VERLIN
SOLUÇÕES EM TI

Bento Gonçalves, quarta-feira, 15 de setembro de 2021

PROPOSTA FINANCEIRA

AO
MUNICÍPIO DE COTIPORÃ
PREGÃO ELETRÔNICO Nº 00010/2021
A/C PREGOEIRO OFICIAL

Lote	Item	Qtd	UND	Marca	Modelo	Descrição do Produto	Valor Unitário	Valor Total
1	1	1	*UND*	HP	Prodesk 400 G7 SFF + Monitor V24b	Descrição do Produto Conforme Anexo de Referência deste Edital ou Anexo de Referencia contido nesta proposta.	**R$ 8.568,00**	**R$ 8.568,00**

Preços cotados para entrega e instalação conforme edital;

1. **Prazo de entrega: Conforme Edital;**
2. **Período de Garantia e Assistência Técnica Conforme Edital;**
    a. **A Verlin dispõe de Serviço 0800 para chamadas gratuitas, para fins de esclarecimentos técnicos e abertura de atendimentos e chamados através do número 0800 887 8800.**
3. **Prazo de pagamento conforme termos do edital;**
4. **Cumpre-nos informar-lhes ainda que examinamos os documentos da licitação, inteirando-nos dos mesmos para elaboração da presente proposta. E em consonância aos referidos documentos, declaramos:**
    a. **Que estamos cientes e concordamos com os Termos do Edital em epígrafe e das cláusulas da minuta do contrato em anexo;**
    b. **Que o prazo de validade da presente proposta, contados a partir da data de abertura do conjunto proposta, é de 60 (sessenta) dias ou conforme edital;**
    c. **Que nos preços apresentados já estão contemplados todos os encargos, principalmente os impostos e ou descontos ou vantagens, e frete para a entrega dos materiais.**
5. **Obs.: O preenchimento da presente proposta acarretará na íntegra conformidade de nossa empresa com todas as características do objeto e exigências constantes no edital.**
6. **Contas Bancárias**
    a. **Banco do Brasil, Agência: 2969-6, Conta Corrente: 19919-2;**
    b. **Caixa Econômica Federal, Agência: 3060, Conta Corrente: 933-4 OP: 003;**
    c. **Banrisul, Agência: 0128, Conta Corrente: 06.040764.0-6;**
7. **O responsável pela assinatura do contrato é o representante legal Willian Verlin de Oliveira, CPF: 754.636.012-91, RG: 001244674 SSP/MS, residente na Rua Antônio Michelon, 722 Apto 2, bairro Santa Rita na cidade de Bento Gonçalves/RS.**

WILLIAN VERLIN DE OLIVEIRA:75463601291

Assinado de forma digital por WILLIAN VERLIN DE OLIVEIRA:75463601291
Dados: 2021.09.15 10:19:47 -03'00'

Verlin Soluções em TI

DESCRIÇÃO GERAL DOS ITENS OFERTADOS

ITEM 1

Desktop HP Prodesk 400 G7 SFF
Memória RAM 16GB DDR4-2666 UDIMM
Unidade de armazenamento HP SSD S600 2,5 240GB- 4FZ33AA#ABC
HP NVIDIA Quadro P400 2GB- 1ME43AA
Monitor HP V24b- 2XM34AA#AC4

Links de comprovações Dekstop:
Datasheet: https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4aa7-7740enuc
QuickSpec: https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c06640086
Manual de serviços: https://support.hp.com/gb-en/product/hp-prodesk-400-g7-small-form-factor-pc/35719304/manuals
http://h10032.www1.hp.com/ctg/Manual/c06713676.pdf
HCL MICROSOFT: https://partner.microsoft.com/en-us/dashboard/hardware/search/cpl
HCL UBUNTU: https://certification.ubuntu.com/hardware/202006-27952
ENERGY STAR: https://www.energystar.gov/productfinder/product/certified-computers/details/2362358
EPEAT: https://epeat.net/product-details/f345d2c683034c9bb93173ffd75a4c19?backUrl=%252Fcomputers-and-displays-search-result%252Fpage-1%252Fsize-25%253FcountryId%253D103%2526productName%253D400%252520G7%252520
ROHS:
https://h20195.www2.hp.com/v2/library.aspx?doctype=98&footer=98&filter_doctype=no&filter_country=no&cc=us&lc=en&filter_oid=no&filter_prodtype=rw&prodtype=ij&showproductcompatibility=yes&showregion=yes&showreglangcol=yes&showdescription=yes3doctype-98&sortorder-popular&teasers-off&isRetired-false&isRHParentNode-false&titleCheck-false#doctype-98&product_type-pc&sortorder-popular&teasers-off&searchword-HP%20ProDesk%20400%20G7%20SFF&isRetired-false&isRHParentNode-false&titleCheck-true
https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c07584367
80plus:
https://clearesult5.sharepoint.com/sites/PLS/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FPLS%2FShared%20Documents%2FHP%2C%20INC%2E%5FD19%2D210P1A%5F210W%5FSOCE%205859%5FReport%2Epdf&parent=%2Fsites%2FPLS%2FShared%20Documents&p=true&originalPath=aHR0cHM6Ly9jbGVhcmVzdWx0NS5zaGFyZXBvaW50LmNvbS86Yjovcy9QTFMvRWFlSmtDTVl3akZKczZuTC10VVA4YlVCX0htWGF0aVNpUHF5bVdiU0pvOXhlUT9ydGltZT16M3ZyVTR0MzJVZw
Membership List UEFI: https://uefi.org/members
Members List DMTF: https://www.dmtf.org/about/list

Links de comprovações Monitor:
Especificações: https://www.hp.com/br-pt/shop/monitor-hp-v24b-23-6-2xm34aa.html
QuickSpec: https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c06018653

DESKTOP CORPORATIVO COM AS SEGUINTES CARACTERÍSTICAS MÍNIMAS; Os equipamentos devem pertencer à linha corporativa, serem novos, sem uso e estar em linha de produção, não sendo aceitos equipamentos destinados ao uso doméstico ou descontinuados..Processador Deverá possuir frequência base de 2.9 Ghz, com características e desempenho equivalente ou superior ao índice de 13.000 pontos registrado PassMark - CPU Benchmarks disponível no site http://www.cpubenchmark.net/cpu_list.php. O processador deverá ser da geração mais recente disponibilizada pelo fabricante do computador. Memória Deverá possuir 16(dezesseis)GB de memória instalada (1x16GB) com tecnologia DDR4, operando a 2.666 MHz. Suporte a tecnologia Dual Channel, devendo disponibilizar 1 (um) slot livre para expansão futura e slots suportando upgrade para 64GB.Unidade de armazenamento Deverá possuir 01(uma) unidade do tipo SSD, com 240GB, do mesmo fabricante do computador ou homologada. Apresenta o part number na proposta.Placa Principal Deverá ser de fabricação própria e exclusiva para o modelo ofertado, não sendo produzida em regime de OEM ou personalizada. Possuir interface de rede gigabit, 04 (quatro) slot PCIe e 08 portas USB, sendo 04 (quatro) no padrão USB 3.1 Tipo A nativas, não sendo utilizado hubs, placas ou adaptadores. Possui 03 (três) interfaces SATA. Possuir 01(uma) porta de vídeo padrão digital e 01(uma) no padrão analógico, suportando no mínimo 02(dois) monitores simultaneamente. Possuir chip de segurança TPM versão 2.0 integrado na placa mãe para criptografia.Possuir chipset pertencente à geração mais recente disponibilizada pelo fabricante do computador, sendo compatível com o processador ofertado. BIOS Deverá ser desenvolvida pelo mesmo fabricante do computador com direitos de copyright em português, em conformidade com as especificações UEFI 2.1, comprovada através da nomeação do fabricante no site http://www.uefi.org/members, na categoria promoters. As atualizações, quando necessárias, devem ser disponibilizadas no site do fabricante do computador. Gabinete Deverá ser do tipo SFF com volume não superior a 11.000 cm3.Deve possuir nativamente tecnologia tool-less para abertura do equipamento, remoção de memórias e unidade de armazenamento (HDs, SSDs ou Drivecages). Suportar pelo menos 1 (um) disco rígido de 2,5 ou 3,5;Conectores de áudio frontais para headphone e microfone sendo aceita interface tipo combo e alto-falante de 2W integrado internamente ao gabinete. Fonte de Alimentação Possuir tensão de entrada automática, potência de 180W e eficiência energética de 92%, comprovada pela certificação 80plus categoria Platinum. Periféricos Teclado USB padrão ABNT-2, vetado o uso de adaptadores. Com ajuste de inclinação e cabo para conexão ao microcomputador de 1,5 m. A impressão sobre as teclas deverá ser do tipo permanente, não podendo apresentar desgaste por abrasão ou uso prolongado. Mouse laser USB, dotado de 3 botões (sendo um botão para rolagem de telas – "scroll") e resolução de 1000 dpi. Os periféricos deverão ser da mesma marca e cor do equipamento ofertado, vedado em regime de OEM. Placa de Vídeo Deverá possuir placa de vídeo com no mínimo 256 Cores, performance em FP32 de no mínimo 0,64 TFLOPS, memória de GPU de no mínimo 2GB GDDR5, memória de Interface mínima de 64-bit, resolução mínima (4096 x 2160) e suportar 3 displays. Possuir no mínimo saídas HDMI ou DisplayPort. Deverá ser do próprio fabricante do computador ou homologada pelo mesmo, devendo ser apresentado o part number destes componentes na proposta. Monitor Tipo LED de no mínimo 23.4", e com ângulos de visualização amplos de 178 graus. resolução Full HD de 1920 x 1080.Taxa de contraste dinâmico de 10M:1.Ajuste de altura, inclinação, rotação e orientação do monitor. Portas HDMI, DP e VGA integradas ao monitor. Padrão VESA de 100 mm e alimentação: entrada 220V OU bivolt. O monitor deverá ser da mesma marca e fabricante do computador ofertado.Sistemas Deve acompanhar licença instalada para Microsoft Windows 10 Professional 64 bits, com ativação através da BIOS do computador.Garantia Os equipamentos devem possuir garantia padrão do fabricante do computador, por um período de 12(doze) meses, com exceção de componentes de upgrade, com mão-de-obra de assistência técnica e serviço de suporte no local (ON SITE) para reposição e reparo de peças danificadas por problemas de fabricação. O fabricante, bem como o fornecedor, deve possuir central de atendimento (0800) para abertura dos chamados de garantia capazes de executar tarefas de troubleshooting e resolver problemas durante o próprio atendimento, comprometendo-se a manter registros dos mesmos constando a descrição do problema. Não serão aceitas adaptações no equipamento, adição ou subtração de componentes por empresas não autorizadas, esta exigência visa a procedência e garantia total do equipamento pelo fabricante. Apresentar comprovação do fabricante juntamente com a proposta..O Fabricante devera possuir site na internet para downloads de drivers e dos softwares originais instalados na fábrica, bem como para verificação status de garantia vigente. Comprovações Técnicas O fabricante deverá estar de acordo com as diretivas RoHS. O fabricante do equipamento deverá ser membro do consorcio DMTF (Desktop Management Task Force) que especifica o padrão DMI de gerenciamento, na categoria BOARD ou CIM Participatory. O modelo de computador ofertado deverá possuir certificação EPEAT SILVER 2019 e ENERGY STAR.O modelo de computador ofertado deverá ser compatível com sistemas operacionais Windows e Ubuntu, comprovado através da certificação HCL dos respectivos desenvolvedores. Juntamente com a proposta deverá constar a marca, modelo e o processador para os equipamentos ofertados , devendo ainda ser apresentado comprovações oficiais do fabricante destacando modelo ofertado, componentes e garantia. No caso de certificações extraídas da internet, apresentar página impressa onde consta tal informação, especificando o endereço eletrônico da fonte extraída.

**HP Brasil Indústria e Comércio de
Equipamentos Eletrônicos Ltda.**
*Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil*

declaração

Barueri, 30 de Agosto de 2021

Ao/À
MUNICÍPIO DE COTIPORÃ

Assunto:
PREGÃO /RFP Nº 0010/2021

BDI 17416

A **HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICOS LTDA**. (**HP**), em atendimento ao quanto solicitado pelo Parceiro HP **Verlin & Piontkoski Ltda**, declara que:

A empresa **VERLIN TECNOLOGIA DA INFORMAÇÃO LTDA**, inscrita no CNPJ **10.894.828/0001-94** sediada na RUA Rua Lino Colussi, 123, Vinosul, Bento Gonçalves, Rio Grande do Sul - CEP 95701-504, é um **PARCEIRO AUTORIZADO HP PARA COMPRA DE PRODUTOS HP DE DISTRIBUIDORES AUTORIZADOS HP**, estando apto a comercializar Produtos HP.

Declaramos ainda que, os produtos **2V8L3LA#AK4**- HP ProDesk 400 G7 SFF, **2V8L5LA#AK4**- HP ProDesk 400 G7 SFF, **2V8L6LA#AK4**- HP ProDesk 400 G7 SFF, **39M30LA#AK4**- HP ProDesk 400 G7 SFF, **39M30LA#AK4-**HP ProDesk 400 G7 SFF **39M32LA#AK4-**HP ProDesk 400 G7 SFF**, 39M42LA#AK4-**HP ProDesk 400 G7 SFF **407D9LA#AK4-**HP ProDesk 400 G7 SFF**, 407F0LA#AK4-**HP ProDesk 400 G7 SFF **39Q47LA#AK4-**HP EliteDesk 800 G6 SFF**, 39Q55LA#AK4-**HP EliteDesk 800 G6 SFF **39Q65LA#AK4-**HP EliteDesk 800 G6 SFF, **1X8N7LA#AK4-**HP ProDesk 600 G6 SFF,**420Z9LA#AK4**-HP ProDesk 600 G6 SFF, **421A0LA#AK4**-HP ProDesk 600 G6 SFF, **421K5LA#AK4**-HP ProDesk 600 G6 SFF, vendidos pela **HP** a seus **Distribuidores Autorizados** possuem:

- Os equipamentos pertencem à linha corporativa, são novos, sem uso e estão em linha de fabricação
- A Placa mãe é de fabricação própria e exclusiva para os modelos ofertados”
- BIOS em português, desenvolvida pela HP, em conformidade com a normativa NIST 800-147
- Permite a inserção de código de identificação do equipamento dentro do próprio BIOS (número do patrimônio e número de série).
- A BIOS está em conformidade com a normativa NIST 800-147 ou ISO/IEC 19678, baseado nos padrões de mercado de maneira a usar métodos de criptografia robusta para verificar a integridade do BIOS antes de passar o controle de execução a mesma;
- Permite salvar as configurações da BIOS em um arquivo e carregá-las em outros equipamentos do mesmo modelo, estando este com senha configurada na BIOS ou não, facilitando assim a aplicação automatizada de configurações e políticas de segurança;
- Software embarcado no BIOS com Funções de diagnóstico de problemas, e gerenciamento permitindo o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico é capaz de ser executado (inicializado) a partir da UEFI (Unified Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12). O software de diagnóstico é capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento; processador; memória RAM; firmware do equipamento; capacidade do disco rígido.
- A solução é capaz de apagar os dados contidos nas unidades de armazenamento como HDD, SSD e SSHD em conformidade com a NIST SP800-88, acessível pela BIOS

LMVB

- Possuem sistema operacional Windows 10 Professional instalado em fábrica com ativação pela BIOS;
- Possuem botão de liga/desliga e luzes de indicação de computador ligado (Power-on) e de acesso ao HD;
- Equipamentos possuem certificação PPB
- Garantia padrão do próprio fabricante conforme solicitado no edital de 12 meses on-site pelo fabricante, com atendimento 8 (oito) horas por dia, 5 (cinco) dias por semana.
- A Verlin Tecnologia da Informação Ltda está autorizada a fazer upgrades de unidades de armazenamento, memória e processamento, mantendo-se a garantia padrão HP. A garantia dos componentes utilizados no upgrade possuem a sua própria politica de garantia, não sendo "absorvida" pela garantia padrão (ou carepack) do equipamento.

Declaramos ainda que, o produto **2XM34AA#AC4-**HP V24b 23.6-inch Monitor:

- Os monitores pertencem à linha corporativa, são novos, sem uso.
- A Placa mãe é de fabricação própria e exclusiva para os modelos ofertados
- Possuem botão de liga/desliga e luzes de indicação de computador ligado (Power-on). Equipamentos possuem certificação PPB
- Garantia padrão do próprio fabricante conforme solicitado no edital
- Todos os componentes serão integrados em fábrica pela HP.

Durante o período de garantia do Produto HP, a Fabricante HP responsabiliza-se pela garantia no prazo e condições padrão HP, conforme especificado no termo de garantia que acompanha o Produto HP e no manual técnico do Produto HP.

Serviços adicionais ao especificado na garantia padrão da Fabricante HP poderão ser adquiridos pelo Parceio HP Autorizado para Compra Direta/Distribuidores Autorizados HP, com prazos e condições customizados.

Declaramos que os equipamentos fabricados pela HP são novos, que não foram submetidos a uso, nem recondicionamento, ressalvados os testes de fábrica.

Os Produtos da marca HP são de fabricação própria ou homologados por regime de O&M e estão em linha de produção atual.

Declaramos, ainda, que a HP possui site na internet - www.hp.com.br – onde pode ser efetuado download de drivers para os Produtos HP e número de telefone para Grande São Paulo – (011) 4004-7751 e demais regiões – 0800 709 77 51 - para informações e aberturas de chamados técnicos.

A Rede de Serviços Autorizados HP está distribuída em todo território nacional, ou conforme indicado a seguir, com uso de peças e componentes originais e com técnicos devidamente treinados pela HP:

Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

Atenciosamente,

LUANA MELATTO VILAS BOAS:28755606890

Digitally signed by LUANA MELATTO VILAS BOAS:28755606890
Date: 2021.08.30 17:21:33 -03'00'

Luana Melatto Vilas Boas
Representante Legal
HP Indústria e Comércio de Equipamentos Eletrônicos Ltda.

Datasheet

HP ProDesk 400 G7 Small Form Factor PC

Reliable and ready expansion for your growing business

Designed to fit the modern workspace, the small and reliable HP ProDesk 400 Small Form Factor is equipped with strong security features and performance that's scalable to grow with your business.

HP recommends Windows 10 Pro for business

- Intel® Core™ processors[2]

Powerful options

- Power through your day with a high-performance 10th Gen Intel® Core™ processor[2] and options that include Intel® Optane™ memory H10[3], SSD storage[4], and up to 64GB of DDR4 memory.[4]

Expansion that extends your investment

- The full value of your investment comes with expansion that extends the life of your PC. The HP ProDesk 400 SFF has two bays and two slots—including storage and WLAN M.2 slots, and configurable ports to fit your peripheral needs.

Built in security

- HP Sure Sense uses advanced protection backed with deep-learning AI to help defend against never before seen threats. An intrusion sensor along with an integrated accessory cable lock help secure your cabled mouse and keyboard from theft.

Tested and ready

- Rest easy with a PC that undergoes MIL-STD 810H testing[6] and 120,000 hours of the HP Total Test Process.[7] Reduce airborne particulate intake with an optional dust filter[4] that helps extend the life of your PC.

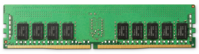
- Support a commitment to create and use more sustainable products. The high-efficiency power supply, use of ocean-bound plastics in the speaker box and molded pulp packaging help reduce the impact on the environment.[8]
- Traditional antivirus can't always recognize new attacks. HP Sure Sense harnesses the power of deep learning AI to identify and quarantine never-before-seen attacks, helping prevent infections before they happen.[5]
- Simplify securing your PC. HP Client Security Manager Gen6 offers a single interface to set up and manage powerful security features, including HP SpareKey and HP Password Manager.[9]
- Keep productivity high and downtime low with HP BIOSphere Gen6 firmware-level automation. Your PCs have extra protection thanks to automatic updates and security checks.[10]
- The HP Manageability Integration Kit helps speed up image creation and management of hardware, BIOS, and security through Microsoft System Center Configuration Manager.[11]
- ITDMs can quickly help create, improve, and secure custom Windows images with HP Image Assistant.
- Help protect your PC from websites, read only Microsoft Office and PDF attachments, malware, ransomware, and viruses with hardware-enforced security from HP Sure Click.[12]
- The HP ProDesk 400 SFF becomes a hub for all your devices in the office with nine total USB ports, optional ports to connect up to three HP Displays, and optional Bluetooth® connectivity.[4,13]
- Get answers to everyday support questions with HP Support Assistant, an included self-help tool. It's ready to go the first time you turn on your PC, it updates automatically, and you can directly connect to HP Support through the tool.[14]

HP ProDesk 400 G7 Small Form Factor PC Specifications Table

Available Operating Systems	Windows 10 Pro 64 – HP recommends Windows 10 Pro for business[1] Windows 10 Pro 64 (National Academic only)[1,2] Windows 10 Home 64[1] Windows 10 Home Single Language 64[1] FreeDOS
Processor family[34]	10th Generation Intel® Core™ i3 processor; 10th Generation Intel® Core™ i5 processor; 10th Generation Intel® Core™ i7 processor; Intel® Celeron® processor; Intel® Pentium® processor
Available Processors[27,28,29,31,32,33]	Intel® Core™ i7-10700 with Intel® UHD Graphics 630 (2.9 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 16 MB L3 cache, 8 cores) Intel® Core™ i5-10600 with Intel® UHD Graphics 630 (3.3 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores) Intel® Core™ i5-10500 with Intel® UHD Graphics 630 (3.1 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores) Intel® Core™ i3-10300 with Intel® UHD Graphics 630 (3.7 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) Intel® Core™ i3-10100 with Intel® UHD Graphics 630 (3.6 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores) Intel® Pentium® Gold G6500 with Intel® UHD Graphics 630 (4.1 GHz base frequency, 4 MB L3 cache, 2 cores) Intel® Celeron® G5900 with Intel® UHD Graphics 610 (3.4 GHz base frequency, 2 MB L3 cache, 2 cores) Intel® Pentium® Gold G6600 with Intel® UHD Graphics 630 (4.2 GHz base frequency, 4 MB L3 cache, 2 cores)
Chipset[32]	Intel® Q470
Form factor	Small form factor
Maximum memory	64 GB DDR4-2666 SDRAM; 64 GB DDR4-3200 SDRAM [3,4] Transfer rates up to 2666 MT/s for Celeron®, Pentium®, Intel® Core™ i3, and Intel® Core™ i5 processors. Transfer rates up to 2933 MT/s for Intel® Core™ i7 processors
Memory slots	2 DIMM
Internal storage	500 GB up to 2 TB SATA HDD[5,7,8] 500 GB SATA SED Opal 2 HDD[5,7,8] 500 GB SATA SED FIPS HDD[5,7,8] 128 GB up to 1 TB PCIe® NVMe™ TLC M.2 SSD[5,7,8] 256 GB up to 512 GB PCIe® NVMe™ SED Opal 2 TLC M.2 SSD[5,7,8] 256 GB up to 512 GB Intel® Optane™ Memory H10 with Solid State Storage[5,7,8,9]
Storage acceleration[10]	16 GB NVMe™ Intel® Optane™ Memory for storage acceleration
Optical drive[6]	HP 9.5 mm Slim Blu-ray writer; HP 9.5 mm Slim DVD-ROM; HP 9.5 mm Slim DVD-Writer
Available Graphics	Integrated: Intel® UHD Graphics 610; Intel® UHD Graphics 630 Discrete: AMD Radeon™ RX 550X Graphics (4 GB GDDR5 dedicated); AMD Radeon™ R7 430 Graphics (2 GB GDDR5 dedicated)
Audio	Realtek ALC3205 codec, 2 W internal speaker, universal audio jack, combo microphone/headphone jack
Expansion slots	1 M.2 2230; 1 M.2 2280; 1 PCIe 3 x1; 1 PCIe 3 x16; 1 SD 4.0 media card reader [11] (1 M.2 2230 slot for WLAN and 1 M.2 2280 slot for storage.)
Ports and Connectors	Front: 1 headphone/microphone combo; 2 SuperSpeed USB Type-A 10Gbps signaling rate; 2 USB Type-A 480Mbps signaling rate Rear: 1 audio-out; 1 power connector; 1 RJ-45; 1 HDMI 1.4; 3 SuperSpeed USB Type-A 5Gbps signaling rate; 1 DisplayPort™ 1.4; 2 USB Type-A 480Mbps signaling rate
Optional Ports	Add-on card – choose one of the following options: 4x Serial, serial and PS/2 ports combination or parallel; Flex IO port – choose one of the following options: DisplayPort™ 1.4, VGA, HDMI 2.0, serial, SuperSpeed USB Type-C® 10Gbps signaling rate (alternate mode DisplayPort™), Dual SuperSpeed USB Type-A 5Gbps signaling rate[35]
Available Keyboards[15]	HP PS/2 Business Slim Keyboard; HP USB Wired Keyboard; HP Wireless Business Slim Keyboard and Mouse Combo; USB and PS/2 washable keyboard; HP Wired Desktop 320K Keyboard; HP USB Business Slim Smart Card (CCID) Keyboard
Available Pointing Devices[15]	HP USB 1000 dpi Laser Mouse; HP USB and PS/2 Washable Mouse; HP PS/2 Mouse; HP Wired Desktop 320M Mouse
LAN[12] Network Interface[12]	Intel® I210-T1 PCIe® GbE
WLAN [13,32]	Intel® Wi-Fi 6 AX201 (2x2) Wi-Fi® and Bluetooth® M.2 combo card, non-vPro™
Drive Bays	One 3.5" HDD convertible to two 2.5" HDD with caddy [7,8]
Environmental	Operating temperature: 5 to 35°C; Operating humidity: 5 to 90% RH
Software[16]	HP Noise Cancellation Software; HP Support Assistant; Buy Office (sold separately); HP JumpStarts; HP Desktop Support Utilities
Security management[20,21,22,23,24,25]	Power-on password (via BIOS); SATA port disablement (via BIOS); Setup password (via BIOS); Support for chassis padlocks and cable lock devices; USB enable/disable (via BIOS); Serial enable/disable (via BIOS); HP Secure Erase; HP Sure Click; HP Sure Sense; HP BIOSphere Gen5; HP DriveLock and Automatic DriveLock; Trusted Platform Module TPM 2.0 Embedded Security Chip shipped with Windows 10. (Common Criteria EAL4+ Certified); HP Client Security Manager Gen6
Management features	HP BIOS Config Utility (download); HP Client Catalog (download); HP Driver Packs (download); HP System Software Manager (download); HP Cloud Recovery; HP Management Integration Kit for Microsoft System Center Configuration Management Gen 4; HP Image Assistant Gen 5[10,16,18,19]
Power	180 W internal power supply, up to 90% efficiency, active PFC; 210 W internal power supply, up to 92% efficiency, active PFC
Dimensions	10.6 x 3.7 x 11.9 in; 27 x 9.5 x 30.3 cm
Weight	8.6 lb; 3.9 kg (Weight will vary by configuration)
Energy efficiency compliance[26]	ENERGY STAR® certified; EPEAT® 2019 registered where applicable
Warranty	1 year (1-1-1) limited warranty or 3 years (3-3-3) limited warranty delivers one year or three years of on-site, next business day service for parts and labor and includes free telephone support 24/7. One-year and three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing a Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: www.hp.com/go/cpc

HP ProDesk 400 G7 Small Form Factor PC

Accessories and services (not included)

HP 16GB DDR4-2666 DIMM		Boost the capabilities of your HP Business Desktop PC and improve system performance and application responsiveness with low-power, high-speed DDR4 memory from HP. **Product number: 3TK83AA**
HP Business PC Security Lock v3 Kit		Help prevent chassis tampering and secure your PC and display in workspaces and public areas with the affordable HP Business PC Security Lock v3 Kit. **Product number: 3XJ17AA**
HP Wired Desktop 320MK Mouse and Keyboard		**Product number: 9SR36AA**
HP 1TB 7200rpm SATA (NCQ/Smart IV) 6Gbp/s Hard Drive		HP Serial ATA Hard Drives maximize the performance of HP Business PCs by providing the technologies to meet your increasing storage demands with high-capacity drives offering superior reliability and performance. Serial ATA provides faster data transfer speeds, better system cooling airflow, more bandwidth, more headroom for speed increases in future generations and better data integrity. A next-generation technology, Serial Advanced Technology Attachment (SATA) interface connects hard drives to the PC platform enabling easy aggregation of multiple hard drives into a single PC. This offers you the additional benefits of dedicated bandwidth, the ability to more easily identify device failures and scalability **Product number: QK555AA**
HP PCIe NVME TLC 512GB SSD M.2 Drive		Reduce boot up, calculation, and graphics response times and revolutionize how your HP Business Desktop handles large files with the HP PCIe NVME TLC 512GB SSD M.2 Drive, a remarkably affordable and innovative PCIe-based NVMe memory SSD storage solution. **Product number: X8U75AA**
Additional Services (Not included)	HP Care Pack	U11BVE - HP 4-year Next Business Day Onsite with Defective Media Retention for Desktop Only Support

HP ProDesk 400 G7 Small Form Factor PC

Messaging Footnotes

[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] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
[3] Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. Requires 8th Gen or higher Intel® Core™ processor, BIOS version with Intel® Optane™ supported, Windows 10 64-bit, and an Intel® Rapid Storage Technology (Intel® RST) driver. 4. Sold separately or as an optional feature.
[4] Sold separately or as an optional feature.
[5] HP Sure Sense requires Windows 10 Pro or Enterprise.
[6] MIL STD 810H testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.
[7] HP Total Test Process testing is not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.
[8] Speaker enclosure component made with 5% ocean bound plastic.
[9] HP Client Security Manager Gen6 requires Windows and is available on the select HP Elite and Pro PCs.
[10] HP BIOSphere Gen6 is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations.
[11] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
[12] HP Sure Click requires Windows 10 Pro or Enterprise 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.
[13] Support for up to three video outputs via two standard video connectors and an optional third video port connector which provides the following choices: DisplayPort™ 1.2, HDMI 2.0, VGA, or USB Type-C® with Display Output.
[14] Requires Windows and internet access.

Technical Specifications Footnotes

[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.
[3] 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.
[4] All memory slots are customer accessible / upgradeable.
[5] 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.
[6] Sold separately or as an optional feature. With Blu-Ray, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this PC. Don't copy copyright-protected content.
[7] Small Form Factor can be configured with either (1) 3.5" or (2) 2.5" internal storage drive (2.5 inch drive needs adapter).
[8] 2.5-inch drive needs adapter that can only be purchased when configuring the PC from factory with a 2.5" drive.
[9] Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. Requires 8th Gen or higher Intel® Core™ processor, BIOS version with Intel® Optane™ supported, Windows 10 64-bit, and an Intel® Rapid Storage Technology (Intel® RST) driver.
[10] Intel® Optane™ memory is sold separately. Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. Available for HP commercial desktops and notebooks and for select HP workstations (HP Z240 Tower/SFF, Z2 Mini, ZBook Studio, 15 and 17 G5) 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 a x2 or x4 configuration with B-M keys that meet NVMe™ Spec 1.1, and an Intel® Rapid Storage Technology (Intel® RST) 15.5 driver.
[11] SD 4.0 with 5-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II). Sold separately or as an optional feature.
[12] Intel® I210-T1 PCIe® GbE: Sold separately or as an optional feature, which is subject to change and availability.
[13] Wireless access point and internet service required. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
[15] Availability may vary by country.
[16] HP Support Assistant: Requires Windows and Internet access.
[17] HP Driver Packs: Not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
[18] HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
[19] 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.
[20] HP BIOSphere Gen5 is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations.
[21] Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
[22] HP Sure Click requires Windows 10 Pro or Enterprise 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.
[23] HP Client Security Manager Gen6 requires Windows and is available on the select HP Elite and Pro PCs.
[24] HP Sure Sense requires Windows 10 Pro or Enterprise.
[25] Storage Drivelock does not work with Self Encrypting or Optane™ based storage.
[26] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.
[27] 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
[29] 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.
[31] 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 www.intel.com/technology/turboboost for more information.
[34] 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
[35] Flex Port and Add-on Card are optional and must be configured at time of purchase. Max of one Flex Port and one Add-on Card can be configured.

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4AA7-7740, 2020 July 2

Overview

HP ProDesk 400 G6 Desktop Mini PC

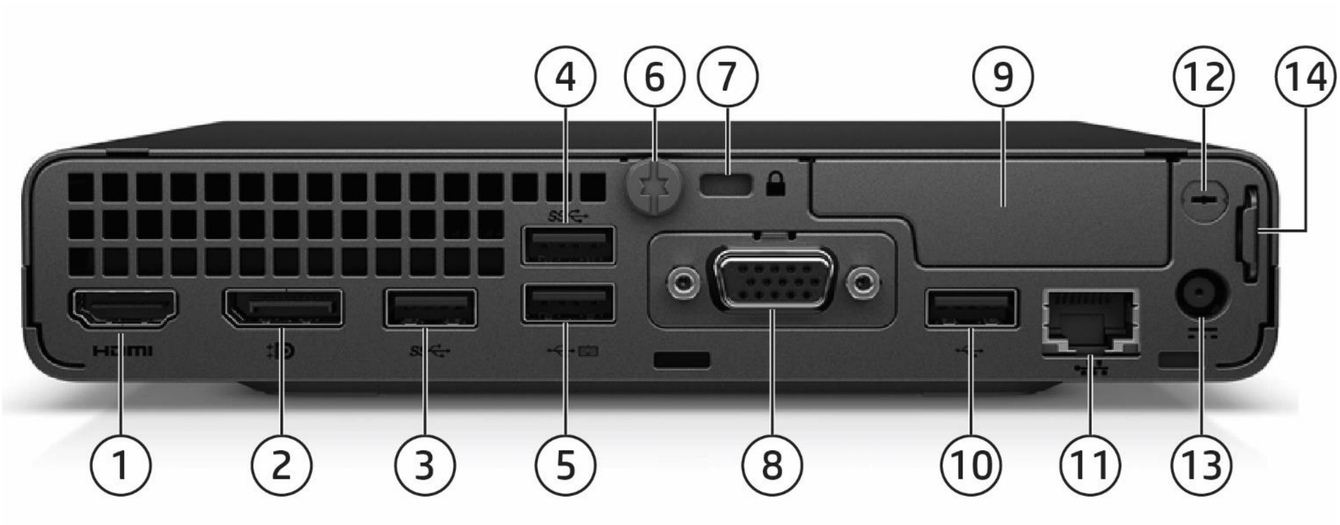
1. Type-C® SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)
2. Type-A SuperSpeed USB 10Gbps signaling rate port
3. Type-A SuperSpeed USB 5Gbps signaling rate port (charge support up to 5V/1.5A)
4. Combo Audio Jack with CTIA and OMTP headset support
5. Dual-state power button
6. Hard drive activity light

Not Shown

(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

(1) 2.5" internal storage drive bay

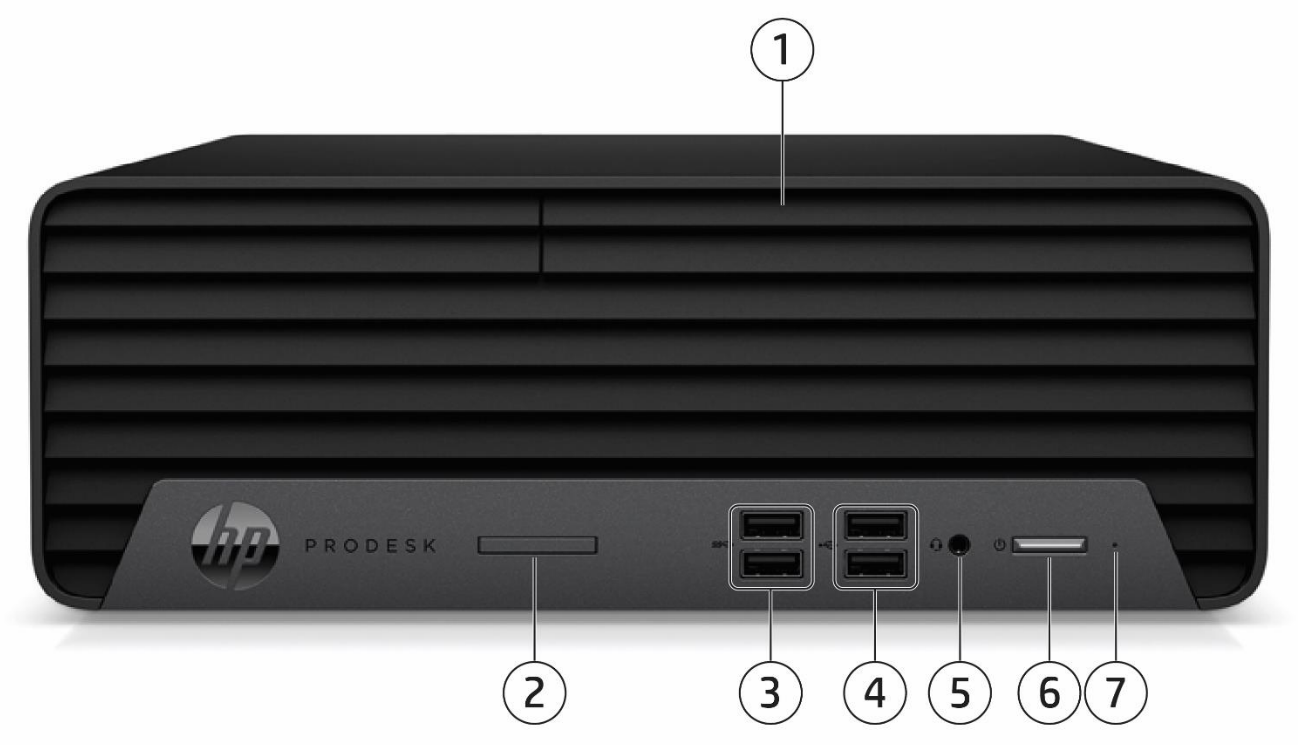
HP ProDesk 400 G6 Desktop Mini PC



1. HDMI 1.4
2. Dual-Mode DisplayPort™ 1.4 (DP++)
3. Type-A SuperSpeed USB 5Gbps signaling rate port
4. Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
5. Type-A Hi-Speed USB 480Mbps signaling rate or SuperSpeed USB 10Gbps signaling rate port[1] (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
6. Cover release thumbscrew
7. Standard cable lock slot (10 mm)
8. Flex Port 1, choice of:
   - DisplayPort™
   - HDMI 2.0a
   - VGA
   - Serial[2]
   - Type-C® SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode and power intake via USB Type-C® Power Delivery up to 100W
9. Flex Port 2[3], choice of:
   - 2x Type-A Hi-Speed USB 480Mbps signaling rate port
   - Serial
10. Type-A Hi-Speed USB 480Mbps signaling rate or SuperSpeed USB 10Gbps signaling rate port[1]
11. RJ45 network connector
12. External WLAN antenna opening[3]
13. Power connector
14. Retractable Padlock loop

1. Upgradeable to SuperSpeed USB 10Gbps signaling rate port if configured with additional digital video port via Flex Port 1 and/or Intel® vPro™.
2. Sold separately or as an optional feature.
3. Must be configured at time of purchase.

HP ProDesk 400 G7 Small Form Factor PC



1. Slim optical drive (optional)
2. SD card 4.0 reader (optional)
3. (2) Type-A SuperSpeed USB 10Gbps signaling rate port
4. (2) Type-A Hi-Speed USB 480Mbps signaling rate port
5. Combo Audio Jack with CTIA and OMTP headset support
6. Dual-state power button
7. Hard drive activity light

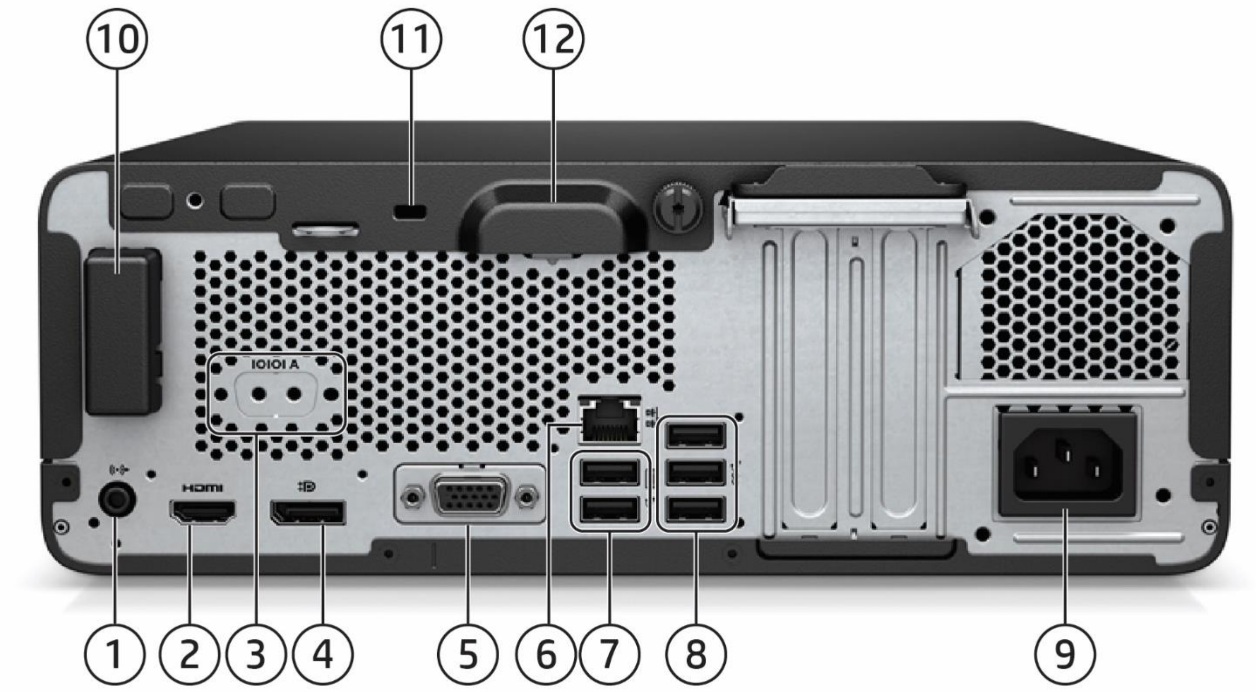
Not Shown

(1) PCI Express x16

(1) PCI Express x1

(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

HP ProDesk 400 G7 Small Form Factor PC



1. Audio-out connector
2. HDMI 1.4
3. Serial Port (Optional)
4. Dual-Mode DisplayPort™ 1.4 (DP++)
5. Flex Port, choice of:
    - DisplayPort™1.4
    - VGA
    - HDMI 2.0a
    - Serial
    - Dual Type-A SuperSpeed USB 5Gbps signaling rate
    - Type-C® SuperSpeed USB 10Gbps signaling rate with DisplayPort™ Alt mode
6. RJ45 network connector
7. (2) Type-A Hi-Speed USB 480Mbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
8. (3) Type-A SuperSpeed USB 5Gbps signaling rate port
9. Power cord connector
10. Internal WLAN antenna cover (optional)
11. Standard cable lock slot
12. Integrated accessory cable lock

Not Shown

Port

Optional PS/2 (2 ports) & serial port card[1] (connected with mainboard via flyer cable)

Optional parallel port[1]

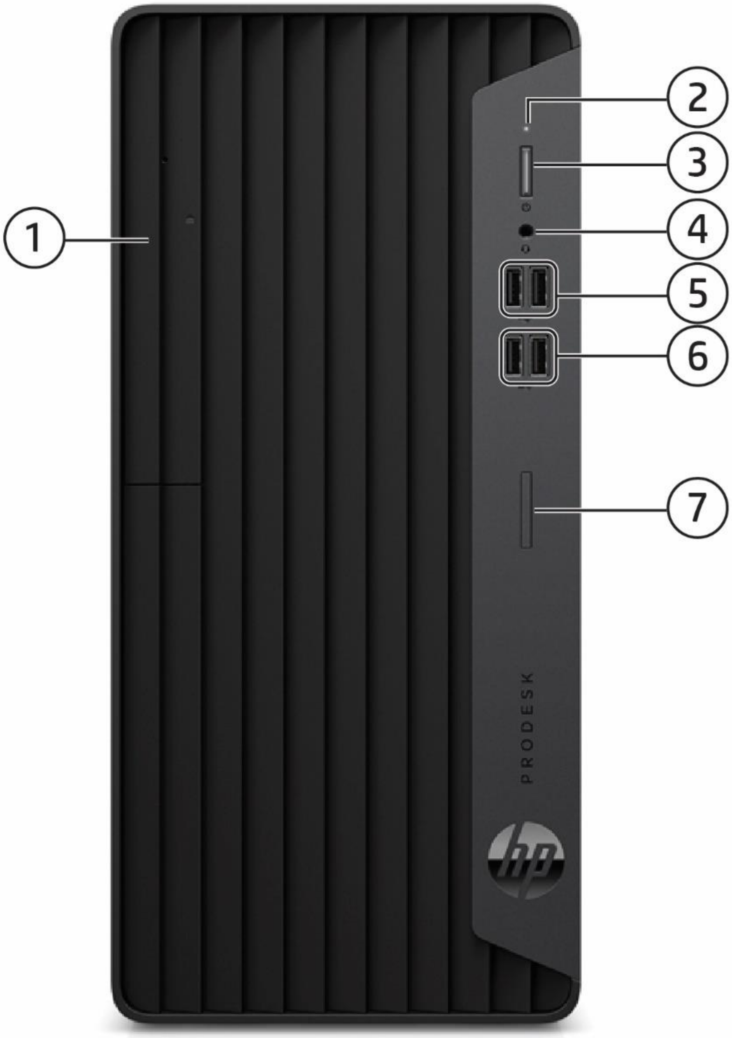
Optional 4 Serial Port PCIe Card[1] (1 to 4 serial port dongle)

Bay

(1) 9.5mm internal optical drive bay
(1) 3.5" internal storage drive bay or (2) 2.5" internal storage drive bays[2]

1. Each of the legacy options will occupy one rear slot.
2. SFF can be configured with either (1) 3.5” or (2) 2.5” internal storage drive (2.5-inch drive needs adapter that can only be purchased when configuring the PC from factory with a 2.5” drive)

HP ProDesk 400 G7 Microtower PC



1. Slim optical drive (optional)
2. Hard drive activity light
3. Dual-state power button
4. Combo Audio Jack with CTIA and OMPT headset support
5. (2) Type-A Hi-Speed USB 480Mbps signaling rate port
6. (2) Type-A SuperSpeed USB 10Gbps signaling rate port
7. SD card 4.0 reader (optional)

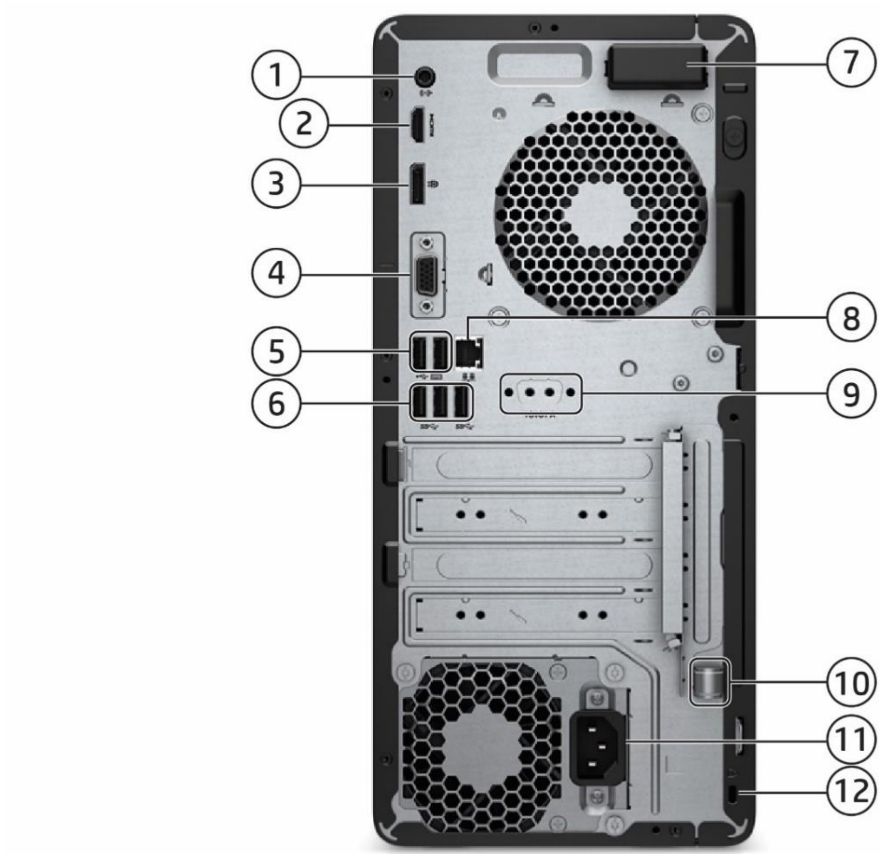
Not Shown

(1) PCI Express x16

(2) PCI Express x1

(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

HP ProDesk 400 G7 Microtower PC



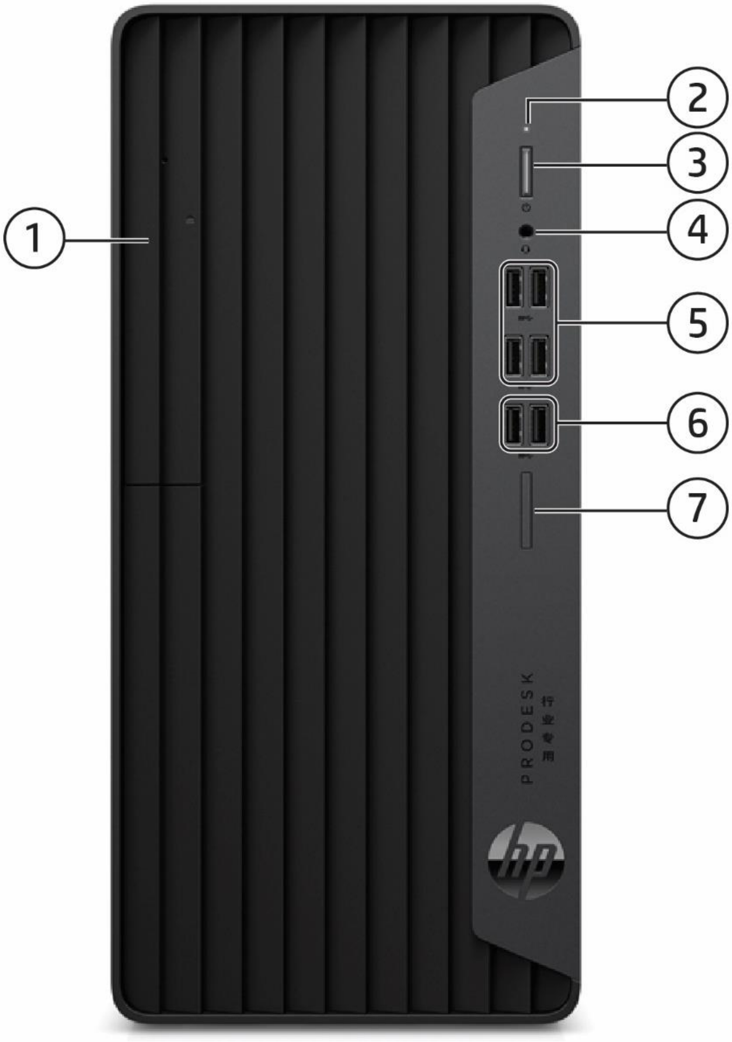
1. Audio-out connector
2. HDMI 1.4
3. Dual-Mode DisplayPort™ 1.4 (DP++)
4. Flex Port, choice of:
   - DisplayPort™1.4
   - VGA
   - HDMI 2.0a
   - Serial
   - Dual Type-A SuperSpeed USB 5Gbps signaling rate
   - Type-C® SuperSpeed USB 10Gbps signaling rate with DisplayPort™ Alt mode)
5. (2) Type-A Hi-Speed USB 480Mbps signaling rate (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
6. (3) Type-A SuperSpeed USB 5Gbps signaling rate port
7. Internal WLAN antenna cover (optional)
8. RJ45 network connector
9. Serial port (optional)
10. Integrated accessory cable lock
11. Power cord connector
12. Standard cable lock slot

Not Shown

Port	Bay
Optional PS/2 (2 ports) & serial port card (connected with mainboard via flyer cable)[1]	(1) 9.5mm internal optical drive bay
Optional parallel port[1]	(1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay
Optional 4 Serial Port PCIe Card[1] (1 to 4 serial port dongle)	(1) 3.5" internal storage drive bay
	(1) 2.5" internal storage drive bay

1. Each of the legacy options will occupy one rear slot

HP ProDesk 480 G7 PCI Microtower PC



1. Slim optical drive (optional)
2. Hard drive activity light
3. Dual-state power button
4. Combo Audio Jack with CTIA and OMTP headset support
5. (4) Type-A SuperSpeed USB 5Gbps signaling rate port
6. (2) Type-A SuperSpeed USB 10Gbps signaling rate port
7. SD card 4.0 reader (optional)

Not Shown

(1) PCI Express x16

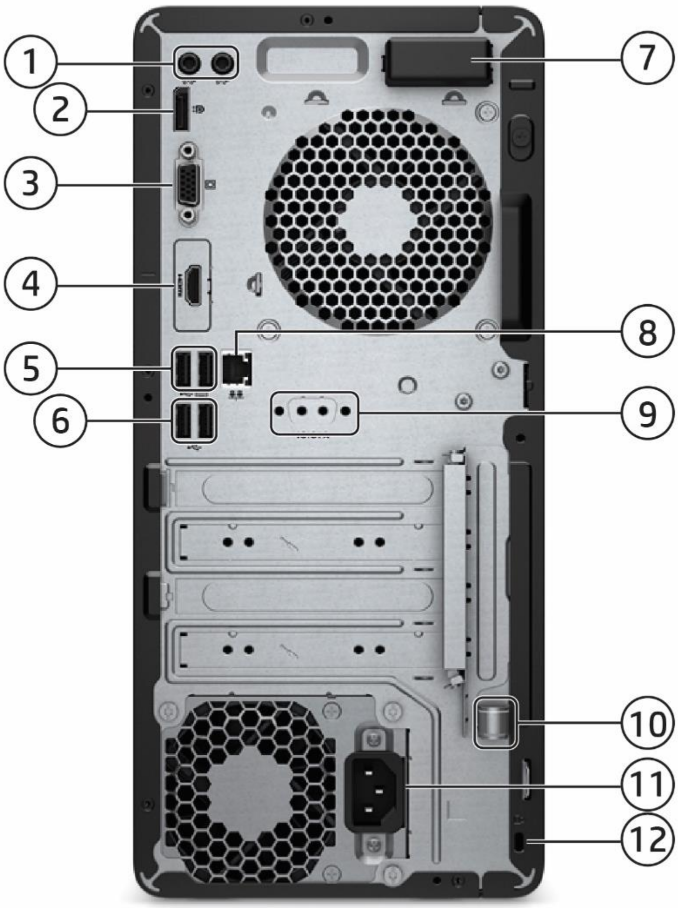
(1) PCI Express x1

(1) PCI x1

(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

Overview

HP ProDesk 480 G7 PCI Microtower PC



1. Audio-in/out connector
2. Dual-Mode DisplayPort™ 1.4 (DP++)
3. VGA port
4. Flex Port, choice of:
   - DisplayPort™ 1.4
   - VGA
   - HDMI 2.0a
   - Serial
5. (2) Type-A Hi-Speed USB 480Mbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
6. (2) Type-A Hi-Speed USB 480Mbps signaling rate port
7. Internal WLAN antenna cover (optional)
8. RJ45 network connector

9 Serial port (optional)

10. Integrated accessory cable lock
11. Power cord connector
12. Standard cable lock slot

Not Shown

Port

Optional PS/2 (2 ports) & serial port card (connected with mainboard via flyer cable) [1]

Optional parallel port[1]

Optional 4 Serial Port PCIe Card[1] (1 to 4 serial port dongle)

Bay

(1) 9.5mm internal optical drive bay

(1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay

(1) 2.5" internal storage drive bay

(1) 3.5" internal storage drive bay

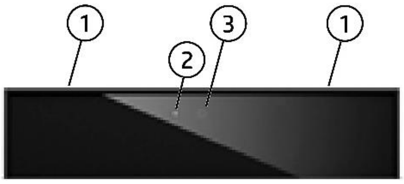
---

1. Each of the legacy options will occupy one rear slot

HP ProOne 400 G6 24 All-in-One PC (Touch & Non-Touch)[1]

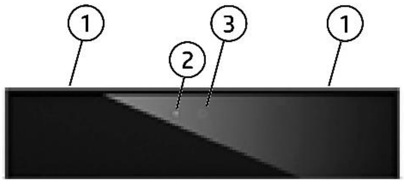
1. Pull-up webcam (optional)
2. Combo Audio Jack with CTIA and OMTP headset support
3. Speakers (optional)
4. SD media card reader (optional)
5. On-screen display (OSD) buttons
6. Hard drive activity light
7. Power button
8. Type-A SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/1.5A)
9. Type-C® SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)

HD webcam (optional)



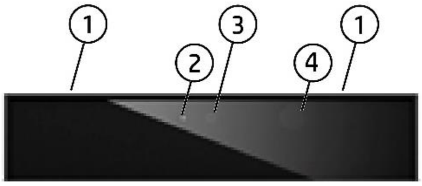
1. Dual microphones
2. Webcam light
3. HD webcam

5MP webcam (optional)



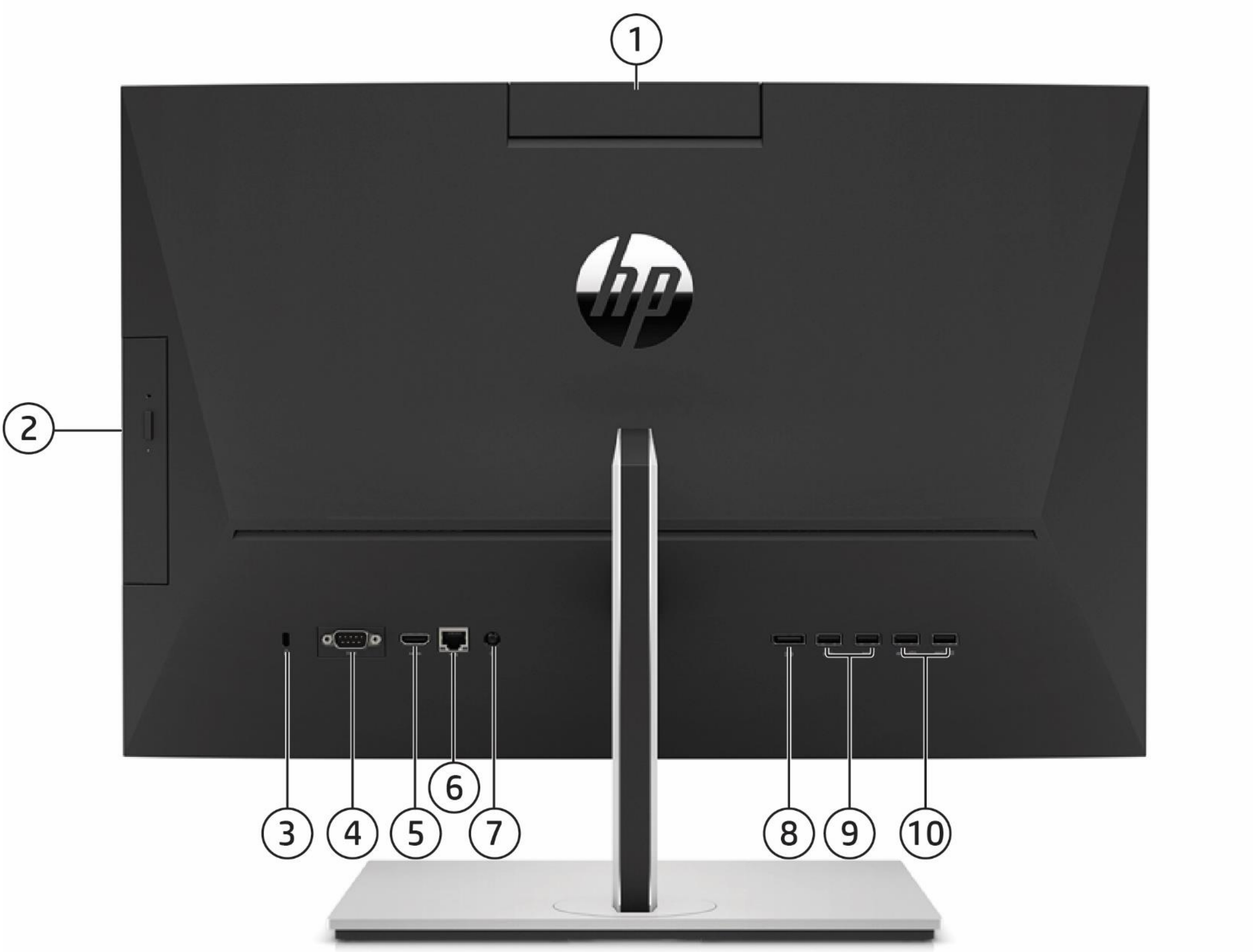
1. Dual microphones
2. Webcam light
3. 5MP webcam

5MP webcam with
Infrared (IR) sensors (optional)



1. Dual microphones
2. Webcam light
3. IR/5MP webcam
4. IR light

HP ProOne 400 G6 24 All-in-One PC (Touch & Non-Touch)[1]



1. Pull-up webcam (optional)
2. Optical disc drive (optional)
3. Standard cable lock slot
4. Flex Port, choice of:
   - DisplayPort™
   - Serial
   - HDMI 2.0a
5. HDMI-in
6. RJ45 network connector
7. Power connector
8. Dual-Mode DisplayPort™ 1.4 (DP++)
9. (2) Type-A SuperSpeed USB 5Gbps signaling rate port
10. (2) Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting wake in from S4/S5 with keyboard/mouse connected and enabled BIOS)

1. Availability may vary by country

HP ProOne 400 G6 20 All-in-One PC (Non-Touch)[1]

1. Dual microphones (optional)
2. Webcam privacy shutter (optional)
3. HD webcam (optional)
4. Webcam light
5. Combo Audio Jack with CTIA and OMTP headset support
6. Speakers (optional)
7. SD media card reader (optional)
8. On-screen display (OSD) buttons
9. Hard drive activity light
10. Power button
11. Type-A SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/1.5A)
12. Type-C® SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)

HP ProOne 400 G6 20 All-in-One PC (Non-Touch)[1]

1. Optical disc drive (optional)
2. Standard cable lock slot
3. Flex Port, choice of:
   - DisplayPort™
   - Serial
   - HDMI 2.0a
4. HDMI-in
5. RJ45 network connector
6. Power connector
7. Dual-Mode DisplayPort™ 1.4 (DP++)
8. (2) Type-A SuperSpeed USB 5Gbps signaling rate port
9. (2) Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)

1. Availability may vary by country

AT A GLANCE

- Choice of four form factors: Microtower, Small Form Factor, Desktop Mini, and All-in-One
- HP developed and engineered UEFI V2.7 BIOS supporting security, manageability and software image stability
- Latest commercial class Intel® 400 Series chipsets supporting latest Intel® 10th Generation Core™ processors[1], featuring integrated Intel® UHD Graphics
    - Intel Standard Manageability (ISM) comes standard for Intel® Core™ and Pentium™ configurations
    - Optional Intel® vPro™ Technology upgrade with selected Core™ i5 and Core™ i7 processors (vPro™ is optional and requires factory configuration)[4]
- Processor support up to 65W for MT/SFF/AiO and up to 35W for Desktop Mini
- Intel® Optane™ memory available as optional feature
- Choice of Windows 10 Professional, Windows 10 Home, and FreeDOS
- Integrated 10/100/1000 Ethernet Controller, with optional Wi-Fi 6 (802.11ax) and Wi-Fi 5 (802.11ac) and Bluetooth®
- Up to 64GB of DDR4 Synchronous Dynamic Random Access Memory (SDRAM)
- Support for up to three video outputs via two standard video connectors and an optional third video port connector which provides the following choices: DisplayPort™, HDMI, VGA, or USB Type-C® with DisplayPort™ Output on MT/SFF/DM
- Reduce clutter on DM with single cable connection for power and video through USB Type-C® enabled displays with the optional USB- Type-C® port w/ DisplayPort Alt Mode and power intake via USB Type-C® Power Delivery up to 100W; reduce desktop footprint with the DM mounted behind a USB-C™ enabled display or enable a “All-in-One” experience by docking into HP Mini-in-One 24 Display
- New flexibility is delivered by the All-in-One that can be used as a full PC or as an additional display for another desktop or laptop PC via the new HDMI in functionality
- Optional Serial port available on all form factors
- Multiple HDD data drives set up in a SATA RAID array for MT/SFF
- Optimized chassis design for SFF enabling dual 2.5" internal storage drives
- Integrated accessory cable lock helps secure cabled mouse and keyboard on MT/SFF
- Trusted Platform Module (TPM) 2.0[2]
- HP BIOSphere Gen6
- HP Client Security Manager Gen6
- HP Sure Click
- HP Manageability Integration Kit Gen4
- HP Image Assistant Gen5
- HP Support Assistant
- High efficiency energy saving power supply
- ENERGY STAR® certified. EPEAT ® 2019 registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country.[5]
- TUV Low Blue Light certified for All-in-One. To reach maximum performance, Low Blue Light setting should be enabled in On-screen display (OSD) settings and Night light mode should be turned on in Windows®
- Optimized for Microsoft Teams for All-in-One
- Low halogen[3]
- All form factors undergo up to 13 MIL-STD tests[6]
- Dust filter available for MT/SFF/DM
- 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 (UL60950-1 / UL62368-1) / CSA (CSA C22.2 No.60950-1-07 / CSA C22.2 No. 62368-1-14) / 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. In some scenarios, machines pre-configured with Windows OS or FreeDOS might ship with TPM turned off
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 future "virtual appliances" is yet to be determined.
5. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.
6. MIL-STD drop test not performed for All-in-Ones. MIL-STD testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

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

PRODUCT NAME

HP ProDesk 400 G6 Desktop Mini PC
HP ProDesk 400 G7 Small Form Factor PC
HP ProDesk 400 G7 Microtower PC
HP ProDesk 480 G7 PCI Microtower PC
HP ProOne 400 G6 20 All-in-One PC
HP ProOne 400 G6 24 All-in-One PC

OPERATING SYSTEM

Preinstalled	Windows® 10 Pro 64 – HP recommends Windows 10 Pro[1] Windows® 10 Pro 64 (National Academic License)[1,2] Windows® 10 Home 64[1] FreeDOS
Web Support	Windows® 10 Enterprise 64 (Web Support)[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. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

CHIPSET

	DM	SFF	MT	AiO
Intel® Q470	X	X	X	X

Standard Features and Configurable Components (availability may vary by country)

PROCESSORS

Intel® 10th Generation Core™ Processors	DM	SFF	MT	AiO
Intel® Core™ i7-10700 Processor[1] 65W 2.9 GHz base frequency Up to 4.8 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 16 MB cache, 8 cores, 16 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2933 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]		X	X	X
Intel® Core™ i7-10700T Processor[1] 35W 2.0 GHz base frequency Up to 4.5 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 16 MB cache, 8 cores, 16 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2933 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]	X			X
Intel® Core™ i5-10600 Processor[1] 65W 3.3 GHz base frequency Up to 4.8 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]		X	X	X
Intel® Core™ i5-10600T Processor[1] 35W 2.4 GHz base frequency Up to 4.0 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]	X			X
Intel® Core™ i5-10500 Processor[1] 65W 3.1 GHz base frequency Up to 4.5 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads		X	X	X

Standard Features and Configurable Components (availability may vary by country)

Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]				
Intel® Core™ i5-10500T Processor[1] 35W 2.3 GHz base frequency Up to 3.8 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP)[3]	X			X
Intel® Core™ i5-10400 Processor[1] 65W 2.9 GHz base frequency Up to 4.3 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate		X	X	X
Intel® Core™ i5-10400T Processor[1] 35W 2.0 GHz base frequency Up to 3.6 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	X			X
Intel® Core™ i3-10320 Processor[1] 65W 3.8 GHz base frequency Up to 4.6 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 8 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate		X	X	X
Intel® Core™ i3-10300 Processor[1] 65W 3.7 GHz base frequency Up to 4.4 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 8 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	X	X	X	X

Standard Features and Configurable Components (availability may vary by country)

	DM	SFF	MT	AiO
Intel® Core™ i3-10300T Processor[1] 35W 3.0 GHz base frequency Up to 3.9 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 8 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	X			X
Intel® Core™ i3-10100 Processor[1] 65W 3.6 GHz base frequency Up to 4.3 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 6 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate		X	X	X
Intel® Core™ i3-10100T Processor[1] 35W 3.0 GHz base frequency Up to 3.8 GHz max. turbo frequency with Intel® Turbo Boost Technology[2] 6 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	X			X

Intel® Pentium® Processors	DM	SFF	MT	AiO
Intel® Pentium® Gold G-6600 Processor[1] 58W 4.2 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate		X	X	X
Intel® Pentium® Gold G-6500 Processor[1] 58W 4.1 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate		X	X	X
Intel® Pentium® Gold G-6500T Processor[1] 35W 3.5 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	X			X

Standard Features and Configurable Components (availability may vary by country)

	DM	SFF	MT	AiO
Intel® Pentium® Gold G-6400 Processor[1] 58W 4.0 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 610 Supports DDR4 memory up to 2666 MT/s data rate		X	X	
Intel® Pentium® Gold G-6400T Processor[1] 35W 3.4 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 610 Supports DDR4 memory up to 2666 MT/s data rate	X			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 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 dependent on 3rd party software providers. Compatibility with future "virtual appliances" is yet to be determined.
NOTE: Memory speed 2666 and 2933 MT/s can be achieved via two UDIMMs per channel (2DPC) when populated with the same part number.

GRAPHICS

Integrated Graphics	DM	SFF	MT	AiO
Intel® UHD Graphics 630 (integrated on 10th gen Core i7/i5/i3 processors and Pentium® Gold G-6600, G-6500 and G-6500T)	X	X	X	X
Intel® UHD Graphics 610 (integrated on Pentium® Gold G-6400, G-6400T)	X	X	X	X

Optional Discrete Graphics Solutions	DM	SFF	MT	AiO
AMD® Radeon™ R7 430 2GB 2DP		X	X	
AMD® Radeon™ R7 430 2GB DP+VGA		X	X	
AMD® Radeon™ 520 1GB VGA +DP			X	
AMD® Radeon™ RX 550X 4GB DP+HDMI		X	X	
AMD® Radeon™ 630 with 2GB GDDR5*				X

*AMD® Radeon™ 630 with 2GB GDDR5 must be configured at purchase

Adapters and Cables	DM	SFF	MT	AiO
HP DisplayPort™ Cable	X	X	X	X
HP DisplayPort™ to DVI-D Adapter	X	X	X	X
HP DisplayPort™ to HDMI True 4K Adapter	X	X	X	X
HP DisplayPort™ to VGA Adapter	X	X	X	X
HP USB to Serial Port Adapter	X	X	X	X

STORAGE

3.5 inch SATA Hard Disk Drives (HDD)	DM	SFF	MT	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	MT	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

* Storage DriveLock does not work with Self Encrypting or Optane based storage

M.2 PCIe NMVe Solid State Drives (SSD)	DM	SFF	MT	AiO
256GB M.2 2280 PCIe NVMe SSD	X	X	X	X
512GB M.2 2280 PCIe NVMe SSD	X	X	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
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

* Storage DriveLock does not work with Self Encrypting or Optane based storage

Optical Disc Drives	DM	SFF	MT	AiO
HP 9.5mm Slim DVD-ROM Drive[1]		X	X	X
HP 9.5mm Slim DVD Writer Drive[2]		X	X	X
HP 9.5mm Slim Blu-Ray Writer Drive[3]		X	X	X

1. HD-DVD disks cannot be played on this drive. No support for DVD-RAM. Actual speeds may vary. Don’t copy copyright-protected materials. Double Layer discs can store more data than single layer discs. Discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.
2. Don't copy copyright-protected materials.
3. With Blu-Ray, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this Desktop PC.

Media Card Reader	DM	SFF	MT	AiO
SD 4.0 with 5-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II)		X	X	
SD 3.0 with 4-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I)				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

	DM	SFF	MT	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), 64 GB, 2 DIMM		X	X	
DDR4-3200 (Transfer rates up to 3200 MT/s), 64 GB, 2 SODIMM	X			X
DDR4-3200 (Transfer rates up to 3200 MT/s), 64 GB, 2 DIMM		X	X	

Memory Configuration

4 GB (4 GB x 1)	X	X	X	X
8 GB (4 GB x 2)	X	X	X	X
8 GB (8 GB x 1)	X	X	X	X
16 GB (8 GB x 2)	X	X	X	X
16 GB (16 GB x 1)	X	X	X	X
32 GB (16 GB x 2)	X	X	X	X
32 GB (32 GB x 1)	X	X	X	X

64 GB (32 GB x 2)	X	X	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.
NOTE: Memory modules support data transfer rates up to 2666 MT/s and 3200 MT/s respectively depending on memory module used; 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.
NOTE: Memory speed 2666 and 2933 MT/s can be achieved via two UDIMMs per channel (2DPC) when populated with the same part number.

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)	DM	SFF	MT	AiO
Intel® I219-LM Gigabit Network Connection (standard)	X	X	X	X
Intel® I210-T1 PCIe x1 Gigabit Network Interface Card (optional)		X	X	
Wireless[1]				
Intel® Wi-Fi 6 AX201 802.11ax 2x2 with Bluetooth® M.2 Combo Card vPro™	X	X	X	X
Intel® Wi-Fi 6 AX201 802.11ax 2x2 with Bluetooth® M.2 Combo Card non-vPro™	X	X	X	X
Realtek RTL8822CE 802.11ac 2x2 with Bluetooth® M.2 Combo Card	X	X	X	X
Realtek RTL8821CE 802.11ac 1x1 with Bluetooth® M.2 Combo Card	X	X	X	X

1. Wireless access point and Internet service required and not included. Availability of public wireless access points limited.

KEYBOARDS AND POINTING DEVICES

Keyboards	DM	SFF	MT	AiO
HP PS/2 Business Slim Standalone Wired Keyboard		X	X	
HP Wired Desktop 320K Keyboard	X	X	X	X
HP USB Business Slim Wired SmartCard CCID Keyboard	X	X	X	X
HP USB & PS/2 Washable Standalone Wired Keyboard	X	X	X	X
HP USB Wired Keyboard	X	X	X	X
HP Universal USB Wired Keyboard	X	X	X	X

Keyboard & Mouse Combo	DM	SFF	MT	AiO
HP Business Slim Wireless Keyboard and Mouse	X	X	X	X
HP USB PS/2 Washable Keyboard and Mouse Wired	X	X	X	X

Mouse	DM	SFF	MT	AiO
HP PS/2 Mouse		X	X	
HP Wired Desktop 320M Mouse	X	X	X	X
HP USB Optical Wired Mouse	X	X	X	X
HP USB Hardened Optical Wired Mouse	X	X	X	X
HP USB 1000dpi Laser Mouse	X	X	X	X
HP USB & PS/2 Washable Wired Mouse Standalone	X	X	X	X
HP USB Fingerprint Mouse	X	X	X	X

NOTE: Availability may vary by country

SECURITY

	DM	SFF	MT	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
Intrusion Sensor (Optional)		X	X	
Intrusion Sensor (integrated in the system board, can be enabled/disabled through BIOS)	X			X
Support for chassis cable lock devices	X (10 mm barrel or smaller)	X	X	X
Support for chassis padlocks devices	X	X	X	
Support for table lock				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
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

PORTS

Internal Slots and Ports	**DM**	**SFF**	**MT**		**AiO**
			400	**480 PCI**	
M.2 PCIe	(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)		(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)
PCI Express v3.0 x1		1	2	1	
PCI Express v3.0 x16		1	1	1	
PCI x1				1	
SATA port		3	3		
Integrated SATA storage connector	1				1

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).

Bays	**DM**	**SFF**	**MT**	**AiO**
9.5mm Slim Optical Disc Drive (ODD)		1	1	1[1]
SD Card Reader		1	1	1
2.5" Internal Storage Drive	1	2[2]	1	1
3.5" Internal Storage Drive		1[2]	2[3]	

1. Must be configured at time of purchase
2. SFF can be configured with either (1) 3.5" or (2) 2.5" internal storage drive (2.5-inch drive needs adapter that can only be purchased when configuring the PC from factory with a 2.5" drive.)
3. MT's one of the 3.5" bay can be configured as either (1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay (2.5-inch drive needs an adapter that can only be purchased when configuring the PC from factory with a 2.5" drive.)

Standard User Accessible Ports	**DM**	**SFF**	**MT**		**AiO**
			400	**480 PCI**	
Type-A Hi-Speed USB 480Mbps signaling rate port	2[1] (rear)	2 (front) 2 (rear)	2 (front) 2 (rear)	4 (rear)	
Type-A SuperSpeed USB 5Gbps signaling rate port	1 (front) 2 (rear)	3 (rear)	3 (rear)	4 (front)	4 (rear)
Type-A SuperSpeed USB 10Gbps signaling rate port	1 (front)	2 (front)	2 (front)	2 (front)	1 (side)
Type-C® SuperSpeed USB 10Gbps signaling rate port	1 (front)				1 (side)
Video	1 DisplayPort™ 1.4 (rear) 1 HDMI 1.4 (rear)	1 DisplayPort™ 1.4 (rear) 1 HDMI 1.4 (rear)	1 DisplayPort™ 1.4 (rear) 1 HDMI 1.4 (rear)	1 DisplayPort™ 1.4 (rear) 1 VGA (rear)	1 DisplayPort™ 1.4 (rear) 1 HDMI 1.4 in (rear)
Audio	1 Combo Audio Jack with CTIA and OMTP	1 Combo Audio Jack with CTIA and OMTP	1 Combo Audio Jack with CTIA and OMTP headset support (front)		1 Combo Audio Jack with CTIA and

Standard Features and Configurable Components (availability may vary by country)

	headset support (front)	headset support (front)		OMTP headset support (side)
Network Interface	1 RJ45 (rear)	1 RJ45 (rear)	1 RJ45 (rear)	1 RJ45 (rear)

1. Upgradeable to SuperSpeed USB 10Gbps signaling rate port if configured with additional digital video port via Flex Port 1 and/or Intel® vPro™

Rear Configurable Non-PCIe/PCI Slot User Accessible Ports

Flexible Port 1, choice of one of the following:	**DM**	**SFF**	**MT**		**AiO**
			400	**480 PCI**	
Type-A USB		2 Type-A SuperSpeed USB 5Gbps signaling rate port	2 Type-A SuperSpeed USB 5Gbps signaling rate port		
Type-C® USB	1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode and power intake via USB Type-C® Power Delivery up to 100W	1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode	1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode		
Video	1 DisplayPort™ 1.4 or HDMI 2.0a or VGA	1 DisplayPort™ 1.4 or HDMI 2.0a or VGA	1 DisplayPort™ 1.4 or HDMI 2.0a or VGA		1 DisplayPort™ 1.4 or HDMI 2.0a
Serial (RS-232)	1[1]	1	1		1

1. Sold separately or as an optional feature

(1) Flexible Port 2, choice of one of the following:	**DM**	**SFF**	**MT**	**AiO**
Type-A USB	2 Hi-Speed USB 480Mbps signaling rate port[1]			
Serial (RS-232)	1[1]	1[1]	1[1]	

1. Must be configured at time of purchase

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

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

Preinstalled Software
HP BIOSphere Gen6[17]
HP Secure Erase[18]
HP DriveLock & Automatic DriveLock[20]
BIOS Update via Network
Absolute Persistence Module[19]
Pre-boot Authentication

Software
HP Desktop Support Utility
HP JumpStarts
HP Privacy Settings
HP Setup Integrated OOBE
HP Support Assistant[21]
HP Noise Cancellation Software
Buy Office (sold separately)
Xerox® DocuShare® (90 day free trial offer)[26]

Manageability Features
HP Driver Packs[22]
HP System Software Manager (SSM) (download)
HP BIOS Config Utility (BCU) (download)
HP Cloud Recovery[38]
HP Client Catalog (download)
HP Manageability Integration Kit for Microsoft System Center Configuration Management Gen4[23]
HP Image Assistant Gen5
Ivanti Management Suite (download)[24]

Client Security Software
HP Client Security Manager Gen6[25]
HP Power On Authentication
Windows Defender[27]

Security Management
Trusted Platform Module TPM 2.0 Embedded Security Chip shipped with Windows 10. (Common Criteria EAL4+ Certified)
Serial, USB enable/disable (via BIOS)
Power-on password (via BIOS)
Setup password (via BIOS)
HP Sure Sense[34]
HP Sure Click[37]

17. HP BIOSphere Gen6 is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations.
18. Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. “Clear” sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
19. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: http://www.absolute.com/company/legal/agreements/computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
20. Storage DriveLock does not work with Self Encrypting or Optane based storage
21. HP Support Assistant requires Windows and Internet access.
22. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
23. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html
24. Ivanti Management Suite subscription required.

25. HP Client Security Manager Gen6 requires Windows and is available on the select HP Elite and Pro PCs.
26. Simply sign up and start using Xerox® DocuShare® Go. No credit card. No obligation. Data will become unavailable unless a subscription is entered before the end of the 90 day free trial period. See visit http://www.xerox.com/docusharego for details.
27. Windows Defender Opt In, Windows 10, and internet connection required for updates.
37. HP Sure Click requires Windows 10 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.
38. 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 (DM/AiO). 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.

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: 5° to 35° C[1] Non-Operating for AiO: -20° to 60° C[1] Non-Operating for MT/SFF/DM: -30° to 60° C[1]
Relative Humidity	Operating: 5% to 90% (non-condensing at ambient) Non-operating: 5% to 90% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50000ft (15240 m)

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

ENVIRONMENTAL & INDUSTRY

HP ProDesk 400 G6 Desktop Mini PC

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® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified 8.0 *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)	4.52 W	4.55 W	4.49 W
Normal Operation (Long idle)	3.85 W	3.86 W	3.84 W
Sleep	0.62 W	0.67 W	0.60 W
Off	0.55 W	0.55 W	0.55 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 certified 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)	15 BTU/hr	16 BTU/hr	15 BTU/hr
Normal Operation (Long idle)	13 BTU/hr	13 BTU/hr	13 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr
	NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.9	19
Fixed Disk – Random writes	3.2	21.4

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: • 2 SODIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5" SATA HDD

<table>
<tr><td></td><td colspan="3">Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</td></tr>
<tr><td>Batteries</td><td colspan="3">This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater than 1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium</td></tr>
<tr><td>Additional Information</td><td colspan="3">• 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).
• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
• This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.*
• This product is 95.1% recycle-able when properly disposed of at end of life.

*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</td></tr>
<tr><td rowspan="3">Packaging Materials
(vary by country)</td><td>External:</td><td>PAPER/Paper</td><td>450 g</td></tr>
<tr><td>Internal:</td><td>PAPER/Molded Pulp</td><td>74 g</td></tr>
<tr><td></td><td>PLASTIC/Polyethylene low density - LDPE</td><td>5 g</td></tr>
<tr><td>Material Usage</td><td colspan="3">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)</td></tr>
</table>

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

HP ProDesk 400 G7 Small Form Factor PC

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® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified 8.0 *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)	4.6735 W	4.7122 W	4.68 W
Normal Operation (Long idle)	4.265 W	4.307 W	4.27 W
Sleep	0.85 W	0.859 W	0.84 W
Off	0.71 W	0.71 W	0.71 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 certified 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, 60Hz**
Normal Operation (Short idle)	15.936 BTU/hr	16.069 BTU/hr	15.959 BTU/hr
Normal Operation (Long idle)	14.544 BTU/hr	14.687 BTU/hr	14.561 BTU/hr
Sleep	2.899 BTU/hr	2.929 BTU/hr	2.864 BTU/hr
Off	2.421 BTU/hr	2.421BTU/hr	2.421BTU/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	3.3	23
Fixed Disk – Random writes	3.3	23
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: • 2 DIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5"/3.5" SATA HDD	

	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium
Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.* • This product is 95.1% recycle-able when properly disposed of at end of life. *Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
Packaging Materials (vary by country)	**External:** PAPER/Corrugated **Internal:** PLASTIC/EPE (Expanded Polyethylene) PLASTIC/Polyethylene low density
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf): • 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)

Standard Features and Configurable Components (availability may vary by country)

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	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.
HP Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

HP ProDesk 400 G7 Microtower 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: • IT ECO declaration • US ENERGY STAR® certified • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified 8.0 *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)	11.81 W	12.1 W	11.77 W
Normal Operation (Long idle)	10.66 W	10.79 W	10.48 W
Sleep	0.69 W	0.68 W	0.68 W
Off	0.88 W	0.86 W	0.86 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 certified 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, 60Hz**
Normal Operation (Short idle)	40.27 BTU/hr	41.26 BTU/hr	40.14 BTU/hr
Normal Operation (Long idle)	36.35BTU/hr	36.8 BTU/hr	35.74 BTU/hr
Sleep	2.35 BTU/hr	2.32 BTU/hr	2.31 BTU/hr
Off	3.00 BTU/hr	2.95 BTU/hr	2.93 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	3.24	22.5
Fixed Disk – Random writes	3.32	23.4
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: • 2 DIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5"/3.5" SATA HDD	

	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium		
Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <Gold> level, see www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains 44.4% post-consumer recycled plastic (by wt.) • This product is 95.0% recycle-able when properly disposed of at end of life.		
Packaging Materials (vary by country)	**External:**	PAPER/Corrugated	1110 g
		PAPER/Molded Pulp	620 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	32 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): • 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)		

Standard Features and Configurable Components (availability may vary by country)

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	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.
HP Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Standard Features and Configurable Components (availability may vary by country)

HP ProDesk 480 G7 PCI Microtower PC

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® certified • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified 8.0 *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)	14.43 W	14.52 W	14.28 W
Normal Operation (Long idle)	12.22 W	12.36 W	12.17 W
Sleep	0.99 W	0.98 W	0.98 W
Off	0.88 W	0.8 W	0.88 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 certified 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, 60Hz**
Normal Operation (Short idle)	49.21 BTU/hr	49.50 BTU/hr	48.70BTU/hr
Normal Operation (Long idle)	41.66BTU/hr	42.16 BTU/hr	41.48BTU/hr
Sleep	3.37 BTU/hr	3.35 BTU/hr	3.33 BTU/hr
Off	3.0 BTU/hr	2.74 BTU/hr	3.0 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	3.24	22.5
Fixed Disk – Random writes	3.32	23.4
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: • 2 DIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5"/3.5" SATA HDD Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.	

<table>
<tr><td>Batteries</td><td colspan="3">This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater than 1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium</td></tr>
<tr><td>**Additional Information**</td><td colspan="3">• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
• This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <Gold> level, see www.epeat.net
• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
• This product contains 44.4% post-consumer recycled plastic (by wt.)
• This product is 95.0% recycle-able when properly disposed of at end of life.</td></tr>
<tr><td rowspan="3">**Packaging Materials**
(vary by country)</td><td>**External:**</td><td>PAPER/Corrugated</td><td>1110 g</td></tr>
<tr><td></td><td>PAPER/Molded Pulp</td><td>620 g</td></tr>
<tr><td>**Internal:**</td><td>PLASTIC/Polyethylene low density - LDPE</td><td>32 g</td></tr>
<tr><td>**Material Usage**</td><td colspan="3">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)</td></tr>
</table>

Standard Features and Configurable Components (availability may vary by country)

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	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.
HP Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Standard Features and Configurable Components (availability may vary by country)

HP ProOne 400 G6 24 All-in-One PC

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® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified *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)	17.85 W	19.04 W	17.25 W
Normal Operation (Long idle)	5.63 W	6.47 W	4.51 W
Sleep	0.92 W	1.00 W	0.85 W
Off	0.73 W	0.74 W	0.64 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 certified 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, 60Hz**
Normal Operation (Short idle)	60.8685 BTU/hr	64.9264 BTU/hr	58.8225 BTU/hr
Normal Operation (Long idle)	19.1983 BTU/hr	22.0627 BTU/hr	15.3791BTU/hr
Sleep	3.1372 BTU/hr	3.41 BTU/hr	2.8985 BTU/hr
Off	2.4893 BTU/hr	2.5234 BTU/hr	2.1824 BTU/hr
	NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.8	17.6
Fixed Disk – Random writes	3.1	21.2
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: • 2 SODIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5" SATA HDD Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.	

<table>
<tr><td>Batteries</td><td colspan="3">This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:
Mercury greater than 1ppm by weight
Cadmium greater than 20ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium</td></tr>
<tr><td>Additional Information</td><td colspan="3">• 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).
• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
• This product contains a minimum of 50% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.*
• This product is 95.1% recycle-able when properly disposed of at end of life.

*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</td></tr>
<tr><td rowspan="3">Packaging Materials
(vary by country)</td><td>External:</td><td>PAPER/Corrugated</td><td>1605 g</td></tr>
<tr><td>Internal:</td><td>PLASTIC/Polyethylene Expanded - EPE</td><td>683 g</td></tr>
<tr><td></td><td>PLASTIC/Polyethylene low density - LDPE</td><td>42 g</td></tr>
<tr><td>Material Usage</td><td colspan="3">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)</td></tr>
</table>

Standard Features and Configurable Components (availability may vary by country)

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

Standard Features and Configurable Components (availability may vary by country)

HP ProOne 400 G6 20 All-in-One PC

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® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified *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)	14.62 W	15.84 W	14.12 W
Normal Operation (Long idle)	5.41 W	6.23 W	4.25 W
Sleep	0.91 W	0.98 W	0.83 W
Off	0.71 W	0.73 W	0.65 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 certified 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, 60Hz**
Normal Operation (Short idle)	49.8542 BTU/hr	51.0144 BTU/hr	48.1492 BTU/hr
Normal Operation (Long idle)	18.4481 BTU/hr	21.2443 BTU/hr	14.4925 BTU/hr
Sleep	3.0690 BTU/hr	3.3418 BTU/hr	2.8303 BTU/hr
Off	2.4211 BTU/hr	2.4893 BTU/hr	2.2165 BTU/hr
	NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.8	16.5
Fixed Disk – Random writes	3	19.5

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: • 2 SODIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5" SATA HDD Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.

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<tr><td rowspan="3">Packaging Materials
(vary by country)</td><td>External:</td><td>PAPER/Corrugated</td><td>1446 g</td></tr>
<tr><td>Internal:</td><td>PLASTIC/Polyethylene Expanded - EPE</td><td>447 g</td></tr>
<tr><td></td><td>PLASTIC/Polyethylene low density - LDPE</td><td>36 g</td></tr>
<tr><td>Material Usage</td><td colspan="3">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):
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• Chlorinated Paraffins
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• 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)</td></tr>
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Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
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HP Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

SERVICE AND SUPPORT

On-site Warranty[1]: Three-year (3-3-3) or one-year (1-1-1) limited warranty delivers three years or one year of on-site, next business day[2] service for parts and labor and includes free support 24 x 7[3]. 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.[4]

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. 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.
4. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

PROCESSORS

Intel® 10th Generation Core™ Processors

All HP ProDesk & ProOne 400 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 ProDesk and ProOne 400 Business PC.

Intel® Advanced Management Technology (AMT) v12[1] – 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 capabilities
- No reset after provisioning
- Support for Intel Enterprise Digital Fence
- The Platform Discovery Utility can now discover these additional Intel products:
  - Intel Identity Protection Technology with One Time Password
  - Public Key Infrastructure
  - Multi Factor Authentication
- Profile Editor and Profile Editor Plugin Interface
- Required Permissions for Solutions Framework

1. Intel® Active Management Technology requires an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes.

DISPLAY PANEL SPECIFICATIONS[1]

HP ProOne 400 G6 All in-One PC

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)
Hardware based low blue light	Available on non-touch variant

19.53” diagonal widescreen WLED backlit anti-glare LCD (1920 x 1080) Non-touch

Type	VA WLED Backlit LCD
Active area (mm)	434.88 x 238.68
Native Resolution (HxV)	1920 x 1080
Refresh Rate	60 Hz @ 1920 x 1080
Aspect ratio	16:9
Pixel pitch (HxV)(mm)	0.2265 x 0.221
Contrast ratio (typical)	3000:1
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
Color gamut (typical)	NTSC 72%
Anti-glare	Yes
Response Time	25ms (typical)
Default color temperature	Warm (6500K)

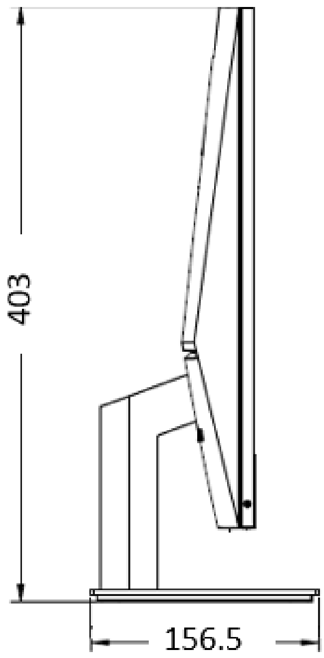
1. All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

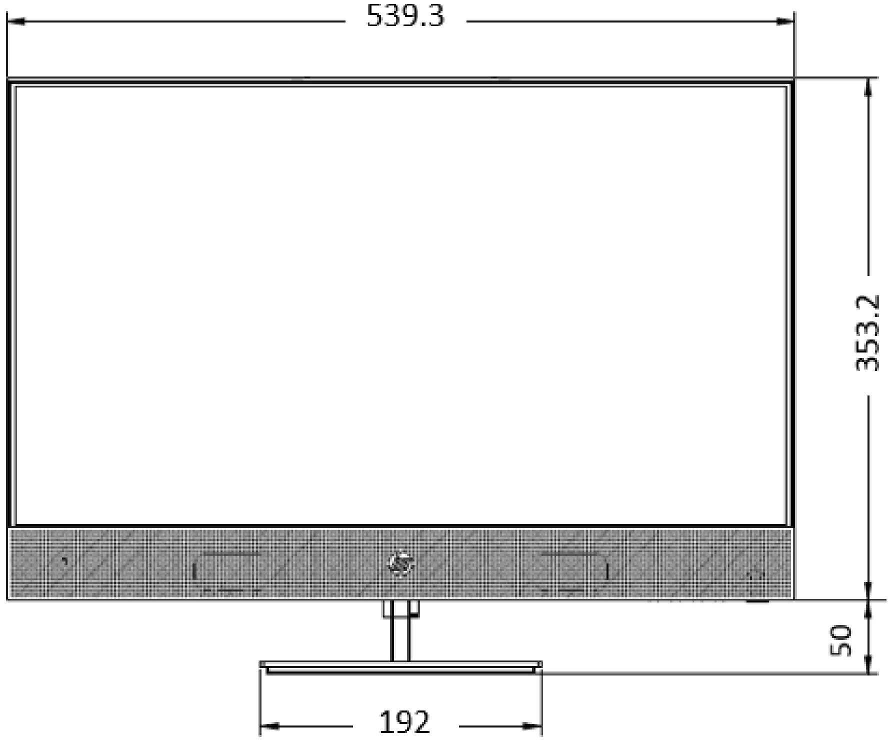
Technical Specifications – All-in-One Stand Specifications

ALL-IN-ONE STAND SPECIFICATIONS

HP ProOne 400 G6 24 All-in-One PC

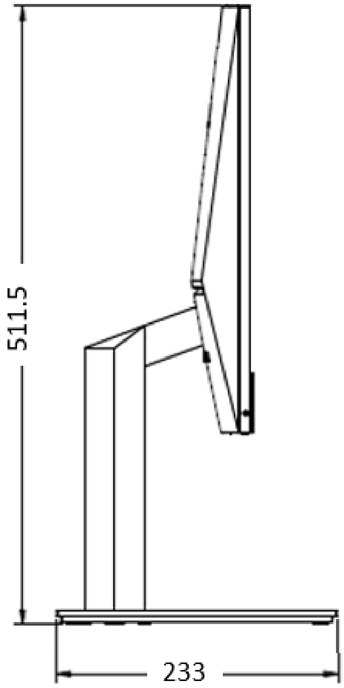
Cantilever Stand (Fixed Height Tilt Stand)	**Tilt Angle**	-5° to +20°
	Rotation (Swivel)	None
	Pivot	None

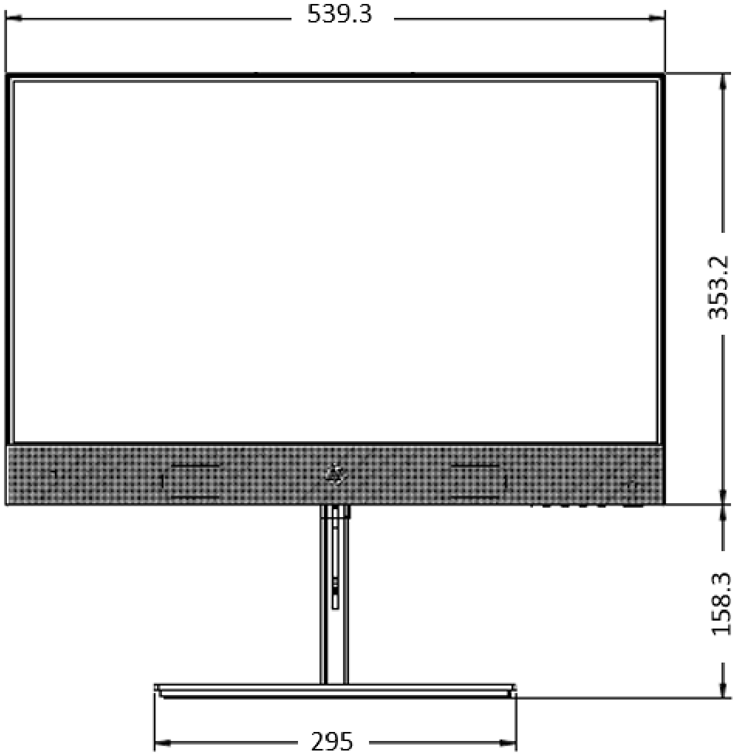


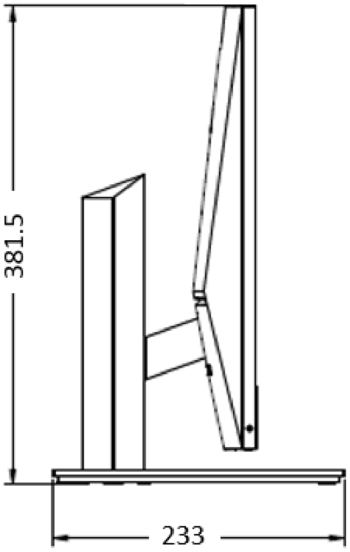


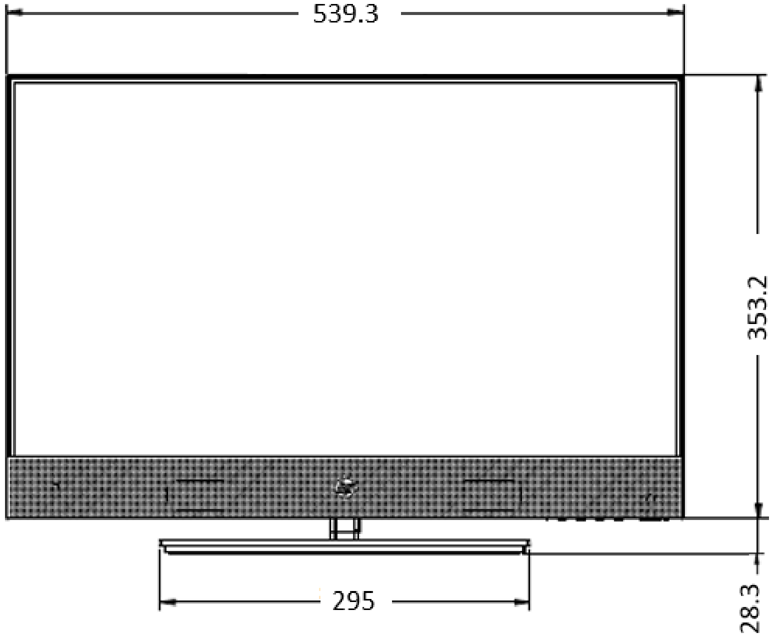
Technical Specifications – All-in-One Stand Specifications

Adjustable Height Stand	**Height Adjustment (Landscape Mode)**	5.12 in / 130mm
	Height Adjustment (Portrait Mode)	N/A
	Tilt Angle	-5° to +20°
	Rotation (Swivel)	±45°
	Pivot	None





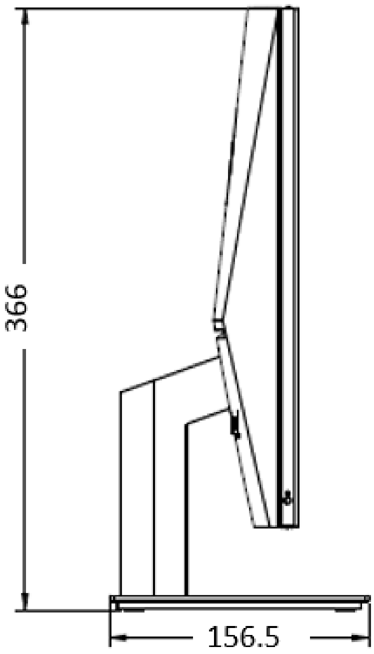


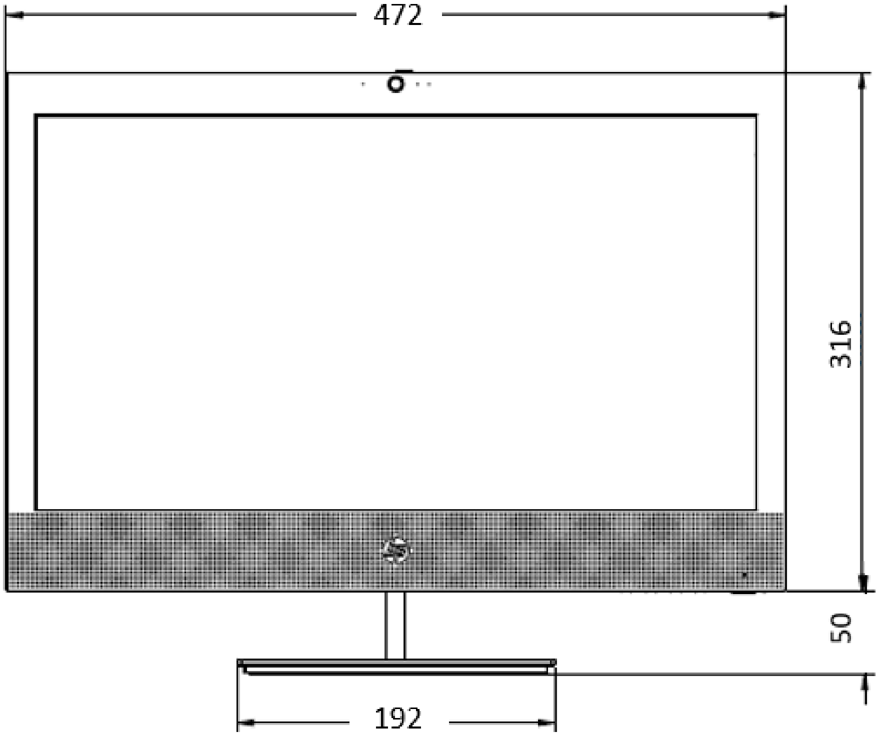


Technical Specifications – All-in-One Stand Specifications

HP ProOne 400 G6 20 All-in-One PC

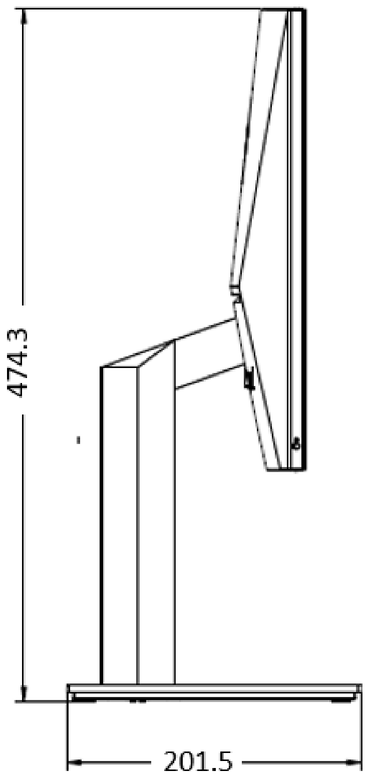
Cantilever Stand (Fixed Height Tilt Stand)	**Tilt Angle**	-5° to +20°
	Rotation (Swivel)	None
	Pivot	None

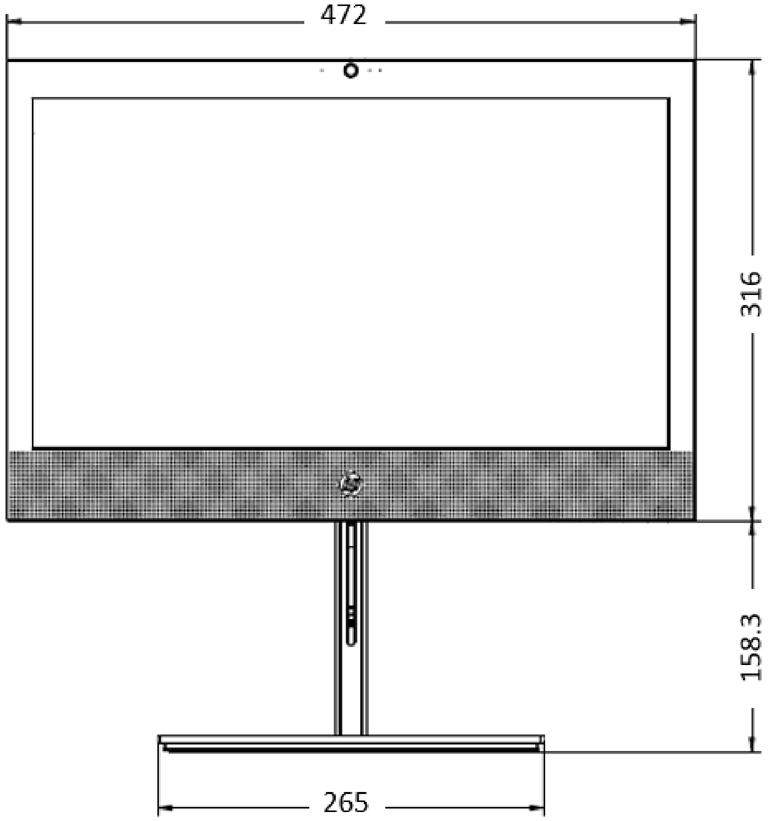


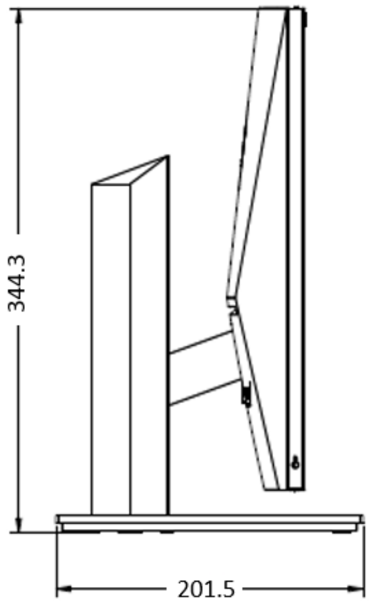


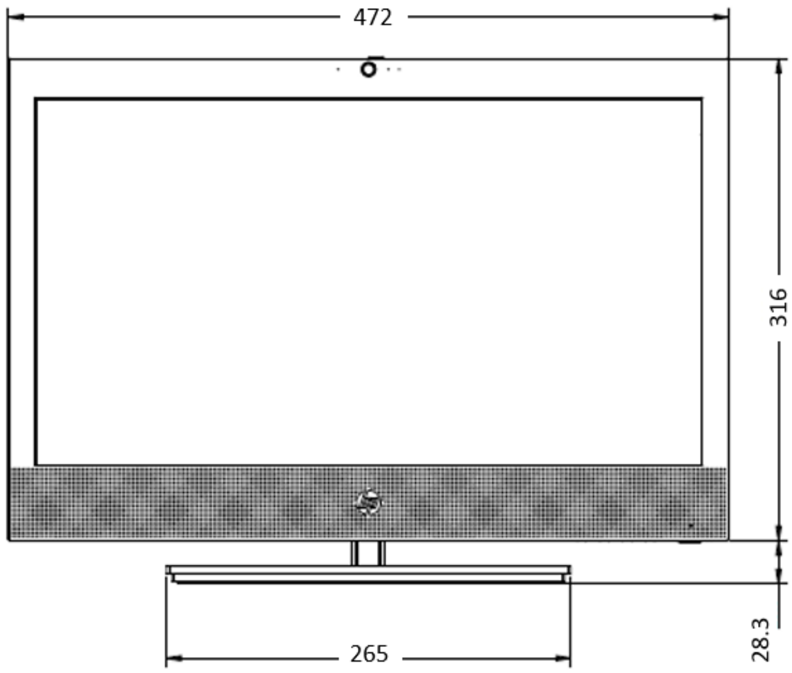
Technical Specifications – All-in-One Stand Specifications

Adjustable Height Stand	**Height Adjustment (Landscape Mode)**	5.12 in / 130 mm
	Height Adjustment (Portrait Mode)	N/A
	Tilt Angle	-5° to +20°
	Rotation (Swivel)	±45°
	Pivot	None









GRAPHICS

Intel® UHD Graphics (integrated)

Graphics Controller	Integrated
DisplayPort™	Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics
HDMI	Supports HDMI 2.0a features Supports HDCP 2.2 Supports audio over HDMI
VGA	VGA output
USB-C™ DP Alt Mode	DisplayPort™ over the 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 VP9 10b Dec HW HDR Rec. 2020 DX12
Max. Resolution (VGA)	2048 x 1536@60Hz
Max. Resolution (HDMI)	4096 x 2160@60Hz
Max. Resolution (DP)	4096 x 2160@60Hz

AMD® Radeon™ RX 550X 4 GB FH 2DP+HDMI

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

AMD® Radeon™ 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

Technical Specifications – Graphics

Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

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

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

AMD Radeon™ 630 with 2 GB GDDR5

Memory	2 GB 64-bit wide frame buffer operating at 1125MHz.
Controller Clock Speed	AMD Radeon™ 630 GPU operating at 1024 MHz
Architecture	Hybrid Graphics AMD GPU uses Intel® graphics controller for display control
Bus Connection	PCIE 3.0 x8
Graphics /API support	DIRECTX 12, Open GL 4.5, Open CL2.0, UVD, , Mantle, AMD LiquidVR™
Display support	Same as for the Intel® integrated graphics solution
Max. Resolution (HDMI)	4096 X 2160@60Hz
Max. Resolution (DP)	4096 X 2160@60Hz

AMD Radeon™ 520 1GB Graphics Card

Engine Clock	780 MHz
Memory Clock	1150 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	PCB with FH bracket

STORAGE

500GB 7200RPM 3.5in SATA HDD

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

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

1TB 7200RPM 3.5in SATA HDD

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

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

2TB 7200RPM 3.5in SATA HDD

Capacity	2 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	64 MB
Logical Blocks	3,907,029,168
Seek Time	11 ms (Average)
Height	1.028 in/26.11 mm
Width (nominal)	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

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

500GB 7200RPM 2.5in SATA HDD

Capacity	500 GB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	Up to 128 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.283 in/7.2 mm (Max)
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.

1TB 7200RPM 2.5in SATA HDD

Capacity	1 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	Up to 128 MB
Logical Blocks	1,953,525,168
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (Max.)
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.

2TB 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 (Max.)
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.

500GB 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	128 MB

Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.283 in/7.2 mm (Max.)
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.

500GB 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	128 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.283 in/7.2 mm (Max.)
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.

256GB 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

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.

512GB 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.

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

Drive Weight	< 10g
Capacity	128 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
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.

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

Drive Weight	< 10g
Capacity	256GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
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.

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

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3

Technical Specifications – Storage

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.

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

Drive Weight	< 10g
Capacity	1 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
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.

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

Drive Weight	< 10g
Capacity	2 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 3500MB/s
Maximum Sequential Write	Up to 3000MB/s
Logical Blocks	3,907,029,168
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.

256GB 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 Gen3
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.

512GB 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 Gen3
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.

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

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

Technical Specifications – Storage

Width	22mm
Interface	PCIe Gen3
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 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.

HP 9.5mm Slim DVD-ROM Drive

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

HP 9.5mm Slim DVD Writer Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 8.5 GB DL or 4.7 GB standard
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.31 lb (140 g)
Write Speeds	DVD-R DL - Up to 6X DVD+R - Up to 8X DVD+RW - Up to 8X DVD+R DL - Up to 6X DVD-R - Up to 8X DVD-RW - Up to 6X CD-R - Up to 24X CD-RW - Up to 10X
Read Speeds	DVD-RW, DVD+RW - Up to 8X

Technical Specifications – Storage

	DVD-R DL, DVD+R DL - Up to 8X DVD+R, DVD-R - Up to 8X DVD-ROM DL, DVD-ROM - Up to 8X CD-ROM, CD-R - Up to 24X CD-RW - Up to 24X
Access time (typical reads, including settling)	Random DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full Stroke DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical) Stop Time 6 seconds (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

HP 9.5mm Slim Blu-Ray Writer Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 128 GB QL, 100 GB TL, 50 GB DL or 25 GB standard SL
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.29 lb (132 g)
Write Speeds	BD-R SL/DL Up to 6X BD-R TL/QL Up to 4X BD-RE Up to 2X DVD-R Up to 8X DVD-R DL - Up to 6X DVD-RW Up to 6X DVD+R Up to 8X DVD+R DL - Up to 6X DVD+RW Up to 8X DVD-RAM Up to 5X CD-R Up to 24X CD-RW Up to 10X
Read Speeds	BD-ROM Up to 6X BD-R Up to 6X BD-RE SL/DL Up to 6X BD-RE TL Up to 4X DVD-ROM Up to 8X DVD-R SL/DL Up to 8X DVD-R Up to 8X DVD-RW Up to 8X DVD+R SL/DL Up to 8X DVD+R Up to 8X DVD+RW Up to 8X BDMV (AACS Compliant Disc) Up to 6x/2x (Read/Play) DVD-RAM Up to 5x DVD-Video (CSS Compliant Disc) Up to 8x/4x (Read/Play)

Technical Specifications – Storage

	CD-R/RW/ROM Up to 24x CD-DA (DAE) Up to 24X/10X (Read/Play)
Access time (typical reads, including settling)	Random BD-ROM: 205 ms (typical), DVD-ROM: 185 ms (typical), CD-ROM: 165 ms (typical) Full Stroke BD-ROM: 350 ms (typical), DVD-ROM: 345 ms (typical), CD-ROM: 340 ms (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC -1200 mA typical, 2000 mA maximum
Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

NETWORKING AND COMMUNICATIONS

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

Intel® Ethernet Controller I210-AT Add-On Card	
Connector	RJ-45
System Interface	PCIe + 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)

Technical Specifications – Networking

Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K
Power consumption	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel® Wi-Fi 6 AX201 + BT5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds)	
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	Features Wi-Fi 6 technology
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
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) • 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM

Technical Specifications – Networking

Security	• IEEE compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power	• 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ac VHT160(5GHz) : +11.5dBm minimum • 802.11ax HT40(2.4GHz) : +10dBm minimum • 802.11ax VHT160(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	802.11b, 1Mbps : -93.5dBm maximum 802.11b, 11Mbps : -84dBm maximum 802.11a/g, 6Mbps : -86dBm maximum 802.11a/g, 54Mbps : -72dBm maximum 802.11n, MCS07 : -67dBm maximum 802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum 802.11ac, MCS9 : -59dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface	
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	
Weight	1. Type 2230 : 2.8g 2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED Off – Radio ON	

Technical Specifications – Networking

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology	
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1 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	Microsoft Windows Bluetooth® Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management **Certifications**	ETS 300 328, ETS 300 826 Low Voltage Directive IEC60950-1/IEC62368-1 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Intel Wi-Fi 6 AX201 + BT5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds)	
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

Technical Specifications – Networking

	IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Features Wi-Fi 6 technology
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
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz) • 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
Security	• IEEE compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power	• 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ac VHT160(5GHz) : +11.5dBm minimum • 802.11ax HT40(2.4GHz) : +10dBm minimum • 802.11ax VHT160(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/Modern Standby: 10mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity	•802.11b, 1Mbps : -93.5dBm maximum •802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum

	• 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0 : -84dBm maximum • 802.11ac, MCS9 : -59dBm maximum •802.11ax, MCS11(HT40): -59dBm maximum •802.11ax, MCS11(VHT160): -58.5dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface	
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	
Weight	1. Type 2230 : 2.8g 2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – Radio ON	
HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1 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	Microsoft Windows Bluetooth® Software	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
Power Management **Certifications**	ETS 300 328, ETS 300 826 Low Voltage Directive IEC60950-1/IEC62368-1 UL, CSA, and CE Mark FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode	

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

Realtek RTL8821CE 802.11ac 1x1 Wi-Fi® and Bluetooth® 4.2 Combo	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi® certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points

Technical Specifications – Networking

Output Power	• 802.11b : +14dBm minimum • 802.11g : +12dBm minimum • 802.11a : +12dBm minimum • 802.11n HT20(2.4GHz) : +12dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +10dBm minimum • 802.11n HT40(5GHz) : +10dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum	
Power Consumption	• Transmit mode2.0 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	802.11b, 1Mbps: -93.5dBm maximum 802.11b, 11Mbps: -84dBm maximum 802.11a/g, 6Mbps: -86dBm maximum 802.11a/g, 54Mbps: -72dBm maximum 802.11n, MCS07: -67dBm maximum 802.11n, MCS15: -64dBm maximum 802.11ac, MCS0: -84dBm maximum 802.11ac, MCS9: -59dBm maximum	
Antenna type	High efficiency antenna. 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 Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED Off – Radio ON	

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

Bluetooth® Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE: 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth® Software Supported	Microsoft Windows Bluetooth® Software

Technical Specifications – Networking

Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management **Certifications**	ETS 300 328, ETS 300 826 Low Voltage Directive IEC60950-1/IEC62368-1 UL, CSA, and CE Mark FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + BT5	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi® certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz & 80MHz)

Technical Specifications – Networking

Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM	
Security	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI	
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 : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ac VHT160(5GHz) : +11.5dBm minimum	
Power Consumption	• 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/Modern Standby: 10mW • Radio disabled: 8 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity	802.11b, 1Mbps : -93.5dBm maximum 802.11b, 11Mbps : -84dBm maximum 802.11a/g, 6Mbps : -86dBm maximum 802.11a/g, 54Mbps : -72dBm maximum 802.11n, MCS07 : -67dBm maximum 802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum 802.11ac, MCS9 : -59dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface	
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	
Weight	1. Type 2230 : 2.8g 2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating Non-operating	14° to 158° F (–10° to 70° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED Off – Radio ON	

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology

Technical Specifications – Networking

Bluetooth® Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE: 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
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	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management **Certifications**	ETS 300 328, ETS 300 826 Low Voltage Directive IEC60950-1/IEC62368-1 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

I/O DEVICES

HP Business Slim Standalone 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 or PS/2
	ESD	Contact Discharge: 2, 4,6,8KV Air Discharge: 2, 4, 8,10,12.5KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±12.5g nominal peak force with tactile feedback
	Switch life	10 million keystrokes (Life tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft (1.8 m)
Environmental	Acoustics	43-dBA maximum sound pressure level
	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	Minus 30 degress to 60 degress 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, RCM, KCC	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP USB Business Slim Wired SmartCard CCID Keyboard		
Physical Characteristics	Keys	104, 105, 109 layout (depending upon country)

	Dimensions (L x W x H)	17.34 x 5.68 x 0.78in (440.6 x 144.5 x 1.98 cm)
	Weight	1.32 lb (598g)
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	100mA (All LED on)
	System interface	USB Type A plug connector
	ESD	Contact Discharge: 8 KV Air Discharge: 12.5 KV
	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)
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	CE Marking, TUV, EAC, FCC, cULus/CSAus, ICES, RCM, VCCI, KCC, BSMI	
Ergonomic compliance	ISO 9241-4, TUVGS	

HP USB & PS/2 Washable Standalone Wired Keyboard		
Physical Characteristics	Keys	104, 105 layout (depending upon country)
	Dimensions (L x W x H)	17.68 x 6.68 x 1.22 in (449.18 x 169.66 x31.2 mm)
	Weight	1.57 lb (710g)
Electrical	Operating voltage	5V +- 5%
	Power consumption	50mA
	System interface	USB Type A plug connector

Technical Specifications – Input/Output Devices

	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Keycaps	Low-profile design
	Switch actuation	55±10g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (Life tester)
	Switch type	Contamination-resistant switch membrane
	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	ft (2.2 m)
Environmental	Acoustics	43-dBA maximum sound pressure level
	Operating temperature	50° to 122° F (10° to 50° C)
	Non-operating temperature	-4° to 149° F (-20° to 65° C)
	Operating humidity	10% to 95% (non-condensing at ambient)
	Non-operating humidity	0% to 95% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence
Approvals	UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, RCM, KCC, USB-IF, WHQL, EN/IEC 60601-1, IP66/NEMA4X	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP USB Wired Keyboard		
Physical Characteristics	Keys	104, 105, 106, 108, 109 layouts
	Dimensions (L x W x H)	18.12 x 6.47 x 1.10 in (460.28 x 164.31 x 27.88 mm)
	Weight	1.98 lb (900g) min
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	50mA Max (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
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±14g nominal peak force with tactile feedback
	Switch life	20 million keystrokes (Life tester)
	Switch type	Contamination-resistant switch membrane

Technical Specifications – Input/Output Devices

	Key-leveling mechanisms	For all double-wide and greater-length keys
	Cable length	6 ft (1.8 m)
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	CUL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC	
Ergonomic compliance	TUVGS	

HP Universal USB Wired Keyboard		
Physical Characteristics	Keys	104, 105 layout (depending upon country)
	Dimensions (L x W x H)	18.15 x 6.02 x 1.08 in (461 x 153 x 27.4 mm)
	Weight	1.32 lb (600g) min
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	50mA Max (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
Mechanical	Keycaps	Mid-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	Mid-profile design
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, RCM, KCC, EAC	
Ergonomic compliance	TUVGS	

HP Universal USB Wired Mouse		
Dimensions (H x L x W)	4.53 x 2.50 x 1.40 in (115 x 63.46 x 35.48 mm)	
Weight	0.18lb (80g)	
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	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption (typical)	50mA Max
	Resolution	1,000 DPI
	Sensor	Pixart PAN3606DL
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	9G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC

HP Optical Mouse		
Dimensions (H x L x W)	4.53 x 2.48 x1.46 in (115.2x 63 x37 mm)	
Weight	0.22lb (101.6g)	
Environmental	Operating temperature	41° to 122° F (5° to 50° C)
	Non-operating temperature	(-4° to 140° F)(-20° to 60° C)

Technical Specifications – Input/Output Devices

	Operating humidity	10% to 85% (non-condensing at ambient)
	Non-operating humidity	5% to 95% (non-condensing at ambient)
	Operating shock	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
Electrical	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
	System interface	USB or PS/2
Mechanical	Switch actuation	60±15g nominal peak force with tactile feedback
	Switch life	3 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)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC

HP USB 1000dpi Laser Mouse		
Dimensions (H x L x W)	115 x 62.9 x 37 mm (L x W x H)	
Weight	0.22lb (101.6g)	
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	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption (typical)	100mA
	Resolution	1,000 DPI
	Sensor	PixArt vendor Laser USB mouse sensor
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC

HP USB Fingerprint Mouse		
Dimensions (H x L x W)	107 x 67 x 38.7 mm	
Weight	85 g	
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	40 g, six surfaces
	Non-operating shock	80 g, six surfaces
	Operating vibration	2-g peak acceleration
	Non-operating vibration	4-g peak acceleration
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption (typical)	130mA
	Resolution	1,200 DPI
	Sensor	PixArt vendor Laser USB mouse sensor
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC

AUDIO/MULTIMEDIA

HP ProDesk 400 G6 Desktop Mini PC

Type	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is retaskable as a Line-in, Line-out, Microphone-in or Headphone-out 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 ProDesk 400 G7 Small Form Factor PC

Type	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is retaskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Line-out, port, 3.5mm and support stereo
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

Technical Specifications – Audio/Multimedia

HP ProDesk 400 G7 Microtower PC

Type	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is retaskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Line-out, Line-in*, 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

***NOTE:** Line-in port only available on product with legacy PCI version

HP ProOne 400 G6 20/24 All-in-One PC

Type	Integrated
HD Stereo Codec	Realtek ALC3252
Audio I/O Ports	Side 3.5mm headset connector supports an OMTP or CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port
Internal Speaker Amplifier	2W per channel class D stereo amplifier for the internal speakers only
Multi-streaming Capable	Playback multi-streaming allows independent audio streams to be sent to/from the side jack and 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

Optional integrated 1 MP HD RGB webcam & microphone; maximum resolution of 1280 x 720
Optional integrated 5 MP RGB webcam & microphone; maximum resolution of 2592 x 1944
Optional integrated 5 MP RGB webcam with IR sensor & microphone; maximum resolution of 2592 x 1944

POWER

	DM	SFF	MT	AiO
External Power Supplies	65W EPS, 88% average efficiency at 115V & 89% at 230Vac	N/A	N/A	90W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac 120W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac 150W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac
80 PLUS Gold	N/A	180W active PFC / 80 PLUS Gold 87/90/87% efficient at 20/50/100% load (115V) 90/92/89% efficient at 20/50/100% load (230V)	180W active PFC / 80 PLUS Gold 87/90/87% efficient at 20/50/100% load (115V) 90/92/89% efficient at 20/50/100% load (230V)	N/A
80 PLUS Platinum	N/A	210W active PFC / 80 PLUS Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	260W active PFC / 80 PLUS Platinum 350W active PFC / 80 PLUS Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	N/A
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 with Energy Efficient* Power Supply	65W≦1.7A 90W≦1.2A	180W Gold ≦ 2.3A 210W Platinum ≦ 2.5A	180W≦2.3A 260W≦3.1A 350W≦4A 550W≦6.6A	90W≦1.7A 120W≦2.2A 150W≦2.5A
DC Output	+19.5V	+12V	+12V	+19.5V
Current Leakage (NFPA 99: 2102)	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and

Technical Specifications – Power

	that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 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.	Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 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.	Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 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.	Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 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	50mm 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)
Dimensions	65W: 102 x 55 x 30 mm 90W : 127 x 50 x 30 mm / 132 x 57 x 30 mm	200 x 85 x 53 mm	165 x 95 x 73 mm	90W : 127 x 50 x 30 mm / 132 x 57 x 30 mm 120W : 148 x 75.5 x 25.4 mm 150W : 160 x 80 x 40 mm

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	
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[1]

	DM	SFF	MT
Chassis (W x D x H)	6.97 x 6.89 x 1.35 in 177 x 175 x 34.2 mm	10.6 x 11.9 x 3.7 in 270 x 303 x 95 mm	6.1 x 13.27 x 11.93 in 155x 337 x 303 mm
System Volume	64 cu in 1.05 L	474 cu in 7.8 L	965 cu in 15.83 L
System Weight[1]	2.74 lbs 1.25 kg	8.6 lbs 3.9 kg	11.01 lbs 5 kg
Max Supported Weight (desktop orientation)	N/A	77 lbs 35 kg	77 lbs 35 kg
Packaging Dimension (W x D x H)	19.57 x 5.04 x 8.78 in (497 x 128 x 223 mm)	15.52 x 8.07 x 19.65 in (394 x 205 x 499 mm)	15.75 x 11.30 x 19.65 in (400 x 287 x 499 mm)
	MPP: 19.61 x 9.25 x 5.20 in (498 x 235 x 132 mm)	**MPP**: 15.52 x 8.07 x 19.65 in (394 x 205 x 499 mm)	**MPP**: 15.75 x 11.30 x 19.65 in (400 x 287 x 499 mm)
Shipping Weight	6.52 lbs (2.97 kg)	15.37 lbs (6.97 kg)	16.85 lbs (7.65 kg)
	MPP: 7.50 lbs (3.40 kg)	**MPP**: 15.86 lbs (7.2 kg)	**MPP**: 17.55 lbs (7.97 kg)
Palletization Profile	18-units per layer 5 or 6 layers max depending on details of air freight 90 or 108 units per pallet depending on details of air freight 45.354 x 39.13 x 57.80 in, 1152 x 994 x 1468 mm (include pallet)	6-units per layer 11 layer max 66 per pallet 47.24 x 39.37 x 93.90 in, 1200 x 1000 x 2380 mm (including pallet)	6-units per layer 8 layer max 48 per pallet 47.24 x 39.37 x 95.12 in, 1200 x 1000 x 2416 mm (including pallet)
Palletization Profile (Molded Pulp)	10-units per layer 10 to 19 layers max depending on details of freight 100 or 190 units per pallet depending on details of freight 46.26 x 39.21 x 103.74 in, 1175 x 996 x 2635 mm (including pallet)	6-units per layer 11 layer max 66 per pallet 47.24 x 39.37 x 93.90 in, 1200 x 1000 x 2380 mm (including pallet)	6-units per layer 8 layer max 48 per pallet 47.24 x 39.37 x 95.12 in, 1200 x 1000 x 2416 mm (including pallet)

1. Packaging material used will vary by country
2. Configured with 1 HDD & 1 ODD; DM configured with 1 HDD only

Technical Specifications – Weights and Dimensions

ALL-IN-ONE DIMENSIONS[1]

HP ProOne 400 G6 24 All-in-One PC

		Without Stand		Cantilever Stand (Fixed Height Tilt Stand)		Adjustable Height Stand	
		cm/kg	inch/lbs	cm/kg	inch/lbs	cm/kg	inch/lbs
Product	**Width**	53.93 cm	21.23 in	53.93 cm	21.23 in	53.93 cm	21.23 in
	Length/Depth	5.07 cm	2.0 in	15.65 cm	6.16 in	23.3 cm	9.17 in
	Height	35.32 cm	13.91 in	40.32 cm	15.87 in	38.2 ~ 51.1 cm	15.04 ~ 20.12 in
	Weight	5.858 kg	12.91 lbs	6.588 kg	14.52 lbs	7.748 kg	17.08 lbs
Package	**Width**	66.0 cm	25.98 in	66.0 cm	25.98 in	66.0 cm	25.98 in
	Length/Depth	24.5 cm	9.65 in	24.5 cm	9.65 in	24.5 cm	9.65 in
	Height	46.2 cm	18.19 in	46.2 cm	18.19 in	46.2 cm	18.19 in
	Weight	9.69 kg	21.36 lbs	10.42 kg	22.97 lbs	11.58 kg	25.53 lbs
Palletization for Sea/Rail	**Width**	120.0 cm	47.24 in	120.0 cm	47.24 in	120.0 cm	47.24 in
	Length/Depth	100.0 cm	39.37 in	100.0 cm	39.37 in	100.0 cm	39.37 in
	Height	198.8 cm	78.27 in	198.8 cm	78.27 in	198.8 cm	78.27 in
	Weight	249.64 kg	550.4 lbs	267.16 kg	589.04 kg	295 kg	650.48 lbs
	Qty / Layer	6		6		6	
	Layers	4		4		4	
Qty / Pallet via Sea/Rail		24		24		24	
Qty / Pallet via Air		18		18		18	

1. Packaging material used will vary by country
2. Configured with 1 HDD & 1 ODD

HP ProOne 400 G6 20 All-in-One PC

		Without Stand		Cantilever Stand (Fixed Height Tilt Stand)		Adjustable Height Stand	
		cm/kg	inch/lbs	cm/kg	inch/lbs	cm/kg	inch/lbs
Product	**Width**	47.2 cm	18.58 in	47.2 cm	18.58 in	47.2 cm	18.58 in
	Length/Depth	5.07 cm	2.0 in	15.65 cm	6.16 in	20.15 cm	7.93 in
	Height	31.6 cm	12.44 in	36.61 cm	14.41 in	34.4 ~ 47.43 cm	13.54 ~ 18.67 in
	Weight	4.74 kg	10.45 lbs	5.46 kg	12.04 lbs	6.32 kg	13.93 lbs
Package	**Width**	59.5 cm	23.43 in	59.5 cm	23.43 in	59.5 cm	23.43 in
	Length/Depth	24.5 cm	9.65 in	24.5 cm	9.65 in	24.5 cm	9.65 in
	Height	41.4 cm	16.30 in	41.4 cm	16.30 in	41.4 cm	16.30 in
	Weight	7.44 kg	16.41 lbs	8.16 kg	18.0 lbs	9.02 kg	19.89 lbs
Palletization for Sea/Rail	**Width**	120 cm	47.24 in	120 cm	47.24 in	120 cm	47.24 in
	Length/Depth	100 cm	39.37 in	100 cm	39.37 in	100 cm	39.37 in
	Height	221 cm	87.07 in	221 cm	87.07 in	221 cm	87.07 in
	Weight	311.8 kg	697.68 lbs	340.6 kg	761.28 lbs	375 kg	826.88 lbs
	Qty / Layer	8		8		8	
	Layers	5		5		5	
Qty / Pallet via Sea/Rail		40		40		40	
Qty / Pallet via Air		24		24		24	

1. Packaging material used will vary by country
2. Configured with 1 HDD & 1 ODD

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 / mainboard 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
- 5 Aux Power LED on System mainboard
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- 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, memory & optical drive Removal (For MT, SFF, and DM only)
- Green Pull Tabs, and Quick Release Latches for easy Identification

Miscellaneous Features

Additional Features	**Description**
Product Orientation	Microtower (MT) can be oriented in a tower (vertical) orientation. Small Form Factor (SFF) can be oriented as either a desktop (horizontal) or a tower (vertical) with optional vertical stand. Desktop Mini (DM) can be oriented as either a desktop (horizontal) or a tower (vertical) with optional vertical stand.
Boot Sectors Protection	MBR and GPT sectors of the hard drive are critical to booting the operating system. By saving the MBR or GPT data (depending on the how the OS was installed), the BIOS will be able to monitor for changes and allow the user to override them with the backup copy at boot-up.
Drive Protection System	DPS Access through F10 Setup during Boot A diagnostic hard drive self- test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures
SMART Technology (Self-Monitoring, Analysis and Reporting Technology)	Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted
SMART I - Drive Failure Prediction	Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count
SMART II - Off-Line Data Collection	By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure
SMART III - Off-Line Read Scanning with Defect Reallocation	IOEDC: I/O Error Detection Circuitry
SMART IV - End-to-End CRC for hard drives	Detects errors in Read/Write buffers on HDD cache RAM

AFTER MARKET OPTIONS

Graphics Solutions	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
AMD Radeon RX 550X 4GB DP Display Card		X			5LH79AA
AMD Radeon R7 430 2GB 2 Display Port Card		X	X		5JW82AA
AMD Radeon R7 430 2GB DP+VGA Card		X	X		5JW81AA
HP DisplayPort™ To HDMI True 4k Adapter	X	X	X	X	2JA63AA
HP DVI Cable Kit		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 Port Cover v2	X				13L69AA
HP Desktop Mini 2.5" SATA Drive Bay kit v2	X				13L70AA
HP Desktop Mini LockBox V2	X				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 v3	X				13L67AA
HP Desktop Mini Security/Dual VESA Sleeve v3 With Power Supply Holder	X				13L68AA
HP B300 PC Mounting Bracket with Power Supply Holder	X				7DB37AA
HP Desktop Mini Vertical Chassis Stand	X				G1K23AA
HP DM Power Supply Holder Kit v2	X				7DB38AA

Data Storage Drives	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
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 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 9.5mm G3 8/6/4 SFF G4 400 SFF/MT DVD Writer		X	X		1CA53AA
HP Prodesk 400/600 MT 2nd 3.5” HDD cage			X		13L71AA

After Market Options

Input Devices	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP Wired Desktop 320K Keyboard	X	X	X	X	9SR37AA
HP USB Business Slim CCID SmartCard Keyboard	X	X	X	X	Z9H48AA
HP PS/2 Business Slim Keyboard		X	X		N3R86AA
HP Wired Desktop 320MK Mouse and Keyboard	X	X	X	X	9SR36AA
HP USB Antimicrobial Business Slim Keyboard and Mouse	X	X	X	X	Z9H50AA
HP USB Keyboard	X	X	X	X	QY776AA
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 Wired Desktop 320M Mouse	X	X	X	X	9VA80AA
HP USB Grey v2 Mouse	X	X	X	X	Z9H74AA
HP PS/2 Mouse		X	X		QY775AA
HP USB Fingerprint Mouse	X	X	X	X	4TS44AA
HP USB 1000dpi Laser Mouse	X	X	X	X	QY778AA
HP USB Optical Mouse	X	X	X	X	QY777AA

Intel® Optane™ Memory	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
Intel® Optane Memory 16GB (Cache)	X	X	X	X	1WV97AA
512GB Intel® Optane™ Memory H10 with SSD	X	X	X	X	6VF55AA

System Memory	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP 4GB DDR4-2666 UDIMM		X	X		3TK85AA
HP 8GB DDR4-2666 UDIMM		X	X		3TK87AA
HP 16GB DDR4-2666 UDIMM		X	X		3TK83AA
HP 32GB DDR4-2666 UDIMM		X	X		1C918AA
HP 4GB DDR4-2666 SODIMM	X			X	3TK86AA
HP 8GB DDR4-2666 SODIMM	X			X	3TK88AA
HP 16GB DDR4-2666 SODIMM	X			X	3TK84AA
HP 4GB DDR4-3200 UDIMM		X	X		13L78AA
HP 8GB DDR4-3200 UDIMM		X	X		13L76AA
HP 16GB DDR4-3200 UDIMM		X	X		13L74AA
HP 32GB DDR4-3200 UDIMM		X	X		13L72AA
HP 4GB DDR4-3200 SODIMM	X			X	13L79AA
HP 8GB DDR4-3200 SODIMM	X			X	13L77AA
HP 16GB DDR4-3200 SODIMM	X			X	13L75AA
HP 32GB DDR4-3200 SODIMM	X			X	13L73AA

Multimedia Devices	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP Business Headset v2	X	X	X	X	T4E61AA

HP S101 Speaker Bar	X	X	X		5UU40AA
HP UC Speaker Phone v2	X	X	X		4VW02AA

Communication Devices	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
Intel® Ethernet I210-T1 GbE NIC		X	X		E0X95AA

Security Devices	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP Business PC Security Lock v3 Kit		X	X	X	3XJ17AA
HP Dual Head Keyed Cable Lock	X	X	X	X	T1A64AA
HP Keyed Cable Lock 10mm	X	X	X	X	T1A62AA
HP Master Keyed Cable Lock 10mm	X	X	X	X	T1A63AA

Stands and Mounting Accessories	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP B250 PC Mounting Bracket	X				8RA46AA
HP B300 PC Mounting Bracket	X				2DW53AA
HP B500 PC Mounting Bracket	X				2DW52AA
HP Quick Release Bracket 2	X			X	6KD15AA
HP Single Monitor Arm				X	BT861AA
HP ProOne G6 VESA Plate with Power Supply Holder				X	13L66AA
HP ProOne G6 Height Adjustable Stand				X	13L65AA

I/O Devices	**DM**	**SFF**	**MT**	**AiO**	**Part Number**
HP DisplayPort Port Flex IO v2	X	X	X		13L54AA
HP HDMI Port Flex IO v2	X	X	X		13L55AA
HP Type-C USB 3.1 Gen2 Port Flex IO v2		X	X		13L59AA
HP Type-C USB 3.1 Gen2 Port with 100W PD Flex IO v2	X				13L60AA
HP VGA Port Flex IO v2	X	X	X		13L53AA
HP Serial Port Flex IO v2	X	X	X		13L56AA
HP Serial Port Flex IO 2nd	X				13L57AA
HP Internal Serial Port (400)			X		3TK81AA
HP PCIe x1 Parallel Port Card		X	X		N1M40AA
HP 800/600/400 G3 Serial/ PS/2 Adapter		X	X		1VD82AA

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

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Change Log

Date	**Version History**	**Action**	**Description of Change**
August 26, 2020	From v1 to v2	Addition	DVD-R DL - Up to 6X, DVD+R DL - Up to 6X, DVD-R SL/DL Up to 8X and DVD+R SL/DL Up to 8X on the read/write speed on the blue ray write drive specs on Storage section Environmental sections for AiO´s completed
September 22, 2020	From v2 to v3	Removal	550W PSU information removed from MT in Power section
October 27, 2020	From v3 to v4	Correction	Processors footnotes and Turbo Boost specs corrected
November 18, 2020	From v4 to v5	Addition	Environmental data for HP ProDesk 400 G7 Microtower PC and HP ProDesk 480 G7 PCI Microtower PC
November 25, 2020	From v5 to v6	Addition	Environmental data for HP ProDesk 400 G7 SFF
December 2, 2020	From v6 to v7	Correction	HDMI versions to 2.0a in port flex sections
December 8, 2020	From v7 to v8	Update	Optional 4 Serial Port PCIe Card not shown call out in 480 G7, 400 G7 MTs and 400 G7 SFF rear images call outs sections
January 20, 2021	From v8 to v9	Update	Graphics Solutions in AMO section updated

Microsoft

Hardware certification report **Approved**

Private product ID:	**13994398875198648**
Shared product ID:	**400207428**
Submission ID:	**1152921505691295478**
Submission date:	**9/2/2020**
Completion date:	**9/2/2020**
Company:	**HP Inc.**
Product name:	**HP ProDesk 400 G7 SFF System BIOS (S08) v02.02.00**
Category:	**Device**
Product type:	**Other Device**
Qualification level:	**Certified for Microsoft Windows 10 Client family version 2004, x64** **Certified as Declarative INF**
Marketing name:	**HP ProDesk 400 G7 SFF**

Ubuntu on HP ProDesk 400 G7 SFF PC

Feedback

If there is an issue with the information for this system, please let us know .

The HP ProDesk 400 G7 SFF PC desktop with the components described below has been awarded the status of certified pre-install for Ubuntu.

Please note that for pre-installed systems:

1. The system is available in some regions with a special image of Ubuntu pre-installed by the manufacturer. It takes advantage of the hardware features for this system and may include additional software. You should check when buying the system whether this is an option.
2. Standard images of Ubuntu may not work at all on the system or may not work well, though Canonical and computer manufacturers will try to certify the system with future standard releases of Ubuntu.

Ubuntu 20.04 LTS 64 Bit

Pre-installed by manufacturer

Testing details

This system was tested with 20.04 LTS, running the 5.6.0-1034-oem kernel.

BIOS
HP: S08 Ver. 02.02.00

Hardware summary

This system was tested with these key components:

Network	Intel Corp. Ethernet Connection (11) I219-LM (8086:0d4c)
Processor	Intel Corp. Intel(R) Core(TM) i5-10400F CPU @ 2.90GHz
Video	Advanced Micro Devices, Inc. [AMD/ATI] Polaris12 (1002:699f)
Wireless	Realtek Semiconductor Co., Ltd. RTL8822CE 802.11ac PCIe Wireless

Realtek Semiconductor Co., Ltd. RTL8822CE 802.11ac PCIe Wireless Network Adapter (10ec:c822)

Hardware details

Audio	Advanced Micro Devices, Inc. [AMD/ATI] Baffin HDMI/DP Audio [Radeon RX 550 640SP / RX 560/560X] (1002:aae0) Intel Corp. Comet Lake PCH cAVS (8086:06c8) Advanced Micro Devices, Inc. [AMD/ATI] Baffin HDMI/DP Audio [Radeon RX 550 640SP / RX 560/560X] Intel Corp. Unknown
BIOS	HP S08 Ver. 02.02.00
Bluetooth	Realtek Semiconductor Co., Ltd. 0bda:b00c (0bda:b00c)
Cdrom	hp HLDS BDRE BU40N
Disk	SAMSUNG Electronics nvme0n1 WDC WD20SPZX-60UA7T0
Mouse	HP Optical Mouse (03f0:134a)
Network	Intel Corp. Ethernet Connection (11) I219-LM (8086:0d4c)
Processor	Intel Corp. Intel(R) Core(TM) i5-10400F CPU @ 2.90GHz
System	HP HP ProDesk 400 G7 SFF
USB	Intel Corp. Comet Lake USB 3.1 xHCI Host Controller (8086:06ed)
Video	Advanced Micro Devices, Inc. [AMD/ATI] Polaris12 (1002:699f)
Wireless	Realtek Semiconductor Co., Ltd. RTL8822CE 802.11ac PCIe Wireless Network Adapter (10ec:c822)
Other	HDA ATI HDMI HDMI/DP,pcm=10

HDA ATI HDMI HDMI/DP,pcm=3

HDA ATI HDMI HDMI/DP,pcm=7

HDA ATI HDMI HDMI/DP,pcm=8

HDA ATI HDMI HDMI/DP,pcm=9

HDA Intel PCH Front Headphone

HDA Intel PCH Line Out

HDA Intel PCH Mic

HP WMI hotkeys

Power Button

Sleep Button

Video Bus

SAMSUNG Electronics nvme0

Intel Corp. Sky Lake PCIe Controller (x16) (8086:1901)

Intel Corp. Unknown

Lite-On Technology Corp. Keyboard (04ca:004b)

The Linux Foundation 2.0 root hub (1d6b:0002)

The Linux Foundation 3.0 root hub (1d6b:0003)

RETURN TO SEARCH

ProDesk 400 G7 Small Form Factor PC (ENERGY STAR)

Product Summary:

Product Type:	**Desktop**
Registered In:	**Brazil**
Manufacturer:	**HP**
EPEAT Tier:	**Gold**
Registration Date:	**2020-07-28**
Product Status:	**Active**
Exceptions:	**Configurations that are not ENERGY STAR qualified do not meet required criterion 4.5.1.1. Configurations that include the HP Healthcare Wired Keyboard and Mouse or the HP USB Keyboard and Mouse Healthcare Edition do not meet optional criterion 4.1.4.1**

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve less than 50% of the optional points are rated at **EPEAT Bronze**

Products that meet all required criteria and achieve 50 - 74% of the optional points are rated at

EPEAT Silver

Products that meet all required criteria and achieve 75 - 100% of the optional points are rated at

EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	**13 / 16**
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	1
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	1
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
4.2 Materials Selection	**2 / 3**
(4.2.1.2) Higher post-consumer recycled, ITE-derived post-consumer recycled plastic, or bio-based content	2
(4.2.1.3) Post-consumer recycled, ITE-derived post-consumer recycled plastic	0
4.4 Product longevity/life-cycle extension	**1 / 2**
(4.4.2.2) Publicly available service information	0
(4.4.2.5) Product upgradeability and repairability	1

4.5 Energy Conservation	**1 / 4**
(4.5.1.3) Energy efficiency for internal power supplies	1
(4.5.1.5) Product energy consumption less than the ENERGY STAR Maximum Energy Limit	0

4.7 Packaging	**2 / 2**
(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	1
(4.7.4.1) Offering of a bulk packaging option	1

4.8 Life cycle assessment and carbon footprint	**6 / 6**
(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1

4.9 Corporate Environmental Performance	**9 / 9**
(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement – manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	2

4.10 Corporate social responsibility	**3 / 6**
(4.10.1.1) Socially responsible manufacturing: Labor	1
(4.10.1.2) Socially responsible manufacturing: OHS	1
(4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1

(4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	0
TOTAL OPTIONAL CRITERIA SCORE:	**37 / 48**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

HP - HP ProDesk 600 G6 Small Form Factor PC (ENERGY STAR) : ProDesk 600 G6 Small Form Factor PC

Specifications

Brand Name:	HP
Model Name:	HP ProDesk 600 G6 Small Form Factor PC (ENERGY STAR)
Model Number:	ProDesk 600 G6 Small Form Factor PC
Type:	Desktop
Notebooks, Desktops, Integrated Computers, Slate/Tablets, Two-in-one Notebooks, and Portable All-in-ones Category for TEC (Typical Energy Consumption) Criteria:	Desktop D1,Desktop D2,Desktop I1 or Integrated Desktop 1,Desktop I2 or Integrated Desktop 2
Category I1: Processor Brand:	Intel
Category I1: Processor Name:	Celeron
Category I1: Operating System Name:	Windows 10
Category I1: Base Processor Speed Per Core (GHz):	3.5
Category I1: System Memory (GB):	128
Category I1: Default Low-power Mode:	Sleep Mode
Category I1: Long Idle Power Used for Sleep Mode:	No
Category I1: Off Mode (watts):	0.7
Category I1: Sleep Mode (watts):	1.9
Category I1: Long Idle (watts):	11.5
Category I1: Short Idle (watts):	13.5
Category I1: Base TEC Allowance (kWh):	26
Category I1: Functional Adder Allowances (kWh):	42.7
Category I1: TEC of Model (kWh):	53.7
Category I2: Processor Brand:	Intel
Category I2: Processor Name:	Core i7
Category I2: Operating System Name:	Windows 10
Category I2: Physical CPU Cores (count):	8
Category I2: Base Processor Speed Per Core (GHz):	2.9
Category I2: System Memory (GB):	128
Category I2: Default Low-power Mode:	Sleep Mode

Category I2: Long Idle Power Used for Sleep Mode:	No
Category I2: Off Mode (watts):	0.7
Category I2: Sleep Mode (watts):	1.8
Category I2: Long Idle (watts):	11.4
Category I2: Short Idle (watts):	13.3
Category I2: Base TEC Allowance (kWh):	46
Category I2: Functional Adder Allowances (kWh):	45.4
Category I2: TEC of Model (kWh):	53.2
Category D1: Processor Brand:	Intel
Category D1: Processor Name:	Celeron
Category D1: Operating System Name:	Windows 10
Category D1: Physical CPU Cores (count):	2
Category D1: Base Processor Speed Per Core (GHz):	3.5
Category D1: System Memory (GB):	128
Category D1: Default Low-power Mode:	Sleep Mode
Category D1: Long Idle Power Used for Sleep Mode:	No
Category D1: Off Mode (watts):	0.7
Category D1: Sleep Mode (watts):	1.9
Category D1: Long Idle (watts):	14.0
Category D1: Short Idle (watts):	18.9
Category D1: Base TEC Allowance (kWh):	35
Category D1: Functional Adder Allowances (kWh):	82.8
Category D1: TEC of Model (kWh):	70.4
Category D2: Processor Brand:	Intel
Category D2: Processor Name:	Core i7
Category D2: Operating System Name:	Windows 10
Category D2: Physical CPU Cores (count):	8
Category D2: Base Processor Speed Per Core (GHz):	2.9
Category D2: System Memory (GB):	128
Category D2: Default Low-power Mode:	Sleep Mode
Category D2: Long Idle Power Used for Sleep Mode:	No
Category D2: Off Mode (watts):	0.7
Category D2: Sleep Mode (watts):	1.9
Category D2: Long Idle (watts):	14.3
Category D2: Short Idle (watts):	18.9
Category D2: Base TEC Allowance (kWh):	45
Category D2: Functional Adder Allowances (kWh):	84.2

Category D2: TEC of Model (kWh):	70.6
Sleep Mode Default Time Upon Shipment (min.):	30
Display Sleep Mode Default Time Upon Shipment (min.):	10
WOL (Wake on LAN) From Sleep:	Shipped Enabled Under All Conditions
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes
WLAN Capability:	Yes
Ethernet Capability:	Yes
Bluetooth Capability:	Yes
Touch Screen:	No
Date Available On Market:	2020-07-20
Date Certified:	2020-07-02
Markets:	United States, Switzerland, Taiwan, Japan, Canada
Category I1: Physical CPU Cores (count):	2
ENERGY STAR Certified:	Yes

Additional Model Information

HP ProDesk 400 G7 Small Form Factor PC (ENERGY STAR),ProDesk 400 G7 Small Form Factor PC,

Captured On:
02/05/2021

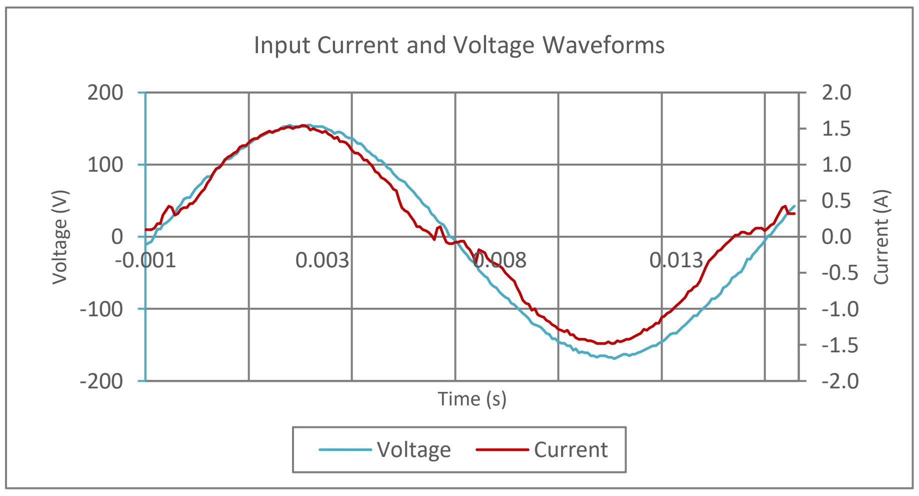
80 PLUS Verification and Testing Report

TYPICAL EFFICIENCY (50% Load):	**93.05%**
AVERAGE EFFICIENCY :	**91.68%**
80 PLUS COMPLIANT:	**YES**

ID Number	5859
Manufacturer	HP, Inc.
Model Number	D19-210P1A
Serial Number	N/A
Year	2019
Type	CUSTOM
Test Date	1/13/20

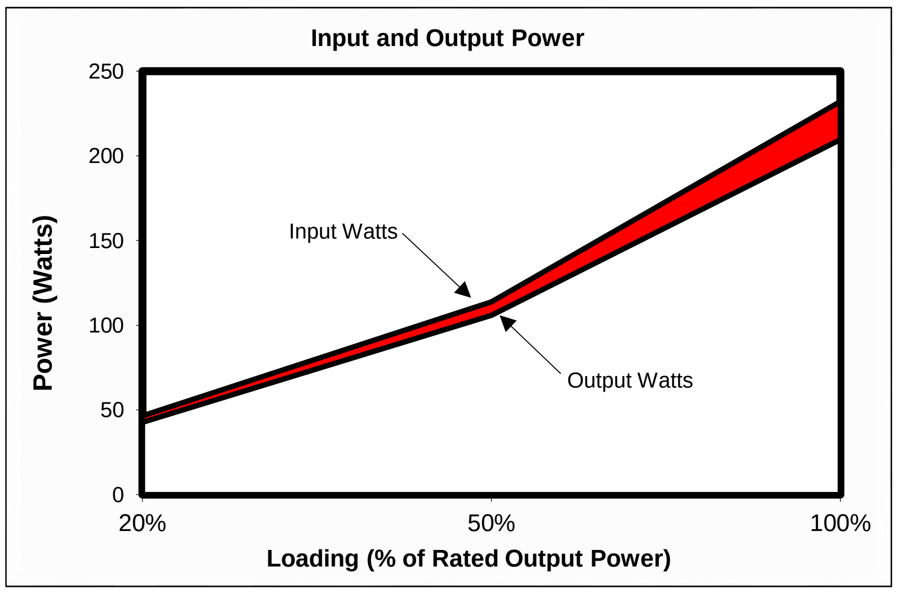
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	2.5	Amps
Input Frequency	50-60	Hz
Rated Output Power	**210**	**Watts**

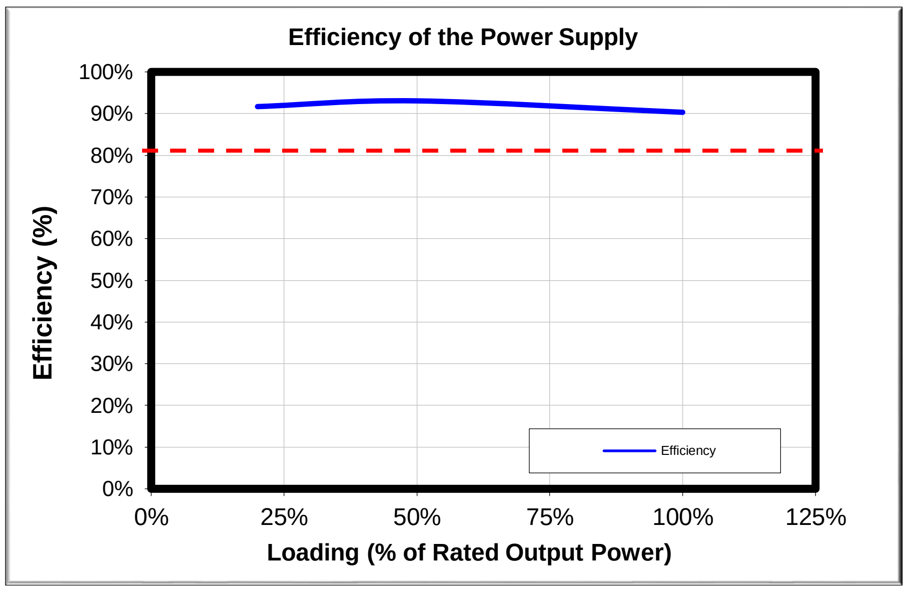
Note: All measurements were taken with input voltage at 115 V nominal at 60 Hz.



Input AC Current Waveform (ITHD = 14.2%, 50% Load)

I_{RMS}	PF	I_{THD}	Load	Input Watts	DC Terminal Voltage (V)/ DC Load Current (A)	Output Watts	Efficiency
					12.1V (cumulative of 12V1, 12V2, etc.)		
0.23	0.93	22.26%	10%	24.06	12.23/1.74	21.33	**88.64%**
0.42	0.96	24.11%	20%	46.46	12.2/3.49	42.59	**91.68%**
1.00	0.99	14.20%	50%	113.86	12.14/8.73	105.94	**93.05%**
2.04	0.99	6.71%	100%	232.05	12.01/17.44	209.56	**90.31%**





PLUG LOAD solutions

These tests were conducted by a third party independent testing firm on behalf of the 80 PLUS Program. 80 PLUS is a certification program to promote highly-efficient power supplies (greater than 80% efficiency in the active mode) in technology applications. *http://www.80plus.org/*

80 PLUS®

DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

DoC #: TPC-P069-SF-R3Traducción/es

Nombre del fabricante: **HP Inc.**
Dirección del fabricante: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declara que el producto

Nombre del producto y modelo:2) **Personal Computer; HP ProDesk 600 G6 Small Form Factor PC; HP ProDesk 400 G7 Small Form Factor PC; HP ProDesk 600 G8 Small Form Factor PC**
Número de modelo reglamentario:1) **TPC-P069-SF**
Opciones del producto: **Ver Anexo I**

cumple con las siguientes especificaciones y normas de productos:

Seguridad:
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2014
EN 62368-1:2014 +A11:2017
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2012 Class B
EN 55032:2015 Class B
EN 55024:2010 +A1:2015
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
FCC CFR 47 Part 15
ICES-003, Issue 7

Espectro radioeléctrico
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1

Diseño ecológico
Reglamento (CE) n º 617/2013
EN 62623:2013

RoHS
EN 50581:2012
EN IEC 63000:2018

Este producto cumple con los requisitos de la directiva RED 2014/53/UE, la Directiva sobre diseño ecológico 2009/125/CE, la Directiva RoHS 2011/65/UE y lleva la marca CE.

SÓLO PARA EE.UU.: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Información Adicional:

1) **A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.**
2) **Este producto se ha probado en un entorno típico de HP.**

Houston, TX
04-02-2021

<u>comprobar la firma de la primera declaración anexa</u>
Gilles Soulard, Manager
Product Compliance Center

Contacto local únicamente para temas de normativa:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

ANEXO I

Número de modelo reglamentario (RMN): TPC-P069-SF

OPCIONES

DESCRIPCIÓN:*	RMN OPCIÓN:*
Transceiver 2,4 and 5 GHz WLAN and BT	RTL8821CE RTL8822CE AX201NGW

*** Donde X representa cualquier carácter alfanumérico.**

THE ECO DECLARATION

Ecma/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes
Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	***HP***	**Logo**
Company name *	***HP***	
Contact information * e-mail address	***HP Sustainability and Compliance Center*** *sustainability@hp.com*	
Internet site *	*http://www.hp.com/hpinfo/globalcitizenship/environment/*	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Desktop***
Commercial name *	***HP ProDesk 400 G7 SFF***
Model number *	***ProDesk 400 G7 SFF***
Issue date *	***7/20/2020***
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

Model number *	***ProDesk 400 G7 SFF***	**Logo**
Issue date *	***7/20/2020***	

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm^2/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/reachdesktop-pcs.html	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	☒	☐	☐
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference). Required information is; ☒ given in item P15 or added to this document, ☒ available at (add URL): ***http://h22235.www2.hp.com/hpinfo/globalcitizenship/environment/productdata/europeErPLot3desktop-pc.html***	☒ ☒	☐ ☐	☐ ☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Model number *	***ProDesk 400 G7 SFF***	**Logo**	
Issue date *	***7/20/2020***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: **5** years			☐
P7.10	Service is available after end of production for: **5** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***>ABS<*** Material type: ***PC+ABS*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☒	☐	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☐ PCBs > 25 g ☒ are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	☒	☐	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: ***>PC+ABS-FR(40)<***	☒	☐	☐
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☐ (See NOTE B3), Other; chemical name: , CAS #:	☐	☐	☐
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4: ***FR(40)***	☒	☐	☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "	☐	☐	☐
	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: ***>PC+ABS-FR(40)<***	☒	☐	☐
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; ***R53*** and Hazard statements: ***H413 may cause long lasting harmful effects to aquatic life.*** The source(s) for these classifications is/are found at (add URL(s)): ***http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database*** (See note B5)	☒	☐	☐
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6 and B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***42.17***%.	☐	☐	☐

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2: IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.
NOTE B3 and B4 A Guidance document on Chemical substances is available; see
http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B5: If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.
NOTE B6: Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7: Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard, criterion 4.2.1

or
b) The weight of recycled material is g.

Model number *	***ProDesk 400 G7 SFF***	**Logo**	
Issue date *	***7/20/2020***		

Product environmental attributes - Market requirements (continued)	**Requirement met**			
Item		Yes	No	n.a.

		Yes	No	n.a.
	Material and substance requirements (continued)			
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition: ***lithium/manganese dioxide***			☐
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
					☐
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)	W	W	W	***EPS Energy Report Data***	☒
PTEC * Typical Energy Consumption	W	W	W	***ENERGY STAR® Program Requirements for Computers***	☒
ETEC * Annual Energy Consumption	***20.32*** kWh/year	***23.10*** kWh/year	***23.28*** kWh/year	***ENERGY STAR® Program Requirements for Computers***	☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * : ***VI***				***ENERGY STAR® Program Requirements for Computers***	☐
Display resolution * : megapixels				***ENERGY STAR® Program Requirements for Computers***	☒
Default time to enter energy save mode: minutes				***ENERGY STAR® Program Requirements for Computers***	☒

		Yes	No	n.a.
P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3	Energy efficiency class (monitors only):			☒
P10	**Emissions**			
	Noise emission – Declared according to ISO 9296 (See NOTE B9)			

	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)	
P10.1	Idle	* ***Fans on, HDD spinning (if applicable)***	* ***3.3***	☐
	Operation	* ***Fans on, HDD spinning***	* ***3.7***	☐
	Other mode			

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;
see http://www.ecma-international.org/publications/standards/Ecma-370.htm
NOTE B9 A Guidance document on Acoustic Noise is available;
see http://www.ecma-international.org/publications/standards/Ecma-370.htm

Model number *	***ProDesk 400 G7 SFF***	**Logo**
Issue date *	*7/20/2020*	

Product environmental attributes - Market requirements (continued)		**Requirement met**		
Item		Yes	No	n.a.
	Electromagnetic emissions			
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	☐	☐	☐
P12	**Ergonomics for computing products**			
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	☐	☐	☒
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	☒	☐	☐
P13	**Packaging and documentation**			
P13.1*	Product packaging material type(s): ***PAPER/Paper*** weight (kg): ***1.019*** Product packaging material type(s): ***PLASTIC/Polyethylene low density - LDPE*** weight (kg): ***0.029*** Product packaging material type(s): ***PAPER/Molded Pulp*** weight (kg): ***414***			
P13.2*	Product plastic primary packaging is free from PVC.	☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90*** %			☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☐, Paper ☐, Other ☒ 'available on hp.com'			☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify:	☒	☐	
	Totally chlorine-free	☒		
	Elemental chlorine-free	☐		
	Processed chlorine-free	☐		
P14	**Voluntary programs**			
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***7/20/2020*** Product category: ***Commercial Desktops*** Eco-label: ***EPEAT*** Criteria version: ***IEEE 1680.1*** Date: ***7/20/2020*** Product category: ***Commercial Desktops*** Eco-label: Criteria version: Date: Product category:			
P15	**Additional information (See NOTE B10)**			
All Sections	***1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over***			
P1	***1. This product does not include DEHP, BBP, DIBP, or DBP.***			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

P7 ***Product Upgradability and Reparability***

The following table is provided in accordance with IEEE 1680.1-2018[6] criterion 4.4.2.5.

feature	Available [1]	Repairable [2]	Replaceable [3]	Upgradeable [4]
processor	Y	Y	Y	Y
main memory	Y	Y	Y	Y
mass storage (internal)	Y	Y	Y	Y
wireless networking	Y*	Y	Y	Y
integrated graphics	Y	Y	Y*	Y
discrete graphics	Y*	Y	Y	Y
display panel	N	N/A	N/A	N/A
integrated keyboard	N	N/A	N/A	N/A
batteries	Y	Y	Y	Y
power supply	Y	Y	Y	Y
fan assemblies	N	N/A	N/A	N/A
speaker(s) (internal)	Y	Y	Y	Y
camera	N	N/A	N/A	N/A
touchpad	N	N/A	N/A	N/A
I/O connectors and external power connector	N	N/A	N/A	N/A
readers [5]	N	N/A	N/A	N/A

Table notes:
[1] Y* = feature is available, but may not be included in every configuration
[2] Product can be repaired (returned to fully functional state) if feature fails.
[3] Feature can be replaced using only commonly available tools without soldering or de-soldering. Y* = replacement may require replacing an assembly to which the feature is attached.
[4] Base feature may be upgraded by replacing it with a higher performance module or by expanding capacity through use of expansion slots. NOTE: This evaluation does not
account for situations in which the initial configuration purchased is already maximized. Contact HP Sales or an HP authorized reseller to determine the availability of upgrade parts and method to obtain them in your geography.
[5] This feature category includes readers such as fingerprint readers, smart card readers, and other read-only devices, but excludes read/write devices.

P9 ***Energy consumption of computer products; description of the tested product configuration:***

P9 ***1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:***

Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Conditi (if applicable)
Off Mode (if applicable)		Not Applicable
Standby Mode (if applicable)	Not Applicable	Not Applicable
Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)		
Network Standby / Sleep / Long Idle Mode (if applicable)		

2.European Union Commission Regulation 1275/2008- Wireless Network Instructions:

Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support.

P10 **Sound Pressure Level**

Noise emission – Declared according to ISO 9296 (See NOTE B9**)**

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound pressure level, $L_{pA,m}$ (dB)
	Idle	* ***Fans on, HDD spinning (if applicable)***	* ***23.0*** ☐
	Operation	* ***Fans on, HDD spinning***	* ***28.0*** ☐
	Other mode		

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6 IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ Other (only if not covered by ECMA-74)

Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation （EC） No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

Company environmental profile - THE ECO DECLARATION

Brand	***HP***	***Logo***
Company name *	***HP***	
Contact information *	***HP Sustainability and Compliance Center (SCC)*** ***sustainability@hp.com***	
Internet site *	***www.hp.com/hpinfo/globalcitizenship/environment/index.html***	
Issue date *	***2014-06-01***	
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**	
Additional information		

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

The declaration may be published only when all rows and/or fields marked with an * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under C7.

Company environmental profile - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
C1	**Product recycling**			
C1.1*	The company participates in a system or has its own system for collection and recycling of end of life products in countries where the company puts them on the market and where required (see legal reference)	☒	☐	
C2	**Battery recycling**			
C2.1*	The company participates in a system or has its own system for collection and recycling of batteries in countries where the company puts products on the market (see legal reference) or pays eco tax / fee where required.	☒	☐	
C3	**Packaging recycling**			
C3.1*	The company participates in a system or has its own system for collection and recycling of packaging material in countries where the company puts products on the market and where required (see legal reference)	☒	☐	

Company environmental profile - Market requirements		**Requirement met**		
Item		Yes	No	n.a.
C4	**Environmental policy and environmental management**			
C4.1*	The company has a documented environmental policy approved by the management.	☒	☐	
C4.2*	The company has an environmental management system covering:			
	Product development	☒	☐	
	Manufacturing	☒	☐	
	If so certified according to: ☒ ISO 14001 ☒ Other as specified in C7			
C4.3	The company regularly publishes an environmental report. If so, it meets the recommendations of ☒￼☐7	☒	☐	☐
C5	**Recycling**			
C5.1*	Information about the product, battery & packaging take back system (C1, C2 and C3) is available in printed or electronic format.	☒	☐	
C6	**Voluntary programs**			
C6.1	The company meets the requirements of the following voluntary program/s: Voluntary Agreement: Criteria version: Date: Product category: Voluntary Agreement: Criteria version: Date: Product category:			
C7	**Additional information**			
	HP has received ISO 14001 certification for its manufacturing operations (Worldwide Manufacturing of Computing and Imaging Products and Related Operations) and for product design for its Personal Systems Products and LaserJet and Enterprise Printing Products. The product design certifications include HP-wide product environmental design processes (such as HP's General Specification for the Environment) that cover all HP products. ***HP is committed to responsible business practices and transparency in its global citizenship policies and performance. We have a long history of working with suppliers to monitor and improve their social and environmental responsibility (SER) performance when required, as well as improving standards in the industry. HP endorses the EICC Code of Conduct in its entirety, and we have supplemented it with additional requirements specific to freedom of association as well as HP's Student and Dispatch Worker Guidance Standard for Supplier Facilities in the People's Republic of China (PRC). HP also has a strong Global Human Rights Policy in place. HP expects its suppliers to establish policies and processes regarding conflict minerals. HP conducts due diligence on its supply chain annually including requesting information about our suppliers' own due diligence and the smelters and refiners used. HP was the first IT company to***			

	publish its supply chain smelter list. HP follows the Global Reporting Initiative (GRI) guidelines as a basis for reporting. The GRI index provides easy reference to HP’s Living Progress Report (LPR) content. HP offers take back services of products and printing suppliers in some 70 countries. Please refer to HP’s Livings Progress Report for more details on our global efforts.

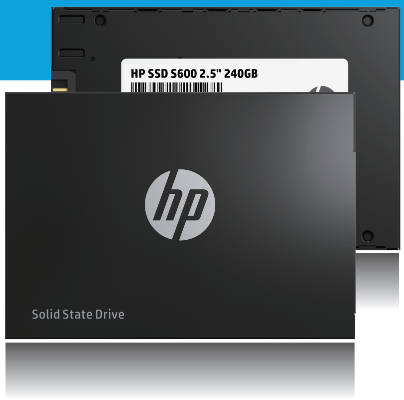
Legal references Europe Annex A

Reference	Declaration item
Directive 2012/19/EU (WEEE directive)	C1.1
Directive 2006/66/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	C2.1
Directive 2004/12/EC (Packaging Directive)	C3.1
Decision 97/129/EC (Secondary packaging legislation)	C3.1

Designed to Rejuvenate Your PC

HP SSD S600 2.5"

HP SSD S600 2.5" SATA is suitable for use in Notebook and Desktop PC's, regardless of whether it is a new or old machine. This upgrade will raise the performance level of your Notebook or Desktop PC and allow you to enjoy better responsiveness on your computer regardless of the task.



High Performance

Durability

Silent

Power Savings

HP SSD S600 is specifically designed to speed up mobile and desktop computing tasks.Super quick response for reads and writes will invigorate slower computer systems and improve your productivity and user experience. HP SSD S600 has undergone rigorous HP Labs testing to provide highest quality assurance and reliability. There is also a limited 3 year product warranty.

Marvell Controller

HP SSD S600 utilizes the Marvell 88NV1120 controller with integrated SRAM and reaches 520MB/s read and 500MB/s write speeds, raising overall PC responsiveness and operational efficiency.

Uses 3D NAND Flash

HP SSD S600 series is built using 3D NAND Flash. This new multilayer stacking technique is superior to older 2D NAND technology, affording higher levels of storage density and durability.

Superior Durability

HP SSD S600 series employs NAND Edge LDPC algorithms, as well as Embedded SRAM (in place of external DRAM) to enhance durability and reliability for today's demanding users.

Special Firmware for Data Security

Strict adherence to HP Authentication Firmware provides effective protection from hackers and computer viruses for the data passed between the system and the HP SSD S600.

HP SSD Advantages

HP SSD has continuously innovated and improved on storage technology for every consumer application for both mainstream and enthusiast computer systems. Compared with traditional spinning platter hard drive storage devices, upgrading to HP SSD will improve your overall computing experience, such as: faster read and write speeds, shorter computer boot times, better responsiveness, excellent shock resistance and durability.Coming from the leading PC Brand, HP SSD are built better beginning from research, design, and all the way through strict quality control in the manufacturing process. This is the HP Brand philosophy in action.

HP SSD are fully compliant with the HP DST self test preinstallation environment, which means that it is 100% compatible and works reliably with all contemporary consumer HP PC's. HP SSD is supported by a Global network of service locations and also a local 800-number for service and support. You can also find additional information and supporting documentation on the HP product web site.

S600 Hardware Specifications

Specifications	HP SSD S600	
	120GB	240GB
Interface		
HP SSD S600 2.5" / 7mm	SATA 6.0 Gb/s	SATA 6.0 Gb/s
Operating Speeds		
Sequential Read Speed Up To	520 MB/s	
Sequential Write Speed Up To	500 MB/s	
Random Read Operations	23 K IOPS	24 K IOPS
Random Write Operations	58 K IOPS	59 K IOPS
Durability		
MTBF (Mean Time Between Failures)	2,000,000 hours	
Operating Environment		
Storage Temperature	-40℃ to 85℃ / -40℉ to 185℉	
Working Temperature	0℃ to 70℃ / 32℉ to 158℉	
Shock Resistance	3.1G RMS (2-500 Hz)	
Certifications	CE、CB、FCC、cTUVus、KCC、BSMI、VCCI、RoHS、RCM	
Warranty/Endurance:	3 years or 70 TBW	3 years or 145 TBW
Product Dimensions		
Size	100 x 69.8 x 6.7 mm / 3.94" x 2.75" x 0.26"	
Weight	≤ 50g	

Specifications subject to change without notice.

1. Backwards compatible with SATA II and I.
2. May not available for sale in some regions.
3. When calculating storage， 1 Megabyte (MB) = 1 million bits， 1 Gigabyte (GB) = 1 billion bits， 1 Terabyte (TB) = 1 Trillion bits. Depending on operating environment, the usable storage space may vary. When describing buffer or cache, 1 Megabyte (MB) = 1,048,576 Bytes. When representing transmission rate or interface， 1 Megabyte/s (MB/s) = 1 million bytes per second， 1 Gigabyte/s (Gb/s) = 1 billion bytes/s. SATA 6 Gb/s maximum effective data transmission rate is based on the Serial ATA specifications published by the SATA-IO organization. For more information about this, please visit www.sata-io.org
4. DIPM （Device-Initiated Power Management) was measured using the MobileMark™ 2012 benchmark.
5. MTBF was based on actual tests using Telcordia mean time to failure stress tests.

Placas gráficas

Placa gráfica NVIDIA Quadro P400 (2 GB)(1ME43AA)

Encontre parceiro

Obter mais informações ›

Descrição geral

Conte com espaços de trabalho visuais amplos que apresentam uma incrível resolução, para trabalhar nos seus projetos 2D e 3D em até três ecrãs 4K, e placa gráfica NVIDIA® Quadro® P400 alimentada pela tecnologia de GPU NVIDIA Pascal™.

Funcionalidades

Trabalhe com várias aplicações e crie e manipule designs e modelos 2D/3D com montagens complexas, sem atraso e em tempo real, quando acede a recursos armazenados na memória gráfica de 2 GB.

Tire partido do elevado brilho e saturação de cores, superior a 10K:1 CR, e do suporte para até três ecrãs 4K ou um ecrã 5K com DisplayPort™ 1.4. Efetue facilmente a gestão da sua configuração com NVIDIA® nView®. Crie e reproduza vídeo HDR com motores H.264 e HEVC.

Concentre-se em dar o seu melhor com uma placa que suporta as versões mais recentes de OpenGL, DirectX, Vulkan™ e NVIDIA® CUDA® para ajudar a garantir a compatibilidade com as suas aplicações profissionais mais utilizadas.

Workstation de Formato Compacto HP Z2 G4, Workstation Torre HP Z2 G4, Workstation de Formato Compacto HP Z2 G5, Workstation Torre HP Z2 G5, Workstation HP Z4 G4, Workstation HP Z6 G4, Z8 G4, HP ZCentral 4R

Especificações

Peso:
129 g

Dimensões mínimas (L x P x A):
6,85 x 14,47 cm (1 ranhura)

Conteúdo da embalagem:
Kit NVIDIA Quadro P400 2 GB com 2 adaptadores, Cartão de garantia, Guia de instalação, Informações sobre o produto

Garantia:
A placa gráfica NVIDIA Quadro P400 tem uma garantia limitada de 1 ano ou o remanescente da garantia do produto HP no qual esteja instalado. Suporte técnico disponível 7 dias por semana, 24 horas por dia, por telefone e em fóruns de suporte online. Peças e mão de obra disponíveis no local no dia útil seguinte. Suporte telefónico disponível para diagnóstico e instalação de peças. São aplicáveis determinadas restrições e exclusões.

Folheto de especificações

Monitor HP V24b

Visualização incrível de detalhes no monitor de tela grande HP V24b de 23,6”, com uma resolução Full HD de 1920 x 1080 nítida e ângulos de visualização amplos. As imagens brilhantes, a conectividade conveniente, a capacidade de adaptação e o preço acessível são ideais para os negócios do dia a dia.

Visualização vívida e expansiva

- Maximize sua visualização em uma tela diagonal de 23,6” com ângulos de visualização amplos de 178 graus, resolução Full HD de 1920 x 1080 para uma qualidade de imagem brilhante e uma taxa de contraste dinâmico de 10M:1, para obter mais detalhes nítidos e claros.[1]

Confortavelmente produtivo

- Aumente a produtividade otimizando o seu conforto de visualização. O suporte de 4 vias fornece flexibilidade para ajustar a altura, inclinação, rotação e orientação do monitor.

Conectividade conveniente

- Conecte dispositivos facilmente com portas HDMI, DP e VGA centralizadas, para acesso digital e compatibilidade legada.

Local de trabalho simplificado

- Conecte um Desktop HP Mini diretamente ao monitor para criar um espaço de trabalho eficiente. Use o padrão VESA de 100 mm para montar o monitor em uma parede ou braço.[2]

Recursos

- Fique tranquilo, pois o seu investimento em TI conta com o suporte de uma garantia limitada padrão de três anos. Para estender sua proteção, selecione Serviços HP Care Pack opcionais.
- Libere espaço valioso na mesa e melhore a ergonomia; o padrão VESA de 100 mm integrado suporta todos os acessórios HP Quick Release, incluindo o braço para um único monitor HP.

Monitor HP V24b Tabela de especificações

Referência	2XM34AA
Tamanho da tela (diagonal)	59,94 cm (23,6")
Tipo do visor	IPS com retroiluminação LED
Área Ativa do Painel	20.51 x 11.54 in; 52,12 x 29,32 cm
Ângulo de visualização	178° horizontal; 178° vertical
Brilho	250 cd/m^2 [1]
Relação de contraste	1000:1 estático; 10000000:1 dinâmico [1]
Tempo de resposta	5 ms cinza para cinza (com overdrive) [1]
Relação largura-altura	16:9
Resolução nativa	FHD (1920 x 1080 a 60 Hz)
Resoluções admitidas	1024 x 768; 1280 x 1024; 1280 x 720; 1280 x 800; 1440 x 900; 1600 x 900; 1680 x 1050; 1920 x 1080; 640 x 480; 720 x 400; 800 x 600
Características do visor	Antirreflexo; IPS (In plane switching); Seleção de idioma; Retroiluminação LED; Controles na tela; Rotação em pivô; Plug and Play; Programável pelo usuário
Controles do usuário	Brilho; Controle de cor; Contraste; Sair; Controle de imagem; Informações; Idioma; Gerenciamento; Controle de energia; Controle de entrada; Controle de menu
Sinal de entrada	1 DisplayPort™ 1.1; 1 HDMI 1.4; 1 VGA; ((com suporte a HDCP))
Potência de entrada	Tensão de entrada 100 - 240 VCA
Consumo de energia	20 W (máximo), 18 W (típico), 0,5 W (estado de espera)
Dimensões com o suporte (L × P × A)	22.09 x 19.74 x 8.58 in 56,13 x 50,14 x 21,8 cm
Dimensões sem o suporte (L × P × A)	22,09 x 13,12 x 2,07" 56,13 x 33,32 x 5,26 cm
Peso	12,32 lb. 5,6 kg Com base.
Funcionalidades ergonômicas	Rotação: ±360°; Inclinação: -5º a +20°; Rotação em pivô: 90°
Ambiental	Vidro do monitor sem arsênio; Retroiluminação sem mercúrio
Conteúdo da caixa	Cabo de alimentação CA; Cabo DisplayPort™; Documentação; Cabo VGA; Certificado de garantia

Veja avisos legais de isenção de responsabilidade importantes na última página

Notas de rodapé de mensagens

[1] Todas as especificações representam as especificações típicas fornecidas pelos fabricantes dos componentes utilizados nos produtos HP; o desempenho real pode ser maior ou menor.
[2] Consulte o resumo de especificações do produto para ver a compatibilidade exata do PC, vendido separadamente. HP Quick Release necessário e vendido separadamente. Hardware de montagem vendido separadamente. Opcionais vendidos separadamente.
[3] Serviços HP Care Pack vendidos separadamente. Os níveis de serviço e tempos de resposta dos Serviços HP Care Pack podem variar, dependendo de sua localização geográfica. O serviço é iniciado na data de compra do hardware. Restrições e limitações se aplicam. Acesse www.hp.com/go/cpc para obter mais informações. Os serviços HP são regidos pelos termos e condições de serviço aplicáveis da HP, fornecidos ou indicados ao cliente no momento da compra. O cliente pode ter direitos legais adicionais, conforme as leis locais aplicáveis, e tais direitos não são afetados de nenhuma forma pelos termos e condições de serviços HP ou pela garantia limitada HP fornecida com o seu produto HP.
[4] Cada acessório vendido separadamente. Hardware de montagem vendido separadamente.

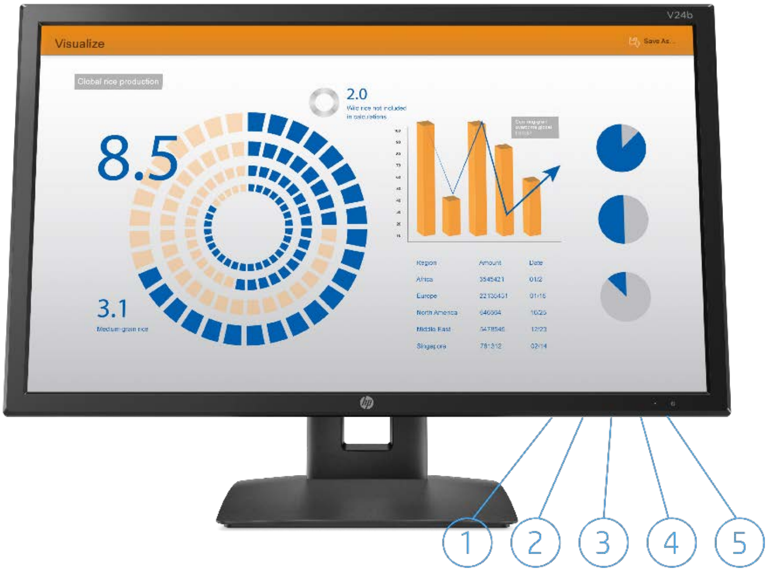
Notas de rodapé das especificações técnicas

[1] Todas as especificações representam as especificações típicas fornecidas pelos fabricantes dos componentes utilizados nos produtos HP; o desempenho real pode variar para mais ou para menos.
[2] Trava vendida separadamente.

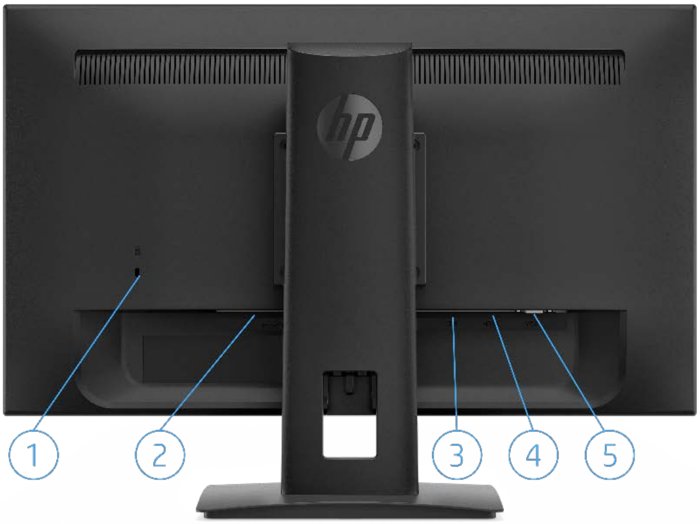
Receba atualizações
hp.com/go/getupdated

Aprenda mais em
hp.com

HP V24b 23.6-inch Monitor



1. **1.** Menu
2. **2.** Minus (“-“)/Information
3. **3.** Plus (“+”)/Viewing Mode
4. **4.** Input Control
5. **5.** Power



1. Security lock slot
2. Power connector
3. DP
4 HDMI
5. VGA

Technical Specifications

Model: 2XM34AA

Panel	**Type**	23.6-inch IPS
	Viewable Image Area (diagonal)	**59,94 cm** (23.6 in) widescreen; diagonally measured
	Panel Active Area (W × H)	**52,12 x 29,32 cm** (20.52 × 11.54 in)
	Resolution	1920 x 1080 @ 60 Hz
	Aspect Ratio	16:9
	Viewing Angle*	178° horizontal/178° vertical
	Brightness*	250 cd/m^2
	Contrast Ratio*	1000:1 Static (Typical)
	Response Times*	5ms (Grey to Grey) Typical
	Pixel Pitch*	0.2715 mm
	Pixels Per Inch (PPI)*	102
	Backlight Lamp Life* (to half brightness)	30,000 hours minimum
	Panel Bit Depth	8bit (6 bit + Hi-FRC)
	Color Production*	Can display up to 16.7 million colors with the use of FRC technology
	Color Gamut* (Typical)	72% (NTSC)
	Default Color Temperature	Neutral (6500)
	Low Blue Light Modes	No

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

User Controls	**Buttons or Switches**	Menu/OK, Minus ("-")/Information, Plus ("+") /Input Control/Power
	On Screen Display (OSD) **User Controls**	Brightness, Contrast, Color Control, Input Control, Image Control, Power Control, Menu Control, Management, Language, Information, Exit
	Audio Controls	N/A
	Languages	10 (English, Spanish, German, French, Italian, Netherlands, Portuguese, Japanese, Traditional Chinese, and Simplified Chinese)
Signal Interface/ Performance	**Horizontal Frequency**	30–80 kHz
	Vertical Frequency	50-60 Hz
	Native Resolution	1920 x 1080 @ 60 Hz
	Preset Graphic Modes (non-interlaced)	640 x 480 @ 60Hz 720 x 400 @ 70Hz 800 x 600 @ 60Hz 1024 x 768 @ 60Hz

		1280 x 720 @ 60Hz 1280 x 800 @ 60Hz 1280 x 960 @ 60 Hz 1280 x 1024@ 60Hz 1440 x 900 @ 60 Hz 1600 x 900 @ 60Hz 1680 x 1050@ 60 Hz 1920 x 1080 @ 60Hz	
	Maximum Pixel Clock Speed	170 MHz	
	Anti-Glare	Yes	
Video/Other Inputs	**Plug and Play**	Yes	
	Input Connectors	(1) VGA (1) HDMI (1) DP (HDCP Support)	
	Cables Included	no	
Audio	**Speakers**	N/A	
Power	**Power Supply**	Internal	
	Input Power	100 - 240 VAC 50/60 Hz	
	Maximum Power	20 W	
	Typical Power	18 W	
	Sleep Power	0.5 W	
	Power Cable Length	**1,9 m** (6.23 ft)	
Mechanical	**Dimensions** (W × D × H)	**Unpacked w/stand** (lowest setting)	**56,13 x 2,18 x 50,14 cm** (22.1 x 8.58 x 19.74 in)
		Unpacked w/o stand (head only)	**56.13 x 5,26 x 33,32 cm** (22.1 x 2.07 x 13.12 in)
		Packaged	**62,5 x 20 x 39,5 cm** (24.6 x 7.87 x 15.55 in)
	Weight	**Head Only**	**3,5 kg** (7.7 lb)
		Unpacked	**5,6 kg** (12.34 lb)
		Packaged	**7,3 kg** (16.10 lb)
Ergonomic Features - Not available on head only model	**Detachable Stand**	Yes, ships detached	
	Tilt Range	-5° to + 20° vertical	
	Swivel	Yes. 360°	
	Pivot	Yes, 90°	
	Height	Yes, 100mm	
Environmental	**Temperature - Operating**	**5° to 35° C** (41° to 95° F)	

	Temperature - Non-operating	**–20° to 60° C** (–4° to 140° F)
	Humidity - Operating	20% to 80% non-condensing
	Humidity - Non-operating	5% to 95%
	Altitude - Operating	**0 to 5,000 m** (0 to 16,400 ft)
	Altitude – Non-operating	**0 to 12,192 m** (0 to 40,000 ft)
	White LED Backlights	Yes
	CCFL Panel	No
	Arsenic-Free Display Glass	Yes
	Low Halogen[1]	N/A
	Mercury-Free Display Backlights	Yes
Options (each sold separately)	**HP LCD Monitor Quick Release —** Part number EM870AA[4]	An easy-to-use, VESA-compliant, LCD monitor mounting solution that allows you to quickly and securely attach an LCD monitor to a variety of stands, brackets, arms or wall mounts. For more information, refer to this product's QuickSpecs document.
	HP Business PC Security Lock V2 Kit — Part number N3R93AA	Help prevent chassis tampering and secure your PC and display in workspaces and public areas. Simply route the cable through the PC's lock slot and your display, anchor to a desk, table, or other fixed surface, and lock with your individual key. A master key configuration is also available upon request.
What's in the box?	**Monitor and Accessories**	HP V22b 21.5-inch Monitor, AC power cable **1,9 m** (6.2 ft), VGA cable **1,8 m** (5.9 ft), DP cable 1,8 m (5.9 ft)
	Documentation	Setup Poster, Product Notice, Warranty
	Software	N/A
Other	**User Guide Languages**	English, Portuguese Brazil, Spanish
	Warranty Languages	Portuguese Brazil, Spanish
	Color	Black
	VESA Mounting	100 mm VESA mount
	Security Lock-Ready	Yes
	Country of Origin	Brazil
Certification and Compliance	CB/FCC/cTUVus/S-Mark(Argentina)/WEEE, Certification (Win 7, Win 8, Win 10)	
Compatibility	Compatible with platforms using the VESA standard video modes. Recommended for use with HP products.	
Service and Warranty	Protected by HP, including a 3-year standard limited warranty (may vary by region). Optional HP Care Pack Services are extended service contracts that extend your protection beyond the standard warranties.[3]	

Technical Specifications

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

Change Log	
V1 to V2	Updated Ergonomic Features and Height Adjustment
	Updated Response Time

Contact HP - Phone Assist

Telefones para obter suporte técnico de produtos HP

IMPORTANTE: Antes de ligar, certifique-se de ter em mãos o produto, o número de série do produto, o número da nota fiscal e a data da compra. Estas são informações necessárias para um atendiment adequado.

Telefones:	Produtos / Servicios:	Horário de operação (horário de Brasília)
Para Grande São Paulo: 01138788338 Demais localidades: 0800 709-7751	Vendas	Opção 2 Usuário doméstico e empresariais – 8h – 18h (Horário de Brasilia) Segunda a Sexta
	Suporte Tecnico	Opção 3 Usuário doméstico – 8h – 22h (Horário de Brasilia) Segunda a Sábado Empresarial – 8h – 18h (Horário de Brasilia) Segunda a Sexta
	Programas Especiais	Opção 5 8h – 18h (Horário de Brasilia) Segunda a Sexta * Mais código de programa

***As opções do menu podem indicar alternativas para atendimento não técnico e para produtos sem garantia.**

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Verificar a garantia manualmente

* *Campos obrigatórios*

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Número de série * ?

Exemplo: HU265BM18V

Verificar garantia

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Há mais de uma garantia para verificar? Utilize nossa opção para verificar várias garantias para agilizar o processo.

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Use o HP Print and
Diagnosticar e corrigir
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Mais

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Rede de serviços autorizada

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Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

Gen-Z (https://genzconsortium.org/)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenStack Foundation (http://www.openstack.org)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

Storage Networking Industry Association (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

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Athens University of Economics and Business (https://www.aueb.gr/en)

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Federal Institute of Technology of Espirito Santo (https://www.ufes.br/)

George Mason University (http://c4i.gmu.edu)

Hungarian Academy Of Sciences Institute For Computer Science And Control (https://sztaki.hu/en)

Indian Institute of Technology Roorkee (https://www.iitr.ac.in/)

Institute of Information Security (IISEC) (https://www2.iisec.ac.jp/english/)

Kasetsart University (https://www.ku.ac.th/th)

Logitrain (https://logitrain.edu.au)

Marshall University (http://www.marshall.edu)

National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

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CIM Forum

The DMTF’s CIM Forum (formerly SMF) develops and implements programs for verifying compliance of software and hardware that implement DMTF’s system management standards. This includes the Desktop and mobile Architecture for System Hardware (DASH) (http://www.dmtf.org/standards/dash) and Systems Management Architecture for Server Hardware (SMASH) (http://www.dmtf.org/standards/smash) standards. CIM Forum also enables adoption of DASH and SMASH through programs and activities that allow developers to validate their implementations.

DMTF's DASH (http://www.dmtf.org/standards/dash) standard is a suite of specifications that takes full advantage of the DMTF’s Web Services for Management (WS-Management) specification – delivering standards-based web services management for desktop and mobile client systems. Through DASH, DMTF provides the next generation of standards for secure out-of-band and remote management of desktop and mobile systems.

DMTF's SMASH (http://www.dmtf.org/standards/smash) standard – which includes the Server Management Command Line Protocol specification – is a suite of specifications that deliver industry standard semantics, protocols and profiles to make data center resource management interoperable.

As of January 2019, the CIM Forum has taken on the work of the Architecture, CPPS and Schema working groups. The expanded scope of the forum will enable continued development and maintenance of the important standards provided by the afforementioned groups - now task forces under the CIM Forum.

Forum Membership

To participate in CIM Forum, an organization must be a member of the DMTF at the Participation, Leadership or Board level, and must also join the Forum as a member. Granted at the company level, membership in the CIM Forum allows an unlimited number of representatives from a member company to participate in Forum activities.

Annual membership dues - $5,000 for the CIM Forum Leadership Level and $2,500 for CIM Forum Participatory membership - are prorated (http://www.dmtf.org/join/smf/dues_schedule) for companies that join during the fiscal year (the new DMTF membership year begins on April 1).

Membership in CIM Forum provides a number of valuable privileges:

Leadership Members ($5,000)

In addition to all rights granted to Participatory members, Leadership members of the CIM Forum receive:

- Access to all Forum governance, communication and documents
- Eligibility for role as a Forum officer
- Eligible for unlimited product submissions and DMTF registry listings
- Ability to contribute company quotes to Forum publications and press releases (/join/company-signup)

Participatory Members ($2,500)

In addition to all rights granted to Non-CIM Forum members, Participatory members of the CIM Forum receive:

- Participate in conference calls and face-to-face meetings of the Forum
- Vote on all Forum matters
- Early access to Forum conformance test suite software and process
- Eligible for unlimited product submissions and DMTF registry listings
- Company name listed in Forum publications and press releases
- Participate in plugfests (/join/company-signup)

Non-CIM Forum Members ($0)

Companies that are members of DMTF and not members of the CIM Forum receive:

- Access to the binaries of the final releases of the certification suite
- Ability to view the product certification registry (if applicable).
- Access to the general discussion reflector
- Participation a Task Force formed within the CIM Forum
- Eligible to be elected as a Task Force Chair of a Task Force within the CIM Forum
- Participate in open plugfests (provided proper fees are paid if required, the company is a DMTF Member, and the DMTF membership allows participation in plugfests)

Join the CIM Forum members (http://www.dmtf.org/about/list) and take advantage of this unique opportunity to shape the future of systems management in the data center. For more information, DMTF members can view the full "Rules Governing Forum Membership" document on the CIM Forum WG page (http://www.dmtf.org/apps/org/workgroup/cimf/).

How to Join

If you are a current DMTF member at the Participation, Leadership or Board level, visit our Add Forum Membership page (http://www.dmtf.org/join/add-forum-membership) to join CIM Forum.

If you are not yet a member of DMTF, you can sign up for both organization and Forum membership simultaneously via the New Company Sign-Up form (https://www.dmtf.org/join/company-signup). Select either the CIM Forum Leadership or CIM Forum Participatory level in the form’s optional “Forum Membership” drop-down. If you have any questions, please complete our Contact Us form (http://www.dmtf.org/contact).

Forum Dues Renewal

Existing Forum members will receive renewal invoices in late February for the upcoming membership year (April 1 to March 31).

If you have any questions about joining the DMTF’s CIM Forum, please contact DMTF Administration (http://www.dmtf.org/about/contact?to=admin).

Fórum de Interface de Firmware Extensível Unificada

Lista de Membros

A comunidade de membros do UEFI Forum é representada por OEMs, IHVs, fabricantes de chips, fabricantes de BIOS e firmware e fornecedores de sistemas operacionais líderes do setor.

Promotores

AMD
American Megatrends, Inc.
Apple Inc.
ARM Limited
Dell
Hewlett Packard Enterprise
HP, Inc.
IBM
Insyde Software
Intel
Lenovo
Microsoft
Phoenix Technologies

Contribuintes

Absolute Software Corporation
Ampere Computing LLC
Aquantia Corporation
ASUSTeK COMPUTER INC.
Broadcom Corporation
Canonical Limited
Cavium Inc.
Cisco
Citrix Systems, Inc.
Cumulus Networks Inc.
Daten Tecnologia
Entre na Informatica Com. Repr. LTDA
Loongson Technology Corporation Limited
Mellanox Technologies
Nanquim Byosoft Co., Ltd.
NEC Corporation
NVIDIA
NXP BV
Oracle America, Inc.
Positivo Tecnologia SA
Pre-OS Security Inc.
Qualcomm Inc.