



**Hewlett Packard  
Enterprise**

# HPE LTO ULTRIUM CARTRIDGES

## Tape Media



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### WHAT'S NEW

- Massive increase in capacity – 620% over the native capacity of LTO-6 (18 TB LTO-9 versus 2.5 TB LTO-6)
- Increase in native performance – possible to store 1.44 TB/hr using LTO-9 (full-height only)
- Built-in AES 256-bit encryption (IEEE1619.1) (LTO-5, LTO-6, LTO-7, LTO-8, and LTO-9) – granted FIPS140-2 Level 1 certification.

### OVERVIEW

HPE LTO Ultrium cartridges provide reliable and low cost protection to guard your data against the threat of cyber attacks and ransomware, as well as meeting your demands for reliability when restoring data. They enable businesses to comply with the recommendations of law enforcement agencies around the world to maintain offline copies of their data. Built upon a legacy of nine generations, and with native transfer speeds of up to 1.44 TB/h for LTO-9, there is a platform for every budget. Secure AES-256 encryption provides even higher levels of data security and compliance with the most stringent industry regulations to prevent unauthorized data access. HPE StoreOpen and Linear Tape

File System makes using tape as easy, flexible, portable and intuitive as using other removable and shareable media, such as a USB drive. Also, because LTO cartridges at rest require minimal additional power and cooling, they offer a greener, more sustainable long term archival solution for your data.

## FEATURES

### **Reliable Offline Medium that Creates an Air Gap to Keep Data Out of the Reach of Cybercriminals**

Agencies such as the US FBI recommend keeping data offline. This is because tapes that are stored offline are disconnected from the network and are out of reach of sophisticated criminals who use digital networks to strike at companies to encrypt both their primary data and their backups.

Built-in AES 256-bit encryption (LTO-5 to LTO-9) allows you to provide additional security for data stored on tape. With LTO encryption (strengthened by the option to use WORM cartridges), even if tapes were to fall into the wrong hands, your data would be protected from unauthorized access.

HPE LTO Ultrium cartridge memory chip delivers faster access time and enhanced media monitoring.

First time restore ensured with fewer media failures and disrupted backups, regardless of duty cycle or environmental conditions.

### **Lowest Total Cost of Ownership for Long-term Archiving**

According to a white paper from ESG, 'The Economic Benefits of HPE StoreEver as Active Archival Storage', published in August 2020, LTO tape technology is over 80% less expensive across a 10-year period, than either all-disk or all-cloud solutions for a 1 PB archive growing at 10% per annum.

Standardizing on HPE LTO Ultrium delivers the capacity to meet shrinking backup windows, industry-standard, AES 256-bit encryption (IEEE1619.1), and interchangeable read-write (RW) or WORM media; without extra space or IT resource overhead.

Open standard technology helps ensure compatibility across product generations and gives you more choice. HPE LTO Ultrium cartridges are available as custom labeled or non-custom labeled.

HPE brand qualification test procedures (load/unload, shoeshine, drop testing and environmental stress testing) go far beyond what is required for the LTO Ultrium logo. This ensures maximum reliability for restoring your data.

HPE warrants LTO Ultrium cartridges for up to 30 years archival life. This ensures businesses can meet the ever-increasing demands of regulation for data retention and archiving.

### **Highest Capacity and Performance of any Comparable Tape Technology**

HPE LTO-9 Ultrium data cartridges can write or read data at a blistering native 1.44 TB/hour, storing, encrypting, and protecting up to 45 TB\* on a single cartridge, making it ideal for large-scale, 24x7, mission-critical IT environments (\*capacity assumes 2.5:1 compression).

A 35% increase in the number of tracks and a 3% increase in bit density has



permitted a capacity increase from 30 TB for LTO-8 to 45 TB for LTO-9. From 2,176 tracks for LTO-6 to 8,960 tracks for 9th generation HPE LTO-9 Ultrium 45 TB cartridges (assuming 2.5:1 compression) – an improvement of 311%

### **Ultra-reliable Storage Medium**

Tape is more reliable than enterprise SATA disk, with a bit error rate (BER) of  $1 \times 10$  to the power of 19 for LTO-8 versus  $1 \times 10$  to the power of 15 for enterprise SATA HDD's. That's a difference in reliability of four orders of magnitude—e.g. tape is 10,000 times more reliable than enterprise SATA HDD

Estimated data loss over 10 years for 1 Exabyte archive is 1.1 Petabytes for HDD compared to only 7.4 Terabytes for tape.

HPE brand qualification test procedures (load/unload, shoeshine, drop testing and environmental stress testing) go far beyond what is required for the HPE LTO Ultrium. This ensure utmost reliability for restoring your data.

Superior 'smart grabber' mechanism and mechanical interlock to prevent the leader pin from being pulled inside the tape housing. Sensors detect proper connection and prevent leader loss that would ruin the tape. Simplified tape path to reduce wear, tear, and build-up of debris—crucial in automation.



**Technical specifications****HPE LTO Ultrium Cartridges**

<b>Recording technology</b>	LTO-5 Ultrium, LTO-6 Ultrium, LTO-7 Ultrium, LTO-8 Ultrium LTO-9 Ultrium
<b>Capacity</b>	45 TB Compressed 2.5:1 Maximum, depending on model
<b>Media format</b>	Re-writable and Write-once media
<b>Quantity per Package</b>	1
<b>Read speed, media</b>	400 MB/sec maximum (Native performance, full height drives only)
<b>Bit density</b>	545 kb/inch maximum, depending on model
<b>Archival life</b>	30 years
<b>Product color</b>	LTO-5 light blue; LTO-6 purple; LTO-7 slate blue; LTO-8 green; LTO-9 light blue
<b>Tape length</b>	1,035m maximum, depending on model
<b>Tape width</b>	12.65 mm
<b>Tape thickness</b>	5.2 microns
<b>Base material</b>	Metal Particle Barium Ferrite Depending on media type
<b>Data tracks</b>	8,960 maximum, depending on model
<b>Magnetic coercivity</b>	2850 Oe maximum, depending on model
<b>Product Dimensions (metric)</b>	11.3 x 11.1 x 2.1 cm
<b>Weight</b>	0.28 kg
<b>Warranty</b>	Limited Lifetime Warranty.



For additional technical information, available models and options, please reference [the QuickSpecs](#)

## HPE POINTNEXT SERVICES

[HPE Pointnext Services](#) brings together technology and expertise to help you drive your business forward and prepare for whatever is next.

### Operational Services from HPE Pointnext Services

[HPE Pointnext Tech Care](#) provides fast access to product-specific experts, an AI-driven digital experience, and general technical guidance to help enable constant innovation. We have reimagined IT support from the ground up to deliver faster answers and greater value. By continuously searching for better ways to do things—as opposed to just fixing things that break—HPE Pointnext Tech Care helps you focus on achieving your business goals.

[HPE Pointnext Complete Care](#) is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment, and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts.

**HPE Integration and Performance Services** help you customize your experience at any stage of your product lifecycle with a menu of services based on individual needs, workloads, and technologies.

- Advise, design, and transform
- Deploy
- Integrate and migrate
- Operate and improve
- Financial Services
- Greenlake Management Services
- Retire and sanitize
- IT Training and personal development

### Other related services

[HPE Education Services](#) delivers a comprehensive range of services to support your people as they expand their skills required for a digital transformation. Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

**Defective Media Retention** is optional and allows you to retain Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

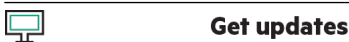
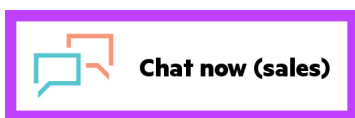
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Parts and Materials: HPE will provide HPE-supported replacement parts and materials required to maintain the covered hardware.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

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