

# HPE LTO ULTRIUM CARTRIDGES

## Tape Media



### 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)
- Significant increase in performance – possible to store 3.6 TB/hr using LTO-9 (full-height only) versus 2.7 TB/hr with LTO-8
- Built-in AES 256-bit encryption

### OVERVIEW

HPE LTO Ultrium cartridges provide reliable, low cost and scalable 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 transfer speeds of up to 3.6 TB/h for LTO-9, there is a platform for every budget. Secure AES-256 encryption provides even higher levels of data

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(IEEE1619.1) (LTO-5, LTO-6, LTO-7, LTO-8, and LTO-9) – granted FIPS140-2 Level 1 certification.

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 3.6 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>Media labeling</b>	Write-on Labels in box
<b>Quantity per Package</b>	1
<b>Read speed, media</b>	1000 MB/sec maximum (Full-Height drives only), depending on drive and media type
<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>	4.9 microns minimum, depending on model
<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.



Most, if not all IT organizations are on a digital transformation journey — each at a different stage. With over 11,000 IT projects conducted and 1.4 million customer interactions each year, [HPE Pointnext Services'](#) 15,000+ experts and its vast ecosystem of solution partners and channel partners are uniquely able to help you at every stage of your digital transformation. We bring together technology and expertise to help you drive your business forward and prepare for whatever is next.

Advisory and Professional Services help you accelerate your digital transformation. [Operational Services](#) help you remove complexity and respond rapidly to business demands.

### **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 reimaged 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.

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- **[HPE Proactive Care](#)** offers an enhanced call experience and helps reduce problems with personalized proactive reports and advice. This also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.). [Read more](#)
- **[HPE Foundation Care](#)** helps when there is a problem and has a choice of response levels. Collaborative software support is included and provides troubleshooting help for ISVs running on your server. [Read more.](#)

### **Other related services**

**[Defective Media Retention](#)** is optional and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

**[HPE Service Credits](#)** offers a menu of technical services, access additional resources, and specialist skills.

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

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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.

Image may differ from the actual product  
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