

# HPE LTO Ultrium Cartridges



## 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). This ensures maximum reliability for restoring your data.

HPE offers a limited lifetime warranty for HPE LTO Ultrium cartridges, including up to 30 years archival life, if stored at the recommended storage conditions. 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  $1 \times 10^{-19}$  for LTO-8 versus  $1 \times 10^{-15}$  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.

User write-on labels are no longer included with A and W SKU's.

Technical specifications

HPE LTO Ultrium Cartridges

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



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

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## HPE Services

No matter where you are in your transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From strategy and planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

### Advisory & Professional services

Experts can help you map out your path to hybrid cloud and optimize your operations.

### Managed services

HPE runs your IT operations, giving you unified control, so you can focus on innovation.

### Support services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources.

- **HPE Complete Care Service:** a modular service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals. All delivered by an assigned team of HPE experts.
- **HPE Tech Care Service:** the operational service experience for HPE products. The service provides access to product specific experts, an AI driven digital experience, and general technical guidance to help reduce risk and search for ways to do things better.
- **HPE Multivendor Services:** Single point of accountability for managing on-site hardware and software support for multivendor products. HPE experts help manage your IT across technologies and platforms for HPE and non-HPE technologies, acting as the single point of contact for your IT operational needs.

### Lifecycle Services

Address your specific IT deployment project needs with tailored project management and deployment services.

### HPE Education Services

Training and certification designed for IT and business professionals across all industries. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options

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

## HPE GreenLake

[HPE GreenLake edge-to-cloud platform](#) is HPE's market-leading as-a-Service offering that brings the cloud experience to apps and data everywhere – data centers, multi-clouds, and edges – with one unified operating model, on premises, fully managed in a pay per use model.

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