

### Overview

## HPE LTO Ultrium Storage Supplies

Because Hewlett Packard Enterprise offers a complete data protection portfolio for Hybrid IT, it understands the critical role of tape media reliability for long term archival storage and as a safeguard against accidental or deliberate data disruption. HPE is more than a media vendor, it is a storage technology leader: LTO Ultrium cartridges are the ultimate 'last line of defence' underpinning HPE's comprehensive Hybrid IT data protection solutions.

Compared to the logo test, HPE has tighter, more controlled specifications in key areas like environmental interchange and load/ unload. HPE also has stringent process controls such as regular ongoing Full Volume Life and 'Green Tape' Testing (GTT) tests. HPE's brand specification is broader and deeper than those stipulated by the LTO logo test because HPE media reliability testing takes account of how media is used, not just how it is made.

HPE's storage leadership and deep heritage in tape enable metrics that actively shape LTO media R&D and manufacturing. This knowledge is used directly to improve customer experiences and provide better tape media products - for example, it's how HPE's Green Tape Test, the gold standard for archival reliability, first originated. Since the beginning of 2016, over 8,500 cartridges have been tested in HPE's demanding GTT protocol. Almost 950 million meters of media have been pulled and over 55 million gigabytes of data have been written.

Backed by this uncompromising media qualification process, HPE LTO Ultrium data cartridges support all HPE StoreEver and non HPE LTO Ultrium tape devices. The latest eighth generation products minimize interruption to network and SAN backup by being capable of protecting 1.30 TB/hour of data at native speeds and storing up to 12 TB native (30 TB assuming 2.5:1 compression) on one piece of media (480% greater capacity than HPE LTO-6 Ultrium tapes and 1000% greater than LTO-5).



Models		
	HPE LTO-8 Ultrium 30 TB RW Data Cartridge	Q2078A
	HPE LTO-8 Ultrium 30 TB RW 960 Data Cartridge Pallet without Cases	Q2078AB
	HPE LTO-8 Ultrium 30 TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	Q2078AC
	HPE LTO-8 Ultrium 30 TB RW 960 Data Cartridge Pallet with Cases	Q2078AD
	HPE LTO-8 Ultrium 30 TB RW 20 Data Cartridges Library Pack without Cases	Q2078AH

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HPE LTO-8 Ultrium 30 TB RW 20 Data Cartridges Custom Labeled with Cases	Q2078AL
HPE LTO-8 Ultrium 30 TB RW 20 Data Cartridges Non Custom Labeled with Cases	Q2078AN
HPE LTO-8 Ultrium 30 TB WORM Data Cartridge	Q2078W
HPE LTO-8 Ultrium 30 TB WORM 20 Data Cartridges Custom Labeled with Cases	Q2078WL
HPE LTO-7 Ultrium Type M 22.5 TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	Q2078MC
HPE LTO-7 Ultrium Type M 22.5 TB RW 20 Data Cartridges Custom Labeled with Cases	Q2078ML
HPE LTO-7 Ultrium Type M 22.5 TB RW 20 Data Cartridges Non Custom Labeled with Cases	Q2078MN
HPE LTO-8 Ultrium RW Bar Code Label Pack	Q2015A
HPE LTO-7 Type M Ultrium RW Bar Code Label Pack	Q2016A
HPE LTO-7 Ultrium 15 TB RW Data Cartridge	C7977A
HPE LTO-7 Ultrium 15 TB 960 Data Cartridge Pallet without Cases	C7977AB
HPE LTO-7 Ultrium 15 TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	C7977AC
HPE LTO-7 Ultrium 15 TB 960 Data Cartridge Pallet with Cases	C7977AD
HPE LTO-7 Ultrium 15 TB RW 20 Data Cartridges RFID Custom Labeled with Cases	C7977AF
HPE LTO-7 Ultrium 15 TB 20 Data Cartridges Library Pack without Cases	C7977AH
HPE LTO-7 Ultrium 15 TB RW 20 Data Cartridges Custom Labeled with Cases	C7977AL
HPE LTO-7 Ultrium 15 TB RW 20 Data Cartridges Non Custom Labeled with Cases	C7977AN
HPE LTO-7 Ultrium 15 TB WORM Data Cartridge	C7977W
HPE LTO-7 Ultrium 15 TB WORM 20 Data Cartridges Custom Labeled with Cases	C7977WL
HPE LTO-7 Ultrium RW Bar Code Label Pack	Q2014A
HPE LTO-6 Ultrium 6.25 TB MP RW Data Cartridge	C7976A
HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges Custom Labeled with Cases	C7976AL
HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges Non Custom Labeled with Cases	C7976AN
HPE LTO-6 Ultrium 6.25 TB MP RW 960 Data Cartridge Pallet with Cases	C7976AD
HPE LTO-6 Ultrium 6.25 TB BaFe RW Data Cartridge	C7976B
HPE LTO-6 Ultrium 6.25 TB BaFe RW 20 Data Cartridges Non Custom Labeled with Cases	C7976BN
HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges Custom Labeled Library Pack without Cases	C7976AC
HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges Library Pack without Cases	C7976AH

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HPE LTO-6 Ultrium 6.25 TB MP WORM Data Cartridge	C7976W
HPE LTO-6 Ultrium 6.25 TB MP WORM 20 Data Cartridges Custom Labeled with Cases	C7976WL
HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges RFID Custom Labeled with Cases	C7976AF
HPE LTO-6 Ultrium 6.25 TB BaFe RW 20 Data Cartridges Custom Labeled with Cases	C7976BL
HPE LTO-6 Ultrium 6.25 TB BaFe RW 20 Data Cartridges Library Pack without Cases	C7976BH
HPE LTO-6 Ultrium 6.25 TB BaFe WORM Data Cartridge	C7976BW
HPE LTO-6 Ultrium RW Bar Code Label Pack	Q2013A
HPE LTO-5 Ultrium 3 TB RW Data Cartridge	C7975A
HPE LTO-5 RW 3 TB 20 Data Cartridges Custom Labeled with Cases	C7975AL
HPE LTO-5 Ultrium 3 TB WORM Data Cartridge	C7975W
HPE LTO-5 Ultrium 3 TB RW 20 Data Cartridges Non Custom Labeled with Cases	C7975AN
HPE LTO-5 3 TB WORM 20 Data Cartridges Custom Labeled with Cases	C7975WL
HPE LTO-5 3 TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	C7975AC
HPE LTO-5 Ultrium 3 TB RW 20 Data Cartridges RFID Custom Labeled with Cases	C7975AF
HPE LTO-5 Ultrium 3 TB RW 20 Data Cartridges RFID Non Custom Labeled with Cases	C7975AJ
HPE LTO-5 Ultrium 3 TB RW 20 Data Cartridges RFID Custom Labeled without Cases	C7975AK
HPE LTO4 Ultrium 1.6 TB RW Data Cartridge	C7974A
HPE LTO-4 Ultrium 1.6 TB RW 20 Data Cartridges Custom Labeled with Cases	C7974AL
HPE LTO4 Ultrium 1.6 TB WORM Data Tape Cartridge	C7974W
HPE LTO-4 Ultrium 1.6 TB RW 20 Data Cartridges Non Custom Labeled with Cases	C7974AN
HPE LTO-4 Ultrium 1.6 TB WORM 20 Data Cartridges Custom Labeled with Cases	C7974WL
HPE LTO-4 Ultrium 1.6 TB RW 20 Data Cartridges RFID Custom Labeled with Cases	C7974AF
HPE LTO-4 Ultrium 1.6 TB RW 20 Data Cartridges RFID Non Custom Labeled with Cases	C7974AJ
HPE LTO-4 Ultrium 1.6 TB RW 20 Data Cartridges RFID Custom Labeled without Cases	C7974AK
HPE LTO-3 Ultrium 800 GB RW Data Cartridge	C7973A
HPE LTO-3 Ultrium 800GB RW 20 Data Cartridges Custom Labeled with Cases	C7973AL
HPE Ultrium 800GB RW 20 Data Cartridges Non Custom Labeled with Cases	C7973AN
HPE LTO-3 Ultrium 800 GB WORM Data Cartridge	C7973W

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HPE LTO-3 Ultrium 800GB WORM 20 Data Cartridges Custom Labeled with Cases	C7973WL
HPE LTO-3 Ultrium 800GB RW 20 Data Cartridges RFID Custom Labeled with Cases	C7973AF
HPE LTO-3 Ultrium 800GB RW 20 Data Cartridges RFID Non Custom Labeled with Cases	C7973AJ
HPE LTO-3 Ultrium 800GB RW 20 Data Cartridges RFID Custom Labeled without Cases	C7973AK
HPE Ultrium Universal Cleaning Cartridge	C7978A
HPE Ultrium 1 Bar Code Label Pack	Q2001A
HPE Ultrium 2 Bar Code Label Pack	Q2002A
HPE Ultrium 3 RW Bar Code Label Pack	Q2007A
HPE Ultrium 3 WORM Bar Code Label Pack	Q2008A
HPE LTO-4 Ultrium Read/Write Bar Code Label Pack	Q2009A
HPE LTO-4 Ultrium WORM Bar Code Label Pack	Q2010A
HPE LTO-5 Ultrium RW Bar Code Label Pack	Q2011A
HPE LTO-5 Ultrium WORM Bar Code Label Pack	Q2012A
HPE LTO-5 Ultrium WORM Bar Code Label Pack	Q2012A
HPE LTO-6 Ultrium RW Bar Code Label Pack	Q2013A
HPE LTO-7 Ultrium RW Bar Code Label Pack	Q2014A
HPE LTO-8 Ultrium RW Bar Code Label Pack	Q2015A
MP = Metal particle BaFe = Barium Ferrite	
MP = Metal particle BaFe = Barium Ferrite	

### Key Features & Benefits

- Up to 30 TB compressed capacity on HPE StoreEver and non-HPE LTO-8 devices.
- Includes support for LTO-8 Type M LTO-7 initialised cartridges providing up to 22.5 TB (assuming 2.5:1 compression)
- Supports transfer speeds of 360 MB/s (native), 700 MB/s (assuming 2.5:1 compression) with LTO- 8
- Tested to extremes to a level performance unique to Hewlett Packard Enterprise. Many of the test procedures required for successful HPE Brand qualification (e.g. Green Tape Test, load/unload, shoeshine, drop testing and environmental stress testing) are not required for the Ultrium logo.
- Both Re-Writable and WORM (LTO-3 and later) formats available.
- Unique HPE colored cartridges to assist with identification in mixed media environments.
- Very low cost per GB compared to alternative storage technologies that could be used for long term archival and retention.
- Superior 'smart grabber' mechanism and mechanical interlock to prevent the leader pin from being pulled inside the tape housing.
- LTO cartridge memory in media to improve access time and provide enhanced media monitoring.
- Durable cartridge designed to minimize wear and debris (important in automation).
- HPE LTO-4 through LTO-8 supports native tape device data encryption for enhanced data security - granted FIPS140-2 Level 1 certification

### Overview

- Hewlett Packard Enterprise offers Custom Labeled and Non-Custom Labeled Tri Optic and RFID data cartridges. All labeled solutions are shipped in 20 packs.
  - Custom Labeled offerings allow automation customers to customize cartridges with a unique bar code sequence. Custom labels are pre-attached to the tapes before shipment. Available worldwide with a leadtime of up to 15 working days. Please note Europe requires a Minimum Order Quantity of 5 units or 100 total data cartridges (1 SKU unit 20 cartridges).
  - HPE Non-Custom Labeled tapes allow automation customers to receive labeled media without the lead times associated with a custom labeled solution. Barcode sequences are pre-determined by Hewlett Packard Enterprise and are guaranteed to be unique.
  - HPE LTO Ultrium RFID Labeled tapes provides a faster, more flexible and secure alternative to traditional barcode identification solutions. Rewritable RFID labels enable cartridges to be accurately tracked in real time, anywhere in the world. Hewlett Packard Enterprise RFID labels are tested to extremes, support worldwide radio frequencies and comply with global data security standards.

### Proven Reliability

- Hewlett Packard Enterprise ensures the highest level of quality with a specification for HPE Brand LTO Ultrium tapes that far exceed industry standards and are monitored throughout every batch of production.
- Ultimately, the best possible microscope to test tape cartridges is a tape drive, or rather thousands of tape drives, performing the same backup and restore tasks as end users. As a leader in LTO Ultrium hardware and storage supplies, HPE has comprehensive R&D and manufacturing programs to scrutinise the performance of tape backup solutions under every conceivable kind of stress. Since the beginning of 2016, in HPE's demanding GTT protocol, over 8,500 cartridges have been tested. Almost 950 million meters of media have been pulled and over 55 million gigabytes of data have been written.
- Hewlett Packard Enterprise Brand qualification also includes procedures like drop testing, creep append, load/unload, environmental stress tests and archival simulation that are not required to gain the LTO Ultrium logo
- Designed for the demanding environment of large-scale libraries, HPE LTO Ultrium media has a 30-year archival storage life.

### HPE LTO-8 Ultrium Format

The latest HPE LTO- Ultrium tape drive technology uses a linear format of 6,656 tracks, writing thirty two (32) tracks simultaneously. The data is written in a serpentine pattern; the tape reverses direction after each set of thirty two tracks is written.

LTO Ultrium formats are open standards. This means that data written on any HPE StoreEver LTO Ultrium tape drive for ProLiant servers, autoloaders, MSL library, T950 library and TFinity library can be interchanged directly with Ultrium tape drives from other vendors.

### Compatibility Testing

HPE LTO Ultrium data cartridges are fully supported and compatible with HPE StoreEver LTO Ultrium tape products. Because HPE LTO Ultrium media is LTO Ultrium logo compliant, it may be used with any other non- Hewlett Packard Enterprise device that bears the LTO Ultrium logo.

### Overview

Backward Read Compatible		LTO-3 Drive	LTO-4 Drive	LTO-5 Drive	LTO-6 Drive	LTO-7 Drive	LTO-8 Drive
	<b>LTO-3 Media</b>	Read/Write	Read/Write	Read Only	Not Compatible	Not Compatible	Not Compatible
	<b>LTO-4 Media</b>	Not Compatible	Read/Write	Read/Write	Read Only	Not Compatible	Not Compatible
	<b>LTO-5 Media</b>	Not Compatible	Not Compatible	Read/Write	Read/Write	Read Only	Not Compatible
	<b>LTO-6 Media</b>	Not Compatible	Not Compatible	Not Compatible	Read/Write	Read/Write	Not Compatible
	<b>LTO-7 Media</b>	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write	Read/Write
	<b>LTO-7 Type M</b>	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write
	<b>LTO-8 Media</b>	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write

### Why Buy LTO?

The decision about which tape technology you should buy next should be based on your future, not your past, investment. Choose the LTO Ultrium format when you need the following advantages:

- Maximum reliability, capacity and performance
- Compatibility with a broad range of operating systems and servers (e.g., a mixed system environment)
- A legacy-free technology that uses the best attributes from a wide range of tape technologies without any compromises for backward compatibility requirements
- A solid roadmap for future generations of the technology
- An open format available from multiple vendors
- Lowest cost

### Warranty and Support

Includes a limited lifetime warranty, fully supported by a worldwide network of resellers and service providers as well as toll-free 24 X 7 technical phone support during the warranty period. For full details on warranty and support for pre-labeled media, please go to:

<https://www.hpe.com/us/en/contact-hpe.html>

### Related Options

## Related Hardware Options

### HPE StoreEver LTO Ultrium Tape Drives

The family of HPE LTO Ultrium tape drives is Hewlett Packard Enterprise's premier line of backup and archive devices. Based on the LTO Ultrium format, an open standard with a well-defined twelve-generation roadmap, HPE LTO Ultrium tape drives offer customers the best choice for investment protection. With ultimate reliability and ease of use in mind, even at 100% duty cycles, HPE's rugged design builds on superior LTO technology and adds advanced features like hardware data encryption to create a new level of data protection. The tape drives employ dynamic data rate matching to adjust to the speed of the host, reducing wear and tear on both drive and media and increasing performance, even on slower hosts. The family of tape drives also features support for HPE Library and Tape Tools which provides HPE TapeAssure health monitoring, diagnostics, and performance optimization.

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### HPE StoreEver 1/8 G2 Tape Autoloader

The HPE StoreEver 1/8 G2 Tape Autoloader provides a cost-effective and easy-to-manage tape solution. The HPE 1/8 G2 autoloader combines incredible storage density and features into a compact 1U form factor. Capable of up to 240 TB of compressed capacity in only a 1U form factor, the autoloader is well equipped to offer room for data growth. Web-based remote management offers the capability to quickly and easily access, configure, monitor, and troubleshoot the autoloader that will reduce dependencies on local IT staff while allowing multiple sites to be supported centrally. Protect confidential information with native encryption, ensuring that if a tape is lost or stolen your data is protected from unauthorized access. Proactively monitor utilization, operational performance, as well as health information for both the drive and media with TapeAssure.

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### HPE StoreEver MSL2024 and MSL4048 Tape Libraries

The HPE StoreEver MSL Tape Libraries meet demanding storage requirements of businesses needing unattended backup, disaster recovery, or archive capability. The MSL Libraries offer a broad choice of storage capacity and technology including LTO-7, LTO-6 or LTO-5 Ultrium tape drives. Web-based remote management makes the MSL Libraries easily managed from across the room or across the globe, eliminating the need for remote office IT staff. Quickly and simply manage the tape media both in and out of the library with the standard bar code reader, configurable mail slots, and multiple 12-slot removable magazines. If a tape were lost or stolen, protect important business data from unauthorized access with data encryption options. MSL library investment protection and uncertain data growth are easily managed within the MSL library portfolio. Quickly increase capacity and/or performance with tool-free drive upgrades in the MSL2024 or 4048, or move tape drive kits to the MSL3040 or 6480 for library scalability and additional enterprise class features. Proactively receive detailed information about your MSL libraries with TapeAssure. Information about the library, drives, and media are all monitored for utilization, operational performance, and life and health information. Prevent problems before they occur by proactively receiving notification if any library, drive or tape media parameters fall below Hewlett Packard Enterprise recommended standards.

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### HPE StoreEver MSL3040

The highly scalable HPE StoreEver MSL3040 Tape Library provides small to mid-sized organizations with flexibility for long-term data protection and retention of data storage assets. With its modular design and ability to reuse existing HPE MSL LTO upgrade drive kits, you can cost-effectively store up to 8.16 PB of data. Scale vertically from 32 to 272 cartridge slots to store up to 8.16 PB in a single 19-inch rack simply adding additional modules to boost performance and capacity without the need to invest in a whole new library. The HPE StoreEver MSL3040 Tape Library offers exceptional enterprise features and functionality as standard providing advanced security features and reliability. It delivers a tape storage solution that

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### Related Options

addresses backup and long-term data management challenges such as storing medical records, video surveillance files or for business compliance.

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#### **HPE StoreEver MSL6480**

The HPE StoreEver MSL6480 Tape Library is the gold standard for mid-range tape automation, delivering best-in-class scalability, density, and performance to meet your short-term backup and disaster recovery data protection needs, as well as long-term archive requirements. Keep pace with data growth by seamlessly scaling up to 7 modules, with 560 slots and 16.8 PB capacity, without disrupting daily data protection. The MSL6480 also saves floor space by providing the highest tape drive density per module of any mid-range tape library. The MSL6480 Tape Library reduces the time and resources needed to achieve enterprise-class manageability, equipping you with proactive monitoring on single pane of glass control.

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#### **HPE T950 and TFinity Tape Libraries**

HPE T950 Tape Libraries deliver enormous scalability to keep pace with unpredictable data growth. Choose from a range of base configurations and scale up to 10,020 LTO-8 tape cartridges in increments of 10 slots or 7,615 TS11xx Technology tape cartridges in increments of 9 slots for capacity on demand. Incorporating between 1 and 120 tape drives you can consolidate and store up to 285 PB (compressed 2.5:1) using TS1155 Technology or 300 PB (compressed 2.5:1) using LTO-8 tape cartridges, of enterprise data.

Meeting enterprise data growth challenges head-on, HPE TFinity® ExaScale Tape Libraries deliver enormous scalability to keep pace with unpredictable data growth. Choose from a range of base configurations and scale up to 53,460 LTO-8 tape cartridges or 40,680 TS11xx Technology cartridges in increments of 10 LTO or 9 TS11xx Technology slots for capacity on demand. Incorporating between 1 and 144 tape drives you can consolidate and store up to 1.52 EB (compressed 2.5:1) using TS11xx Technology or 1.6 EB (compressed 2.5:1) using LTO-8 tape cartridges of enterprise data.



### Technical Specifications

#### Technical Specifications

	LTO-4 Ultrium	LTO-5 Ultrium	LTO-6 Ultrium	LTO-7 & LTO-7 Type M	LTO-8 Ultrium
<b>Magnetic Material</b>	Metal Particle	Metal Particle	Metal Particle or Barium Ferrite	Barium Ferrite	Barium Ferrite
<b>Recording Density</b>	343 kbits/inch	385 kbits/inch	385 kbits/inch	485 kbits/inch	525 kbits/inch
<b>Number of Data Tracks</b>	896	1,280	2,176	3,584 & 5376	6,656
<b>Recording Capacity</b>	800GB/1.6 TB	1.5 TB/3.0 TB	2.5/6.25 TB	6/15 TB & 9/22.5 TB	12/30 TB
<b>Coercivity</b>	2500 - 2700 Oe	2,500 - 2,700 Oe	2,800 - 2,900 Oe for MP 2,200 - 2,300 Oe for BaFe	2,200 - 2,300 Oe	2,300 Oe
<b>Tape Width (mm)</b>	12.65	12.65	12.65	12.65	12.65
<b>Tape Thickness (um)</b>	6.6	6.4	6.4	5.6	5.6
<b>Tape Length (m)</b>	820	846	846	960	960
<b>External Dimensions</b>	1.8 x 4.45 x 4.37 in (2.1 x 11.3 x 11.1 cm)	1.8 x 4.45 x 4.37 in (2.1 x 11.3 x 11.1 cm)	1.8 x 4.45 x 4.37 in (2.1 x 11.3 x 11.1 cm)	1.8 x 4.45 x 4.37 in (2.1 x 11.3 x 11.1 cm)	1.8 x 4.45 x 4.37 in (2.1 x 11.3 x 11.1 cm)
<b>Cartridge Weight</b>	0.63 lb (285.2 g)	0.63 lb (285.2 g)	0.63 lb (285.2 g)	0.63 lb (285.2 g)	0.63 lb (285.2 g)
<b>Archival Life</b>	30 years	30 years	30 years	30 years	30 years
<b>Environmental Requirements</b> (Media should not be used outside of these parameters)	Operational Temperature:		50° to 113° F (10° to 45° C)		
	Storage Temperature:		60° to 90° F (16° to 32° C)		
	Archival Temperature:		41° to 73° F (5° to 23° C)		
	Wet Bulb (not to exceed) Temperature:		79° F (26° C)		
	Humidity: (Archival)		10 to 80% (Operating) 20 to 60%		

### Summary of Changes

Date	Version History	Action	Description of Change
05-Mar-2018	From Version 21 to 22	Added	Information about Type M products was added.
		Changed	Tables and specifications relating to Type M were revised.  Type M product descriptions were updated.
		Removed	Certain passages relating to HPE brand testing information that are no longer accurate were removed.
04-Dec-2017	From Version 20 to 21	Changed	Updated throughout with information about new LTO-8 products
01-Dec-2015	From Version 19 to 20	Changed	Updated throughout with information about new LTO-7 products
13-May-2013	From Version 18 to 19	Changed	Overview: Completely updated Models and updated Key features Benefits section.
04-Dec-2012	From Version 17 to 18	Changed	Changes made to the Introduction of Overview only.
09-Oct-2012	From Version 16 to 17	Changed	Changes were made in the Product Highlights and Technical Specifications sections.
09-Jun-2011	From Version 15 to 16	Removed	Mentions of StorageWorks were removed.
18-Mar-2011	From Version 14 to 15	Changed	Models were revised Mentions of Bar Code and RFID was added Related Hardware Options was added to Product Highlights
27-Sep-2010	From Version 13 to 14	Changed	Options was completely revised and all mentions of HPE RFID Labeled Data Cartridges were added.
29-Mar-2010	From Version 12 to 13	Changed	Changes were made throughout the QuickSpecs.
01-Sep-2007	From Version 11 to 12	Changed	Changes made to the Introduction of Overview only.
11-Jun-2007	From Version 10 to 11	Added	Added EMEA version.
01-Jun-2007	From Version 9 to 10	Changed	Changes made throughout the entire QuickSpecs, except for the Related Options section.
01-May-2006	From Version 8 to 9	Changed	Changes made throughout the entire QuickSpecs, except for the Technical Specifications section.
20-Mar-2006	From Version 7 to 8	Changed	Updated the OVERVIEW section.
25-Apr-2005	From Version 6 to 7	Changed	Corrected the North America QS to be a duplicate of the Worldwide.
01-Apr-2005	From Version 5 to 6	Changed	Moved the "Introduction" paragraph to precede the image. Made minor column changes to "Technical Specifications."
		Added	Added four models to "Models" Section.
13-Dec-2004	From Version 4 to 5	Changed	Changes made throughout the entire QuickSpecs, including removing "StorageWorks" from the title.
17-Mar-2004	From Version 3 to 4	Changed	This QuickSpecs has been completely rebuilt, including a new title.
12-Sep-2003	From Version 2 to 3	Changed	High Reliability LTO Ultrium 100/200 GB tape technology uses a "best of breed" technology approach, taking the best features from other tape technologies and combining them into a single new technology without the need for design compromises to accommodate legacy compatibility requirements. Designed for the demanding environment of large-

### Summary of Changes

			scale libraries, Ultrium 400 GB media is certified for 1 million passes or 260 full back ups and has a 30 year archival storage life
			Media Durability1,000,000 passes on any area of tape, equates to over 20,000 end-to-end passes/260 full tape backups
29-Aug-2003	From Version 1 to 2	Changed	This QuickSpecs has been converted into the new system.



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For tape drives and media, 1 GB = 1 billion bytes. Actual formatted capacity is less.



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