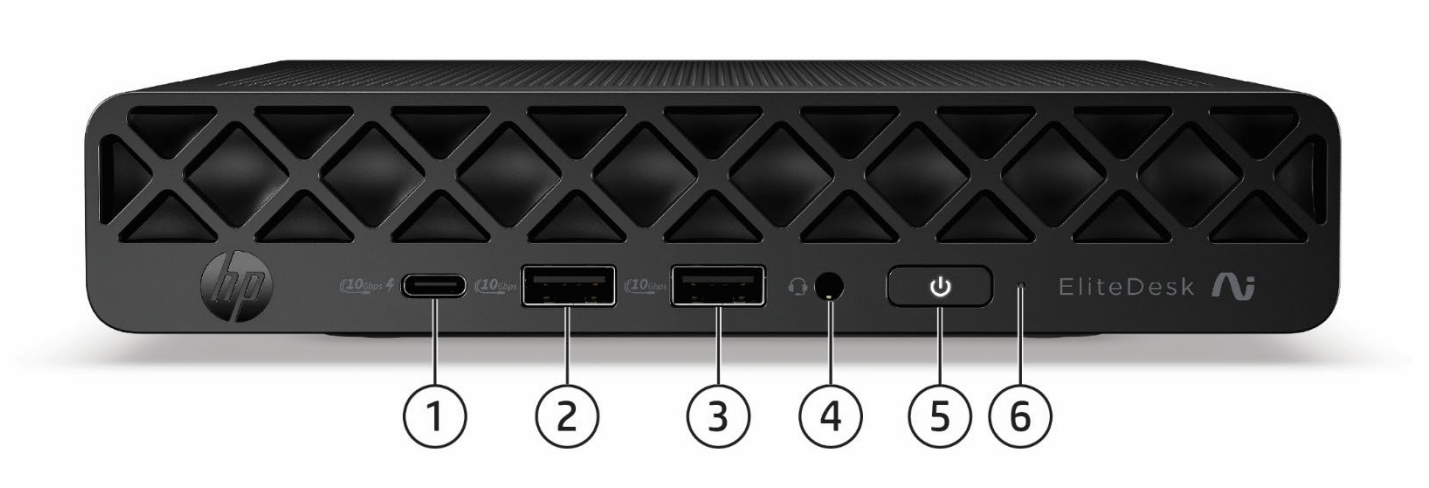
Overview

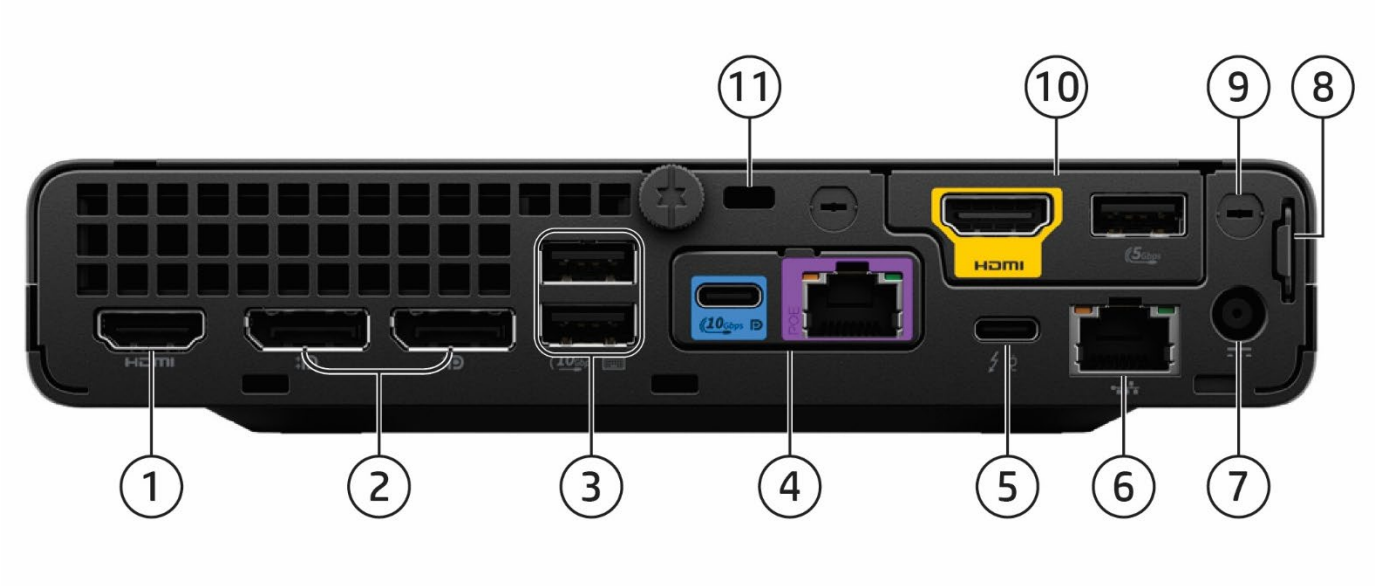
HP Poly Studio 7 Room Compute with ZR



1. Type-C® SuperSpeed USB 10G Gbps signaling rate port (charge support up to 5V/3A)
2. Type-A SuperSpeed USB 10Gbps signaling rate port
3. Type-A SuperSpeed USB 10Gbps signaling rate port
4. Combo Audio Jack with CTIA and OMTP headset support
5. Dual-state power button
6. SSD activity light

Overview

HP Poly Studio 7 Room Compute with ZR



1. HDMI port 2.1TMDS 6Gbps
2. (2) Dual-Mode DisplayPort™ 2.1 HBR3 (DP++)
3. (2) Type-A SuperSpeed USB 10Gbps signaling rate port (Supporting wake from S4 with keyboard/mouse connected and enabled in BIOS)
4. (1) Flex Port 1, choice of:
   - USB-C MFDP + POE
5. TBT4 with Alt mode and 100W Power in
6. RJ-45 network connector
7. Power connector
8. Retractable Padlock loop
9. External WLAN antenna opening[3]
10. (1) Flex Port 2[3], choice of:
    - HDMI Ingest + USB-A 5Gbps

Not shown

Slots

(3) Internal M.2 SSD storage 2280 connector[4]

Mounting

Support for

- HP Poly Studio G62 / PC Plate Mount
- Dual VESA Sleeve V4 Standalone
- Quick Release Bracket
- B200/B300/B500/B550/B560/B600 Mounting bracket
- Integrated Work Center Stand
- HP Single Monitor Arm

1. Fiber NIC 1Gbps cards would not be available in some selected Europe countries and Korea.
2. Sold separately or as an optional feature - Not sold in every region.
3. Must be configured at time of purchase.
4. 3rd SSD must be configured at the time of purchase

NOTE: SPO (Single Power On) feature only available when platform config in 35W CPU with Thunderbolt cable plugged in native

Overview

Thunderbolt port via selected HP series 7 pro monitors or HP series 5 pro monitors.

NOTE: Thunderbolt flex module does not support SPO (Single Power On) feature.

Features

PRODUCT NAME

HP Poly Studio 7 Room Compute with ZR

OPERATING SYSTEM

Preinstalled Windows 11 IoT Enterprise[1]

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

Collaboration Software
For Zoom Room on Windows Deployment consult the Zoom Room Deployment Guide Zoom Rooms deployment guide.

PROCESSORS

Intel® Core Ultra Processor
Intel® Core™ Ultra 7-366H Processor with Intel® UHD Graphics 4Xe (up to 4.8GHz with Intel® Turbo Boost[1] Max Technology, 18MB Intel® Smart Cache LLC, 16 Cores & threads, NPU 50 TOPs) 65W, Supports Intel® vPro® Technology[2]

1. 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. See http://www.intel.com/technology/turboboost for more information.
2. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro.

GRAPHICS

Integrated Intel® Graphics

Intel® UHD Graphics 4X[e1]

Adapters and Cables

DisplayPort to HDMI True 4K Adapter
10M PoE LAN cable
HP DisplayPort™ Cable (not drop in box)
HP USB-C® to HDMI Adapter (not drop in box)
HP USB-C® to DisplayPort™ Adapter G2 (not drop in box)
HP 1.8m HDMI Cable (not drop in box)

Features

STORAGE

NOTE: Starting November 1, 2023, HP PCs with Windows require Windows to be installed on SSD.
HDD can only be configured as additional data drives and not as the boot drive.
NOTE: SATA RAID and NVME RAID can be supported simultaneously when customers configure on their own.

M.2 PCIe NVMe Solid State Drives (SSD)[1]

256GB M.2 2280 PCIe NVM SSD

1. 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) of system disk is reserved for the system recovery software.
2. Storage DriveLock does not work with Self Encrypting or Optane based storage.

MEMORY

Memory Type

DDR5-5600 SO-DIMM Modules

***NOTE:** Memory modules support data transfer rates up to 6400 MT/s; system speed should follow Intel's design guideline. Actual data rate is determined by the system configuration.
***NOTE:** System architecture design is 2 DIMMS per channel and the population starts from the furthest memory slot from the processor.
***NOTE:** Symmetric configurations are required for the 2 DIMMs within the same memory channel.
***NOTE:** To achieve optimal memory speed, HP strongly recommends using identical memory modules (e.g., same capacity, same part number and from the same supplier within the same memory channel.
***NOTE:** All memory slots are customer accessible.

Memory Configuration

32GB (2 x 16GB) 5600

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

Intel® I219-LM 1 Gigabit Network Connection LOM (vPro)
Intel® I226V 2.5 Gigabit Network Connection LOM (non-vPro)

NOTE: External Antenna is supported on Desktop Mini to strengthen the quality of networking and only available at the time of purchase.

Wireless

Intel® AX211 w/ vPro Wi-Fi 6E + Bluetooth® 5.3 (2x2)

NOTE: Wi-Fi 6E requires a Wi-Fi 6E router, sold separately to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.

Features

NOTE: WiFi-6E might be restricted by local regulation and only available in countries where Wi-Fi 6E is supported. HP will enable countries in the future by upgrading BIOS in default as the technology becomes available in more regions.
NOTE: External Antenna is supported on Desktop Mini to strengthen the quality of networking and only available at the time of purchase.

Features

SECURITY

TPM 2.0 endpoint security controller (Infineon SLB9672/Nuvoton NPCT760HABYX). Common Criteria EAL4+ Certified FIPS 140-2 Level 2 Certified.
Solenoid Lock & Intrusion Sensor (optional)
Intrusion Sensor for Mini/AiO (integrated in the PCA, can be enabled/disabled through BIOS)
2026 HP Software Security Stack
HP Sure Start
Microsoft Secure Core PC
TPM 2.0
Nuvoton NPCT760HAEYX v7.2.4.1
No Vulcan TPM Support
Hood Sense
Padlock Loop
HP Business Lock
Individual USB Port Disable
Support for chassis cable lock devices
Support for chassis padlocks devices
Serial, USB enable / disable (via BIOS)
Serial, parallel, USB enable / disable (via BIOS)
Optional USB Port Disable at factory (user configurable via BIOS)
Removable media write/boot control
Power-on password (via BIOS)
Setup password (via BIOS)

Features

PORTS

I/O Ports – Internal Ports

M.2 PCIe	(1) M.2 PCIe 2280

NOTE: M.2 SSD attached to CPU is PCIe Gen 4.

Standard User Accessible Ports

Type-A SuperSpeed USB 10 Gbps signaling rate port	2(front) 2 (rear)
Type-C® SuperSpeed USB 10Gbps signaling rate port (charge supports up to 15W)	1 (front)
Thunderbolt™ 4.0 with Alt Mode DisplayPort™ and 100W Power intake	1 (rear)
Video[1]	2 DisplayPort™ 2.1 HBR3 1 HDMI 2.1 (TMDS 6Gbps) 1 Thunderbot™ 4.0 with Alt Mode DisplayPort™
Audio	1 Combo Audio Jack with CTIA and OMTP headset support (front)

1. For actual resolution supported, refer to the Graphics section of this document.

(1) Flexible Port 1, choice of <u>one</u> of the following[1]:

120-pin B2B Poly USB-C MFDP + 2.5 GbE PoE 30W	1

1. Sold separately or as an optional feature.
2. Occupies a PCIe slot on TWR/SFF.

NOTE: Integrated graphics support up to max 4 display signals out of 5 video output ports.

Support up to 6 out of 7 display outputs at a time when configured with 1 optional video port flex IO and 1 HP Video Port Extender.

Support up to 7 out of 8 display outputs at a time when configured with 1 optional video port flex IO and discrete graphic card.

(1) Flexible Port 2, choice of <u>one</u> of the following[1]:

50-pin Header MIPI CSI-2 v2.0 CPHY 2T Poly HDMI Ingest + USB--A 5 Gbps	1

1.Must be configured at time of purchase

Features

USB SPECIFICATION AND MARKETING NAME MAPPING TABLE

Marketing Name	Technical Terminology
Hi-Speed USB 480Mbps signaling rate	USB 2.0
SuperSpeed USB 5Gbps signaling rate	USB 3.2 Gen 1
SuperSpeed USB 10Gbps signaling rate	USB 3.2 Gen 2
SuperSpeed USB 20Gbps signaling rate	USB 3.2 Gen 2x2

Features

SOFTWARE COMPONENTS AND APPLICATIONS WITH 7

Software

HP Connection Optimizer
HP Desktop Support Utilities
HP Notifications
HSA Fusion for Commercial
HSA Telemetry for Commercial

Manageability Features

HP Client Catalog (download)[1]
HP Client Management Script Library (download)[2]
HP Cloud Recovery[3]
HP Connect for Microsoft Endpoint Manager[4]
HP Driver Packs (download)[5]
HP Image Assistant (download)[6]
HP Manageability Integration Kit (download)[7]

Security Features

HP Secured-Core PC Enable[8]
HP Wolf Security for Business[9] includes:
HP Sure Admin[10]
HP Sure Click[11]
HP Sure Run[12]
HP Sure Sense[13]
HP Sure Recover[14]
HP Sure Start[15]
HP Tamper Lock[16]

BIOS

Absolute Persistence Module[17]
HP BIOS Update via Network
HP BIOSphere[18]
HP Secure Erase[19]
HP DriveLock & Automatic DriveLock
TPM
UEFI Self Certification Level: 2.9

Features

1. HP Client Catalog not preinstalled, however available for download at (https://www.hp.com/us-en/solutions/client-management-solutions.html).
2. HP Client Management Script Library (https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools).
3. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, 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.
4. HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.
5. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
6. HP Image Assistant not preinstalled, however available for download at (https://ftp.ext.hp.com/pub/caps-softpaq/cmit/HPIA.html)
7. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
http://www8.hp.com/us/en/ads/clientmanagement/overview.html8. Secured-Core PC Enable requires an Intel® vPro®, AMD Ryzen™ Pro processor or Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.
9. HP Wolf Security for Business requires Windows 10 or 11 (Pro or Home) or higher, includes various HP security features and is available on HP X, Ultra, Pro, Elite, Engage and Workstation products. See product details for included security features.
10. HP Sure Admin requires HP G8 or newer platforms, Windows 10 or higher, HP BIOS, HP Manageability Kit or KMS Service from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator.
11. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
12. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
13. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.
14. HP Sure Recover is available on select HP PCs and requires Windows 10 or 11 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. HP Sure Recover Gen6 with Embedded Reimaging is an optional feature on select HP PCs which requires Windows 10 or 11 must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.
15. HP Sure Start is available on select HP PCs and requires Windows 10 and higher.
16 HP Tamper Lock can be Enabled/disabled by customers or IT administrator with administrator authority.
17. Absolute Persistence firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/.
18. HP BIOSphere features may vary depending on the platform and configuration.
19. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special.

Features

UNIT ENVIRONMENT AND OPERATING CONDITIONS

ENERGY STAR® certified models available. ENERGY STAR® certified. EPEAT registered where applicable. Based on US EPEAT registration according to EPEAT criteria and EPEAT Climate+ achieved, status and tier level varies by country. Visit http://www.epeat.net for more information.

Low halogen (chassis, all internal components and modules)[1]
TAA compliant models available

1. 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)[2] Non-operating: -22° to 149° F (-30° to 65° C)
Relative Humidity	Operating: 10% to 90% (non-condensing at ambient) Non-operating: 5% to 95% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50000ft (15240 m)

2. 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

ENVIRONMENTAL & INDUSTRY

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: ▪ IT ECO declaration ▪ US ENERGY STAR® ▪ US Federal Energy Management Program (FEMP) ▪ EPEAT Gold registered and EPEAT Climate+ attained in the United States. See http://www.epeat.net for registration status in your country.* ▪ Taiwan Green Mark ▪ Korea Eco-label ▪ Japan PC Green label ▪ Commission Regulation (EC) No 617/2013 (ErP Lot 3) **NOTE***: Based on US EPEAT registration according to EPEAT criteria and EPEAT Climate+, status and tier level varies by country. Visit http://www.epeat.net for more information.		
Sustainable Impact Specifications	▪ At least 25% ocean bound plastic-PET Bottle in the Fan and 5% ocean bound plastic-PET Bottle used in the Speaker[1] ▪ At least 5% OP-EPS in plastic parts of Enclosure ▪ At least 55% of total post-consumer recycled plastic used in the system[2] ▪ 95% recycled plastic used in parts ▪ 20% recycled metal used in parts ▪ 100% recycled Aluminum used in thermal part ▪ 100% Recycled Rare Earth Elements (REE) used in speaker ▪ Outside Box and corrugated cushions are 100% sustainably sourced and recyclable[3] ▪ Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable[4]		
System Configuration	The configuration used for the 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 (Short idle)	7.43 W	7.46 W	7.41 W
Normal Operation (Long idle)	N/A	N/A	N/A
Sleep	4.55 W	4.50 W	4.48 W
Off	0.72 W	0.71 W	0.71 W
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	25.3 BTU/hr	25.4 BTU/hr	25.3 BTU/hr

Features

Normal Operation (Long idle)	N/A	N/A	N/A
Sleep	15.5 BTU/hr	15.3 BTU/hr	15.3 BTU/hr
Off	2.5 BTU/hr	2.4 BTU/hr	2.4 BTU/hr

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.8	17
Fixed Disk – Random writes	2.8	17

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: Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.

Additional Information	▪ This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. ▪ This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. ▪ This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). ▪ This product is registered as EPEAT Gold and has attained EPEAT Climate+ in the US, status and tier level varies by country, see http://www.epeat.net. ▪ Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. ▪ This product is 92.7% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Corrugated	637g
	Internal:	PAPER/Molded pulp	73g
		PLASTIC/Polyethylene low density - LDPE	31g
	The plastic packaging material contains at least 30.0% recycled content.		
	The corrugated paper packaging materials contain at least 35.0% recycled content.		
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional		

Features

	substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see: HP RoHS position statement.
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf): ▪ Asbestos ▪ Certain Azo Colorants ▪ Certain Brominated Flame Retardants – may not be used as flame retardants in plastics ▪ Cadmium ▪ Chlorinated Hydrocarbons ▪ Chlorinated Paraffins ▪ Formaldehyde ▪ Halogenated Diphenyl Methanes ▪ Lead carbonates and sulfates ▪ Lead and Lead compounds ▪ Mercuric Oxide Batteries ▪ Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. ▪ Ozone Depleting Substances ▪ Polybrominated Biphenyls (PBBs) ▪ Polybrominated Biphenyl Ethers (PBBEs)

	▪ Polybrominated Biphenyl Oxides (PBBOs) ▪ Polychlorinated Biphenyl (PCB) ▪ Polychlorinated Terphenyls (PCT) ▪ Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. ▪ Radioactive Substances ▪ Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: ▪ Design packaging materials for ease of disassembly. ▪ Maximize the use of post-consumer recycled content materials in packaging materials. ▪ Use readily recyclable packaging materials such as paper and corrugated materials. ▪ Reduce size and weight of packages to improve transportation fuel efficiency. ▪ Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	1. Percentage of ocean-bound plastic & PCR contained in each component varies by product. 2. Recycled plastic content percentage is based on the definition set in EPEAT criteria. 3. 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. 4. Fiber cushions made from 100% recycled wood fiber and organic materials.

SERVICE AND SUPPORT

On-site Warranty[1]: One-year (1-0-0) limited warranty delivers: http://www.hp.com/go/cpc.[3]

Features

1. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
2. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
3. 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 http://www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

PROCESSORS

Intel Core Ultra Series 3 Processors

All HP Poly Studio 7 Room Compute with ZR 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 Poly Studio 7 Room Compute with ZR.

Intel® Management Engine (ME) v21 – 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 includes the following advanced management functions:

- Support for configuration of Intel ME v21 capabilities
- No reset after provisioning
- Support for Intel Enterprise Digital Fence
- The Platform Discovery Utility can now discover these additional Intel products:
    - Public Key Infrastructure
- Profile Editor and Profile Editor Plugin Interface
- Required Permissions for Solutions Framework

GRAPHICS

Intel® HD Graphics (integrated)

Up to four simultaneous displays, 4K60Hz display concurrent with:

- Single external display up to 8K60Hz, supported by joining two pipes over single port.
- Up to 4x4K60Hz External display (Out of 4 Native video ports + 1 Flex IO option)

VGA Controller	Integrated
DisplayPort™	Supports up to UHBR20
	Support MST (Multi-Stream Transport), Maximum of 3 displays with Daisy-Chain monitor
	Support VESA DSC 1.2b
	Support HDCP
	Support up to 36 BPP (Bit Pre Pixel)
HDMI	Supports HDMI 2.1 features
	Supports up to 6Gbps TMDS link rates on 3 lanes
	Supports up to 12Gbps FRL link rates on 4 lanes Supports HDCP 2.3 Supports audio over HDMI
	Support up to 36 BBP (Bit Pre Pixel)
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.
Graphics/Video API Support	HEVC/VP9 8k@60 12-bit 420/422/444 Decode
	AV1 8K@60 10-bit 420 Decode
	AVC 4k@60 8bit 430 Decode
	HDR
	Direct3D 12.2/Direct3D 12 .1/Direct3D 12/Direct3D 11.4
	Direct3D 11.3/ Direct3D 11.2/Direct/Direct3D11.1/Direct3D 10,1/ Direct3D 10
	Direct3D 9.0L/Direct3D 9.0C/ Direct2D
	OpenGL* 4.6
	OpenCL* 3.0/OpenCL*2.1/OpenCL2.0/Open CL 1.2
	Direct X* 12.2
Max resolution (Native DP)	DP2.1 (HBR3) 7680 x 4320 @60hz (with DSC)
Max resolution (Native HDMI)	4096 x 2160 @60Hz HMDI 2.1 (TMDS 6Gbps) 4K @60HZ 24bpp
Max resolution (Native Thunderbolt 4)	DP ALT Mode DP2.1 UHBR20 7680 x 4320 @60Hz

STORAGE

256GB M.2 2280 PCIe NVMe SSD

Capacity	256GB
Interface	PCIE Gen4x4
Minimum Sequential Read	3100 MB/s ±20%
Minimum Sequential Write	1200 MB/s ±20%
Logical Blocks	500,118,192
Features	TRIM; L1.2

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

NETWORKING AND COMMUNICATIONS

Intel® I219-LM 1 Gigabit Network Connection LOM (vPro)	
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling (Hash Mode Only) Jumbo Frame 9K
Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel® I226-V 2.5 Gigabit Network Connection LOM (non-vPro)	
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	1. 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 2. 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 3. 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) 4. 2.5 Gbit/s operation (2.5GBASE-T; IEEE 802.3bz Clause 126) 5. Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10& 100 Mbit/s
IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet) IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BAE-T IEEE 802.3bz 2.5GBASE-T
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling (Hash Mode Only) Jumbo Frame 9K
Power consumption	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000Mbp Full Run: 1000mW 2500Mbp Full Run: 4500mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Security & Manageability	Intel® non-vPro™ support with appropriate Intel® chipset components

Intel® AX211 Wi-Fi 6E Bluetooth® 5.3 WW WLAN[1 2]	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n/ax ▪ 2.402 – 2.482 GHz 802.11a/n/ac/ax ▪ 4.9 – 4.95 GHz (Japan) ▪ 5.15 – 5.25 GHz ▪ 5.25 – 5.35 GHz ▪ 5.47 – 5.725 GHz ▪ 5.825 – 5.850 GHz ▪ 5.955 – 6.415 GHz ▪ 6.435 – 6.515 GHz ▪ 6.535 – 6.875 GHz ▪ 6.895 – 7.115 GHz
Data Rates	▪ 802.11b: 1, 2, 5.5, 11 Mbps ▪ 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11n: max 300Mbps ▪ 802.11ac: 1733Mbps ▪ 802.11ax: max 2.4Gbps
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM , 1024QAM
Security	▪ WPA3 personal and enterprise including WPA2 transition mode. ▪ 802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA') ▪ 128-bit AES-CCMP, 256-bit AES-GCMP

Technical Specifications – Networking and Communications

Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power	▪ 802.11b: +17dBm minimum ▪ 802.11g: +16dBm minimum ▪ 802.11a: +17dBm minimum ▪ 802.11n HT20(2.4GHz): +14dBm minimum ▪ 802.11n HT40(2.4GHz): +13dBm minimum ▪ 802.11n HT20(5GHz): +14dBm minimum ▪ 802.11n HT40(5GHz): +13dBm minimum ▪ 802.11ac VHT80(5GHz): +10dBm minimum ▪ 802.11ac VHT160(5GHz): +10dBm minimum ▪ 802.11ax HE40(2.4GHz): +12dBm minimum ▪ 802.11ax HE80(5GHz): +10dBm minimum ▪ 802.11ax HE160(5GHz): +10dBm minimum
Power Consumption	▪ Transmit mode 2.0 W ▪ Receive mode 1.6 W ▪ Idle mode (PSP) 180 mW (WLAN Associated) ▪ Idle mode 50 mW (WLAN unassociated) ▪ Connected Standby 10mW ▪ Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity [3]	▪802.11b, 1Mbps: -93.5dBm maximum ▪802.11b, 11Mbps: -84dBm maximum ▪ 802.11a/g, 6Mbps: -86dBm maximum ▪ 802.11a/g, 54Mbps: -72dBm maximum ▪ 802.11n, MCS07: -67dBm maximum ▪ 802.11n, MCS15: -64dBm maximum ▪ 802.11ac, MCS0(VHT80): -84dBm maximum ▪ 802.11ac, MCS9(VHT80): -59dBm maximum ▪ 802.11ac, MCS9(VHT160): -58.5dBm maximum ▪802.11ax, MCS11(HE40): -57dBm maximum ▪802.11ax, MCS11(HE80): -54dBm maximum ▪802.11ax, MCS11(HE160): -53.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
Form Factor	PCI-Express M.2
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm

Technical Specifications – Networking and Communications

Weight	1. Type 2230: 2.8g 2. Type 1216: 1.3g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Technology	
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps BLE: 1 Mbps data rate; throughput up to 0.2 Mbps Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.

Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth Software Supported Link Topology	1. Microsoft Windows Bluetooth Software
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Certifications	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407 ETSI 300 328, ETSI 301 893, ETSI 303 687
Bluetooth Profiles Supported	Bluetooth 4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan Bluetooth 4.2 ESR08 Compliance LE Secure Connection- Basic/Full

Technical Specifications – Networking and Communications

	LE Privacy 1.2 -Link Layer Privacy LE Privacy 1.2 -Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) Bluetooth 5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range Bluetooth 5.3 Host to Controller Encryption Key Control Enhancements Compliance to the latest Errata Section 12.3 of Bluetooth 5.3 specification Periodic Advertisement interval

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
2. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

AUDIO/MULTIMEDIA

Type	Integrated
HD Stereo Codec	Realtek ALC3252
Audio I/O Ports	combo audio jack with CTIA and OMTP headset support
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 192 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 – Power

POWER

Unit Environment and Operating Conditions

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

External Power Supplies[1]	90W EPS, active PFC, 88% average efficiency at 115V & 89% at 230Vac 100W EPS Wall mount Type-C[2], active PFC, 88% average efficiency at 115V & 89% at 230Vac 120W EPS, active PFC, 88% average efficiency at 115V & 89% at 230Vac 150W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac 180W EPS, active PFC, 88% average efficiency at 115V & 89% at 230Vac
Operating Voltage Range	90Vac~264Vac
Rated Voltage Range	100Vac~240Vac
Rated Line Frequency	50HZ~60HZ
Operating Line Frequency	47HZ~63HZ
Rated Input Current with Energy Efficient* Power Supply	90W≦1.7A 100W≦1.6A 120W≦1.7A 150W≦2.5A 180W≦2.5A
DC Output	+19.5V
Current Leakage (NFPA 99: 2012)	Less than 40 microamps of leakage current at 250 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 40 microamps of leakage current at 250 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 cord length	6.0 ft. (1.83 m)[2]

Technical Specifications – Power

External Power Adapter	External power
Dimensions	90W: 127 x 51 x 30 mm 100W: 32x56.5x60 mm 120W: 138 x 68.5 x 25.4 mm 150W: 148 x 75.5 x 25.4 mm 180W: 165.5 x 75.9 x 25.4 mm
Total Cord Length	1 m, 6.0 ft. (1.83 m)[3]

1. External power supplies, power cords, cables and peripherals are not low halogen. Service parts obtained after purchase may not be low halogen.
2 Power cord length will be varied from different type of cords start from 1.8m.
3. The length of India power cord is 2.0m.

The power supply shall comply with harmonic input current requirements as detailed in EN61000-3-2 and JEIDA MITI standards. 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%	86%	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	115Vac/60HZ
100% of Rated Load	70%	82%	85%	87%	89%	115Vac/60HZ
	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.9	230Vac/50HZ

Technical Specifications – Weights and Dimensions

WEIGHTS & DIMENSIONS

Chassis (WxDxH)	6.97 x 7.13 x 1.35 in (177 x 181 x 34 mm)
System Volume	66.86 cu in (1.09 L)
Standard System Weight	1075g
Stand Dimensions (WxDxH)	117 x 160 x 20 mm
Packaging (WxDxH)	Packaging: 19.4 x 10.0 x 4.5 in (492 x 254 x 114 mm)
Shipping Weight	3.18 kg[2] 6.95 lb[2]
Palletization Profile (Molded Pulp)	Palletization: 8-units per layer 20-layers max (18-layers typical) 160 unit per pallet max (144 units typical) 40.0 x 38.7 x 95.5 in max (40.0 x 38.7 x 86.5 -in typical) 1016 x 984 x 2425 mm max (1016 x 984 x 2197 mm typical)

1. Only available on selected US, Brazil, India & Japan SKU
2. Actual weight depends on configuration.

NOTE: Packaging material used will vary by country.

NOTE: The palletization is for single pack.

NOTE: Palletization options depend on the factories.

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
- 1 Aux Power LED on System PCA
- Over-Temp Warning on Screen (Requires IM Agents)
- DIMM Connectors for easy Upgrade
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power button LED – To indicate Normal Operations and Fault Conditions

Technical Specifications – Miscellaneous features

- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board
- Tool-less Hard Drive, CD & Diskette Removal (For MT, SFF, and DM only)
- Blue 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 Tower, SFF, and Mini only. SFF/Mini requires optional stand.
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 (for SATA hard drive only) A diagnostic hard drive self- test. it scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted
SMART I - Drive Failure Prediction	Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count
SMART II - Off-Line Data Collection	By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure
SMART III – Off-Line Read Scanning with Defect Reallocation	IOEDC: I/O Error Detection Circuitry
SMART IV – End-to-End CRC for hard drives	Detects errors in Read/Write buffers on HDD cache RAM

AFTER MARKET OPTIONS

Graphics Solutions	Part Number
HP HDMI Standard Cable Kit	T6F94AA
HP HDMI to VGA Adapter	H4F02AA
HP DisplayPort to VGA Adapter	F7W97AA
HP DisplayPort to DVI-D Adapter	F7W96AA
HP DisplayPort to HDMI 1.4 Adapter	F3W43AA
HP DisplayPort to HDMI Adapter	2JA63AA
HP USB-C to DisplayPort Adapter G2	8Y8Y1AA
HP USB-C to HDMI 2.0 Adapter	1WC36AA
HP USB-C to USB 3.0 Adapter	N2Z63AA

Desktop Mini Accessories	Part Number
HP Desktop Mini 90W Power Supply Kit	L4R65AA
HP Desktop Mini v4+ VESA Sleeve (95W and discrete GPU skus not supported)	99T54AA
HP Desktop Mini v4+ VESA Sleeve with Power Supply Holder (Discrete GPU skus not supported)	99T55AA
HP 150W Elite Mini EPS Holder*	657R3AA
HP B200 PC Mounting Bracket	762T5AA
HP B250 PC Mounting Bracket	8RA46AA
HP B300 PC Mounting Bracket	2DW53AA
HP B300 PC Mounting Bracket with Power Supply Holder (Discrete GPU skus and 150W/180W adapter not supported)	7DB37AA
HP B550 PC Mounting Bracket	16U00AA
HP B560 PC Mounting Bracket	763U8AA
HP Z Display B600 PC Mounting Bracket	529H3AA
HP Quick Release Bracket 2	6KD15AA
HP Desktop Mini Vertical Chassis Stand	G1K23AA
HP Desktop Mini v4 Port Cover	B6BS6AA

NOTE*: Compatible with HP B300 PC Mounting Bracket (2DW53AA) and HP Desktop Mini v4+ VESA Sleeve (99T54AA)

Data Storage Drives	Part Number
HP 256GB 2280 PCIe NVMe Value Solid State Drive	A92L2AA
HP 256GB 2280 PCIe NVMe Value China Solid State Drive	A92L3AA

Input Devices	Part Number
HP Business Slim v2 Smart Card USB Keyboard	A71J9AA
HP 128 Laser Wired Mouse	265D9AA
HP 405 Multi-Device Wired Backlit Keyboard	7N7C1AA
HP 475 Dual-Mode Keyboard	7N7B9UT
HP 515 Ultra-Fast Rechargeable Wireless Mouse	9C2F7AA
HP 685 Comfort Dual-Mode Keyboard	8T6L9UT
HP 685 Comfort Dual-Mode Mouse	8T6M0UT
HP 685 Comfort Dual-Mode Keyboard and Mouse Combo	8T6L7UT
HP 725 Multi-Device Rechargeable Wireless Keyboard	9T5B2AA
HP 725 Multi-Device Rechargeable Wireless Keyboard and Mouse Combo``	9T5B0UT

System Memory	Part Number
HP 8GB DDR5-5600 SODIMM	B8CA1AA
HP 16GB DDR5-5600 SODIMM	B8CA2AA
HP 32GB DDR5-5600 SODIMM	B8CA3AA

Multimedia Devices	Part Number
HP S101 Speaker Bar	5UU40AA
HP Z G3 Conferencing Speaker Bar wStand	647Y2AA

Security Devices	Part Number
HP Keyed Cable Lock 10mm	T1A62AA
HP Master Keyed Cable Lock 10mm	T1A63AA

I/O Devices	Part Number
HP VGA Flex IO v3	B6BT0AA
HP DisplayPort 2.1 Flex IO v3	B6BS8AA
HP HDMI 2.1 Flex IO v3	B6BS9AA
HP Thunderbolt 4™ Flex IO v3	B6BT1AA
HP Dual Type-C 3.2 Gen2 Flex IO v3	B6BT5AA
HP USB 3.2 Gen1 x2 Module Flex IO v2 (Not Available on discrete GPU SKUs)	13L58AA
HP USB to Serial Port Adapter	J7B60AA

HP Serial Port Flex IO v2	5B895AA
HP Z2 2.5GbE LAN Flex Port	B96W7AA
HP Flex 1GbE Fiber LC Single Port	20J15AA
HP USB External DVD RW Drive	F2B56AA

NOTE: For more detail on HP I/O Devices please refer to the HP FLEX IO v3 Option Cards QuickSpecs:
https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c06712909

Change Log

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Date	Version History	Action	Description of Change
July 8, 2026	From v1 to v2	Updated	Environmental & Industry
	From v2 to v3		
	From v3 to v4		
	From v4 to v5		
	From v5 to v6		
	From v6 to v7		
	From v7 to v8		
	From v8 to v9		
	From v9 to v10		
	From v10 to v11		
	From v11 to v12		
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	From v24 to v25		
	From v25 to v26		
	From v26 to v27		