Have feedback on QuickSpecs? We're listening

HPE Storage LTO Ultrium Tape Drives QuickSpecs

The family of HPE Storage LTO Ultrium Tape Drives is the Hewlett Packard Enterprise premier line of backup and archive devices.

Based on the LTO (Linear Tape-Open) Ultrium format, an open standard with a well-defined fourteen-generation roadmap, HPE Storage 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, the HPE 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 provide diagnostics, and performance optimization. If data is critical to your business, protect it with an HPE Storage LTO Ultrium tape drive.

Overview

HPE Storage LTO Ultrium Half-Height Tape Drives



HPE Storage LTO Ultrium External Tape Drive



HPE Storage LTO Ultrium Internal Tape Drive

HPE Storage LTO-9 Ultrium 45000 Tape Drive

The HPE LTO-9 Ultrium 45000 tape drive represents HPE's ninth generation of LTO tape drive technology capable of storing up to 45 TB (compressed 2.5:1) per cartridge while providing ease of use with support for linear tape file system (LTFS) and AES 256-bit hardware data encryption easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges. Capable of data transfer rates up to 300 MB/s (native), its Speed Matching feature further optimizes performance by matching speed of host to keep drives streaming and increase the reliability of the drive and media. HPE LTO Ultrium half-height drives are designed for server customers in direct attached storage (DAS) environments. The Ultrium 45000 tape drives provide investment protection with full read and write backward support with LTO-8 media. By increasing the capacity of the previous generation Ultrium drive by 50%, HPE customers now require fewer data cartridges to meet their storage needs, significantly reducing their IT costs and increasing their ROI.

What’s New

- HPE Smart Choice purchase program; for our most popular tape drives, smartly configured and ready to ship now!

HPE Storage LTO-8 Ultrium 30750 Tape Drive

The HPE LTO-8 Ultrium 30750 tape drive represents HPE’s eighth-generation of LTO tape drive technology capable of storing up to 30 TB (compressed 2.5:1) per cartridge while providing ease of use with support for LTFS and AES 256-bit hardware data encryption easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges. Capable of data transfer rates up to 300 MB/s (native), its Speed Matching feature further optimizes performance by matching speed of host to keep drives streaming and increase the reliability of the drive and media. HPE LTO Ultrium half-height drives are designed for server customers in direct attached storage (DAS) environments. For IT organizations with stringent, long-term data retention requirements, the Ultrium 30750's WORM (Write-Once, Read-Many) data protection feature offers a simple and secure method for archiving records as part of a compliance solution to meet the toughest of industry regulations. The Ultrium 30750 tape drives provide investment protection with full read and write backward support with LTO-7 media. By doubling the native capacity of previous generation Ultrium drives, HPE customers now require fewer data cartridges to meet their storage needs, significantly reducing their IT costs and increasing their ROI.

Standard Features

LTO Ultrium Technology

Linear Tape-Open (LTO) technology was developed by three leaders in the storage industry - HPE, IBM, and Quantum - who brought together their combined expertise in tape technology to develop an entirely new format based on the best of existing technologies. Because LTO Ultrium technology was a new format, it required no cumbersome support of legacy formats, so it could be designed without compromising on reliability or performance. The LTO Program, a consortium of the three technology provider companies, has developed a well-defined fourteen-generation roadmap.

Ultrium LTO-8 and LTO-9 tape drives feature a breakthrough in recording technology by writing thirty-two tracks simultaneously on a linear format of 3,584 tracks, 6,656 tracks and 8,960 tracks respectively. The data is written in a serpentine pattern; the tape reverses direction after each set of tracks is written. This provides higher density recording, enabling customers to lower costs and increase efficiency by storing more data on a single tape in an industry standard format.

The LTO standard for backward compatibility up to generation seven is to write back one generation and read back two generations; therefore:

- First-generation LTO Ultrium drives (HPE Ultrium 230, HPE Ultrium 232) read and write LTO-1 media
- Second-generation LTO Ultrium drives (HPE Ultrium 460, HPE Ultrium 448) read and write LTO-1 and LTO-2 media
- Third-generation LTO Ultrium drives (HPE Ultrium 920, Ultrium 960) read and write LTO-2 and LTO-3 media and also read LTO-1 media
- Fourth-generation LTO Ultrium drives (Ultrium 1840, Ultrium 1760) read and write LTO-3 and LTO-4 media and also read LTO-2 media
- Fifth-generation LTO Ultrium drives (Ultrium 3280, Ultrium 3000) read and write LTO-4 and LTO-5 media and also read LTO-3 media
- Sixth-generation LTO Ultrium drives (Ultrium 6650, Ultrium 6250) read and write LTO-5 and LTO-6 media and also read LTO-4 media
- Seventh-generation LTO Ultrium drives (Ultrium 15000) read and write LTO-6 and LTO-7 media and also read LTO-5 media
- Eighth-generation LTO Ultrium drives (Ultrium 30750) read and write LTO-7, LTO-7 Type M and LTO-8 media
- Ninth-generation LTO Ultrium drives (Ultrium 45000) read and write LTO-8 and LTO-9 media.

As part of the LTO open standard, all HPE tape drives and media offer the same standards of compatibility with tape drives and media manufactured by other LTO vendors.

LTO data compression (LTO-DC) is an enhanced version of Advanced Lossless Data Compression (ALDC) hardware compression. Compression is automatically turned off if the compressed data would cause an overall expansion in data size, hence optimizing the available capacity on the media. Data compression is also turned off if data is found to be uncompressible; thus, allowing for better data scans. The system is used in all LTO Ultrium tape drives.

Standard Features

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 technology
- An open format available from multiple vendors
- Lowest media cost of any 'superdrive' tape technology.

Hardware Based Encryption

Since LTO generation 4, HPE LTO Ultrium tape drives support hardware-based encryption to enable greater levels of security:

- AES 256-bit Encryption
  - Easy-to-enable encryption for a secure backup
  - Helps prevent unauthorized accessed of tape media if cartridges are lost or stolen
  - Eliminates the need to purchase and manage additional h/w
- No loss in performance of backup.

Linear Tape File System (LTFS)

HPE LTO drives support the open standard LTFS format for writing data to tape. LTFS makes tape self-describing, file-based, and easy-to-use, it also provides users with the ability to use standard file operations on tape media for accessing, managing and sharing files with an interface that behaves just like a hard disk. In addition, LTFS provides the ability to share data across platforms, as you would with a USB drive or memory stick. Simply load a tape into the drive, mount it into the file system, and it becomes visible as a disk.

For more information about LTFS please see: https://www.snia.org/tech_activities/standards/curr_standards/ltfs

For applications supporting LTFS please see the compatibility guide:
HPE Storage Single Point of Connectivity Knowledge - SPOCK

Data Rate Matching

Data Rate Matching combines sophisticated buffer management with the HPE exclusive Variable Tape Speed technology to allow the tape drive to match its transfer rate to the host speed dynamically and continuously across the wide range of transfer rates. This feature ensures that the tape drive continues to stream data regardless of the environment, and brings two big advantages:

- It optimizes backup performance, regardless of the speed of the host or the network
- It minimizes rewinding and repositioning of the tape, reducing wear and increasing reliability

WORM (Write-Once, Read-Many) Drive and Media Support

Critical to the success of data retention policies in highly regulated environments is the ability to store and manage data in an unalterable state. Following stringent guidelines set forth by regulatory agencies such as the SEC and HIPPA, IT organizations must now integrate new solutions and policies that can verify the integrity of stored data for periods that can extend well beyond seven years.

LTO tape drives feature the ability to archive and store data in a non-rewriteable format that meets the most stringent regulatory guidelines. Using a combination of integrated fail-safe features in the drive firmware, cartridge memory, and tape formatting, LTO Ultrium drives can archive large amounts of data for periods of up to 30 years in a secure, untampered state. Since all LTO tape drives include support for both rewritable and WORM media, IT organizations can now easily integrate a secure, long-term archiving solution into their current data protection strategy. As compared to other technologies that feature support for WORM storage, LTO tape drives offer the advantages of:

- A single drive to support all backup and archiving needs
- Two distinctive tape cartridges to easily distinguish and manage both rewriteable and WORM data cartridges
- A specially designed WORM data cartridge with multiple integrated fail-safe features to prevent accidental or intentional overwriting of data
- High-capacity, low-cost HPE WORM media that can store up to 45TB (LTO-9) of data on a single data cartridge
- Support from many backup and archiving software vendors, providing the most comprehensive and mainstream support in the industry
- The LTO open standard that offers greater choice and compatibility across all third to eighth generation Ultrium products

HPE Ultrium Storage Media

HPE branded Linear Tape-Open (LTO) Ultrium cartridges are designed, manufactured and tested to provide outstanding reliability for backing up, archiving and restoring your data. We continuously monitor the quality of our branded tapes using what we believe is the industry's most comprehensive and forensic specification for quality and reliability. Using real life conditions and both HPE and non-HPE drives, we supplement extensive in-process QA parametric testing with ongoing drive-based scrutiny, to make sure performance is excellent for any combination of device duty cycle and environment.

Because HPE is a leading supplier of both LTO tape devices and media, we have the ability to re-create many different scenarios mirroring how customers use their cartridges. And many of the HPE protocols are either unique in nature or scale, such as the HPE 'Green Tape', and HPE 'Environmental Interchange' tests, or far surpass industry standards, for example, The HPE 'Locate/Rewind/Append' test. Since the beginning of 2016, almost 700 million meters of media have been pulled and over 40 million gigabytes of data have been written in the HPE demanding Green Tape Test (GTT) protocol. These ongoing tests are intended to ensure HPE LTO Ultrium media is the most reliable you can find. Your best choice for ease of support and maximum dependability is to always use HPE-branded Ultrium cartridges.

LTO-9 Media Initialization

Media initialization has been implemented in LTO-9 technology to optimize data placement according to the characteristics of each LTO-9 cartridge. Each new LTO-9 cartridge requires this one-time initialization prior to starting read/write operations, this is only required for the first use of a new LTO-9 cartridge, subsequent loads do not require additional initialization. The initialization process varies in time depending on the environmental conditions of tape and drive. Most initializations will complete within an hour; however, in some cases it can take up to 2 hours.

For standalone drives, the "Ready" LED and the "Tape" LED on the front panel of the drive will flash together rapidly to indicate that the media initialization is taking place. This will continue until the cartridge is ready to use.

Notes: LTO-9 WORM media is now supported on HPE Ultrium LTO-9 Drives with the latest firmware.

Diagnostics

HPE LTO Ultrium tape drives and automation are supported by HPE Library and Tape Tools (LTT). This tool is intended to help in the installation and maintenance of HPE tape drives and devices, including:

- Verifies installation of the drive
- Test/verify the health of the drive and media
- Provides HPE support with detailed device information
- Multiple options for finding and upgrading new firmware
- Performance optimization and recommendations
- Included with each Ultrium tape drive and available via free download supporting all HPE tape products

Instructions and downloads of HPE Library and Tape Tools are available at: HPE Library and Tape Tools | HPE Store US

Compatibility

HPE's extensive compatibility testing program assures that your HPE LTO Ultrium tape drive works with leading servers, operating systems, and backup applications - and not just those sold by HPE. HPE LTO Ultrium tape drives work seamlessly on many platforms, making them especially suitable if you have a mixed system environment. For the latest list of servers, workstations, operating systems, and backup software that support HPE Ultrium tape drives, check the tape backup compatibility pages on our Web site at: HPE Storage Single Point of Connectivity Knowledge - SPOCK

Server Compatibility

HPE Ultrium tape drives are supported on the following classes of HPE systems:

- HPE ProLiant DL servers
- HPE ProLiant ML servers
- HPE Integrity servers
- HPE 9000 servers
- HPE Apollo
- HP Inc. workstations

Standard Features

HPE Ultrium tape drives are also supported on server platforms from third-party manufacturers including:

- Dell
- IBM
- Oracle

For details of which tape drive models work with which systems, including third-party systems, visit:
HPE Storage Single Point of Connectivity Knowledge - SPOCK for the latest hardware compatibility information.

OS Support

Microsoft® Windows, HPE-UX, Tru64, Red Hat Linux, SUSE Linux, IBM-AIX, Oracle Solaris and other operating systems.
Notes: Please visit: HPE Storage Single Point of Connectivity Knowledge - SPOCK for the latest compatibility information.

Backup Software Support

Supported with ARCserve Backup, EMC NetWorker, EMC Retrospect, IBM Tivoli Storage Manager, Veritas NetBackup, Veritas Backup Exec., BakBone NetVault, Commvault Simpana, Tolis Group BRU, Archiware P5, QStar Archive Manager and others.
Notes: Please visit: HPE Storage Single Point of Connectivity Knowledge - SPOCK for the latest compatibility information.

Cables and Termination

All cables required for a typical internal and external connection to Hewlett Packard Enterprise servers are provided with your tape drive. For non-HPE servers, please consult your manufacturers' server specifications to determine if the cable provided with your LTO Ultrium tape drive is appropriate for use with that server.

SAS-based HPE LTO Ultrium models ship with SAS cable which allows direct attach from embedded SAS controller.
Notes: Visit: HPE Storage Single Point of Connectivity Knowledge - SPOCK for the latest compatibility information.

Performance Tuning

Use HPE Library and Tape tools to assist in this area at: HPE Library and Tape Tools | HPE Store US
Device performance test - will run data to an LTO drive direct from memory to prove the drive is capable of high performance if the data supply rate is fast enough.

System performance test for backup will read data from your primary storage device e.g. EVA disk array, and tell you how fast the array can supply multiple streams of data

System performance test for restore; this tool generates data of a known size and compressibility for benchmarking purposes.

Service and Support

For the most up-to-date information on HPE Services, please refer to the HPE Services – Supplemental QuickSpecs, which provides a comprehensive and regularly updated overview of available services.

Configuration Information

HPE Storage LTO Ultrium Half-Height Tape Drives

Model Name/Kit Contents

LTO-9 Ultrium 45000 tape drives

Description	SKU
HPE StoreEver LTO-9 Ultrium 45000 Internal Tape Drive	BC040A

- HPE StoreEver LTO-9 Ultrium 45000 Internal Tape Drive
- HPE LTO-9 Ultrium 45 TB RW Data Cartridge
- SFF8087 Mini SAS 4i to SFF8087 Mini SAS 3i cable
- Documentation

Notes: 0D1 will appear after this part number on your sales order if factory integration is indicated.

HPE StoreEver LTO-9 Ultrium 45000 Internal TAA-compliant Tape Drive	BC041A

- HPE StoreEver LTO-9 Ultrium 45000 TAA Internal Tape Drive
- HPE LTO-9 Ultrium 45 TB RW Data Cartridge
- SFF8087 Mini SAS 4i to SFF8087 Mini SAS 3i cable
- Documentation

Notes: 0D1 will appear after this part number on your sales order if factory integration is indicated.

HPE StoreEver LTO-9 Ultrium 45000 External Tape Drive	BC042A

- HPE StoreEver LTO-9 Ultrium 45000 External Tape Drive
- HPE LTO-9 Ultrium 45 TB RW Data Cartridge
- mini-SAS HD SFF8644 to mini-SAS HD SFF8644 cable
- Documentation

Notes:

- 0D1 will appear after this part number on your sales order if factory integration is indicated.
- For US-English Localization please select BC042A#ABA
- This product is TAA (Trade Agreements Act) compliant

LTO-8 Ultrium 30750 tape drives

HPE StoreEver LTO-8 Ultrium 30750 Internal Tape Drive	BC022A

- HPE StoreEver LTO-8 Ultrium 30750 Internal Tape Drive
- HPE LTO-8 Ultrium 30 TB RW Data Cartridge
- mini-SAS SFF8482 to SFF8087 cable
- Documentation

Notes: 0D1 will appear after this part number on your sales order if factory integration is indicated.

HPE StoreEver LTO-8 Ultrium 30750 TAA-compliant SAS Internal Tape Drive	BC024A

- HPE StoreEver LTO-8 Ultrium 30750 Internal Tape Drive
- HPE LTO-8 Ultrium 30 TB RW Data Cartridge
- mini-SAS SFF8482 to SFF8087 cable
- Documentation

Notes: 0D1 will appear after this part number on your sales order if factory integration is indicated.

Configuration Information

Description	SKU
HPE StoreEver LTO-8 Ultrium 30750 External Tape Drive – HPE StoreEver LTO-8 Ultrium 30750 External Tape Drive – HPE LTO-8 Ultrium 30 TB RW Data Cartridge – mini-SAS High Density SFF8644 to mini-SAS SFF8088 cable – Documentation **Notes:** – 0D1 will appear after this part number on your sales order if factory integration is indicated. – For US-English Localization please select BC023A#ABA – This product is TAA (Trade Agreements Act) compliant	BC023A

Host Bus Adapters, Controllers, and Accessories for ProLiant Servers

Description	SKU
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
Notes: Recommended SAS HBA for connecting External LTO Ultrium tape drives to Gen10 ProLiant servers.	
Microsemi Adaptec HBA 1100-8e	A1100-8E
Notes: Recommended SAS HBA for DL & ML Gen9 servers only. HPE does not provide official support for this adapter, however the configuration is supported.	

Media

Description	SKU
HPE LTO-5 Ultrium 3TB RW Data Cartridge	C7975A
Notes: Write and read support for LTO-5 Ultrium 3280 and Ultrium 3000.	
HPE LTO-6 Ultrium 6.25TB RW Data Cartridge	C7976A
Notes: Write and read support for LTO-6 Ultrium 6650 and Ultrium 6250.	
HPE LTO-6 Ultrium 6.25TB WORM Data Cartridge	C7976W
Notes: This data cartridge only supports Write-Once Read-Many recording format for LTO-6 drives. Data recorded to this data cartridge cannot be overwritten.	
HPE LTO-7 Ultrium 15TB RW Data Cartridge	C7977A
Notes: Write and read support for LTO-7 Ultrium 15000.	
HPE LTO-7 Ultrium WORM Data Cartridge	C7977W
Notes: This data cartridge only supports Write-Once Read-Many recording format for LTO-7 drives. Data recorded to this data cartridge cannot be overwritten.	
HPE LTO-8 Ultrium 30TB RW Data Cartridge	Q2078A
Notes: Write and read support for LTO-8 Ultrium 30750.	
HPE LTO-8 Ultrium 30TB WORM Data Cartridge	Q2078W
Notes: This data cartridge only supports Write-Once Read-Many recording format for LTO-8 drives. Data recorded to this data cartridge cannot be overwritten.	

Configuration Information

Description	SKU
HPE LTO-9 Ultrium 45TB RW Data Cartridge	Q2079A
Notes: Write and read support for LTO-9 Ultrium 45000.	
HPE LTO-9 Ultrium 45TB WORM Data Cartridge	Q2079W
Notes: This data cartridge only supports Write-Once Read-Many recording format for LTO-9 drives. Data recorded to this data cartridge cannot be overwritten.	
HPE Ultrium Universal Cleaning Cartridge	C7978A

Rack-mount Options

Description	SKU
HPE StoreEver 1U Generic Rack Mount Kit	BC029A

Notes:

- For racked servers. No drives included. Accommodates up to two internal SAS half-height drives (LTO-8 Ultrium 30750 or LTO-9 Ultrium 45000).
- Please refer to the 1U Rack-mount Kit web page for further information

Cables and Adapters

Description	SKU
HPE 12Gb Mini SAS High Density (SFF-8644) to LTO Drive 4m Cable for 1U Rack Mount Kit	P35174-B21
Notes: Use this cable to connect HPE LTO-9 SAS internal tape drives to Mini SAS HD (SFF-8644) connectors	
HPE StoreEver 4m Mini SAS HD (SFF-8644) LTO Drive Cable for 1U Rack Mount Kit	876805-B21
Notes: Use this cable to connect HPE LTO-5, 6, 7 and 8 SAS internal tape drives to Mini SAS HD (SFF-8644) connectors.	
HPE StoreEver 4m Mini SAS (SFF-8088) LTO Drive Cable for 1U Rack Mount Kit	876804-B21
Notes: Use this cable to connect HPE LTO-5, 6, 7 and 8 SAS internal tape drives to SAS (SFF-8088) connectors.	
HPE 2.0m External Mini SAS High Density to Mini SAS Cable	716191-B21
Notes: Use this cable to connect HPE SAS external LTO-5, LTO-6, LTO-7, LTO-8 tape devices to HPE SAS controllers with external Mini-SAS high density connectors as used by HPE E208e-p or H241 Host Bus Adapters.	
HPE External 2.0m (6ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716197-B21
Notes: Use this cable to connect HPE SAS external LTO-9 tape devices to HPE SAS controllers with external Mini-SAS high density connectors as used by HPE E208e-p or H241 Host Bus Adapters.	

HPE Smart Choice purchase program

The HPE Smart Choice purchase program features popular fully configured products that can be quoted in minutes and shipped quickly through HPE Authorized Partners. Products are configured and tested in an HPE factory and stocked at HPE Authorized Distributors and Partners. The products arrive in a single box, making onsite integration easier and more efficient for partners and customers. Additionally, there are aggressively priced HPE Tech Care Services available only through the HPE Smart Choice program when you purchase an HPE Smart Choice product.

For HPE Smart Choice configuration and product details, please visit the Smart Choice Supplemental QuickSpecs: HPE Smart Choice Purchase Program – Supplemental QuickSpecs

Pre-Configured models ship with the configurations below.

- Pre-Configured models ship with the configurations below. Options can be selected from the Core or Additional Options
  section of this QuickSpecs.
- Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional
  options purchased will not be shipped inside the server.

SKU Number	Model Name	Part Description
P84141-B25	HPE Storage LTO-8 Ultrium External Tape Drive 5x LTO-8 30TB Data Cartridges	(1) HPE StoreEver LTO-8 Ultrium 30750 External Tape Drive (5) HPE LTO-8 Ultrium 30TB RW Data Cartridge
P84142-B25	HPE Storage LTO-9 Ultrium External Tape Drive 5x LTO-9 45TB Data Cartridges	(1) HPE StoreEver LTO-9 Ultrium 45000 External Tape Drive (5) HPE LTO-9 Ultrium 45TB RW Data Cartridge

Family Information

Features	LTO-8 Ultrium 30750	LTO-9 Ultrium 45000
Dimensions		
Form Factor	5¼-inch half-height	
Physical (HxWxD)Internal	1.6 x 5.7 x 8.1 in (4.1 x 14.5 x 20.6 cm)	
Physical (HxWxD) External	3 x 8.8 x 11.7 in (7.7 x 22.3 x 29.5 cm)	
Shipping (HxWxD) Internal	7.9 x 9.4 x 11.4 in (24 x 31 x 39 cm)	
Shipping (HxWxD)External	9.4 x 12.2 x 15.4 in (24 x 31 x 39 cm)	
Weight		
Out of boxInternal	3.2 lb (1.45 kg)	
Out of boxExternal	10.3 lb (4.65 kg)	
Shipping Internal	5.1 lb (2.3 kg)	
Shipping External	11 lb (5 kg)	
Capacity		
Native	12 TB	18 TB
Compressed 2.5:1 compression for LTO-7 and higher)	30 TB	45 TB
Buffer Size	1024 MB	1024 MB
Sustained transfer rate, native	300 MB/s	300 MB/s
Burst transfer rate	600 MB/s (with 6Gb/s SAS)	1200 MB/s (with 12 Gb/s SAS)
Data rate matching range	100-300 MB/s (native)	100-300 MB/s (native)
Average locate time (BOT - MOT)	60 seconds for LTO-8 media	60 seconds for LTO-9 media
Average load time	15 s	17 s
Average unload time	24 s	28 s – 275 s
Rewind time from EOT	114 s	123 s
Rewind tape speed	9.0 m/s	
Reliability		
MTBF	250,000 hours at 100% duty cycle	
Uncorrected Error Rate	1 in $1x10^{19}$ bits	
	LTO Ultrium 7 (Read and Write); LTO Ultrium 8 (Read and Write)	LTO Ultrium 8 (Read and Write); LTO Ultrium 9 (Read and Write)
Recording method	32-channel linear serpentine	
Recording format	LTO Ultrium 8 LTO Ultrium 7 (for 6 TB tape)	LTO Ultrium 9 LTO Ultrium 8 (for 12 TB tape)
Data compression	LTO DC dual mode compression (an enhanced version of ALDC)	
Error detection/ correction	Reed-Solomon	
Read channel technology	Partial Response Maximum Likelihood (PRML)	

Technical Specifications

Features	LTO-8 Ultrium 30750	LTO-9 Ultrium 45000
Data encoding method	RLL 32/33	
Interface		
Interface type	6Gb/sec Dual Port SAS	12Gb/sec Dual Port SAS
SAS connector	SAS Internal: mini-SAS SFF8482 SAS External: mini-SAS SFF8088	SAS Internal: mini-SAS SFF8482 SAS External: mini-SAS HD SFF8644
Power Specifications		
Power requirements Internal (including rack-mount model)	5V@4.0A (typical) +5V@4.5A (max) +12V@1.2A (typical) +12V@4.0A (max)	5V@4.0A (typical) +5V@4.0A (max) +12V@1.2A (typical) +12V@3.5A (max)
Power requirements External	100 to 240 VAC, 50-60 Hz, auto-ranging, 0.8A max	100 to 240 VAC, 50-60 Hz, auto-ranging, 0.8A max
Power consumption	11 Watts idle 31 Watts typical	17 Watts idle 33 Watts typical
Environmental Specifications		
Temperature range	Recommended Operating: 59° F to 77° F (20° C to 25° C) if 3 CFM airflow is provided Allowable Operating: 59° F to 95° F (10° C to 40° C) if 3 CFM airflow is provided	Recommended Operating: 59° F to 77° F (15° C to 25° C) if 3 CFM airflow is provided Allowable Operating: 59° F to 95° F (15° C to 35° C) if 3 CFM airflow is provided
	Non-Operating: -40° F to 151° F (-40° C to 66° C,)	-40° F to 140° F (-40° C to 60° C
Non-condensing humidity range	Operating: 20 to 80% RH (Non-condensing, max wet bulb temperature = 26C)	Recommended Operating: 20 to 50% Allowable Operating: 20 to 80% (Non-condensing, max wet bulb temperature = 22C)
	Non-Operating: 10 to 95% (90% for LTO-8) RH (Non-condensing, max wet bulb temperature = 26C)	5 to 80% for LTO-9 (Non-condensing, max wet bulb temperature = 26C)

Standards Compliance

- CSA Certification to C22.2, No.60950 (cCSAus)
- TÜV EN60950 (IEC 60950 and EN60950)
- CE Declaration of Conformity
- FCC 47 CFR Parts 15
- NOM
- VCCI
- C-TICK
- RRL
- BSMI
- GOSH
- CB Certificate and Report (IEC 60950)

Front Panel LED Indicators

HPE LTO Ultrium 7, 8 and 9 tape drives have five LED indicators on the front panel:

- Ready
- Drive
- Tape
- Clean
- Encryption

Please consult your HPE Ultrium Tape Drive "Getting Started Guide" for more information on how to use these LED indicators for ascertaining drive status and for help in troubleshooting your HPE LTO Ultrium tape drive.

Summary of Changes

Date	Version History	Action	Description of Change
17-Aug-2026	Version 53	Changed	The most significant content change is the removal of the dedicated HPE Storage LTO-7 Ultrium 15000 Tape Drive product information. content is focused exclusively on: – LTO-8 Ultrium 30750 – LTO-9 Ultrium 45000 The current configuration tables no longer contain this entry while retaining supported LTO-6, LTO-7, LTO-8, and LTO-9 media offerings. Removal of HPE StoreOpen Software Section, remaining information as: – The LTFS section remains. – References to StoreOpen software functionality and product positioning have been removed. – The section now focuses on LTFS standards and compatibility guidance only.
		Removed	Obsolete or not supported SKU removed - C7976B
16-Feb-2026	Version 52	Changed	HPE Rebranding applied
		Removed	Obsolete SKU removed - C7976B
02-Sep-2025	Version 51	Changed	Pre-Configured Models section was updated - HPE Smart Choice purchase program information was added
28-Jul-2025	Version 50	Changed	Survey link updated.
05-May-2025	Version 49	Changed	Overview, Standard Features and Configuration Information sections were updated. Branding updates
02-Dec-2024	Version 48	Changed	Overview, Standard Features, Configuration Information and Technical Specifications section were updated.
15-Jul-2024	Version 47	Changed	Overview, Standard Features, Service and Support, Configuration Information and Technical Specifications section were updated.
06-May-2024	Version 46	Changed	Standard Features, Service and Support, Configuration Information and Technical Specifications section were updated. Obsolete SKU removed
04-Dec-2023	Version 45	Changed	HPE Service Rebranding Obsolete SKU removed
13-Jun-2022	Version 44	Changed	Standard Features section was updated.
07-Feb-2022	Version 43	Changed	Overview and Configuration Information sections were updated.
10-Jan-2022	Version 42	Changed	Changes made throughout the QuickSpecs
01-Nov-2021	Version 41	Changed	Service and Support section was updated.
17-May-2021	Version 40	Changed	Configuration Information section was updated.
06-Apr-2021	Version 39	Changed	Configuration Information section was updated.
07-Dec-2020	Version 38	Changed	Configuration Information section was updated.
05-Oct-2020	Version 37	Changed	Configuration Information section was updated.
08-Sep-2020	Version 36	Changed	Configuration Information section was updated.
17-Aug-2020	Version 35	Changed	QuickSpecs layout was updated, and Branding Refresh was applied.
06-Apr-2020	Version 34	Changed	QuickSpecs layout was updated and Obso SKUs were removed

Summary of Changes

Date	Version History	Action	Description of Change
15-Apr-2019	Version 33	Changed	Overview, Product Highlights and Options sections were updated
04-Mar-2019	Version 32	Changed	Options section was updated.
02-Apr-2018	Version 31	Changed	Service and Support section and Options were revised.
05-Feb-2018	Version 30	Changed	Overview, Product Highlights, Compatibility, Options, and Technical Specifications were revised.
04-Dec-2017	Version 29	Changed	Overview, Product Highlights, Compatibility, Options, and Technical Specifications were revised.
04-Sep-2017	Version 28	Changed	Changes made throughout the QuickSpecs
07-Aug-2017	Version 27	Changed	Changes made throughout the QuickSpecs
11-Jul-2017	Version 26	Changed	Removed LTO-3 Ultrium 920 Tape Drives & Ultrium Full-Height Drives
11-Mar-2016	Version 25	Changed	Changes made to the options section
19-Feb-2016	Version 24	Changed	Changed a reference in the Option Section, Descriptions updated.
17-Dec-2015	Version 23	Changed	Changes made in the Overview and standard features sections
01-Dec-2015	Version 22	Changed	Changes made throughout the QuickSpecs
03-Apr-2015	Version 21	Changed	Remove 0D1 for internal drives into rackmount kits, SKUs descriptions were updated.
07-Nov-2014	Version 20	Changed	Changes made throughout the QuickSpecs.
09-May-2014	Version 19	Removed	LTO-4 Ultrium 1840 Tape Drives were removed.
02-May-2014	Version 18	Changed	Recommended Support was revised and Optional HPE Support Services was removed.
07-Mar-2014	Version 17	Changed	Image correction.
21-Feb-2014	Version 16	Changed	Added images.
23-Dec-2013	Version 15	Changed	HPE StoreEver LTO-2 Ultrium 448 Tape Drives were removed Performance was revised for LTO-6 Ultrium 6650
13-Sep-2013	Version 14	Changed	Changes were made to the following sections: Product Highlights Service and Support Options Technical Specifications
21-Dec-2012	Version 13	Changed	Changes were made to the following sections: Options: updated part # COL98A in HPE LTO Ultrium Full Height Tape Drives Technical Specifications: updated Capacity section
04-Dec-2012	Version 12	Changed	Changes made throughout the QuickSpecs.
19-Oct-2012	Version 11	Changed	Change was made to URL in Service and Support, HPE Support, and Warranty Information section.
13-Aug-2012	Version 10	Changed	Changes were made in Overview, Features, Product Highlights, Compatibility and Options sections.
28-Oct-2011	Version 9	Added	HPE StoreOpen Standalone was added to Product Highlights.
23-Sep-2011	Version 8	Changed	Updated the following: Linear Tape File Systems (LTFS) updated URL
8-Jun-2011	Version 7	Removed	Removed StorageWorks throughout the document.
27-May-2011	Version 6	Removed	HPE StorageWorks Ultrium 232 Tape Drive was removed.

Summary of Changes

Date	Version History	Action	Description of Change
29-Apr-2011	Version 5	Changed	Updated the following: replaced "Go Connect" link with the "SPOCK" link throughout the entire document.
29-Oct-2010	Version 4	Removed	Tape Array 5300 and Redundant, hot-swap power supply and fan for Tape Array 5300 were removed from Rack-mount Options.
27-Sep-2010	Version 3	Changed	Key Features and Customer Benefits were moved into Features Software in the Box was changed to Included Software in Product Highlights Related was changed to Optional for the HPE Support Services that will enhance your HPE product experience descriptions and Customer Technical Training, HPE Service Awards and Additional Services Information were completely revised in Service and Support, HPE Support and Warranty Information Software was changed to Upgrade included software to Data Protector Express in Options Value was added to Customer Benefits HPE Data Protector Express Basic was added to Backup Software Support Part numbers were removed from Models
18-Jun-2010	Version 2	Changed	Changes made within the Media section of Options.
29-Mar-2010	Version 1	New	New QuickSpecs

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

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