
 - 4 - power supply failure
 - 5 -- memory error
 - 6 - video error
 - 7 - PCA failure (ROM detected failure prior to video)
 - 8 - invalid ROM, boot block recovery mode
 - 9 - system not fetching code
 - 10 - system hang while loading an option ROM
- 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
- Green Pull Tabs, and Quick Release Latches for easy Identification

Additional Features

Description



Technical Specifications – Miscellaneous Features

Towerable Orientation	Product can be oriented as either a desktop (horizontal) or a tower (vertical)
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. 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
Drive Protection System	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 Detects errors in Read/Write buffers on HDD cache RAM
SMART IV - End-to-End CRC for hard drives	Interface in F10 setup provides confirmation of SMART IV support.

Technical Specifications – Environmental

HP EliteDesk 800 G2 DM 65W Business PC				
Environmental Data	Eco-Label Certifications & declarations	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: - IT ECO declaration - US ENERGY STAR® - EPEAT® <gold> registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	7.53 W	7.68 W	7.65 W
	Normal Operation (Long idle)	6.51 W	6.58 W	6.48 W
	Sleep	0.90 W	0.93 W	0.90 W
	Off	0.72 W	0.77 W	0.72 W
		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, 60Hz
	Normal Operation (Short idle)	26 BTU/hr	26 BTU/hr	26 BTU/hr
	Normal Operation (Long idle)	22 BTU/hr	23 BTU/hr	22 BTU/hr
	Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
	Off	2 BTU/hr	3 BTU/hr	2 BTU/hr
		*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		
	Declared Noise Emissions	Sound Power (L _{WAd} , bels)		Sound Pressure (L _{pAm} , decibels)

Technical Specifications – Environmental

	(in accordance with ISO 7779 and ISO 9296)		
	Typically Configured – Idle	2.9	19
	Fixed Disk – Random writes	2.9	19
	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:	
		• 6 USB ports • 1 USB Type-C™ • 2 memory slots • 2 M.2 PCIe slots • 1 internal 2.5" bay supporting a 2.5" hard drives (HDD/SSD/SED/SSHD) 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	• 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 at the <gold> level, see www.epeat.net • This product has obtained a Korea KCC EMC certificate. • 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 94.6% recycle-able when properly disposed of at end of life.	
	Packaging Materials	External:	PAPER/Corrugated 530 g
		Internal:	PLASTIC/EPE-Expanded Polyethylene 41 g
			PLASTIC/Polyethylene low density 7 g
		The Plastic packaging material is made from 0% recycled content.	
		The corrugated paper packaging materials contains at least 0% recycled content.	

Technical Specifications – Environmental

	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): • 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	HP follows these guidelines to decrease the environmental impact of product packaging: • 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.

Technical Specifications – Environmental

	End-of-life Management and Recycling	Hewlett-Packard 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.
	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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

HP EliteDesk 800 G2 DM 35W Business PC				
Environmental Data	Eco-Label Certifications & declarations	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: - IT ECO declaration - US ENERGY STAR® - EPEAT® <gold> registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	6.96 W	7.01 W	6.81 W
	Normal Operation (Long idle)	5.99 W	5.87 W	5.87 W
	Sleep	0.87 W	0.90 W	0.87 W

Technical Specifications – Environmental

	Off	0.69 W	0.72 W	0.69 W
		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, 60Hz
	Normal Operation (Short idle)	24 BTU/hr	24 BTU/hr	24 BTU/hr
	Normal Operation (Long idle)	20 BTU/hr	20 BTU/hr	20 BTU/hr
	Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
	Off	2 BTU/hr	2 BTU/hr	2 BTU/hr
		*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	2.8	18	
	Fixed Disk – Random writes	2.8	18	
	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:		
		• 6 USB ports • 1 USB Type-C™ • 2 memory slots • 2 M.2 PCIe slots • 1 internal 2.5" bay supporting a 2.5" hard drives (HDD/SSD/SED/SSHD) 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		

Technical Specifications – Environmental

		Battery size: CR2032 (coin cell) Battery type: Lithium		
	Additional Information	- 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 at the <gold> level, see www.epeat.net - This product has obtained a Korea KCC EMC certificate. - 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	530 g
		Internal:	PLASTIC/EPE (Expanded Polyethylene)	41 g
			PLASTIC/Polyethylene low density	7 g
		The EPE foam packaging material is made from 0% recycled content.		
		The corrugated paper packaging materials contains at least 0% recycled content.		
	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): - 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)		

Technical Specifications – Environmental

		• 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	HP follows these guidelines to decrease the environmental impact of product packaging: • 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	Hewlett-Packard 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.
	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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

Technical Specifications – Environmental

HP EliteDesk 800 G2 SFF Business PC				
Environmental Data	Eco-Label Certifications & declarations	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: - IT ECO declaration - US ENERGY STAR® - EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	16.64 W	16.57 W	16.72 W
	Normal Operation (Long idle)	15.98 W	15.83 W	15.82 W
	Sleep	2.16 W	2.37 W	2.14 W
	Off	0.90 W	1.08 W	0.88 W
		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, 60Hz
	Normal Operation (Short idle)	57 BTU/hr	57 BTU/hr	57 BTU/hr
	Normal Operation (Long idle)	55 BTU/hr	54 BTU/hr	54 BTU/hr
	Sleep	7 BTU/hr	8 BTU/hr	7 BTU/hr
	Off	3 BTU/hr	4 BTU/hr	3 BTU/hr
		*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)

Technical Specifications – Environmental

	Typically Configured – Idle	3.2		24
	Fixed Disk – Random writes	3.5		25
	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:		
		• 6 USB ports • 2 memory slots • 1 Mini PCIe half-length slot • 1 MXM 3.0 Type A - 35W slot • 1 mSATA slot • 1 2.5" internal bay supporting up to Two 2.5" hard drives (HDD/SSD/SED/SSHD) • 1 5.25" external supporting optical drive 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	• 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 at the <gold> level, see www.epeat.net • This product has obtained a Korea KCC EMC certificate. • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 16.5% post-consumer recycled plastic (by wt.) • This product is 92.2% recycle-able when properly disposed of at end of life.		
	Packaging Materials	External:	PAPER/Corrugated	1007 g
		Internal:	PLASTIC/Plast. other	198 g
			PLASTIC/Polyethylene low density	57 g
			PLASTIC/Polypropylene	13 g

Technical Specifications – Environmental

		The Plastic packaging material is made from 9.3% recycled content.
		The paper packaging materials contains at least 45.3% recycled content.
	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): • 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	HP follows these guidelines to decrease the environmental impact of product packaging: • 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.

Technical Specifications – Environmental

	End-of-life Management and Recycling	Hewlett-Packard 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.
	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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

HP EliteDesk 800 G2 Tower Business PC				
Environmental Data	Eco-Label Certifications & declarations	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: • IT ECO declaration • US ENERGY STAR® • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	15.15 W	16.49 W	15.36 W
	Normal Operation (Long idle)	14.11 W	15.23 W	14.25 W

Technical Specifications – Environmental

	Sleep	2.03 W	2.27 W	2.02 W
	Off	0.97 W	1.15 W	0.95 W
		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, 60Hz
	Normal Operation (Short idle)	52 BTU/hr	56 BTU/hr	53 BTU/hr
	Normal Operation (Long idle)	48 BTU/hr	52 BTU/hr	49 BTU/hr
	Sleep	7 BTU/hr	8 BTU/hr	7 BTU/hr
	Off	3 BTU/hr	4 BTU/hr	3 BTU/hr
		*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	3.4	23	
	Fixed Disk – Random writes	3.6	25	
	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:		
		• 10 USB ports • 4 memory slots • 1 PCIe x16 slot • 1 PCIe x16 slot, wired as x4 • 2 PCIe x1 slot • 2 internal 3.5" bay supporting up to Two 2.5" hard drives (HDD/SSD/SED/SSHD) • 1 internal 2.5" bay supporting a 2.5" hard drive (HDD/SSD/SED/SSHD) • 1 external 5.25" supporting optical drive • 1 Slim external supporting optical drive • 1 external SD 4.0 Reader		

Technical Specifications – Environmental

		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	- 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 at the Gold level, see www.epeat.net - This product has obtained a Korea KCC EMC certificate. - Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. - This product contains 20.4% post-consumer recycled plastic (by wt.) - This product is 95.3% recycle-able when properly disposed of at end of life.	
	Packaging Materials	External:	PAPER/Corrugated 1563 g
		Internal:	PLASTIC/Polyethylene low density 37 g PLASTIC/Polypropylene 16 g PLASTIC/Other plastics unknown 194 g
		The EPE foam packaging material is made from 9.3% recycled content.	
		The corrugated paper packaging materials contains at least 45.3% recycled content.	
	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): - 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	

Technical Specifications – Environmental

		• 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	HP follows these guidelines to decrease the environmental impact of product packaging: • 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	Hewlett-Packard 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 you're 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.

Technical Specifications – Environmental

	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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
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HP EliteOne 800 G2 23-in Touch GPU All-in-One PC				
Environmental Data	Eco-Label Certifications & declarations	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: - IT ECO declaration - US ENERGY STAR® - EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the All-in-One PC model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	33.31 W	33.80 W	33.60 W
	Normal Operation (Long idle)	12.63 W	12.76 W	12.58 W
	Sleep	1.34 W	1.38 W	1.37 W
	Off	0.59 W	0.60 W	0.59 W
		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, 60Hz
	Normal Operation (Short idle)	114 BTU/hr	116 BTU/hr	115 BTU/hr

Technical Specifications – Environmental

	Normal Operation (Long idle)	43 BTU/hr	44 BTU/hr	43 BTU/hr
	Sleep	5 BTU/hr	5 BTU/hr	5 BTU/hr
	Off	2 BTU/hr	2 BTU/hr	2 BTU/hr
		*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	3.1	19	
	Fixed Disk – Random writes	3.1	19	
	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:		
		• 6 USB ports • 2 memory slots • 1 Mini PCIe half-length slot • 1 MXM 3.0 Type A - 35W slot • 1 mSATA slot • 1 2.5" internal bay supporting up to Two 2.5" hard drives (HDD/SSD/SED/SSHD) • 1 5.25" external supporting optical drive 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 the1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium		

Technical Specifications – Environmental

	Additional Information	- 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 at the Gold level, see www.epeat.net - This product has obtained a Korea KCC EMC certificate. - Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. - This product contains 38.9% post-consumer recycled plastic (by wt.) - This product is 96.8% recycle-able when properly disposed of at end of life.		
	Packaging Materials	External:	PAPER/Corrugated	1296 g
		Internal:	PLASTIC/EPE-Expanded Polyethylene	544 g
		The plastic packaging material contains at least 0% recycled content.		
		The corrugated paper packaging materials contains at least 80% recycled content.		
	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): - 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		

Technical Specifications – Environmental

		Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
	Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: - 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	Hewlett-Packard 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.
	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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

Technical Specifications – Environmental

HP EliteOne 800 G2 23-in Non-Touch GPU All-in-One				
Environmental Data	Eco-Label Certifications & declarations	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: - IT ECO declaration - US ENERGY STAR® - EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Ultra-slim Desktop model is based on a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
	Normal Operation (Short idle)	33.31 W	33.80 W	33.60 W
	Normal Operation (Long idle)	12.63 W	12.76 W	12.58 W
	Sleep	1.34 W	1.38 W	1.37 W
	Off	0.59 W	0.60 W	0.59 W
		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, 60Hz
	Normal Operation (Short idle)	114 BTU/hr	116 BTU/hr	115 BTU/hr
	Normal Operation (Long idle)	43 BTU/hr	44 BTU/hr	43 BTU/hr
	Sleep	5. BTU/hr	5 BTU/hr	5 BTU/hr
	Off	2 BTU/hr	2 BTU/hr	2 BTU/hr
		*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)

Technical Specifications – Environmental

	Typically Configured – Idle	3.2		23
	Fixed Disk – Random writes	3.2		22
	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:		
		• 6 USB ports • 2 memory slots • 1 Mini PCIe half-length slot • 1 MXM 3.0 Type A - 35W slot • 1 mSATA slot • 1 2.5" internal bay supporting up to Two 2.5" hard drives (HDD/SSD/SED/SSHD) • 1 5.25" external supporting optical drive 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	• 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 at the Gold level, see http://www.epeat.net • This product has obtained a Korea KCC EMC certificate. • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 40.1% post-consumer recycled plastic (by wt.) • This product is 96.6% recycle-able when properly disposed of at end of life.		
	Packaging Materials	External:	PAPER/Corrugated	1296 g
		Internal:	PLASTIC/EPE-Expanded Polyethylene	544 g
		The Plastic packaging material is made from 0% recycled content.		
		The corrugated paper packaging materials contains at least 80% recycled content.		

Technical Specifications – Environmental

	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): • 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	HP follows these guidelines to decrease the environmental impact of product packaging: • 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.

Technical Specifications – Environmental

	End-of-life Management and Recycling	Hewlett-Packard 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.
	Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: 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

After-Market Options (availability may vary by region)

Business Monitors

	DM	SFF	TWR	AiO	Part Number
HP ProDisplay P17A 17-inch 5:4 LED Backlit Monitor	X	X	X	X	F4M97AA
HP ProDisplay P202 20-inch Monitor	X	X	X	X	K7X27AA
HP ProDisplay P222va 21.5-inch Monitor	X	X	X	X	K7X30AA
HP ProDisplay P232 23-inch Monitor	X	X	X	X	K7X31AA
HP EliteDisplay E190i 18.9-inch LED Backlit Monitor	X	X	X	X	E4U30AA
HP EliteDisplay E221c 21.5-inch Webcam LED Backlit Monitor	X	X	X	X	D9E49AA
HP EliteDisplay E222 21.5-inch Monitor	X	X	X	X	M1N96AA
HP EliteDisplay E232 23-inch Monitor	X	X	X	X	M1N98AA
HP EliteDisplay E240c 23.8-inch Video Conferencing Monitor	X	X	X	X	M1P00AA
HP EliteDisplay E242 24-inch Monitor	X	X	X	X	M1P02AA
HP EliteDisplay S140u 14-inch USB Portable Monitor	X	X	X	X	G8R65AA
HP EliteDisplay S230tm 23-inch Touch Monitor	X	X	X	X	E4S03AA
HP EliteDisplay S231d 23-in IPS LED BLU Notebook Docking Monitor	X	X	X	X	F3J72AA

Communication Devices

	DM	SFF	TWR	AiO	Part Number
Intel® Ethernet I210 – T1 Gbe NIC		X	X		E0X95AA
Intel® 7265 802.11ac PCIe x1 Card		X	X		N4G85AA
Broadcom BCM943228Z 802.11n PCIe x1 Card		X	X		N4M64AA

Graphics Solutions

	DM	SFF	TWR	AiO	Part Number
NVIDIA GeForce GT 730 2GB PCIe x8 Graphics Card		X	X		N3R90AA
NVIDIA GeForce GT 720 2GB PCIe x16 Graphics Card (China only)			X		T4E57AA
NVIDIA Quadro NVS 310 1GB PCIe x16 Graphics Card		X	X		M6V51AA
AMD Radeon™ R9 350 2GB PCIe x16 Graphics Card			X		N3R91AA
AMD Radeon R5 320 1GB PCIe x16 Graphics Card Card (China only)			X		T9F48AA
HP UHD USB Graphics Adapter	X	X	X	X	N2U81AA
HP DisplayPort Cable Kit	X	X	X		VN567AA
HP DisplayPort To DVI-D Adapter	X	X	X		FH973AA
HP DisplayPort to VGA Adapter	X	X	X		AS615AA
HP DisplayPort to HDMI 4K Adapter	X	X	X		K2K92AA
HP (Bulk) 700mm DisplayPort Cable Kit	X				V8Y77A6

Data Storage Drives

	DM	SFF	TWR	AiO	Part Number
HP 500GB SATA 6Gbps Hard Drive		X	X		QK554AA



After-Market Options (availability may vary by region)

HP 1TB SATA 6Gbps Hard Drive		X	X		QK555AA
HP 128-GB SATA Solid State Drive	X	X	X	X	QV063AA
HP 500-GB SATA Solid State Hybrid Drive	X	X	X	X	E1C62AA
HP 128-GB SED Opal 2 Solid State Drive	X			X	G2K24AA
HP Turbo Drive 128GB PCIe Solid State Drive		X	X		J5V07AA
Intel® Pro 2500 180GB SATA SED Opal2 Solid State Drive	X	X	X	X	P3X90AA
HP 256GB SATA 3D Non-SED Solid State Drive	X	X	X	X	N1M49AA
HP Turbo Drive G2 256GB m.2 SSD Card				X	T4E65AA
HP 256GB SATA Value Non-SED Solid State Drive	X	X	X	X	W0U55AA
HP 256GB SATA TLC Non-SED Solid State Drive	X	X	X	X	P1N68AA

Input Devices

	DM	SFF	TWR	AiO	Part Number
HP USB Business Slim Keyboard	X	X	X	X	N3R87AA
HP USB Keyboard	X	X	X	X	QY776AA
HP USB Grey Keyboard (EMEA only)	X	X	X	X	B6B64AA
HP USB Smart Card (CCID) Keyboard	X	X	X	X	BV813AA
HP USB Grey Smart Card (CCID) Keyboard (EMEA only)	X	X	X	X	J7H70AA
HP USB and PS/2 Washable Keyboard and Mouse Kit	X	X	X	X	BU207AA
HP USB Grey Mouse (EMEA only)	X	X	X	X	K7W54AA
HP PS/2 Business Slim Keyboard		X	X	X	N3R86AA
HP PS/2 Mouse		X	X	X	QY775AA
HP USB Mouse	X	X	X	X	QY777AA
HP USB 1000dpi Laser Mouse	X	X	X	X	QY778AA
HP Wireless Business Slim Keyboard and Mouse*	X	X	X	X	N3R88AA
HP Wireless Keyboard and Mouse*	X	X	X	X	QY449AA
HP USB Antimicrobial Keyboard and Mouse (China Only)	X	X	X	X	K7X25AA
HP Executive Capacitive Stylus					E7U19AA

*Keyboard contains 25% post-consumer recycled plastic material

System Memory

	DM	SFF	TWR	AiO	Part Number
HP 4GB DDR4-2133 DIMM		X	X		P1N51AA
HP 8GB DDR4-2133 DIMM		X	X		P1N52AA
HP 4GB DDR4-2133 SODIMM	X			X	P1N53AA
HP 8GB DDR4-2133 SODIMM	X			X	P1N54AA
HP 16GB DDR4-2133 SODIMM	X			X	P1N55AA

Multimedia Devices

	DM	SFF	TWR	AiO	Part Number
HP 9.5mm Desktop G2 Slim DVD-ROM Drive		X	X		N1M41AA



After-Market Options (availability may vary by region)

HP 9.5mm Desktop G2 Slim SuperMulti DVD Writer Drive		X	X		N1M42AA
HP 9.5mm Desktop G2 Slim SATA BDXL Blu-Ray Writer		X	X		N1M43AA
HP 9.5mm EliteOne AIO 705/800 G2 Slim DVD-ROM Drive				X	N3S09AA
HP 9.5mm EliteOne AIO 705/800 G2 Slim SuperMulti DVD Writer Drive				X	N3S10AA
HP 9.5mm Desktop G2 Slim SATA BDXL Blu-Ray Writer				X	N3S11AA
HP Business Headset v2	X	X	X	X	T4E61AA
HP USB Business Speakers v2	X	X	X		D9J19AA

Desktop Mini Accessories

	DM	SFF	TWR	AiO	Part Number
HP Desktop Mini DVD Super Multi-Writer ODD Expansion Module	X				K9Q83AA
HP Desktop Mini 500GB HDD/ I/O Expansion Module	X				K9Q82AA
HP Desktop Mini Rack Mount Tray Kit	X				G1K21AA
HP Desktop Mini Security/Dual VESA Sleeve	X				G1K22AA
HP Desktop Mini 65W Power Supply Kit	X				L2X04AA
HP Desktop Mini 90w Power Supply Kit - Supports EliteDesk 800 G2 65W Desktop Mini	X				L4R65AA
HP Desktop Mini Vertical Chassis Stand	X				G1K23AA
HP Desktop Mini LockBox	X				P1N78AA
HP Desktop Mini Port Cover Kit	X				P3R65AA
HP Desktop Mini I/O Expansion Module	X				K9Q84AA
HP Integrated Work Center Desktop Mini/Thin Clients	X				G1V61AA
HP Single Monitor Arm	X				BT861AA
HP Quick Release Bracket	X			X	EM870AA
HP Desktop Mini Port Cover Kit	X				P3R65AA

Security Devices

	DM	SFF	TWR	AiO	Part Number
HP Solenoid Lock and Hood Sensor (DM/SFF)	X	X	X		E0X97AA
HP Solenoid Lock and Hood Sensor (TWR)			X		E0X96AA
HP SFF Wall Mount/Security Sleeve		X			VN570AA
HP UltraSlim Cable Lock	X	X	X		H4D73AA
HP Chassis (1bay) Security Kit		X	X		AR639AA
HP Business PC Security Lock V2 Kit			X		N3R93AA

Stands and Accessories

	DM	SFF	TWR	AiO	Part Number
HP Integrated Work Center Stand v3 (SFF)		X			F2P06AA
HP SFF Tower Stand		X			VN569AA
HP (10 Sets) EliteDesk 800 G2 Tower Bezel Support Kit			X		P1N74AA



After-Market Options (availability may vary by region)

HP (10 Sets) 600/705/800 G2 SFF Bezel Support Kit		X			N7H10AA
HP Serial Port Adapter (RS-232 compatible)		X	X		PA716A
HP PCIe x1 Parallel Port Card		X	X		N1M40AA
HP SuperSpeed USB 3.1 Gen 2 PCIe x1 Card		X	X		P1N75AA
HP Type-C™ to USB3 Adapter	X	X	X	X	N2Z63AA
HP PCI Expansion Kit			X		E1V16AA
HP USB to Serial Adapter	X				J7B60AA
HP Single Monitor Arm				X	BT861AA

LANDesk Software (E-Delivery)*

Contact your HP representative for available options.

*Optional and sold separately.

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Change Log

Date of change:	Version History:	Action	Description of change:
Oct. 2, 2015	From v1 to v2	Added	Processor edit
Nov. 20, 2015	From v2 to v3	Added	Multiple edits
Dec 09 2015	From v3 to v4	Added	Multiple edits
Jan 13, 2016	From v4 to v5	Added	VESA Support note and Marked AiO in After Market Options
Jan 28, 2016	From v5 to v6	Added	Internal SATA Ports
Feb 01, 2016	From v6 to v7	Removed	AMD Radeon™ R9 350 2GB PCIe x16 Graphics Card Compatibility w/ SFF
Feb 03, 2016	From v7 to v8	Removed	Intel® 7265 802.11ac m.2 Card (AIO) HP USB Graphics Adapter HP Dual Output USB Graphics Adapter
March 08, 2016	From v8 to v9	Added	E7U19AA HP Executive Capacitive Stylus
March 17, 2016	From v9 to v10	Added	HP Executive Capacitive Stylus to Input Device
March 28, 2016	From v10 to v11	Added	HP 700mm DisplayPort Cable
March 31, 2016	From v11 to v12	Added	Standard Efficiency voltage and Stand Accessory
April 12, 2016	From v12 to v13	Added	1 USB Type C
April 18, 2016	From v13 to v14	Added	This product has obtained a Korea KCC EMC certificate.
April 22, 2016	From v14 to v15	Update	Removed compatibility of DM with communications cards
April 27, 2016	From v15 to v16	Update	Removed part number and added another drive
May 10, 2016	From v16 to v17	Update	Added solid state drive options
May 19, 2016	From v17 to v18	Update	Updated the Turbo Drive slots
June 14, 2016	From v18 to v19	Update	Updated buffer of HP 1 TB* 7.2K rpm SATA 6.0Gb/s 3.5" Hard Disk Drive from 16 to 32MB
July 06, 2016	From v19 to v20	Update	Added Response Time on Display Panel