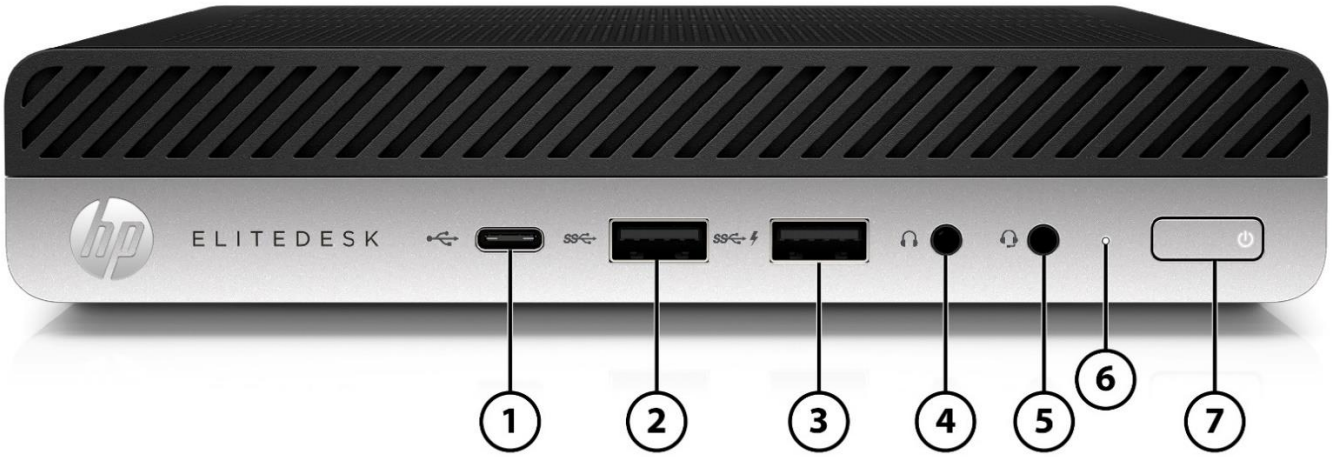
Overview

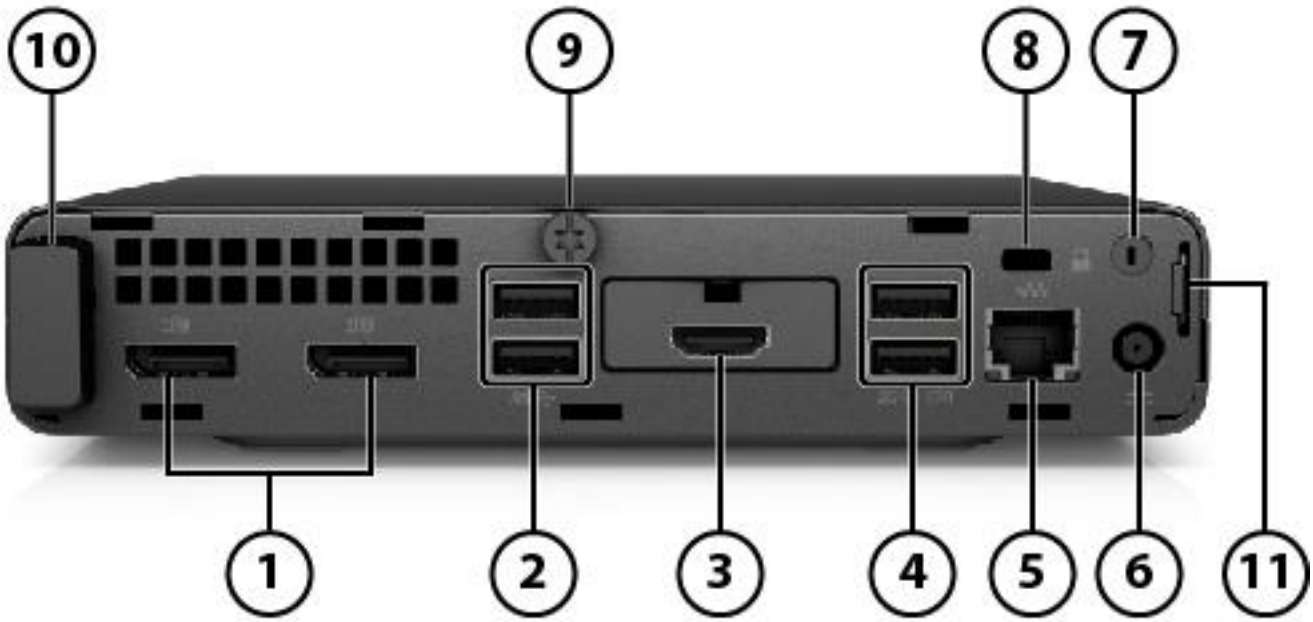
**HP EliteDesk 800 G5 Desktop Mini Business PC**




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

Overview

## HP EliteDesk 800 G5 Desktop Mini Business PC




1. DisplayPort™ 1.2
2. USB 3.1 Gen 2 Type A
3. Configurable Option card slot (Choice of DisplayPort™ 1.2, HDMI™ 2.0, VGA, USB Type-C™ with alt mode display, USB Type-C™ with Power Delivery, Discrete Graphics Option Card with DisplayPort™ 1.4, Thunderbolt 3.0, Serial Port, Fiber NIC) (not all options are available on 65W and 95W processors)
4. USB 3.1 Gen 1 Type A
   allows for wake from S4/S5 with keyboard/mouse when connected and enabled in BIOS
5. RJ-45 Network connector
6. Power connector
7. WLAN External Antenna Punchout
8. Standard lock slot (10mm)
9. Cover Release Thumbscrew
10. WLAN Internal Antenna
11 Padlock Loop

**Not Shown**

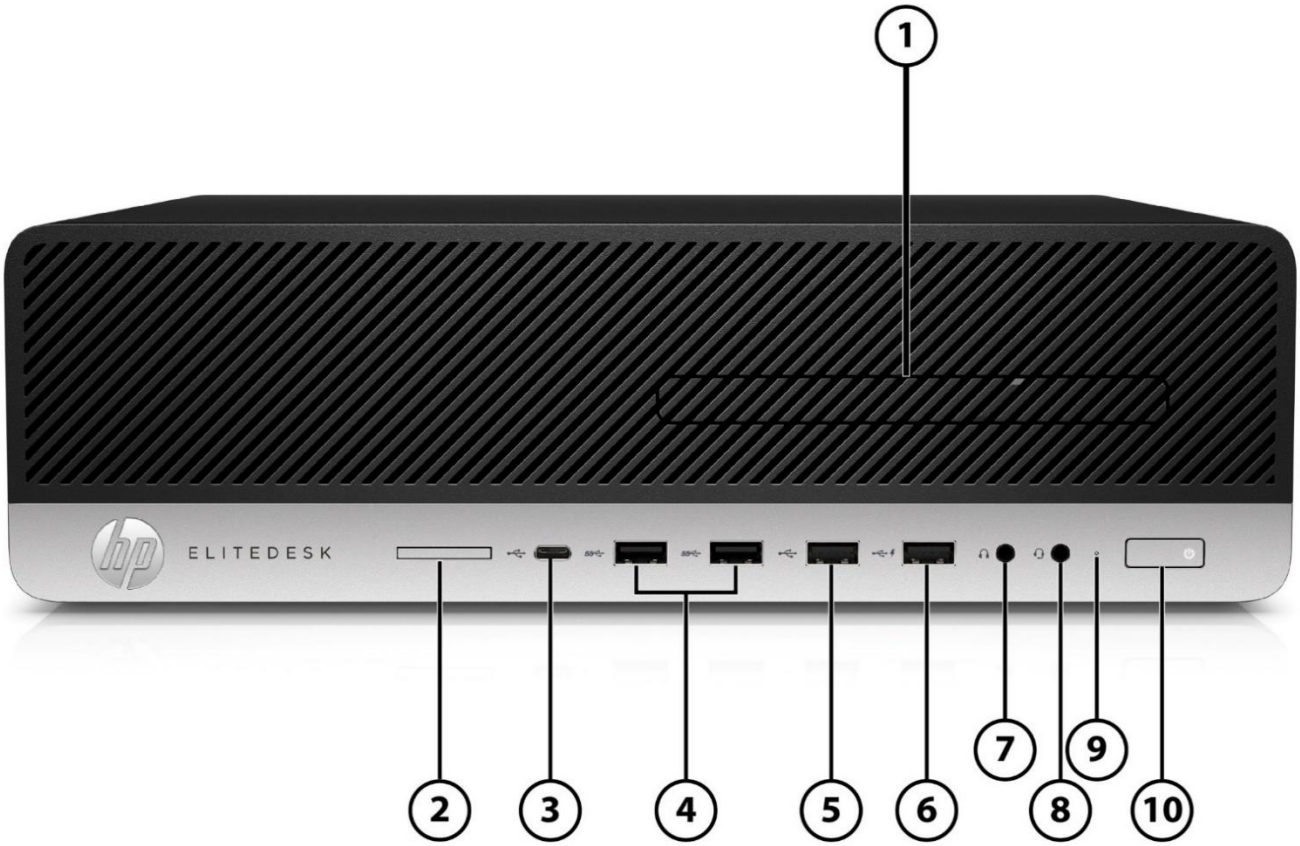
Slots (1) Internal M.2 2230 connector for WLAN
(2) Internal M.2 SSD storage (2230 or 2280 connector)

Bays (1) 2.5- inch SATA drive Bay (not available on 95W processor)

Mounting Support for
- VESA Sleeve Standalone
- Quick Release Bracket
- B300/B500 Mounting bracket
- Integrated Work Center

Overview

**HP EliteDesk 800 G5 Small Form Factor Business PC**

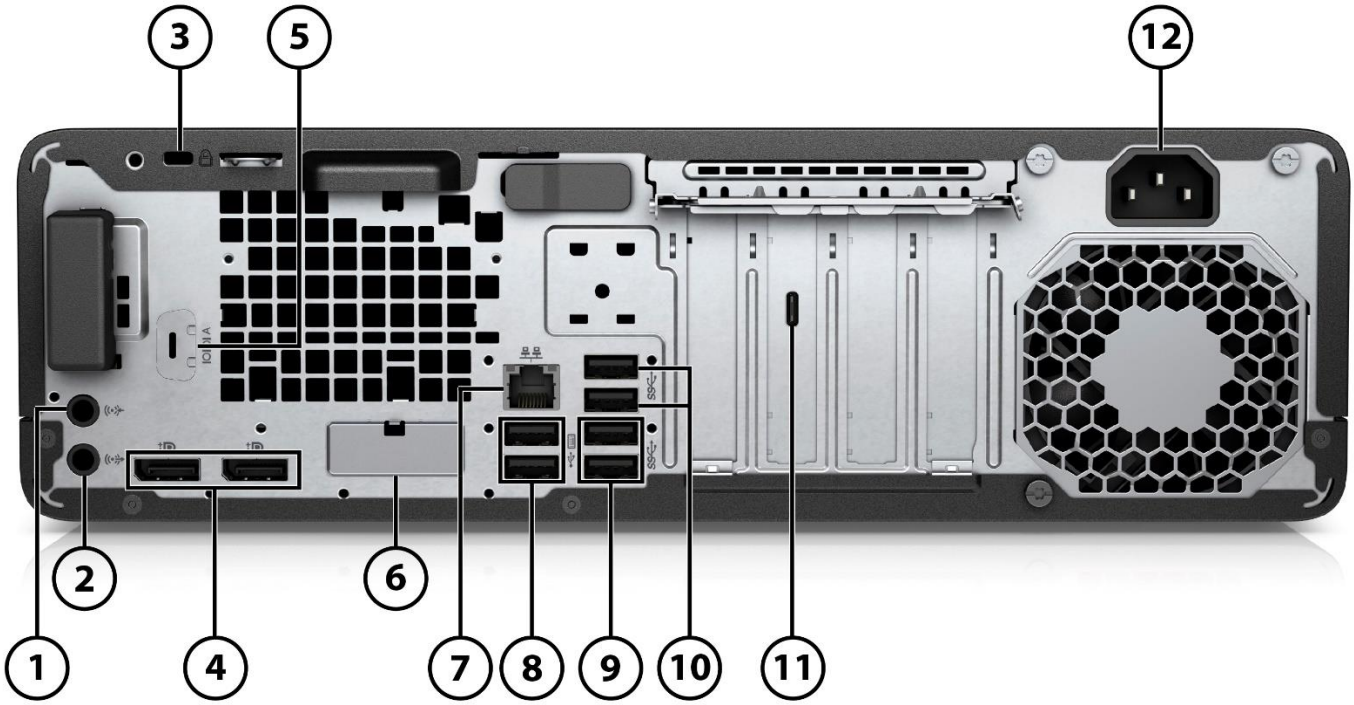



1. Slim optical drive (optional)
2. SD 4 Card Reader (optional)
3. USB Type-C™ port (charge support up to 5V/3A)
4. USB 3.1 Gen2 ports (2)
5. USB 2.0 port
6. USB 2.0 (charge support up to 5V/1.5A)
7. Headphone connector
8. Universal Audio Jack with CTIA headset support
9. Hard drive activity light
10.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

Overview

**HP EliteDesk 800 G5 Small Form Factor Business PC**

**(Rear Image)**




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

**Not shown**

**Slots**

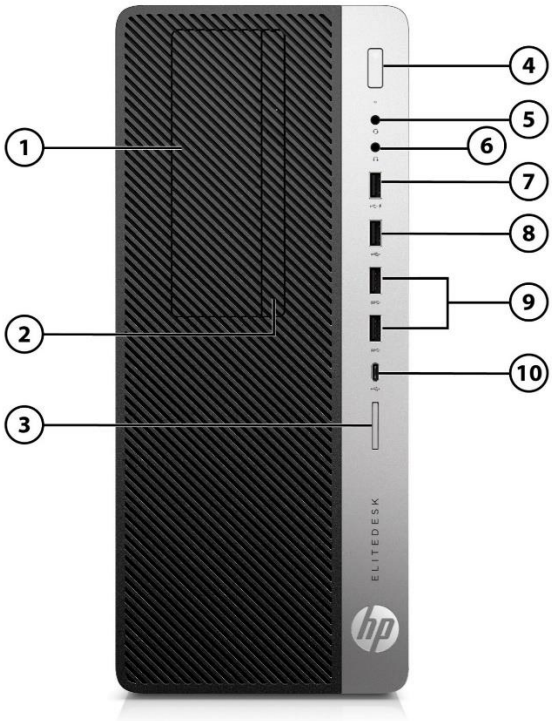
(2) PCI Express x16 graphics connectors; one wired as an x4
(2) PCI Express x1
(2) internal M.2 SSD storage (2230 or 2280 connector)
(1) internal M.2 WLAN (2230 connector)

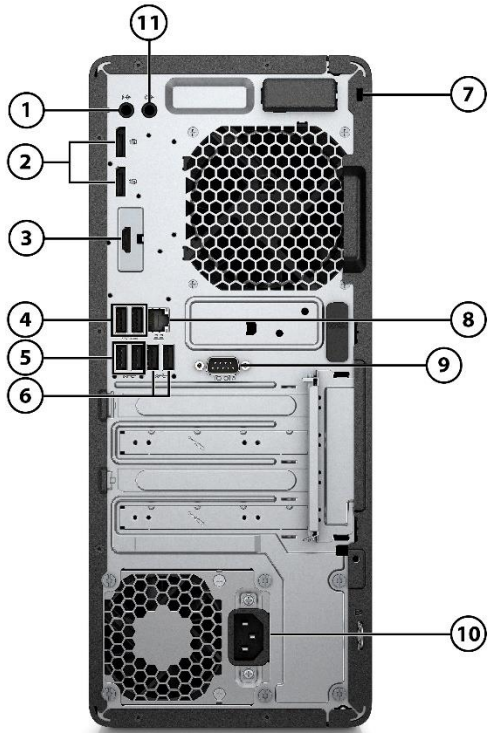
**Bays**

(1) 2.5" internal storage drive bay
(2) 3.5” internal storage drive bay (convertible to 2.5”)
(1) 9.5 mm slim optical drive bay

Overview

## HP EliteDesk 800 G5 Tower Business PC




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

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

### Not shown

**Slots**

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

**Bays**

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

Overview

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




1. Camera (optional)
2. Speakers (optional)

## Infrared (IR) and dual facing camera (optional)




1. Camera light
2. IR camera light
3. Full High Definition (FHD) camera
4. IR camera
5. Rear camera adjustment wheel
6. Digital microphones
7. Camera light
8. FHD camera

## Full High Definition (FHD) camera (optional)

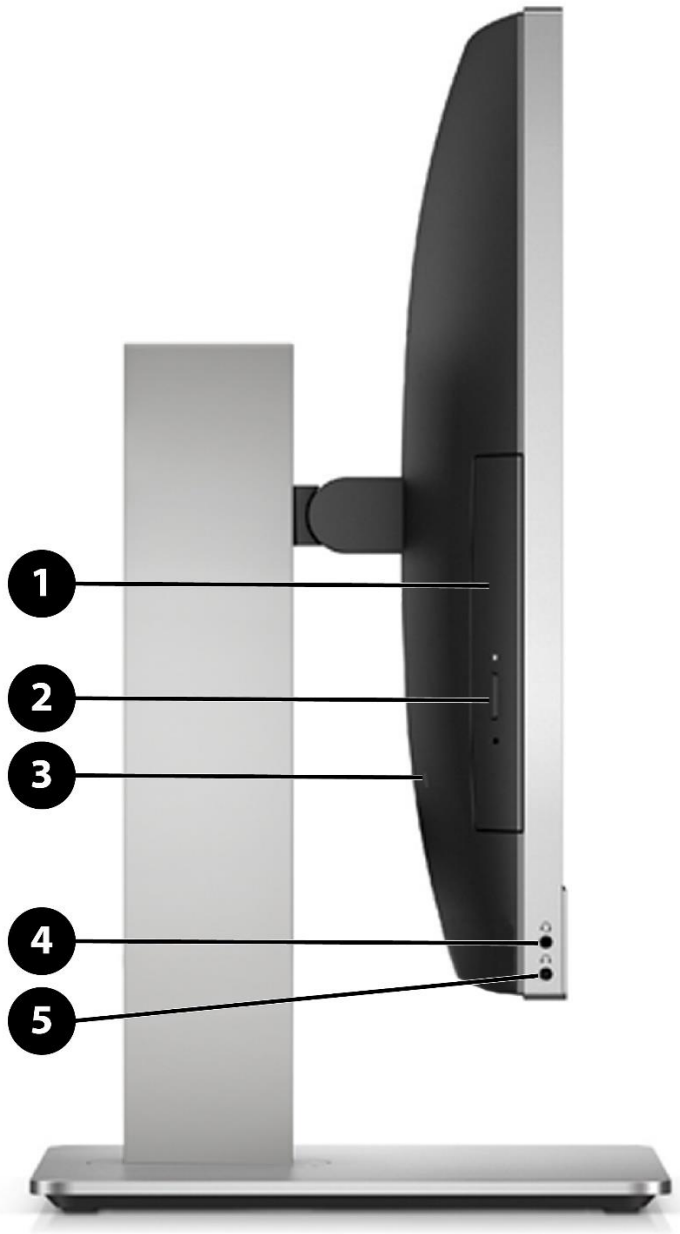



1. Camera light
2. FHD camera
3. Digital microphones

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

Overview

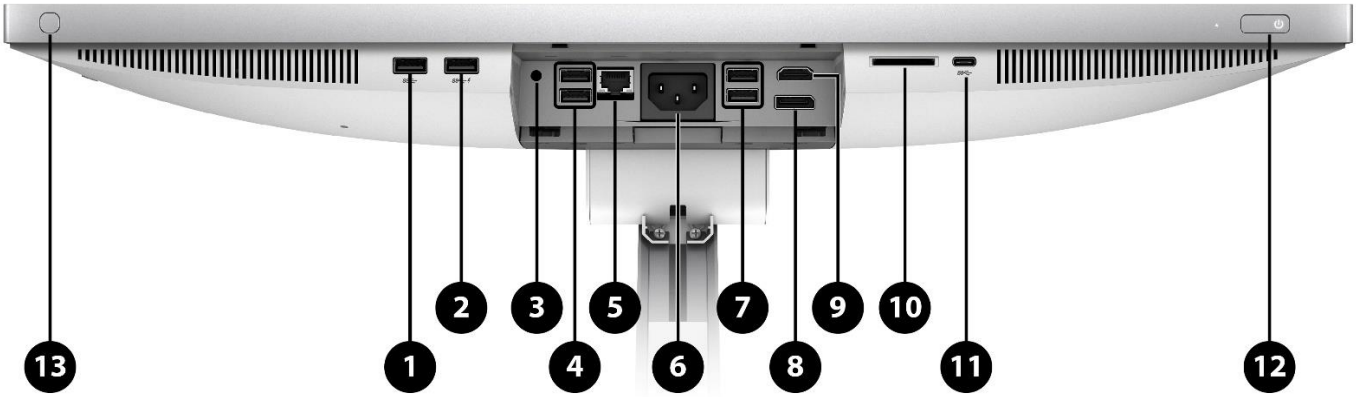
**HP EliteOne 800 G5 23.8-in All-in One**




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

Overview

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




**Bottom components and rear ports (behind security cover)**

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

**Not shown**

**Slots**

(1) internal M.2 PCIe x1 connector for optional wireless NIC

(2) internal M.2 PCIe x4 connector for optional m.2 SSD

**Bays**

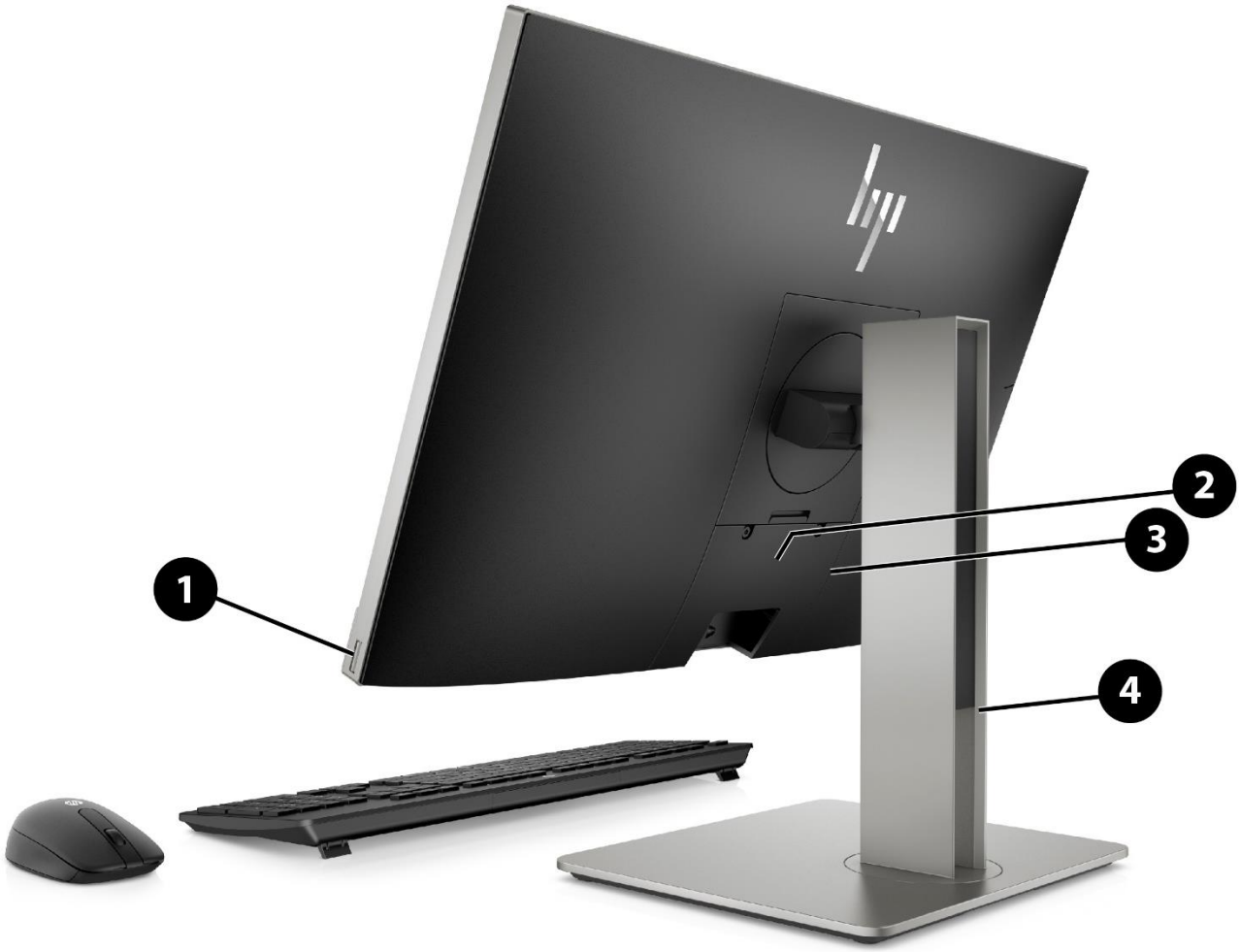
(1) 2.5" internal storage drive bay

**VESA**

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

Overview

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




**Rear and side components**

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

Features

## AT A GLANCE

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

1. Multi core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance
2. DisplayPort™ multi-stream monitors 'daisy-chained' together.
3. External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.
4. Some functionality of vPro technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependant on 3rd party software providers. Compatibility of this generation of Intel vPro technology-based hardware with with future "virtual appliances" is yet to be determined."
5. VR-ready as optional feature, requires specific configuration to support.
6. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

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

## PRODUCT NAME

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

## OPERATING SYSTEM

| | |
|---|---|
| **Preinstalled** | Windows® 10 Pro 64[1]<br>Windows® 10 Pro 64 (National Academic License)[2]<br>Windows® 10 Home 64[1]<br>Windows® 10 Home Single Language 64[1]<br>FreeDos |
| **Web-supported only** | Windows® 10 Enterprise 64[1] |

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

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

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

## CHIPSET

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

Features

## PROCESSORS

| Intel® 9th Generation Core™ Processors | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® Core™ i9 9900 Processor with Intel® UHD Graphics 630 (3.1GHz, up to 4.9 GHz with Intel® Turbo Boost,16MB cache, 8 cores) 65W[1,2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i9 9900K Processor with Intel® UHD Graphics 630 (3.6GHz, up to 5.0 GHz with Intel® Turbo Boost,16MB cache, 8 cores) 95W[1,2] Supports Intel® vPro™Technology[3] | X | X | X | |
| Intel® Core™ i9 9900T Processor with Intel® UHD Graphics 630 (2.1GHz, up to 4.4 GHz with Intel® Turbo Boost,16MB cache, 8 cores) 35W[1,2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i7 9700 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.8 GHz with Intel® Turbo Boost, 12 MB cache, 8 cores) 65W[1,2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i7 9700K Processor with Intel® UHD Graphics 630 (3.6 GHz, up to 4.9 GHz with Intel® Turbo Boost,12MB cache, 8 cores) 95W[1,2] Supports Intel® vPro™Technology[3] | X | X | X | |
| Intel® Core™ i7 9700T Processor with Intel® UHD Graphics 630 (2.0Hz, up to 4.3 GHz with Intel® Turbo Boost,12MB cache, 8 cores) 35W[1,2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i5 9600 processor with Intel® UHD Graphics 630 (3.1 GHz, up to 4.8 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i5 9600K processor with Intel® UHD Graphics 630 630 (3.7 GHz, up to 4.6 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores) 95W [1, 2] Supports Intel® vPro™Technology[3] | X | X | X | |
| Intel® Core™ i5 9600T processor with Intel® UHD Graphics 630 (2.3 GHz, up to 3.9 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i5 9500 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.1 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i5 9500T processor with Intel® UHD Graphics 630 (2.2 GHz, up to 3.7 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i3 9300 processor with Intel® UHD Graphics 630 (3.7 GHz, 8 MB cache, 4 cores)[1] | X | X | X | X |
| Intel® Core™ i3 9300T processor with Intel® UHD Graphics 630 (3.2 GHz, 8 MB cache, 4 cores)[1] | X | | | |
| Intel® Core™ i3 9100 processor with Intel® UHD Graphics 630 (3.6 GHz, 6 MB cache, 4 cores)[1] | X | X | X | X |
| Intel® Core™ i3 9100T processor with Intel® UHD Graphics 630 (3.1 GHz, 6 MB cache, 4 cores)[1] | X | | | |

## Features

| Intel® 8th Generation Core™ Processors | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® Core™ i7 8700 processor with Intel® UHD Graphics 630 (3.2 GHz, up to 4.6 GHz with Intel® Turbo Boost, 12 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i7 8700T processor with Intel® UHD Graphics 630 (2.4 GHz, up to 4.0 GHz with Intel® Turbo Boost, 12 MB cache, 6 cores)[1, 2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i5 8500 processor with Intel® UHD Graphics 630 (3.0 GHz, up to 4.1 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1,2] Supports Intel® vPro™Technology[3] | X | X | X | X |
| Intel® Core™ i5 8500T processor with Intel® UHD Graphics 630 (2.1 GHz, up to 3.5 GHz with Intel® Turbo Boost, 9 MB cache, 6 cores)[1,2] Supports Intel® vPro™Technology[3] | X | | | |
| Intel® Core™ i3 8100 processor with Intel® UHD Graphics 630 (3.6 GHz, 6 MB cache, 4 cores)[1] | X | X | X | X |
| Intel® Core™ i3 8100T processor with Intel® UHD Graphics 630 (3.61GHz, 6 MB cache, 4 cores)[1] | X | | | |

| Intel® Pentium® Processors | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® Pentium® Gold G5420 processor with Intel® UHD Graphics 610 (3.8 GHz, 4 MB cache, 2 cores)[1] | X | X | X | X |
| Intel® Pentium® Gold G5420T processor with Intel® UHD Graphics 610 (3.2 GHz, 4 MB cache, 2 cores)[1] | X | | | |
| Intel® Pentium® Gold G5600 processor with Intel® UHD Graphics 630 (3.9 GHz, 4 MB cache, 2 cores)[1] | X | X | X | X |
| Intel® Pentium® Gold G5600T processor with Intel® UHD Graphics 630 (3.3GHz, 4 MB cache, 2 cores)[1] | X | | | |
| Intel® Pentium® Gold G5620 processor with Intel® UHD Graphics 630 (4.0 GHz, 4 MB cache, 2 cores)[1] | X | X | X | X |

| Intel® Celeron™ Processors | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® Celeron® G4930 processor with Intel® UHD Graphics 610 (3.2 GHz, 2 MB cache, 2 cores)[1] | X | X | X | X |
| Intel® Celeron® G4930T processor with Intel® UHD Graphics 610 (3.0 GHz, 2 MB cache, 2 cores)[1] | X | | | |
| | | | | |

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

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

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

Features

## GRAPHICS

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

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

*Requires 500W chassis
**Only available on the Touch Version All-in-One
***Not available in all regions
**NOTE:** As of 2019, AMD Radeon™ RX 560 is renamed to AMD Radeon™ RX 560X

| Adapters and Cables | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| HP DisplayPort™ Cable | X | X | X | X |
| HP DisplayPort™ to DVI-D Adapter | X | X | X | X |
| HP DisplayPort™ to HDMI 4K Adapter | X | X | X | X |
| HP DisplayPort™ to VGA Adapter | X | X | X | X |
| HP USB-C™ to USB 3.0 | X | X | X | X |
| HP USB to Serial Port Adapter | X | X | X | X |
| HP USB-C™ to HDMI 4K Adapter | X | | | |
| HP DisplayPort to HDMI True 4K Adapter | | | | X |
| HP DVI Cable | | | | X |
| HP HDMI Standard Cable Kit (HDMI) | | | | X |
| HP DVI Cable Kit | | | | X |
| HP HDMI to VGA Adapter | | | | X |
| HP UHD USB Graphics Adapter | | | | X |

Features

## STORAGE

| 3.5 inch SATA Hard Disk Drives (HDD) | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| 500GB 7200RPM 3.5in SATA HDD | | X | X | |
| 1TB 7200RPM 3.5in SATA HDD | | X | X | |
| 2TB 7200RPM 3.5in SATA HDD | | X | X | |

| 2.5 inch SATA Hard Disk Drives (HDD) | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| 500GB 7200RPM 2.5in SATA HDD | X | X | X | X |
| 1TB 7200RPM 2.5in SATA HDD | X | X | X | X |
| 2TB 5400RPM 2.5in SATA HDD | X | X | X | X |
| 500GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD | X | X | X | X |
| 500GB 7200RPM 2.5in Self Encrypted Federal Information Processing Standard SATA HDD | X | X | X | X |

| 2.5 inch Solid State Drives (SSD) | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| 256GB 2.5in SATA Three Layer Cell SSD | X | X | X | X |
| 512GB 2.5in SATA Three Layer Cell SSD | X | X | X | X |
| 256GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD | X | X | X | X |
| 512GB 2.5in SATA Self Encrypted OPAL2 Three Layer Cell SSD | X | X | X | X |
| 256GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD | X | X | X | X |
| 512GB 2.5in SATA Self Encrypted Federal Information Processing Standard SSD | X | X | X | X |

| M.2 PCIe NMVe Solid State Drives (SSD) | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| 256GB M.2 2280 PCIe NVMe SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe SSD | X | X | X | X |
| 1TB M.2 2280 PCIe NVMe SSD | | X | X | |
| 128GB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 256GB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 1TB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 2TB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 256GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD | X | X | X | X |
| 256GB Intel® Optane™ Memory H10 with Solid State Storage | X | X | X | X |
| 512GB Intel® Optane™ Memory H10 with Solid State Storage | X | X | X | X |

| Optical Disc Drives | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| HP 9.5mm Slim DVD-ROM Drive | | X | X | X |
| HP 9.5mm Slim DVD Writer Drive | | X | X | X |
| HP 9.5mm Slim Blu-Ray Writer Drive | | X | X | X |

Features

| Media Card Reader | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| SD 4.0 with 5-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II) | | X | X | X |

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

## MEMORY

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

| Memory Configuration | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| 4 GB (1 x 4 GB) | X | X | X | X |
| 8 GB (2 x 4 GB) | X | X | X | X |
| 8 GB (1 x 8 GB) | X | X | X | X |
| 16 GB (2 x 8 GB) | X | X | X | X |
| 16 GB (1 x 16 GB) | X | X | X | X |
| 32 GB (2 x 16 GB) | X | X | X | X |
| 32 GB (4 x 8 GB) | | X | X | |
| 32 GB (1 x 32 GB) | X | X | X | X |
| 64 GB (4 x 16 GB) | | X | X | |
| 64 GB (2 x 32 GB) | X | X | X | X |
| 128 GB (4 x 32 GB) | | X | X | |

**NOTE:** For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.
Memory modules support data transfer rates up to 2666 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.
**NOTE:** All memory slots are customer accessible / upgradeable.

## NETWORKING/COMMUNICATIONS

| Ethernet (RJ-45) | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® I219-LM Gigabit Network Connection LOM (standard) | X | X | X | X |
| Intel® Ethernet I210-T1 PCIe x1 Gb Network Interface Card (optional) | | X | X | |

| Wireless[1] | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Intel® Wi-Fi 6 AX200 + BT5 (802.11AX 2x2 vPro, supporting gigabit file transfer speed ) | X | X | X | X |
| Intel® Wi-Fi 6 AX200 + BT5 (802.11AX 2x2 non-vPro, supporting gigabit file transfer speed ) | X | X | X | X |
| Intel Wireless-AC 9560 802.11ac 2x2 Wi-Fi + BT5 (vPro, supporting gigabit file transfer speeds) | X | X | X | X |

Features

| | | | | |
|---|---|---|---|---|
| Intel Wireless-AC 9560 802.11ac 2x2 Wi-Fi + BT5 (non-vPro, supporting gigabit file transfer speeds) | X | X | X | X |
| Realtek RTL8822BE 802.11ac 2x2 Wi-Fi + BT4.2 | | X | X | X |
| Realtek RTL8821CE 802.11ac 1x1 Wi-Fi + BT4.2 | | | | X |

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

## KEYBOARDS AND POINTING DEVICES

| **Keyboards** | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| HP USB Premium Keyboard | X | X | X | X |
| HP USB Conferencing Keyboard | X | X | X | X |
| HP Wireless Collaboration Keyboard | X | X | X | X |
| HP USB Collaboration Keyboard | X | X | X | X |
| HP USB and PS/2 Washable Keyboard[1] | X | X | X | X |
| HP USB Smart Card (CCID) Keyboard | X | X | X | X |
| HP USB Business Slim Keyboard | X | X | X | X |
| HP USB Keyboard | X | X | X | X |
| HP PS/2 Business Slim Keyboard[1] | | X | X | |
| HP Wireless Business Slim Keyboard and Mouse | X | X | X | X |
| HP USB Business Slim Antimicrobial Keyboard[2] | X | X | X | X |

| **Mouse** | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| HP PS/2 Mouse[1] | | X | X | |
| HP USB Optical Mouse | X | X | X | X |
| HP USB Premium Mouse | X | X | X | X |
| HP USB 1000dpi Laser Mouse | X | X | X | X |
| HP USB and PS/2 Washable Mouse[1] | X | X | X | X |
| Antimicrobial USB Mouse[2] | X | X | X | X |
| HP USB Hardened Mouse[2] | X | X | X | X |
| HP USB Fingerprint Reader Mouse | | X | X | X |
| HP USB Grey Mouse[2] | X | X | X | X |

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

Features

## SECURITY

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

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

Features

## PORTS

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

| I/O Ports – Optional | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| Serial (RS-232) | 1 (rear)(option) | 1 (rear) (option) | 1 (rear) (option) | N/A |
| Serial (RS-232) and PS/2 combination | N/A | 1 (rear) (option) | 1 (rear) (option) | N/A |

Features

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

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

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

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

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

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

Features

## SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

**BIOS**
HP BIOSphere Gen5 [17]
HP DriveLock & Automatic DriveLock
BIOS Update via Network
Master Boot Record Security
Power On Authentication
HP Secure Erase [18]
Absolute Persistence Module [19]
RAID Configurations[33]
Pre-boot Authentication
HP Wireless Wakeup

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

**Manageability Features**
HP Driver Packs [22]
HP System Software Manager (SSM)
HP BIOS Config Utility (BCU)
HP Client Catalog
HP Image Assistant Gen4
HP Manageability Integration Kit Gen3 [23]
Ivanti Management Suite [24]
HP Cloud Recovery[39]

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

Features

**Security Management**
HP Secure Erase[18]
TPM 2.0 (FW: 7.85) endpoint security controller (Infineon SLB9670) shipped with Windows 10. Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.
SATA 0,1 port disablement (viaBIOS)
RAID configurations[33]
Serial, USB enable/disable (viaBIOS)
Power-on password (viaBIOS)
Setup password (viaBIOS)
Support for chassis padlocks and cable lock devices
Integrated hood sensor
HP Sure Click Gen2[38]
HP Sure Start Gen5[30]
HP Sure Run[35]
HP Sure Recover[36]

15. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming
17. HP BIOSphere Gen5 requires Intel® or AMD® 9th Gen processors. Features may vary depending on the platform and configurations.
18. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Supported on Elite platforms with BIOS version F.03 or higher.
19. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/company/legal/agreements/computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
21. HP Support Assistant requires Windows and Internet access.
22. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
23. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
24. Ivanti Management Suite subscription required.
25. HP Client Security Manager Gen5 requires Windows and is available on select HP Pro and Elite PCs. See product specifications for details.
26. HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.
27. Windows Defender Opt in Windows 10 and internet connection required for updates.
30. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
31. HP Fingerprint Sensor available on 800 G5 AiO touch models and optional on 800 G5 AiO non-touch models
33. RAID configuration is optional and requires two equivalent hard drives.
34. RAID 1 is pre-installed and functionality will require a second hard drive.
35. HP Sure Run is available on HP Elite products equipped with 8th and 9th generation Intel® or AMD® processors.
36. HP Sure Recover is available on HP Elite PCs with 8th generation Intel® or AMD® processors and requires an open, wired network connection. Not available on platforms with multiple internal storage drives, Intel® Optane™. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.
38. HP Sure Click is available on most HP PCs and supports Microsoft® Internet Explorer, Google Chrome, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.
39. HP Cloud Recovery is available for HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/document/c05115630.

Features

## ENVIRONMENTAL & INDUSTRY

**ENERGY STAR® certified models available**

EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country[1]. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.
Low halogen (chassis, all internal components and modules)[2]
TAA compliant models available

1. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information
2. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

**UNIT ENVIRONMENT AND OPERATING CONDITIONS**

General Unit Operating Guidelines

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

| | |
|---|---|
| Temperature Range | Operating: 50° to 95° F (10° to 35° C)[1]<br>Non-operating: -22° to 140° F (-30° to 60° C) |
| Relative Humidity | Operating: 10% to 90% (non-condensing at ambient)<br>Non-operating: 5% to 95% (non-condensing at ambient) |
| Maximum Altitude (unpressurized) | Operating: 5000m<br>Non-operating: 50000ft (15240 m) |

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

Features

**HP EliteDesk 800 Desktop Mini G5 series**

| | | | |
|---|---|---|---|
| **Eco-Label Certifications & declarations** | 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:<br>• IT ECO declaration<br>• US ENERGY STAR®<br>• EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. | | |
| **System Configuration** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop. | | |
| **Energy Consumption (in accordance with US ENERGY STAR® test method)** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 13.27 W | 13.51 W | 13.11 W |
| Normal Operation (Long idle) | 13.11 W | 13.27 W | 12.88 W |
| Sleep | 0.75 W | 0.81 W | 0.75 W |
| Off | 0.69 W | 0.74 W | 0.68 W |
| | **NOTE:** Energy efficiency data listed is for an ENERGY STAR® certified product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® certified configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system. | | |
| **Heat Dissipation*** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 45 BTU/hr | 46 BTU/hr | 45 BTU/hr |
| Normal Operation (Long idle) | 45 BTU/hr | 45 BTU/hr | 44 BTU/hr |
| Sleep | 3 BTU/hr | 3 BTU/hr | 3 BTU/hr |
| Off | 2 BTU/hr | 3 BTU/hr | 2 BTU/hr |
| | **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 | 20 | |
| Fixed Disk – Random writes | 3.9 | 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:<br><br>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<br><br>Batteries used in the product do not contain:<br>Mercury greater the1ppm by weight<br>Cadmium greater than 20ppm by weight | | |

Features

| | | | |
|---|---|---|---|
| | Battery size: CR2032 (coin cell)<br>Battery type: Lithium | | |
| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product is in compliance with the IEEE 1680 (EPEAT) standard, see http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product contains 0% post-consumer recycled plastic (by wt.)<br>• This product is 95.1% recycle-able when properly disposed of at end of life. | | |
| **Packaging Materials** | **External:** | PAPER/Corrugated | 322 g |
| | **Internal:** | PLASTIC/EPE (Expanded Polyethylene) | 33 g |
| | | PLASTIC/Polyethylene low density | 5 g |
| **Material Usage** | This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):<br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) | | |

Features

| | |
|---|---|
| **Packaging 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):<br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) |
| **End-of-life Management and Recycling** | HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>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.<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www8.hp.com/us/en/hp-information/environment/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf<br>and<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf |

**HP EliteDesk 800 Small Form Factor G5 series**

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|---|---|
| **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:<br>• IT ECO declaration<br>• US ENERGY STAR® |

Features

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| | • EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.<br>. | | |
| **System Configuration** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop. | | |
| **Energy Consumption (in accordance with US ENERGY STAR® test method)** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 4.53 W | 4.57 W | 4.39 W |
| Normal Operation (Long idle) | 4.04 W | 4.20 W | 3.96 W |
| Sleep | 0.38 W | 0.42 W | 0.38 W |
| Off | 0.35 W | 0.38 W | 0.34 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, 50Hz** |
| Normal Operation (Short idle) | 15.4926 BTU/hr | 15.6294 BTU/hr | 15.0138 BTU/hr |
| Normal Operation (Long idle) | 13.8168 BTU/hr | 14.364 BTU/hr | 13.5432 BTU/hr |
| Sleep | 1.2996 BTU/hr | 1.4364 BTU/hr | 1.2996 BTU/hr |
| Off | 1.197 BTU/hr | 1.2996 BTU/hr | 1.1628 BTU/hr |
| | **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 | 3.2 | 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:<br><br>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<br><br>Batteries used in the product do not contain:<br>Mercury greater the1ppm by weight<br>Cadmium greater than 20ppm by weight<br><br>Battery size: CR2032 (coin cell)<br>Battery type: Lithium | | |

Features

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| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product is in compliance with the IEEE 1680 (EPEAT) standard, see http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product contains 0% post-consumer recycled plastic (by wt.)<br>• This product is 95.1% recycle-able when properly disposed of at end of life. | | |
| **Packaging Materials** | **External:** | PAPER/Corrugated | 1158 g |
| | **Internal:** | PLASTIC/EPE (Expanded Polyethylene) | 320 g |
| | | PLASTIC/Polyethylene low density | 28 g |
| **Material Usage** | 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):<br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) | | |
| **Packaging Usage** | HP follows these guidelines to decrease the environmental impact of product packaging:<br>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.<br>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.<br>• Design packaging materials for ease of disassembly.<br>• Maximize the use of post-consumer recycled content materials in packaging materials.<br>• Use readily recyclable packaging materials such as paper and corrugated materials.<br>• Reduce size and weight of packages to improve transportation fuel efficiency.<br>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. | | |

Features

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| **End-of-life Management and Recycling** | HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>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.<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www8.hp.com/us/en/hp-information/environment/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf<br>and<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf |

**HP EliteDesk 800 Tower G5 series**

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| **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:<br>• IT ECO declaration<br>• US ENERGY STAR®<br>• EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. | | |
| **System Configuration** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop. | | |
| **Energy Consumption (in accordance with US ENERGY STAR® test method)** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 60Hz** |
| Normal Operation (Short idle) | 15.02 W | 14.68 W | 14.94 W |
| Normal Operation (Long idle) | 14.34 W | 13.38 W | 14.12 W |
| Sleep | 1.20 W | 1.11 W | 1.25 W |
| Off | 0.70 W | 0.72 W | 0.69 W |
| | **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) | 51.3684 BTU/hr | 50.2056 BTU/hr | 51.0948 BTU/hr |
| Normal Operation (Long idle) | 49.0428 BTU/hr | 45.7596 BTU/hr | 48.2904 BTU/hr |
| Sleep | 4.104 BTU/hr | 3.7962 BTU/hr | 4.275 BTU/hr |
| Off | 2.394 BTU/hr | 2.4624 BTU/hr | 2.3598 BTU/hr |
| | **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 | 3.2 | 23 | |
| Fixed Disk–Random writes | 3.6 | 26 | |
| 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:<br><br>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<br><br>Batteries used in the product do not contain:<br>Mercury greater the1ppm by weight<br>Cadmium greater than 20ppm by weight | | |

Features

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| | Battery size: CR2032 (coin cell)<br>Battery type: Lithium | | |
| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product contains 0% post-consumer recycled plastic (by wt.)<br>• This product is 95.1% recycle-able when properly disposed of at end of life.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. | | |
| **Packaging Materials** | **External:** | PAPER/Corrugated | 1170 g |
| | **Internal:** | PLASTIC/EPE (Expanded Polyethylene) | 378 g |
| | | PLASTIC/Polyethylene low density | 17 g |
| **Material Usage** | This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):<br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) | | |

Features

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| **Packaging Usage** | HP follows these guidelines to decrease the environmental impact of product packaging:<br>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.<br>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.<br>• Design packaging materials for ease of disassembly.<br>• Maximize the use of post-consumer recycled content materials in packaging materials.<br>• Use readily recyclable packaging materials such as paper and corrugated materials.<br>• Reduce size and weight of packages to improve transportation fuel efficiency.<br>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. |
| **End-of-life Management and Recycling** | HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>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.<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www8.hp.com/us/en/hp-information/environment/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf<br>and<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf |

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

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| **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:<br>• IT ECO declaration<br>• US ENERGY STAR®<br>• EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. | | |
| **System Configuration** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop. | | |
| **Energy Consumption (in accordance with US ENERGY STAR® test method)** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 31.86 | 31.868 | 31.626 |
| Normal Operation (Long idle) | 14.466 | 14.483 | 14.389 |

Features

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| Sleep | 4.049 | 4.082 | 3.971 |
| Off | 0.644 | 0.649 | 0.623 |
| | **NOTE:** Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system. | | |
| **Heat Dissipation*** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 108.6426 | 108.6699 | 107.8447 |
| Normal Operation (Long idle) | 49.3291 | 49.387 | 49.0665 |
| Sleep | 13.8071 | 13.9196 | 13.5411 |
| Off | 2.196 | 2.2131 | 2.1244 |
| | **NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour. | | |

| **Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)** | Sound Power ($L_{WAd}$, bels) | Sound Pressure ($L_{pAm}$, decibels) |
|---|---|---|
| Typically Configured – Idle | 2.9 | 21.0 |
| Fixed Disk – Random writes | 3.7 | 22.8 |

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| Longevity and Upgrading | This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include: storage, Memory and processor.<br>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<br><br>Batteries used in the product do not contain:<br>Mercury greater the1ppm by weight<br>Cadmium greater than 20ppm by weight<br><br>Battery size: CR2032 (coin cell)<br>Battery type: Lithium |
| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product is in compliance with the IEEE 1680 (EPEAT) standard, see http://www.epeat.net for registration status by country. Search keyword generator on HP’s 3rd party option store for solar generator accessories at http://www.hp.com/go/options<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product contains 0% post-consumer recycled plastic (by wt.)<br>• This product is 95.1% recycle-able when properly disposed of at end of life. |

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| **Packaging Materials** | **External:** | PAPER/Corrugated | |
| | **Internal:** | PLASTIC/EPE (Expanded Polyethylene) | |
| | | PLASTIC/Polyethylene low density | |

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| **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):<br>• Asbestos<br>• Certain Azo Colorants |

Features

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| | • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) |
| **Packaging Usage** | HP follows these guidelines to decrease the environmental impact of product packaging:<br>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.<br>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.<br>• Design packaging materials for ease of disassembly.<br>• Maximize the use of post-consumer recycled content materials in packaging materials.<br>• Use readily recyclable packaging materials such as paper and corrugated materials.<br>• Reduce size and weight of packages to improve transportation fuel efficiency.<br>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. |
| **End-of-life Management and Recycling** | HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>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.<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www8.hp.com/us/en/hp-information/environment/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf<br>and<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf |

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

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| **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:<br>• IT ECO declaration<br>• US ENERGY STAR®<br>• EPEAT® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.<br><br>*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. | | |
| **System Configuration** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a Typically Configured Notebook. | | |
| **Energy Consumption (in accordance with US ENERGY STAR® test method)** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 60Hz** |
| Normal Operation (Short idle) | 13.279 | 13.514 | 13.115 |
| Normal Operation (Long idle) | 13.116 | 13.275 | 12.889 |
| Sleep | 0.753 | 0.817 | 0.751 |
| Off | 0.69 | 0.746 | 0.689 |
| | **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) | 45.2814 | 46.0827 | 44.7222 |
| Normal Operation (Long idle) | 44.7256 | 45.2678 | 43.9515 |
| Sleep | 2.5677 | 2.7860 | 2.5609 |
| Off | 2.3529 | 2.5439 | 2.3495 |
| | **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 | | | |
| Fixed Disk – Random writes | | | |
| 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:<br><br>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<br><br>Batteries used in the product do not contain:<br>Mercury greater the1ppm by weight<br>Cadmium greater than 20ppm by weight | | |

Features

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| | Battery size: CR2032 (coin cell)<br>Battery type: Lithium | | |
| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product is in compliance with the IEEE 1680 (EPEAT) standard, see http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product contains 0% post-consumer recycled plastic (by wt.)<br>• This product is 95.1% recycle-able when properly disposed of at end of life. | | |
| **Packaging Materials** | **External:** | PAPER/Corrugated | 322 g |
| | **Internal:** | PLASTIC/EPE (Expanded Polyethylene) | 32 g |
| | | PLASTIC/Polyethylene low density | 5 g |
| **Material Usage** | This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):<br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Formaldehyde<br>• Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) | | |
| **Packaging Usage** | HP follows these guidelines to decrease the environmental impact of product packaging:<br>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.<br>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.<br>• Design packaging materials for ease of disassembly.<br>• Maximize the use of post-consumer recycled content materials in packaging materials.<br>• Use readily recyclable packaging materials such as paper and corrugated materials.<br>• Reduce size and weight of packages to improve transportation fuel efficiency.<br>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. | | |

Features

| | |
|---|---|
| **End-of-life Management and Recycling** | HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>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.<br>Global Citizenship Report<br>http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html<br>Eco-label certifications<br>http://www8.hp.com/us/en/hp-information/environment/ecolabels.html<br>ISO 14001 certificates:<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf<br>and<br>http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf |

Features

## SERVICE AND SUPPORT

### HP EliteDesk 800 G5 Tower Business PC

On-site Warranty[15]: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day[16] service for parts and labor and includes free support 24 x 7[17]. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc.[18]

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.
18. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

### HP EliteDesk 800 G5 Small Form Factor Business PC

On-site Warranty[15]: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day[16] service for parts and labor and includes free support 24 x 7[17]. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc.[18]

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.
18. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Features

### HP EliteDesk 800 G5 Desktop Mini Business PC

On-site Warranty[15]: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day[16] service for parts and labor and includes free support 24 x 7[17]. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc.[18]

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.
18. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

### HP EliteOne 800 G5 All-in-One Business PC

On-site Warranty[15]: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day[16] service for parts and labor and includes free support 24 x 7[17]. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc.[18]

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.
18. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

## CERTIFICATION AND COMPLIANCE

### Energy Efficiency Compliance

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

19. *Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.

## PROCESSORS

**Intel® 8th and 9th Generation Core™ Processors**

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

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

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

## DISPLAY PANEL SPECIFICATIONS

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

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

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

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

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

Intel® HD Graphics (integrated)

## Technical Specifications – Display Panel Specifications

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

## GRAPHICS

### HP EliteDesk 800 G5 Desktop Mini Business PC

Intel® HD Graphics (integrated)

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

### AMD® Radeon™ RX 560X

| | |
|---|---|
| **Architecture** | Discrete GPU<br>AMD® GPU drives the integrated panel and all of the graphics output ports |
| **DisplayPort** | Multimode capable; supports HDCP, HDR, Display Port Audio (6 streams max), DisplayPort HBR3 link rates and Multi-Stream Technology for a maximum of 5 displays (including the integrated panel and all attached displays) |
| **HDMI** | Supports HDMI 2.0b features<br>Supports HDCP 2.2, HDR |
| **Memory** | 4GByte, 128bit wide GDDR5 |
| **Maximum Color Depth** | up to 12 bits/color |
| **Graphics/Video API Support** | DirectX 12<br>OpenCL 2.0<br>OpenGL 4.5<br>AMD® Unified Video Decoder (UVD) |
| **Rear I/O connector** | 1 DP |
| **Max. Resolution (VGA)** | 2048 x 1536@60Hz |
| **Max. Resolution (HDMI)** | 4096 x 2160@60Hz |
| **Max. Resolution (DP)** | 5120 x 2880@60Hz |

Technical Specifications – Graphics

## HP EliteDesk 800 G5 Tower Business PC

Intel® UHD Graphics (integrated)

| | |
|---|---|
| **VGA Controller** | Integrated |
| **DisplayPort™ 1.2** | Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics<br>Supports HDMI 2.0a features |
| **HDMI (optional)** | Supports HDCP 2.2<br>Supports BT2020 and HDR playback (7th Gen processors only) |
| **VGA (optional)** | VGA ouput |
| **USB-C™ DP Alt Mode (optional)** | DisplayPort over the optional USB-C™ module |
| **Memory** | The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use. |
| **Maximum Color Depth** | up to 10 bits/color<br>HEVC 10b Enc/Dec HW<br>VP9 10b Dec HW |
| **Graphics/Video API Support** | HDR<br>Rec. 2020<br>DX12 |
| **34" UHD Supported Resolutions and Refresh Rates. Other resolutions may also work.** | 640x480 60 Hz640x480 67Hz<br>640x480 72Hz<br>640x480 75Hz<br>720x400 70Hz<br>800x600 60Hz<br>800x600 75Hz<br>1024x768 60Hz<br>1024x768 75Hz<br>1280x960 60Hz<br>1280x720 60Hz<br>1280x1024 60Hz<br>1280x1024 75Hz<br>1440x900 60Hz<br>1440x900 75Hz<br>1680x1050 60Hz<br>1920x1080 60Hz<br>3440x1440 60Hz (Native Resolution)<br>3440x1440 30Hz |
| **Max. Resolution (VGA)** | 2048 x 1536@60Hz |
| **Max. Resolution (HDMI)** | 4096 x 2160@60Hz |
| **Max. Resolution (DP)** | 4096 x 2160@60Hz |

Technical Specifications – Graphics

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

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

**NVIDIA® GeForce® RTX 2060 6 GB Graphics Card**

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

**AMD® Radeon™ RX 550X 4 GB FH PCIe x16**

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

Technical Specifications – Graphics

**AMD® Radeon™ RX 580 8GB GDDR5 Graphics Card**

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

**NVIDIA® GeForce® RTX 2080 8GB GDDR6**

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

**NVIDIA® GeForce® RTX 2070 8GB GDDR6**

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

Technical Specifications – Graphics

**NVIDIA® Quadro P620 2GB Graphics Card**

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

**NVIDIA® Quadro P400 2GB Graphics Card**

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

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

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

Technical Specifications – Graphics

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

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

## HP EliteDesk 800 G5 Small Form Factor Business PC

Intel® HD Graphics (integrated)

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

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

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

Technical Specifications – Graphics

| | |
|---|---|
| **Total power consumption(W)** | <50W |
| **PCB form-factor with bracket** | LP PCB with FH/LP bracket |

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

| | |
|---|---|
| **Engine Clock** | 780 MHz |
| **Memory Clock** | 1100 MHz |
| **Memory Size(width)** | 1 GB(64-bit) |
| **Memory Type** | 256M x 32 GDDR5 |
| **Max. Resolution(DP)** | 4096x2160@60Hz |
| **Multi Display Support** | 2 displays |
| **HDCP Compliance** | yes |
| **Rear I/O connectors(bracket)** | DPx2 |
| **Cooling(active/passive)** | Active fan-sink (Active cooling with dynamic speed) |
| **Total power consumption(W)** | <50W |
| **PCB form-factor with bracket** | LP PCB with FH/LP bracket |

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

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

**AMD® Radeon™ RX550 4 GB PCIe x16**

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

## Technical Specifications – Graphics

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

Technical Specifications – Graphics

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

Intel® UHD Graphics (integrated)

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

### AMD® Radeon™ RX 560X

| | |
|---|---|
| **Architecture** | Discrete GPU<br>AMD® GPU drives the integrated panel and all of the graphics output ports |
| **DisplayPort** | Multimode capable; supports HDCP, HDR, Display Port Audio (6 streams max), DisplayPort HBR3 link rates and Multi-Stream Technology for a maximum of 5 displays (including the integrated panel and all attached displays) |
| **HDMI** | Supports HDMI 2.0b features<br>Supports HDCP 2.2, HDR |
| **Memory** | 4GByte, 128bit wide GDDR5 |
| **Maximum Color Depth** | up to 12 bits/color |
| **Graphics/Video API Support** | DirectX 12<br>OpenCL 2.0<br>OpenGL 4.5<br>AMD® Unified Video Decoder (UVD) |
| **Rear I/O connector** | 1 DP |
| **Max. Resolution (VGA)** | 2048 x 1536@60Hz |
| **Max. Resolution (HDMI)** | 4096 x 2160@60Hz |
| **Max. Resolution (DP)** | 5120 x 2880@60Hz |

## STORAGE

### 500 GB 7200RPM 3.5in SATA HDD

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

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

### 1 TB 7200RPM 3.5in SATA HDD

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

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

### 2 TB 7200RPM 3.5in SATA HDD

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

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

### 500 GB 7200RPM 2.5in SATA HDD

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

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

### 1 TB 7200RPM 2.5in SATA HDD

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

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

### 2 TB 5400RPM 2.5in SATA HDD

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

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

Technical Specifications – Storage

### 500 GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD

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

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

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

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

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

### 500 GB 5400RPM 2.5in SATA SSHD

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

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

Technical Specifications – Storage

### 1 TB 5400RPM 2.5in SATA SSHD

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

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

### 2 TB 5400RPM 2.5in SATA SSHD

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

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

### 128 GB 2.5in SATA Three Layer Cell SSD

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

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

### 256 GB 2.5in SATA Three Layer Cell SSD

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

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

### 512 GB 2.5in SATA Three Layer Cell SSD

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### 128 GB M.2 2280 PCIe NVMe SSD

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

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

### 256 GB M.2 2280 PCIe NVMe SSD

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

Technical Specifications – Storage

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

### 512 GB M.2 2280 PCIe NVMe SSD

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

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

### 1 TB M.2 2280 PCIe NVMe SSD

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

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

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

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

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

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

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

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

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

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

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

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

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

| | |
|---|---|
| **Drive Weight** | < 10g |
| **Capacity** | 1 TB |
| **Height** | 2.38mm |
| **Length** | 80mm |
| **Width** | 22mm |
| **Interface** | PCIE Gen3x4 |

Technical Specifications – Storage

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

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

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

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

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

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

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

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

Technical Specifications – Storage

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

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

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

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

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

**NOTE:** For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software. Not available with eMMC Base Units. Intel® Optane™ SSD is sold separately. Intel® Optane™ SSD system acceleration does not replace or increase the DRAM in your system. Available for HP commercial desktops and notebooks and for select HP workstations and requires a SATA HDD, 7th Gen or higher Intel® Core™ processor or Intel ® Xeon® processor E3-1200 V6 product family or higher, BIOS version with Intel® Optane™ supported, Windows 10 version 1703 or higher, M.2 type 2280-S1-B-M connector on a PCH Remapped PCIe Controller and Lanes in x2 or x4 configuration with B-M keys that meet NVMeTM Spec 1.1, and an Intel® Rapid Storage Technology (Intel® RST) 15.5 driver.

### HP 9.5mm Slim DVD-ROM Drive

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

### HP 9.5mm Slim DVD Writer Drive

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

Technical Specifications – Storage

| | |
|---|---|
| **Environmental conditions (operating - non-condensing)** | Temperature 41° to 122° F (5° to 50° C)<br>Relative Humidity 10% to 80%<br>Maximum Wet Bulb Temperature 84° F (29° C) |

**HP 9.5mm Slim Blu-Ray Writer Drive**

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

## NETWORKING AND COMMUNICATIONS

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

Technical Specifications – Networking and Communications

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

| **Intel® i210 10/100/1000 NIC** | |
|---|---|
| **Connector** | RJ-45 |
| **System Interface** | PCI (Intel proprietary) + SMBus |
| **Data rates supported** | 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<br>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)<br>1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40)<br>Auto-Negotiation (Automatic Speed Selection)<br>Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s |
| **IEEE Compliance** | IEEE 802.1p QoS (Quality of Service) Support<br>IEEE 802.1q VLAN support<br>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)<br>IEEE 802.3az EEE (Energy Efficient Ethernet) |
| **Performance** | TCP/IP/UDP Checksum Offload (configurable)<br>Protocol Offload (ARP & NS)<br>Large send offload and Giant send offload<br>Receiving Side Scaling<br>Jumbo Frame 9K |
| **Power consumption** | Cable Disconnetion: 25mW<br>100Mbps Full Run: 450mW<br>1000bp Full Run: 1000mW<br>WoL Enable(S3/S4/S5): 50mW<br>WoL Disable(S3/S4/S5): 25mW |
| **Power Management** | ACPI compliant – multiple power modes<br>Situation-sensitive features reduce power consumption<br>Advanced link down power saving for reducing link down power consumption |
| **Management Interface** | Auto MDI/MDIX Crossover cable detection |

Technical Specifications – Networking and Communications

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

| **Intel Wi-Fi 6 AX200 + BT5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds) vPro** | |
|---|---|
| **Wireless LAN Standards** | IEEE 802.11a<br>IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n<br>IEEE 802.11ac<br>IEEE 802.11ax<br>IEEE 802.11d<br>IEEE 802.11e<br>IEEE 802.11h<br>IEEE 802.11i<br>IEEE 802.11k<br>IEEE 802.11r<br>IEEE 802.11v |
| **Interoperability** | Wi-Fi certified |
| **Frequency Band** | 802.11b/g/n/ax<br>• 2.402 – 2.482 GHz<br>802.11a/n/ac/ax<br>• 4.9 – 4.95 GHz (Japan)<br>• 5.15 – 5.25 GHz<br>• 5.25 – 5.35 GHz<br>• 5.47 – 5.725 GHz<br>• 5.825 – 5.850 GHz |
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)<br>• 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) |
| **Modulation** | Direct Sequence Spread Spectrum<br>OFDMA, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power**[2] | • 802.11b: +18.5dBm minimum<br>• 802.11g: +17.5dBm minimum |

Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| | • 802.11a: +18.5dBm minimum<br>• 802.11n HT20(2.4GHz): +15.5dBm minimum<br>• 802.11n HT40(2.4GHz): +14.5dBm minimum<br>• 802.11n HT20(5GHz): +15.5dBm minimum<br>• 802.11n HT40(5GHz): +14.5dBm minimum<br>• 802.11ac VHT80(5GHz): +11.5dBm minimum<br>• 802.11ac VHT160(5GHz): +11.5dBm minimum<br>• 802.11ax VHT160(5GHz) : +10dBm minimum | |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW | |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity**[3] | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum<br>802.11ax, MCS11(HT40): -59dBm maximum<br>802.11ax, MCS11(VHT160): -58.5dBm maximum | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230: 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230: 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |
| | | |
| **HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology** | | |
| **Bluetooth® Specification** | 4.0/4.1/4.2/5.0 Compliant | |
| **Frequency Band** | 2402 to 2480 MHz | |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) | |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps | |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps | |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels.<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) | |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. | |

Technical Specifications – Networking and Communications

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

| **Intel Wi-Fi 6 AX200 + BT5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) non-vPro** | |
|---|---|
| **Wireless LAN Standards** | IEEE 802.11a<br>IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n<br>IEEE 802.11ac<br>IEEE 802.11ax<br>IEEE 802.11d<br>IEEE 802.11e<br>IEEE 802.11h<br>IEEE 802.11i<br>IEEE 802.11k<br>IEEE 802.11r<br>IEEE 802.11v |
| **Interoperability** | Wi-Fi certified |
| **Frequency Band** | 802.11b/g/n/ax<br>• 2.402 – 2.482 GHz<br>802.11a/ac/ax<br>• 4.9 – 4.95 GHz (Japan)<br>• 5.15 – 5.25 GHz<br>• 5.25 – 5.35 GHz<br>• 5.47 – 5.725 GHz<br>• 5.825 – 5.850 GHz |

## Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) | |
| **Modulation** | Direct Sequence Spread Spectrum<br>OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM | |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI | |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) | |
| **Roaming** | IEEE 802.11 compliant roaming between access points | |
| **Output Power**[2] | • 802.11b : +18.5dBm minimum<br>• 802.11g : +17.5dBm minimum<br>• 802.11a : +18.5dBm minimum<br>• 802.11n HT20(2.4GHz) : +15.5dBm minimum<br>• 802.11n HT40(2.4GHz) : +14.5dBm minimum<br>• 802.11n HT20(5GHz) : +15.5dBm minimum<br>• 802.11n HT40(5GHz) : +14.5dBm minimum<br>• 802.11ac VHT80(5GHz) : +11.5dBm minimum<br>• 802.11ac VHT160(5GHz) : +11.5dBm minimum | |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW | |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity**[3] | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230: 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230: 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |

Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |
| | | |
| **HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology** | | |
| **Bluetooth® Specification** | 4.0/4.1/4.2/5.0 Compliant | |
| **Frequency Band** | 2402 to 2480 MHz | |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) | |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps | |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps | |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels.<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) | |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. | |
| **Power Consumption** | Peak (Tx) 330 mW<br>Peak (Rx) 230 mW<br>Selective Suspend 17 mW | |
| **Range** | Legacy Up to 33 ft (10 m)<br>BLE Up to 99 ft (30 m) | |
| **Bluetooth® Software Supported Link Topology** | Microsoft Windows Bluetooth® Software | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support | |
| **Certifications** | FCC (47 CFR) Part 15C, Section 15.247 & 15.249<br>ETS 300 328, ETS 300 826<br>Low Voltage Directive IEC950<br>UL, CSA, and CE Mark | |
| **Bluetooth Profiles Supported** | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping<br>LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP)<br>Hands Free Profile (HFP)<br>Advanced Audio Distribution Profile (A2DP) | |

Technical Specifications – Networking and Communications

| **Intel Thunder Peak 9260 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo vPro** | |
|---|---|
| **Wireless LAN Standards** | IEEE 802.11a<br>IEEE 802.11bsd<br>IEEE 802.11g<br>IEEE 802.11n<br>IEEE 802.11ac<br>IEEE 802.11d<br>IEEE 802.11e<br>IEEE 802.11h<br>IEEE 802.11i<br>IEEE 802.11k<br>IEEE 802.11r<br>IEEE 802.11v |
| **Interoperability** | Wi-Fi certified |
| **Frequency Band** | 802.11b/g/n<br>• 2.402 – 2.482 GHz<br>802.11a/n/ac<br>• 4.9 – 4.95 GHz (Japan)<br>• 5.15 – 5.25 GHz<br>• 5.25 – 5.35 GHz<br>• 5.47 – 5.725 GHz<br>• 5.825 – 5.850 GHz |
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac: MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) |
| **Modulation** | Direct Sequence Spread Spectrum<br>OFDMA, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power**[2] | • 802.11b: +18.5dBm minimum<br>• 802.11g: +17.5dBm minimum<br>• 802.11a: +18.5dBm minimum<br>• 802.11n HT20(2.4GHz): +15.5dBm minimum<br>• 802.11n HT40(2.4GHz): +14.5dBm minimum<br>• 802.11n HT20(5GHz): +15.5dBm minimum<br>• 802.11n HT40(5GHz): +14.5dBm minimum<br>• 802.11ac VHT80(5GHz): +11.5dBm minimum<br>• 802.11ac VHT160(5GHz): +11.5dBm minimum |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW |

## Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity[3]** | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230: 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230: 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |
| **HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology** | | |
| **Bluetooth® Specification** | 4.0/4.1/4.2/5.0 Compliant | |
| **Frequency Band** | 2402 to 2480 MHz | |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) | |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps | |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps | |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels.<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) | |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. | |
| **Power Consumption** | Peak (Tx) 330 mW<br>Peak (Rx) 230 mW<br>Selective Suspend 17 mW | |
| **Range** | Legacy Up to 33 ft (10 m)<br>BLE Up to 99 ft (30 m) | |
| **Bluetooth® Software Supported Link Topology** | Microsoft Windows Bluetooth® Software | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support | |
| **Certifications** | FCC (47 CFR) Part 15C, Section 15.247 & 15.249<br>ETS 300 328, ETS 300 826<br>Low Voltage Directive IEC950<br>UL, CSA, and CE Mark | |
| **Bluetooth Profiles Supported** | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping | |

Technical Specifications – Networking and Communications

| | |
|---|---|
| | LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP)<br>Hands Free Profile (HFP)<br>Advanced Audio Distribution Profile (A2DP) |
| **Security & Manageability** | Intel® vPro™ support with appropriate Intel® chipset components |

| **Intel Thunder Peak 9260 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 5.0 Combo Non vPro** | |
|---|---|
| **Wireless LAN Standards** | IEEE 802.11a<br>IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n<br>IEEE 802.11ac<br>IEEE 802.11d<br>IEEE 802.11e<br>IEEE 802.11h<br>IEEE 802.11i<br>IEEE 802.11k<br>IEEE 802.11r<br>IEEE 802.11v |
| **Interoperability** | Wi-Fi certified |
| **Frequency Band** | 802.11b/g/n<br>• 2.402 – 2.482 GHz<br>802.11a/ac<br>• 4.9 – 4.95 GHz (Japan)<br>• 5.15 – 5.25 GHz<br>• 5.25 – 5.35 GHz<br>• 5.47 – 5.725 GHz<br>• 5.825 – 5.850 GHz |
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) |
| **Modulation** | Direct Sequence Spread Spectrum<br>OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |

## Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| **Roaming** | IEEE 802.11 compliant roaming between access points | |
| **Output Power**[2] | • 802.11b : +18.5dBm minimum<br>• 802.11g : +17.5dBm minimum<br>• 802.11a : +18.5dBm minimum<br>• 802.11n HT20(2.4GHz) : +15.5dBm minimum<br>• 802.11n HT40(2.4GHz) : +14.5dBm minimum<br>• 802.11n HT20(5GHz) : +15.5dBm minimum<br>• 802.11n HT40(5GHz) : +14.5dBm minimum<br>• 802.11ac VHT80(5GHz) : +11.5dBm minimum<br>• 802.11ac VHT160(5GHz) : +11.5dBm minimum | |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW | |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity**[3] | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230: 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230: 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |

| **HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology** | |
|---|---|
| **Bluetooth® Specification** | 4.0/4.1/4.2/5.0 Compliant |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels.<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. |

Technical Specifications – Networking and Communications

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

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

## Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) | |
| **Modulation** | Direct Sequence Spread Spectrum<br>BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM | |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI | |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) | |
| **Roaming** | IEEE 802.11 compliant roaming between access points | |
| **Output Power**[2] | • 802.11b: +14dBm minimum<br>• 802.11g: +12dBm minimum<br>• 802.11a: +12dBm minimum<br>• 802.11n HT20(2.4GHz): +12dBm minimum<br>• 802.11n HT40(2.4GHz): +12dBm minimum<br>• 802.11n HT20(5GHz): +10dBm minimum<br>• 802.11n HT40(5GHz): +10dBm minimum<br>• 802.11ac VHT80(5GHz): +10dBm minimum | |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW | |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity**[3] | 802.11b, 1Mbps: -93.5dBm maximum<br>802.11b, 11Mbps: -84dBm maximum<br>802.11a/g, 6Mbps: -86dBm maximum<br>802.11a/g, 54Mbps: -72dBm maximum<br>802.11n, MCS07: -67dBm maximum<br>802.11n, MCS15: -64dBm maximum<br>802.11ac, MCS0: -84dBm maximum<br>802.11ac, MCS9: -59dBm maximum | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230 : 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230 : 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |

Technical Specifications – Networking and Communications

| HP Integrated Module with Bluetooth® 4.0/4.1/4.2 Wireless Technology | |
|---|---|
| **Bluetooth® Specification** | 4.0/4.1/4.2 Compliant |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. |
| **Power Consumption** | Peak (Tx) 330 mW<br>Peak (Rx) 230 mW<br>Selective Suspend 17 mW |
| **Electrical Interface** | USB 2.0 compliant |
| **Bluetooth® Software Supported Link Topology** | Microsoft Windows Bluetooth® Software |
| **Power Management Certifications** | Microsoft Windows ACPI, and USB Bus Support<br>ETS 300 328, ETS 300 826<br>Low Voltage Directive IEC950<br>UL, CSA, and CE Mark |
| **Certifications** | FCC (47 CFR) Part 15C, Section 15.247 & 15.249<br>ETS 300 328, ETS 300 826<br>Low Voltage Directive IEC950<br>UL, CSA, and CE Mark |
| **Bluetooth Profiles Supported** | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping<br>LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP)<br>Hands Free Profile (HFP)<br>Advanced Audio Distribution Profile (A2DP) |

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

Technical Specifications – Networking and Communications

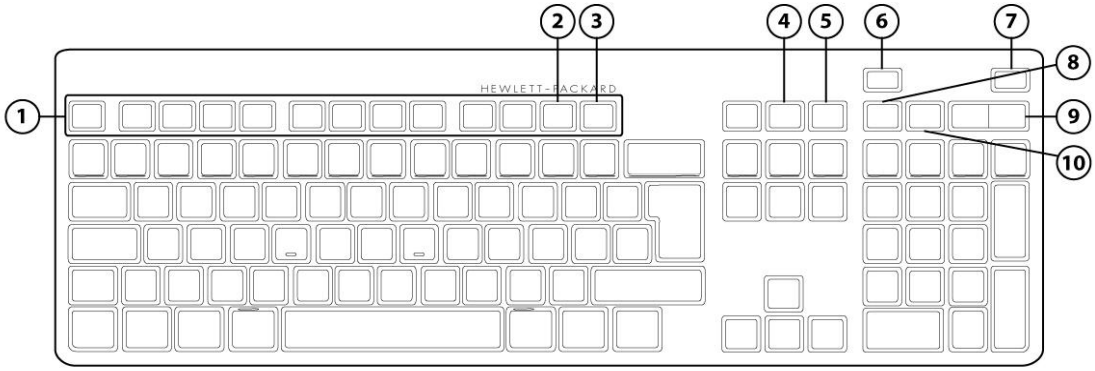
| | |
|---|---|
| | IEEE 802.11i<br>IEEE 802.11k<br>IEEE 802.11r<br>IEEE 802.11v |
| **Interoperability** | Wi-Fi certified |
| **Frequency Band** | 802.11b/g/n<br>• 2.402 – 2.482 GHz<br>802.11a/n/ac<br>• 4.9 – 4.95 GHz (Japan)<br>• 5.15 – 5.25 GHz<br>• 5.25 – 5.35 GHz<br>• 5.47 – 5.725 GHz<br>• 5.825 – 5.850 GHz |
| **Data Rates** | • 802.11b: 1, 2, 5.5, 11 Mbps<br>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)<br>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz) |
| **Modulation** | Direct Sequence Spread Spectrum<br>BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM |
| **Security**[1] | • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only<br>• AES-CCMP: 128 bit in hardware<br>• 802.1x authentication<br>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>• WPA2 certification<br>• IEEE 802.11i<br>• WAPI |
| **Network Architecture Models** | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power**[2] | • 802.11b : +14dBm minimum<br>• 802.11g : +12dBm minimum<br>• 802.11a : +12dBm minimum<br>• 802.11n HT20(2.4GHz) : +12dBm minimum<br>• 802.11n HT40(2.4GHz) : +12dBm minimum<br>• 802.11n HT20(5GHz) : +10dBm minimum<br>• 802.11n HT40(5GHz) : +10dBm minimum<br>• 802.11ac VHT80(5GHz) : +10dBm minimum |
| **Power Consumption** | • Transmit mode2.0 W<br>• Receive mode 1.6 W<br>• Idle mode (PSP) 180 mW (WLAN Associated)<br>• Idle mode 50 mW (WLAN unassociated)<br>• Connected Standby 10mW<br>• Radio disabled 8 mW |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode |
| **Receiver Sensitivity**[3] | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum |
| **Antenna type** | High efficiency antenna. |

## Technical Specifications – Networking and Communications

| | | |
|---|---|---|
| | One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN communications and Bluetooth communications | |
| **Form Factor** | PCI-Express M.2 MiniCard | |
| **Dimensions** | Type 2230 : 2.3 x 22.0 x 30.0 mm | |
| **Weight** | Type 2230 : 2.8g | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 158° F (–10° to 70° C)<br>–40° to 176° F (–40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |
| **HP Integrated Module with Bluetooth® 4.0/4.1/4.2 Wireless Technology** | | |
| **Bluetooth® Specification** | 4.0/4.1/4.2 Compliant | |
| **Frequency Band** | 2402 to 2480 MHz | |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) | |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps | |
| | BLE : 1 Mbps data rate; throughput up to 0.2 Mbps | |
| | Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels<br>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) | |
| **Transmit Power** | The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR. | |
| **Power Consumption** | Peak (Tx) 330 mW<br>Peak (Rx) 230 mW<br>Selective Suspend 17 mW | |
| Electrical Interface | USB 2.0 compliant | |
| **Bluetooth® Software Supported Link Topology** | Microsoft Windows Bluetooth® Software | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support | |
| **Certifications** | ETS 300 328, ETS 300 826<br>Low Voltage Directive IEC950<br>UL, CSA, and CE Mark | |
| **Bluetooth Profiles Supported** | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping<br>LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP)<br>Hands Free Profile (HFP)<br>Advanced Audio Distribution Profile (A2DP) | |

## I/O DEVICES

**HP Conferencing Keyboard**




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

1. Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Contact list
2. Microsoft Lync 2013, or Skype for Business, or Microsoft Outlook 2013 Calendar

Technical Specifications – Input/Output Devices

| **HP USB Premium Keyboard** | | |
|---|---|---|
| **Physical Characteristics** | Keys | 104, 105 layout (depending upon country) |
| | Dimensions (L x W x H) | 17.04 x 5.55 x 0.52 in (433 x 141 x13.2 mm) |
| | Weight | 1.54 lb. (698g) |
| **Electrical** | Operating voltage | 5 VDC, +/-5% |
| | Power consumption | 35mA (All LED on) |
| | System interface | USB Type A plug connector |
| | ESD | Contact Discharge: 8 KV Air Discharge: 15 KV |
| | EMI - RFI | Conforms to FCC rules for a Class B computing device |
| | Microsoft® PC 99 - 2001 | Functionally compliant |
| **Mechanical** | Keycaps | Low-profile design |
| | Switch actuation | 60±10g nominal peak force with tactile feedback |
| | Switch life | 10 million keystrokes (Life tester) |
| | Switch type | Contamination-resistant switch membrane |
| | Key-leveling mechanisms | For all double-wide and greater-length keys |
| | Cable length | 6 ft. (1.8 m) |
| | Microsoft PC 99 - 2001 | Mechanically compliant |
| **Environmental** | Acoustics | 43-dBA maximum sound pressure level |
| | Operating temperature | 50° to 122° F (10° to 50° C) |
| | Non-operating temperature | -22° to 140° F (-30° to 60° C) |
| | Operating humidity | 10% to 90% (non-condensing at ambient) |
| | Non-operating humidity | 20% to 80% (non-condensing at ambient) |
| | Operating shock | 40 g, six surfaces |
| | Non-operating shock | 80 g, six surfaces |
| | Operating vibration | 2-g peak acceleration |
| | Non-operating vibration | 4-g peak acceleration |
| | Drop (out of box) | 26 in (66 cm) on carpet, six-drop sequence |
| | Drop (in box) | 30 in (76.2 cm) on concrete, 16-drop sequence |
| **Approvals** | UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC | |
| **Ergonomic compliance** | TUVGS | |
| **Kit contents** | Keyboard, QSP | |
| **Warranty Card** | Product Notice | |

Technical Specifications – Input/Output Devices

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

| **HP USB Premium Mouse** | |
|---|---|
| **Dimensions** (H x L x W) | 4.21 x 2.64 x 1.52 in (107 x 67 x 38.7 mmm) |

## Technical Specifications – Input/Output Devices

| | | |
|---|---|---|
| **Weight** | 0.19lb (90g) | |
| **Environmental** | Operating temperature | 50° to 122°F (10° to 50° C) |
| | Non-operating temperature | -22° to 140°F (-30° to 60° C) |
| | Operating humidity | 10% to 90% (non-condensing at ambient) |
| | Non-operating humidity | 20% to 80% (non-condensing at ambient) |
| | Operating shock | 50 g, 6 surfaces |
| | Non-operating shock | 80 g, 6 surfaces |
| | Operating vibration | 2 g peak acceleration |
| | Non-operating vibration | 4 g peak acceleration |
| **Electrical** | Operating voltage | 5 VDC, +/-5% |
| | Power consumption | 12mA |
| **Mechanical** | Connector | USB 2.0 |
| | Type | 3D mouse (3 keys and wheel) |
| | Resolution | 800, 1200, 1600 DPI |
| | Sensor | Pixart PAN3606DL |
| **Tracking speed** | Tracking acceleration | 8G(max), 1G=9.8m/s2 |
| | Cable length | 6 ft. (1.8 m) |
| | Color | Jack Black |
| **Regulatory approvals** | Compliant | UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC |

| **HP USB Mouse** | | |
|---|---|---|
| **Dimensions** (H x L x W) | 37mm x 115mm x ccccccccc62.9mm | |
| **Weight** | 90 +10g/- 5 g | |
| **Color** | Black | |
| **Connector** | USB | |
| **Mechanical** | Resolution | 800 DPI sensitivity |
| | Buttons | Two primary buttons and clickable scroll wheel |

## AUDIO/MULTIMEDIA

### HP EliteDesk 800 G5 Tower Business PC

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

### HP EliteDesk 800 G5 Small Form Factor Business PC

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

Technical Specifications – Audio/Multimeda

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

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

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

**Bang & Olufsen Audio**

| | |
|---|---|
| Type | Integrated |
| HD Stereo Codec | Conexant CX5001 |
| Audio I/O Ports | Side headset connector supports a CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port<br>Side headphone connector supports a headphone connections<br>Rear line out connector<br>All ports are 3.5mm and support stereo |
| Internal Speaker Amplifier | 2W per channel class D stereo amplifier for the internal speakers only |
| Multi-streaming Capable | Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speakers. |
| Sampling | Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC |
| Wavetable Syntheses | Yes - Uses OS soft wavetable |
| Analog Audio | Yes |
| # of Channels on Line-Out | Stereo (Left & Right channels) |
| Internal Speaker | Yes - Stereo |

## INTEGRATED WEBCAM AND MICROPHONE

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

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

## INTEGRATED FINGERPRINT SENSOR

**Sensor type:** Touch
**Fingerprint matching:** Performed on device
**Anti-Spoofing:** Yes
**Windows Hello Support**: Yes
**Encryption:** On sensor
**FIPS Compliant**: No

## POWER

### HP EliteDesk 800 G5 Tower Business PC

**Unit Environment and Operating Conditions**

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

### HP EliteDesk 800 G5 SFF Business PC

**Unit Environment and Operating Conditions**

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

### HP EliteDesk 800 G5 Desktop Mini Business PC (35W)

**Unit Environment and Operating Conditions**

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

### HP EliteDesk 800 G5 Desktop Mini Business PC (65W)

**Unit Environment and Operating Conditions**

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

### HP EliteDesk 800 G5 Desktop Mini Business PC (95W)

**Unit Environment and Operating Conditions**

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

Technical Specifications – Power

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

#### Unit Environment and Operating Conditions

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

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

| | DM | SFF | TWR | AiO |

Technical Specifications – Power

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

The harmonic input current requirements must be met under the following operating conditions:
Load Requirements: 50% and 100%
Input Voltage: 230Vac/50Hz.
For active power factor correction the power factor at 50% &100% loads shall be greater than 0.9 over the entire nominal input voltage range (100-127VAC and 200-240VAC).

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

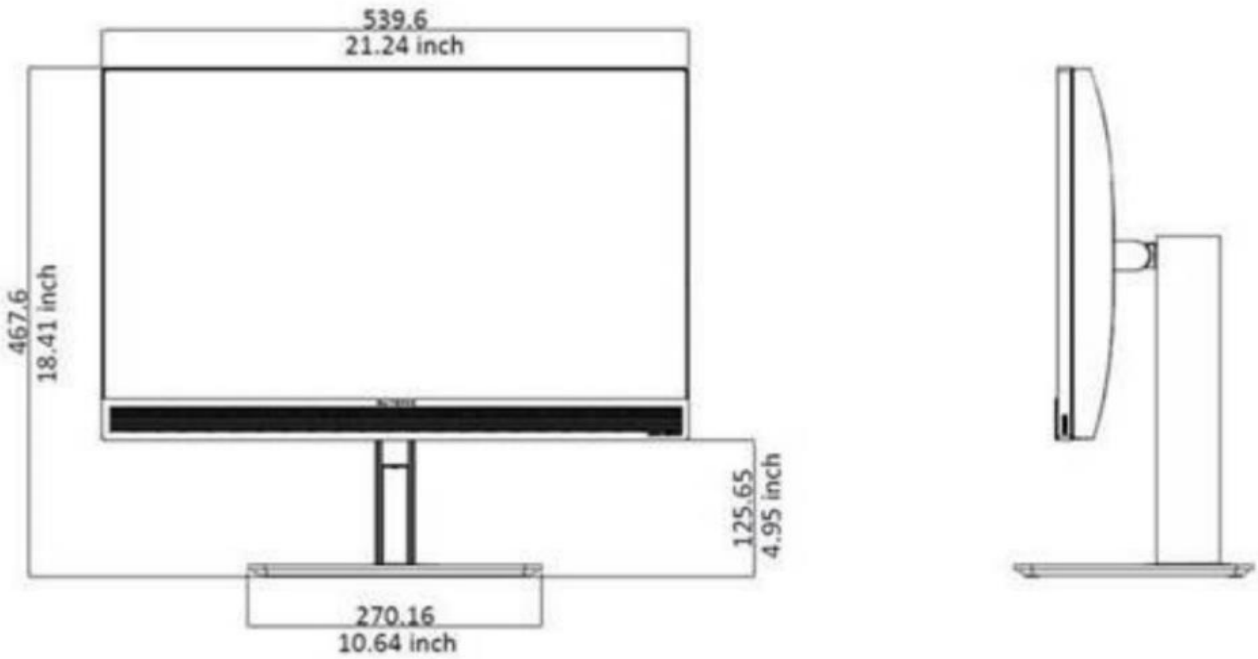
## WEIGHTS & DIMENSIONS

| | DM | SFF | TWR | AiO |
|---|---|---|---|---|
| **Chassis (W x D x H)** | 6.97 x 6.89 x 1.35 in<br>177x175x34mm | 3.94 x 13.3 x 12.13 in<br>100 x 338 x 308 mm | 6.1 x 14.6 x 14.4 in<br>154 x 370 x 365 mm | See table below. |
| **System Volume** | 63.4 cu in<br>1.05L | 63.4 cu in<br>10.4 L | 1269 cu in<br>20.8 L | See table below. |
| **System Weight** | 2.31 lb<br>1.05 kg | 13.5 lb<br>6.13 kg | 21.74 lb<br>9.86 kg | See table below. |
| **Max Supported Weight (desktop orientation)** | 0 | 77 lb<br>35 kg | 77 lb<br>35 kg | See table below. |
| **Stand Dimensions** | 160x117x18.5mm | 151.8x200x37.2mm | N/A | See table below. |
| **Packaging (W x D x H)** | 19.57 x 5.04 x 8.78 in<br>497 x128 x223mm | 15.71 x 19.65 x 9.06 in<br>399 x 499 x 230 mm | 11.77 x 18.82 x 20.35 in<br>299 x 478 x 517 mm | See table below. |
| **Shipping Weight** | 2.95 kg<br>6.49 lb | 9 kg<br>19.82 lb | 11.34 kg<br>24.98 lb | See table below. |
| **Multipack Packaging (10 units)** | 20.28x16.54x25 in<br>515x420x636 mm | | | |
| **Palletization Profile** | 18-units per layer<br>5 or 6 layers max<br>depending on details of air freight<br>90 or 108 units per pallet<br>depending on details of air freight<br>45.354 x 39.13 x 57.80 in, 1152 x 994 x 1468 mm<br>(include pallet) | 6 units per layer<br>10 layers max<br>60 units per pallet<br>1200*1000*2438 mm<br>(include the pallet) | 8 units per layer<br>4 layers ax<br>32 units per pallet<br>1200*1000*2203 mm<br>(include the pallet) | 10-units per layer<br>4-layers max<br>40-units per pallet (sea)<br>1200 x 1000 x 2470 mm |

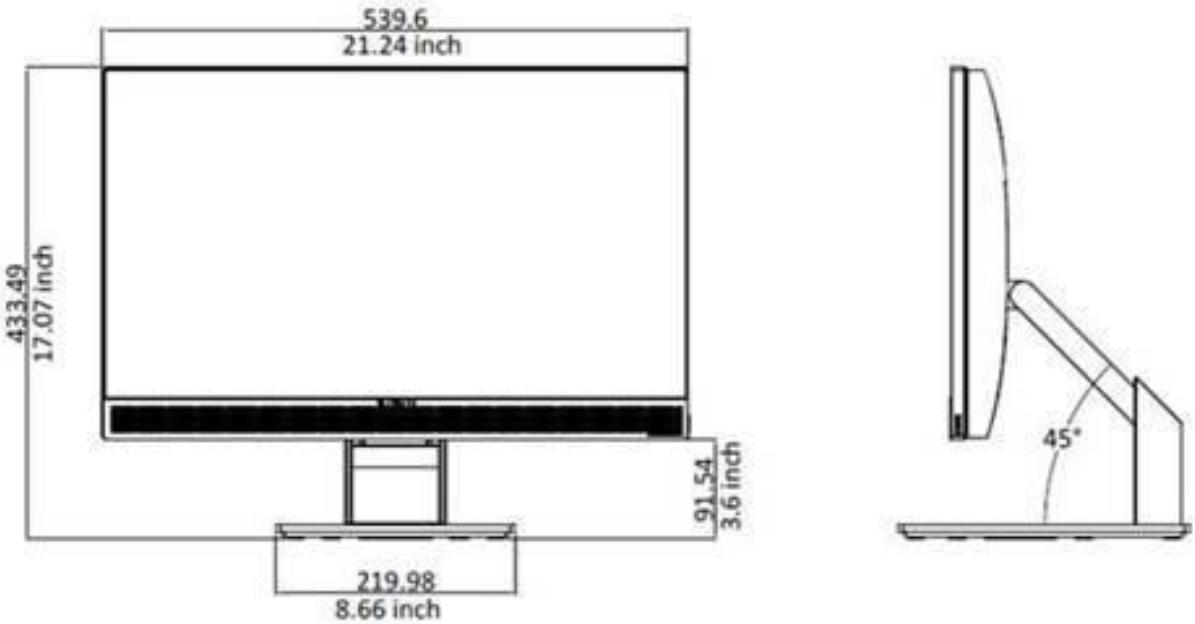
Technical Specifications – Weights and Dimensions

## STANDS AND DIMENSIONS

### HP EliteOne G5 AIO Adjustable Height Stand




### HP EliteOne G5 AIO Recline Stand



Technical Specifications – Weights and Dimensions

## ALL-IN-ONE WEIGHTS AND DIMENSIONS

### Weight with Touch Panel

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

### Weight without Touch Panel

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

### Dimensions (W x D x H)

| | | | |
|---|---|---|---|
| **Product Dimensions** | Without Stand<br>21.2 x 2.12 x 13.46 in<br>539.6 x 53.8 x 341.79 mm | Adjustable Height Stand 0 degrees<br>21.2 x 7.1 x 18.4 in<br>539.6 x 180.28 x 467.7 mm | Recline Stand<br>0 degrees<br>21.2 x 10.3 x 10.63 in<br>539.6 x 261.8 x 269.98 mm |

### Shipping Dimensions

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

## MISCELLANEOUS FEATURES

### Management Features

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

### Serviceability Features

- Dual colored power LED on front of computer to indicate either normal or fault condition
- Diagnostic LED Explanation Table:
    - Power LED will blink red 2 to 5 times, then blink white 2 or more times, then repeat (with beep tones for each blink initially):
        - 2 red + 2 white User must provide file for BIOS recovery (USB storage typically)
        - 2 red + 3 white User must enter a key sequence to proceed with recovery by policy
        - 2 red + 4 white BIOS recovery is in progress
        - 3 red + 2 white Memory could not be initialized
        - 3 red + 3 white Graphics adaptor could not be found
        - 3 red + 4 white Power supply failure / not connected
        - 3 red + 5 white Processor not installed
        - 3 red + 6 white Current processor does not support an enabled feature
        - 4 red + 2 white Processor has exceeded its temperature threshold / system thermal shutdown
        - 4 red + 3 white System internal temperature has exceeded its threshold
        - 5 red + 2 white System controller firmware is not valid
        - 5 red + 3 white System controller detected BIOS is not executing
        - 5 red + 4 white BIOS could not complete initialization / PCA failure
        - 5 red + 5 white System controller rebooted the system after a health or recovery timer triggered
- HP PC Hardware Diagnostics UEFI:
    - This utility enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support
- System/Emergency ROM
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software5 Aux Power LED on System PCA
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- DIMM Connectors for easy Upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive, CD & Diskette Removal (For MT, SFF, and DM only)
- Green Pull Tabs, and Quick Release Latches for easy Identification

Technical Specifications – Miscellaneous Features

| Additional Features | Description |
|---|---|
| **Tower Orientation** | Product can be oriented as either a desktop (horizontal) or a tower (vertical) for MT, SFF, and DM only |
| **Drive Lock** | Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided. |
| **Boot Sectors Protection** | MBR and GPT sectors of the hard drive are critical to booting the operating system. By saving the MBR or GPT data (depending on the how the OS was installed), the BIOS will be able to monitor for changes and allow the user to override them with the backup copy at boot-up. |
| **Drive Protection System** | DPS Access through F10 Setup during Boot<br>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<br>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<br>The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures |
| **SMART Technology (Self-Monitoring, Analysis and Reporting Technology)** | Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted |
| **SMART I - Drive Failure Prediction** | Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count |
| **SMART II - Off-Line Data Collection** | By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure |
| **SMART III - Off-Line Read Scanning with Defect Reallocation** | IOEDC: I/O Error Detection Circuitry |
| **SMART IV - End-to-End CRC for hard drives** | Detects errors in Read/Write buffers on HDD cache RAM |

## AFTER MARKET OPTIONS

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

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

Technical Specifications – After Market Options

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

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

Technical Specifications – After Market Options

| | | | | | |
|---|---|---|---|---|---|
| HP USB Hardened Mouse | X | X | X | X | P1N77AA |
| HP USB Mouse | X | X | X | X | QY777AA |

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

| Multimedia Devices | DM | SFF | TWR | AiO | Part Number |
|---|---|---|---|---|---|
| HP Business Headset v2 | X | X | X | X | T4E61AA |
| HP S101 Speaker Bar | X | X | X | | 5KC42AA |

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

| Stands and Accessories | DM | SFF | TWR | AiO | Part Number |
|---|---|---|---|---|---|
| HP ProOne G4 Height Adjustable Stand | | | | X | 4CX34AA |

Technical Specifications – After Market Options

| I/O Devices | DM | SFF | TWR | AiO | Part Number |
|---|---|---|---|---|---|
| HP DisplayPort Port Flex IO | X (discrete GPU skus not supported) | X | X | | 3TK72AA |
| HP Fiber NIC (1Gbps and 100Mbps) Port Flex IO | X (95W and discrete GPU skus not supported) | | | | 3TK73AA |
| HP HDMI Port Flex IO (400/600/800) | X (discrete GPU skus not supported) | X | X | | 3TK74AA |
| HP Thunderbolt 3.0 Port Flex IO | X (95W and discrete GPU skus not supported) | | | | 3TK77AA |
| HP Thunderbolt 3.0 PCIe Card | | X | X | | 4CX35AA |
| HP Type-C™ USB 3.1 Gen2 Port Flex IO | X (discrete GPU skus not supported) | X | X | | 3TK78AA |
| HP Type-C™ USB 3.1 Gen2 Port with PD Flex IO | X (65W & 95W and discrete GPU skus not supported) | | | | 3TK79AA |
| HP VGA Port Flex IO | X (discrete GPU skus not supported) | X | X | | 3TK80AA |
| HP Serial Port Flex IO | X (discrete GPU skus not supported) | | | | 3TK76AA |
| HP Internal Serial Port (600/705/800) | | X | X | | 3TK82AA |
| HP PCIe x1 Parallel Port Card | | X | X | | N1M40AA |

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

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

| Intel® Optane Memory | DM | SFF | TWR | AiO | Part Number |
|---|---|---|---|---|---|
| Intel® Optane Memory 16GB (Cache) | X | X | X | X | 1WV97AA |

## Change Log

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| Date | Version History | Action | Description of Change |
|---|---|---|---|
| July 11, 2019 | From v1 to v2 | Update | Environmental tables for DM/SFF updated |
| July 19, 2019 | From v2 to v3 | Update | DM rear call outs image updted<br>AMO section updated |
| July 31, 2019 | From v3 to v4 | Update | Weights and dimensions table updated<br>TPM description updated<br>Typo in 2TB M.2 SSD description corrected |
| August 15, 2019 | From v4 to v5 | Update | NOTE added in AMO section under I/O Devices |
| August 20, 2019 | From v5 to v6 | Update | Cable lock slot upgraded to Standard<br>Intel® Core™ i5 8500 made able to DM |
| September 17, 2019 | From v6 to v7 | Update | Note added to Graphics |
| September 20, 2019 | From v7 to v8 | Update | Intel® Wi-Fi 6 AX200 corrected |
| October 2, 2019 | From v8 to v9 | Update | RTX 2080, RTX 2070, RTX 2060 names corrected |
| October 8, 2019 | From v9 to v10 | Update | Second bullet added to At a Glance section |
| October 15, 2019 | From v10 to v11 | Update | HP ProOne 600/400 G4 VESA Plate removed from AMO |
| October 18, 2019 | From v11 to v12 | Update | AiO call outs re-arranged for back and side images, adding Standard lock slot |
| October 31, 2019 | From v12 to v13 | Update | EPEAT references updated / Power Factor table added to Power Supply / 256 GB M.2 2280 PCIe NVMe SSD added to Storage |
| November 20, 2019 | From v13 to v14 | Update | AMD Radeon 520 1GB DP/VGA added to Graphics |
| November 26, 2019 | From v14 to V15 | Update | AMD® Radeon™ RX 550X 4GB LP Display Port Card set only for SFF in AMO / and NVIDIA® Quadro P620 2GB Graphics Card set for SFF in Graphics section |
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