

Technical Specifications

HP Storage Solutions for HP Business Notebooks

Models

Optical Drives	HP External USB DVD/RW	F2B56AA
	2013 Upgrade Bay DVD AMO - Carrier and Drive	G1Y56A
Removable Hard Drives	HP 500 GB 7200 rpm Primary SATA Hard Drive	F3B97AA
	HP 1 TB 7200 rpm Primary SATA Hard Drive	L3M56AA
	2013 Upgrade Bay 750GB HDD AMO Carrier and Drive	G1Y57AA
Solid State Drives	HP 256 GB TLC Solid State Drive 2.5"	M0F34AA
	HP 256 GB PCIe NVMe M.2 Solid State Drive	V3K66AA
	HP 256 GB Value 2280 SATA3 M.2 Solid State Drive	1DE47AA
	HP 256 GB TLC 2280 SATA3 M.2 Solid State Drive	1DE48AA
	HP 256GB TLC PCI-e 3x4 NVMe M.2 Solid State Drive	1FU87AA
	HP 512 GB PCIe NVMe M.2 Solid State Drive	V3K67AA
	HP 512 GB TLC PCI-e 3x4 NVMe M.2 Solid State Drive	1FU88AA
	HP 1 TB 2280 PCI-E 3x4 NVME M.2 Solid State Drive	X2E90AA
	HP 512 GB TLC 2.5 Solid State Drive New!	2JB96AA
	HP 128 GB TLC 2280 M.2 Solid State Drive New!	2JB95AA
	HP 256GB SED TLC SATA- 3 M.2 SSD New!	3JP90AA
HP 512GB TLC SATA- 3 M.2 SSD New!	3JP91AA	
Brackets	HP Mobile Workstation HDD/SSD Bracket	J2D73AA

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HP Storage Solutions

HP storage solutions for your HP business notebook provide additional flexibility and expandability with a range of options that include optical drives, hard drives, and solid state drives.

Optical Drives

HP External USB DVD/RW

With the HP External USB Optical Drive, any available USB port on your notebook or Ultrabook™ becomes a ticket to optical storage. Simply connect the drive with the included USB cable, and get immediate read/write access to your optical media.

Key Benefits

- Write to or access large files, media or music from CDs or DVDs
 - Connect easily through a USB 2.0 port
 - Lightweight, compact design stores easily into a carrying case or backpack
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2013 Upgrade Bay DVD AMO - Carrier and Drive

Create CDs and DVDs, back up or archive permanent data files on CD or DVD media with the HP 2013 Upgrade Bay DVD AMO - Carrier and Drive.

Key Benefits

- Write to or access large files, media or music from CDs or DVDs
 - Up to 4.7 GB of data storage capacity (up to 8.5 GB double layer).
 - Lightweight, compact design stores easily into a carrying case or backpack.
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Removable Hard Drives

HP 500 GB/750 GB/ 1 TB 7200rpm Primary SATA Hard Drive

The HP Hard Drives are convenient and affordable solutions for users who require additional storage or a faster dedicated second hard drive.

Key Benefits

- Extend the life of your HP Business Notebook by providing additional storage
 - Easy low-cost back-up solution without burdening network resources
 - Switch drives between most HP business notebooks
 - SMART predictive failure analysis (PFA)
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2013 Upgrade Bay 750 GB HDD AMO Carrier and Drive

The 2013 HP Upgrade Bay 750 GB HDD AMO Carrier and Drive is a convenient and affordable solution for users who require additional storage or a faster dedicated second hard drive.

Key Benefits

- Easy back-up solution without burdening network resources.
 - Warm swappable.
 - High speed SATA data transfer.
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- Power/drive activity LED indicator.

Solid State Drives

HP 240 GB and 256, 512 GB, or 1 TB Solid State Drives

The HP 240 GB, 512 GB, and 1 TB Solid State Drives provide many performance and durability improvements over traditional Hard Disk Drive (HDD) technology. With no moving parts, solid state drives do not need to spin up or mechanically seek files like conventional hard disk drives do. These drive characteristics significantly improve boot-up, shut down, and application loading times as well as overall application responsiveness.

The HP 256 GB SED Solid State Drive includes Trusted Computing Group (TCG) Opal-compliant self-encryption for enhanced data security that adds a layer of authentication to your drive.

Key Benefits

- Store your data with a hard drive with no moving parts
- Get faster transfer speeds and higher cell endurance with Multi Level Cell (MLC) NAND flash memory
- Significantly improve boot up, shut down, and application loading times
- Improved protocol for enhanced data integrity
- Performance increase to up to 6 Gb/s maximum external (burst) data transfer rate
- Native Command Queuing allows the drive to have several write or read commands outstanding at the same time

Bracket

HP Mobile Workstation HDD/SSD Bracket

Easily replace or upgrade your hard drive or solid state drive with the HP Mobile Workstation HDD/SSD Bracket.

Simply insert the drive (sold separately) into the bracket, and the bracket into the available drive slot on your HP Mobile Workstation or HP ZBook.

Rest easy with a one-year parts replacement limited warranty.

Optical Drives

HP External USB DVD/RW Drive	Manual tray-load
Interface	USB 2.0
Dimensions (HxWxD)	0.55 x 5.41 x 5.94 in (1.40 x 14.40 x 13.75 cm)
Form Factor	External
Access Times	CD 1/3 Stroke: 140 ms
	DVD 1/3 Stroke: 160 ms
Supported Media (read)	DVD-ROM, DVD-R DVD-R , DVD-R DL, DVD-RW, DVD-RAM, DVD+R, DVD+R DL, and +RW CD-ROM, CD-ROM XA, CD-DA

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	Super Audio CD CD-R discs CD-RW discs CPRM (DVD-R/RW/RAM) supported	
Supported Media (write)	DVD-R DVD-R DL DVD-RW DVD-RAM DVD+R DVD+R DL DVD+RW CD-R/RW	
Maximum speed		Normal
Write	DVD-RW DVD+RW CD-RW	6X maximum by ZCLV 8X maximum by ZCLV 24 X maximum by ZCLV
Read	DVD-R/RW/ROM DVD-R DL DVD-RAM DVD-Video M-DISC(DVD+R SL) DVD+R/+RW DVD+R DL CD-R/RW/ROM CD-DA	8 X maximum 8 X maximum 6 X maximum 4 X maximum 8 X maximum 8 X maximum 8 X maximum 24 X maximum 24 X maximum
Environmental (all conditions, non-condensing)	Temperature (operating) Read and Write Relative Humidity (operating) Read Write Temperature (non-operating) Relative Humidity (non-operating)	5 to 40 °C 10% to 80% 15% to 85% (Non-Condensing) 15% to 80% (Depend on the Temperature) -30 to 40 °C 10% to 90% (Non-Condensing)
Operating systems supported	Windows 8, Windows 7, Windows Vista, Windows XP, Windows 2008, Windows 2003, Mac OS X	
System requirements	Pentium IV 2.4 GHz or higher, compatible (Recommended: Pentium IV 3.2 GHz or Higher) RAM: 256 MB or higher (Recommended: 128 MB) HDD: 20 GB or more of available space Video Memory: 64 MB or higher (Recommend: 128 MB) Interface: USB 2.0	
Option kit contents	HP Mobile USB DVD/RW Drive, software, documentation	
Compatibility	All HP Business Notebook PCs, HP Mobile Workstations	

Note: Actual speeds may vary. Intended only for creation and storage of original material and other lawful uses. Double-layer discs may not be compatible with many existing single-layer DVD drives and players.

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2013 Upgrade Bay DVD AMO - Carrier and Drive	Drive	Manual tray-load
	Orientation	Horizontal or vertical
	Operating Temperature	5 to 50 °C
	Interface	SATA 1.0
	Transfer Mode	1X CD-ROM = 150 Kbytes/second 1X DVD-ROM = 1350 Kbytes/second (1KB = 1024 Bytes) DVD+R Write 10800 KB/s up to 8X DVD+R DL Write 5400 KB/s up to 6X DVD+RW Write 10800 KB/s up to 8X DVD-R Write 10800 KB/s up to 8X. DVD-R DL Write 5400 KB/s up to 6X DVD-RW Write 8100 KB/s up to 6X DVD-RAM Write 6750 KB/s up to 5X CD-R Write 3600 KB/s up to 24X. CD-RW Write 2400 KB/s up to 16X CD-ROM Read 3600 KB/s up to 24X. DVD-ROM Read 10800 KB/s up to 8X.
	Weight	4.94 lb (140 g)
	Dimensions (HxWxD)	5.51 x 5.09 x .62 in 13.99 x 12.93 x 1.58 cm
	Form Factor	Commands for DVD Devices. Small Form Factor Connector Standards
	Capacity	Read Write
	Access Times	CD DVD
	Max Data transfer rates (sustained)	24X CD-ROM 8X DVD 24X CD-R 16X CD-RW 8X DVD+R 4X DVD+RW 8X DVD-R 4X DVD-RW 2.4X DVD+R(9) 5X DVD-RAM
	Supported Media (read)	DVD-R DVR-W DVD+RW DVD+R DVD+R DL DVD-R DL DVD-RAM
	Supported Media (write)	CD-R CD-RW DVD-R DVD-R DL

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	DVD-RW DVD+R DVD+R DL DVD+RW DVD-RAM
Max Media Capacity (read)	9.40 GB
Max Media Capacity (write)	8.50 GB
Power	5 VDC < 800 mA Read (typical at O.D.) < 1,000 mA Write (typical at O.D.) <1600 mA (maximum-excluding spike current <1ms duration) <65 mA (stand-by - partial if supported) <40 mA (stand-by - slumber)
Environmental (all conditions, non-condensing)	Temperature (operating) Relative Humidity (operating) Maximum Wet Bulb Temperature (operating)
Operating systems supported	Windows 7 and Windows 8
Option kit contents	2013 Upgrade Bay DVD AMO - Carrier and Drive and documentation
Compatibility	HP ZBook 15/17 Mobile Workstations

Note: Actual speeds may vary. Intended only for creation and storage of original material and other lawful uses. Double-layer discs may not be compatible with many existing single-layer DVD drives and players.

Removable Hard Drives

HP 500 GB 7200rpm Primary SATA Hard Drive	Drive Weight	0.25 lb (115g)	
	Capacity	500 GB	
	Height	0.27 in (7 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
	Transfer Rate	Synchronous (maximum) 150 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	Single Track	1.5ms
		Average	11ms
		Maximum	22ms
	Rotational Speed	7200 rpm	
	Logical Blocks	976,773,168	
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
	Features	ATA Security	
Compatibility	HP ProBook 430, 440, 450, 470, 445 , 450, 470, 640, 650, 645, 655 , 4440s, 4540s, 4740s, 4445s/4446s, 4545s, 6470b, 8470p, 6570b, 8570p Notebook PCs		

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 465 GB is user available.

Technical Specifications

HP 1 TB 7200rpm Primary SATA Hard Drive	Drive Weight	115g
	Capacity	1000GB
	Height	9.5mm
	Width	70mm
	Interface	ATA-8, SATA 3.0
	Transfer Rate	Synchronous (maximum) 600MB/s
	Seek Time (typical reads, including settling)	Single Track 2ms Average 13ms Maximum 15ms
	Rotational Speed	7200 rpm
	Logical Blocks	1,465,149,168
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security
	Compatibility	HP EliteBook 700, 800 Notebook PCs, HP ZBook 14/15/17 Mobile Workstations

Note: 1 TB = a trillion bytes. Actual formatted capacity is less. Up to 931 GB is user available.

HP 2013 Upgrade Bay 750 GB Hard Drive	Weight (without HDD)	1.59 lb (45 g)
	Dimensions (HxWxD)	5.30 x 5.04 x .60 in 13.45 x 12.80 x 1.53 cm
	Formatted Capacity	750 GB
	Total logical sectors	1465149168
	Interface	SATA 3.0
	Data Transfer rate @ Disk to Buffer SATA	170 Mbytes/s up to 600MB/s
	RPM	7200
	Operating systems supported	Windows 7 and Windows 8
	Operating Temperature	0 to 60°C
	Option kit contents	HP 2013 Upgrade Bay 750 GB Hard Drive and documentation
	Compatibility	HP ZBook 15, 17 Mobile Workstations

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 698 GB is user available.

Solid State Drives

Technical Specifications

HP 256 GB M.2 Solid State Drive	Capacity*	256 GB
	NAND Flash Memory	Multi Level Cell (MLC) with wear leveling controller
	Interface type	SATA 6 Gb/sec (SATA Gen3 compliant)
	Dimensions-external (W x H x D)	2.74 x 0.276 x 3 in (2.2 x 8 x 0.15 cm)
	Weight	<0.02 lb (10 g)
	Internal transfer rate	Write speed Up to 465 MB/s
		Read speed Up to 515 MB/s
	Host transfer rate	Ultra DMA mode Up to 100 MB/s (Support Ultra DMA 5)
	Power	DC power requirement 3.3 VDC 3.3%-100 mV ripple pk-pk
		Total power consumption < 6.6 Watt (max value)
	Environmental (all conditions, non-condensing)	Temperature (operating) 32° to 158° F (0° to 70° C)
		Relative Humidity (operating) 5% to 95%
		Maximum Wet Bulb Temperature (operating) 104° F (40° C)
	Operating systems supported	Windows® 7 Home Basic 32-bit, Windows 7 Home Premium 32- and 64-bit, Windows 7 Professional 32- and 64-bit, Windows XP Professional 32-bit, Windows XP Professional x64 or Windows XP Home. No driver is required for this device, although the HP-tested driver is recommended. Native support is provided by the operating system.
	Regulations	UL, CSA, EN60950-1:2006, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B,
	Option kit contents	HP 256GB SSD M.2, documentation
	Compatibility	TBD

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 238 GB is user available.

HP 256 GB TLC Solid State Drive	Capacity*	256 GB
	NAND Flash Memory	
	Interface type	SATA 3 (6Gbps)
	Dimensions-external (W x H)	2.5 x .27 in (63.5 mm x 7mm)
	Weight	0.10 lb (45 g)
	Interface	SATA 3 (6Gbps)
	READY TIME, MAXIMUM (to Not Busy)	1.0 s
	Access times, Logical	TYP.
	Data Transfer rate (4k sector Random / 128k Sequential)	0.1 ms
	Sequential Read	Up to 510 MB/s

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Random Read	Up to 90K IOPS
Sequential Write	Up to 280 MB/s
Random Write	Up to 70K IOPS
Logical Blocks	500118192
Operating Temperature	0 to 70 °C
Option kit contents	HP 256 GB Solid State Drive, documentation
Compatibility	HP 245, 250, 250, 255 G4

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 238 GB is user available.

Technical Specifications

HP 256 GB PCIe NVMe M.2 Capacity*	256 GB	
Solid State Drive	Interface type	M.2 PCIe Gen 3x4 NVMe
	Form Factor	M.2 2280 Single Sided
	Dimensions-external (W x H x D)	80.15 x 22.15 x 2.38 (mm)
	Weight	<0.02 lb (10 g)
	Internal transfer rate	Sequential Write speed Up to 1260 MB/s
		Sequential Read speed Up to 2150 MB/s
	Host transfer rate	Ultra DMA mode Up to 100 MB/s (Support Ultra DMA 5)
	Power	DC power requirement 3.3 VDC 3.3%-100 mV ripple pk-pk
		Total power consumption < 6.6 Watt (max value)
	Environmental (all conditions, non-condensing)	Temperature (operating) 32° to 158° F (0° to 70° C)
		Relative Humidity (operating) 5% to 95%
		Maximum Wet Bulb Temperature (operating) 104° F (40° C)
	Operating systems supported	Windows® 7 Home Basic 32-bit, Windows 7 Home Premium 32- and 64-bit, Windows 7 Professional 32- and 64-bit, Windows XP Professional 32-bit, Windows XP Professional x64 or Windows XP Home. No driver is required for this device, although the HP-tested driver is recommended. Native support is provided by the operating system.
	Regulations	UL, CSA, EN60950-1:2006, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B~~
	Option kit contents	256 GB SSD M.2, documentation
	Compatibility	ZBook 15, 17 G3

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 512 GB PCIe NVMe M.2 Capacity*	512 GB
Solid State Drive	
Interface type	M.2 PCIe Gen 3x4 NVMe
Form Factor	M.2 2280 Double Sided
Dimensions-external (W x H x D)	80.15 x 22.15 x 2.38 (mm)
Weight	<0.02 lb (10 g)
Internal transfer rate	Sequential Write speed Up to 1500 MB/s
	Sequential Read speed Up to 2150 MB/s
Host transfer rate	Ultra DMA mode Up to 100 MB/s (Support Ultra DMA 5)
Power	DC power requirement 3.3 VDC 3.3%-100 mV ripple pk-pk
	Total power consumption < 6.6 Watt (max value)
Environmental (all conditions, non-condensing)	Temperature (operating) 32° to 158° F (0° to 70° C)
	Relative Humidity (operating) 5% to 95%
	Maximum Wet Bulb Temperature (operating) 104° F (40° C)
Operating systems supported	Windows® 7 Home Basic 32-bit, Windows 7 Home Premium 32- and 64-bit, Windows 7 Professional 32- and 64-bit, Windows XP Professional 32-bit, Windows XP Professional x64 or Windows XP Home. No driver is required for this device, although the HP-tested driver is recommended. Native support is provided by the operating system.
Regulations	UL, CSA, EN60950-1:2006, CISPR Pub 22 Class B, CNS 13438, AS/NZS CISPR 22:2002 Class B~~
Option kit contents	512 GB SSD M.2, documentation
Compatibility	ZBook 15, 17 G3

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 1 TB PCI-E 3x4 NVME 2280 M.2 Solid State Drive	Capacity*	1 TB	
	Interface type	PCIe NVMe Gen3X4	
	Form Factor	M.2 2280	
	Dimensions-external (W x H x D)	0.87 x 0.14 in (22 x 3.65 mm)	
	Weight	0.02 lb (10 g)	
	Internal transfer rate	Sequential Write speed	2,400 MB/s
		Sequential Read speed	1,500 MB/s
	Host transfer rate	Ultra DMA mode	
	Power	DC power requirement	
		Total power consumption	
		Nominal voltage	+3.3 V
		Temperature (operating)	0 to 70 C
	Environmental (all conditions, non- condensing)	Relative Humidity (operating)	5 to 95 %
		Maximum Wet Bulb Temperature (operating)	35 C
		Operating systems supported	Win 7 Pro 64, Win 10 Home 64 Chinese Market CPPP Win 10 Home 64 High-end Win 10 Home 64 High-end Chinese Market Win 10 Home 64 High-end Single Language Win 10 Pro 64 Win 10 Pro 64 Downgrade Win 7 64 FreeDOS 2.0
	Regulations	RoHS UL CSA EN 60950-1 FCC AS/ NZ CISPR BSMI KCC CE CISPR 22 - Class B	
	Option kit contents	HP 1 TB Solid State Drive 2280 M.2 PCI-E 3x4 NVME, documentation	
	Compatibility	ZBook 15U G3 ZBook 15 G3 ZBook 15 Studio G3 ZBook 17 G3	

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 256GB Value 2280 SATA3 M.2 SSD

Capacity*	256 GB	
NAND Flash Memory	Flash 5st Generation. 1T ODP 8CE NAND Density	
Interface type	SATA 6 Gb/sec (Partially Complies with revision 3.2)	
Dimensions-external (H x W x L)	0.09 x 0.86 x 3.1 in (0.23 x 2.2 x 8 cm)	
Weight	0.01 lb (8 g)	
Internal transfer rate	Write speed	Up to 515 MB/s
	Read speed	Up to 535 MB/s
Power	Supply Voltage	3.3V ± 5%
	Voltage Ripple/Noise (max.)	100mV p-p
	Temperature (operating)	0 ~ 70 °C
Environmental (all conditions, non- condensing)	Relative Humidity (non- condensing)	5% to 95%
	Shock (1/2 sine pulse)	1,500 G (0.5ms)
Regulations	CE Comunaute Europeenne, BSMI Bureau of Standards, Metrology and Inspection, KCC Korea Communications commission, VCCI Voluntary Control Council for Interference, C-Tick Radio Telecommunication Labeling, FCC Federal Communications Commission, IC Industry Canada, UL Underwriters Laboratories, Inc., TUV Technischer Uberwachungs Verine e.V, CB Scheme of the IECEE for Mutual Recognition of Test Certificates for Electrical Equipment	
Option kit contents	HP 256GB SSD M.2, documentation	
Compatibility	HP ProBook 430, 440, 450, 470 G4	

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 256GB TLC 2280 SATA3 M. 2 SSD

Capacity*	256 GB	
NAND Flash Memory	Flash 1st Generation. 4T HDP 16CE, 2T ODP 8CE, 1T QDP 4CE NAND Density	
Interface type	SATA 6 Gb/sec (Partially Complies with revision 3.2)	
Dimensions-external (H x W x L)	0.09 x 0.86 x 3.1 in (0.23 x 2.2 x 8 cm)	
Weight	0.01 lb (9 g)	
Internal transfer rate	Write speed	Up to 515 MB/s
	Read speed	Up to 530 MB/s
Power	Supply Voltage	3.3V ± 5%
	Voltage Ripple/Noise (max.)	100mV p-p
	Temperature (operating)	0 ~ 70 °C
Environmental (all conditions, non- condensing)	Humidity (non-condensing)	5% to 95%
	Linear Shock (1/2 sine pulse)	1,500 G (0.5ms)
	Regulations	CE Comunaute Europeenne, BSMI Bureau of Standards, Metrology and Inspection, KCC Korea Communications commission, VCCI Voluntary Control Council for Interference, C-Tick Radio Telecommunication Labeling, FCC Federal Communications Commission, IC Industry Canada, UL Underwriters Laboratories, Inc., TUV Technischer Uberwachungs Verine e.V, CB Scheme of the IECEE for Mutual Recognition of Test Certificates for Electrical Equipment
Option kit contents	HP 256GB SSD M.2, documentation	
Compatibility	HP ProBook 430, 440, G3, 640 , 650 G2 HP EliteBook 840, 850, G3	

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 256GB TLC PCI-e 3x4 NVMe M.2 SSD	Capacity*	256 GB		
	Interface type	PCI-E		
	Dimensions-external (H x W x L)	0.86 x 3.14 x 0.09 in (2.2 x 8 x 0.23 cm)		
	Weight	0.01 lb (8 g)		
	Internal transfer rate	Write speed	Up to 515 MB/s	
		Read speed	Up to 535 MB/s	
	Host transfer rate	Ultra DMA mode		
	Power	DC power requirement	3.3V	
		Total power consumption	80mW in active mode	
	Environmental (all conditions, non-condensing)	Temperature (operating)	0 ~ 70 °C	
		Relative Humidity (non-condensing)	5% to 95%	
	Operating systems supported	Windows 8, 8.1, 10		
	Regulations	CE Comunaute Europeenne, BSMI Bureau of Standards, Metrology and Inspection, KCC Korea Communications commission, VCCI Voluntary Control Council for Interference, C-Tick Radio Telecommunication Labeling, FCC Federal Communications Commission, IC Industry Canada, UL Underwriters Laboratories, Inc., TUV Technischer Uberwachungs Verine e.V, CB Scheme of the IECEE for Mutual Recognition of Test Certificates for Electrical Equipment		
	Option kit contents	M.2 Drive, Product Notice, Warranty		
Compatibility	HP EliteBook 840/850 G4, 720 G4, 820 G4, 745/755 G4 HP ProBook 640/650/645/655 G3			

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 512GB TLC PCI-e 3x4 NVMe M.2 SSD	Capacity*	512 GB		
	Interface type	PCI-E		
	Form Factor	M2		
	Dimensions-external (H x W x L)	0.86 x 3.14 x 0.09 in (2.2 x 8 x 0.23 cm)		
	Weight	0.01 lb (8 g)		
	Internal transfer rate	Write speed	Up to 515 MB/s	
		Read speed	Up to 535 MB/s	
	Host transfer rate	Ultra DMA mode		
	Power	DC power requirement	3.3V	
		Total power consumption	80mW in active mode	
	Environmental (all conditions, non-condensing)	Temperature (operating)	0 ~ 70 °C	
		Relative Humidity (non-condensing)	5% to 95%	
	Operating systems supported	Windows 8, 8.1, 10		
	Regulations	CE Comunaute Europeenne, BSMI Bureau of Standards, Metrology and Inspection, KCC Korea Communications commission, VCCI Voluntary Control Council for Interference, C-Tick Radio Telecommunication Labeling, FCC Federal Communications Commission, IC Industry Canada, UL Underwriters Laboratories, Inc., TUV Technischer Uberwachungs Verine e.V, CB Scheme of the IECEE for Mutual Recognition of Test Certificates for Electrical Equipment		
Option kit contents	M.2 Drive, Product Notice, Warranty			
Compatibility	HP EliteBook 840/850 G4, 720 G4, 820 G4, 745/755 G4 HP ProBook 640/650/645/655 G3			

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

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HP 512GB TLC 2.5 SSD	Capacity*	512 GB
	Interface type	SATA
	Form Factor	M.2 2280 Double Sided
	Dimensions-external (H x W x L)	80.15 x 22.15 x 2.38 (mm)
	Weight	0.21 lb (10 g)
	Internal transfer rate	Sequential Write speed 515MB/s for sequential write speed
		Read speed 530MB/s for sequential read
	Host transfer rate	Ultra DMA mode
	Power	DC power requirement 5V
		Total power consumption 90mW in active mode
	Environmental (all conditions, non-condensing)	Temperature (operating) 0 ~ 70 degree C
		Relative Humidity (operating) 5% to 95%
		Maximum Wet Bulb Temperature 104° F (40° C)
	Operating systems supported	
	Regulations	
	Option kit contents	512 GB SSD M.2, M.2 screw, documentation
	Compatibility	

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

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HP 128 GB TLC 2280 M.2 Solid State Drive	Capacity*	128 GB
	Interface type	SATA
	Form Factor	M.2 2280 Double Sided
	Dimensions-external (H x W x L)	80.15 x 22.15 x 2.38 (mm)
	Weight	0.21 lb (10 g)
	Internal transfer rate	Sequential Write speed 515MB/s for sequential write speed
		Read speed 530MB/s for sequential read
	Host transfer rate	Ultra DMA mode
	Power	DC power requirement 3.3V
		Total power consumption 80mW in active mode
	Environmental (all conditions, non-condensing)	Temperature (operating) 0 ~ 70 degree C
		Relative Humidity (operating) 5% to 95%
		Maximum Wet Bulb Temperature (operating) 104° F (40° C)
	Operating systems supported	
Regulations		
Option kit contents	128 GB SSD M.2, M.2 screw, documentation	
Compatibility		

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

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HP 256 GB SED TLC SATA-3 M.2 SSD	Capacity*	256 GB		
	Interface type	SATA-3		
	Form Factor	M.2 2280		
	Dimensions-external (H x W x L)	80 x 22 x 2.38 (mm)		
	Weight	0.02 lb (9 g)		
	Internal transfer rate	Sequential Write speed	Up to 515 MB/s	
		Read speed	Up to 530 MB/s	
	Host transfer rate	Ultra DMA mode		
	Power	DC power requirement	3.3V +- 5%	
		Total power consumption	100mW Active Power	
		Nominal voltage	+3.3 VOLTS	
	Environmental (all conditions, non-condensing)	Temperature (operating)	0 TO 70 °C	
		Relative Humidity (operating)	5 to 95 %	
		Maximum Wet Bulb Temperature (operating)	40 °C	
		Operating systems supported	Win 7 Pro 64, Win 10 Home 64 Chinese Market CPPP Win 10 Home 64 High-end Win 10 Home 64 High-end Chinese Market Win 10 Home 64 High-end Single Language Win 10 Pro 64 Win 10 Pro 64 Downgrade Win 7 64 FreeDOS 2.0	
	Regulations	RoHS UL CSA EN 60950-1 FCC AS/ NZ CISPR BSMI KCC CE CISPR 22 - Class B		
	Option kit contents			
	Compatibility			

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

HP 512GB TLC SATA-3 M.2 Capacity* SSD	512 GB	
Interface type	SATA-3	
Form Factor	M.2 2280	
Dimensions-external (H x W x L)	80 x 22 x 2.38 (mm)	
Weight	0.02 lb (9 g)	
Internal transfer rate	Sequential Write speed	Up to 515 MB/s
	Read speed	Up to 530 MB/s
Host transfer rate	Ultra DMA mode	
Power	DC power requirement	3.3V +/- 5%
	Total power consumption	100mW Active Power
	Nominal voltage	+3.3 VOLTS
Environmental (all conditions, non- condensing)	Temperature (operating)	0 TO 70 °C
	Relative Humidity (operating)	5 to 95 %
	Maximum Wet Bulb Temperature (operating)	40 °C
Operating systems supported	Win 7 Pro 64, Win 10 Home 64 Chinese Market CPPP Win 10 Home 64 High-end Win 10 Home 64 High-end Chinese Market Win 10 Home 64 High-end Single Language Win 10 Pro 64 Win 10 Pro 64 Downgrade Win 7 64 FreeDOS 2.0	
Regulations	RoHS UL CSA EN 60950-1 FCC AS/ NZ CISPR BSMI KCC CE CISPR 22 - Class B	
Option kit contents		
Compatibility		

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 167 GB is user available.

Technical Specifications

Spares Information

Optical Drives	HP External USB DVD/RW	TBD
	HP Upgrade Bay -- SuperMulti (DL) DVD+/-RW SATA Drive	375197-001

Removable Hard Drives	HP 2011 Upgrade Bay 500 GB Hard Drive	657405-001 (drive)
		657406-001 (cradle)
		657407-001 (bezel kit)

Note: GB = 1 billion bytes. Actual formatted capacity is less. Up to 465 GB is user available.

Service and Support

Each HP Storage Solution carries a one-year limited warranty. Additional support is available 24 hours a day, seven days a week by phone as well as online support forums.

Note: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

Summary of Changes

Date of change:	Version 1 to 2		Description of change:
June 5, 2014	v30to v30.1	Added	SSDs and updated the compatibility section
July 1, 2014	v30.1 to v31	Updated	Updated HP 500 GB 7200rpm specs for height
July 30, 2014	v31 to v32	Added	HP 256 GB SED Opal 2 Solid State Drive
January 27, 2015	v32 to v33	Added	HP 1TB 7200rpm Primary SATA Hard Drive and HP 256 GB Solid State Drive M.2 2260 Added new disclaimers
February 6, 2015	v33	Removed	HP 2011 Upgrade Bay 500 GB Hard Drive and HP 256 GB SED Solid State Drive
February 23, 2015	v33 to v34	Added	HP 256 GB Solid State Drive TLC 2.5"
November 17, 2015	v34 to v35	Added	HP 240 GB Solid State Drive
		Updated	Legal disclaimer Storage disclaimer
January 20, 2016	v35 to v36	Added	HP 256 GB M.2 PCIe NVMe Solid State Drive V3K66AA HP 512 GB M.2 PCIe NVMe Solid State Drive V3K67AA
April 1, 2016	v36 to v37	Added	HP 1 TB Solid State Drive 2280 M.2 PCI-E 3x4 NVMe
January 26, 2017	V37 to 38	Added	HP 256GB Value 2280M2 SATA3 SSD, 1DE47AA HP 256GB TLC 2280M2 SATA3 SSD, 1DE48AA
April 18, 2017	V38 to 39	Added Removed	HP 256GB TLC PCI-e 3x4 NVMe M.2 SSD 1FU87AA HP 512GB TLC PCI-e 3x4 NVMe M.2 SSD 1FU88AA HP 240 GB Solid State Drive 2.5" T3Y75AA HP 256 GB SED Opal 2 Solid State Drive 2.5" K1Z11AA HP 512 GB Solid State Drive 2.5" J2V75AA
June 29, 2017	V39 to V40	Added	HP 512GB TLC 2.5 SSD - 2JB96AA & HP 128 GB TLC 2280 M.2 SSD - 2JB95AA added
January 2, 2018	V40 to V41	Added	HP 256GB SED TLC SATA- 3 M.2 SSD 3JP90AA HP 512GB TLC SATA- 3 M.2 SSD 3JP91AA

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