

# IBM LTO Ultrium Data Cartridges Family Data Sheet

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## Highlights

- Achieve up to 45TB data storage per cartridge
- Ensure optimal data security
- Support IBM Spectrum Archive data indexes
- Meet Linear Tape-Open (LTO) Ultrium Generation 9 specifications
- Choose between rewritable and write-once, read-many (WORM) models
- Use custom, blank and RFID-embedded cartridge labels

High capacity and performance with exceptional reliability

## Overview

With volumes of data growing exponentially—and with no end in sight—the IBM LTO Ultrium data cartridges are designed to help organizations protect and preserve more data for longer periods of time. The latest generation of IBM LTO tape solutions offers, once more, 50% more storage capacity than previous generations for long-term data preservation that provides security as it sustains rapid, reliable access to data and helps ensure business resilience.



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IBM LTO Ultrium 9 tape cartridges

## **Increased capacity**

Rapid data growth compounds the need for increased storage capacity. The ninth generation of LTO Ultrium tape media delivers 18 TB native capacity and up to 45 TB of compressed capacity for significantly greater efficiency and performance. This exceptional capacity helps reduce the number of cartridges and the amount of equipment, space and labor associated with tape-based data storage, enabling an outstanding total cost of ownership (TCO).

## **Optimal data security**

To comply with regulatory requirements and preserve stakeholder trust, organizations must protect data from unauthorized access and unintentional loss. Tape cartridge portability facilitates remote, offline data storage for superior protection from natural or man-made threats that can impact online or on-site data storage. IBM LTO Ultrium 9 data cartridges are compatible with LTO Ultrium 9 tape drives, which offer device-level data encryption to ensure data privacy and reduce the risk of data corruption due to virus or sabotage. The WORM cartridge model stores data in a non-erasable, non-rewritable format to prevent overwriting of stored data and reduce the risk of data loss due to human error.

## **IBM Spectrum Archive support**

LTO Ultrium 9 supports tape partitioning and IBM Spectrum Archive, which features IBM Linear Tape File System technology, making tape storage an even more compelling solution for the long-term preservation of data. With IBM Spectrum Archive, data files are indexed to facilitate search and retrieval using disk-like directory tree structures and drag-and-drop techniques to improve the usability of tape solutions. IBM Spectrum Archive allows users and applications to directly retrieve files from tape rather than rely on proprietary, third-party applications, thereby significantly enhancing data access and potentially reducing software licensing costs and dependencies.

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General characteristics	LTO 9	LTO 8	LTO 7	LTO 6
Media type	Linear serpentine recording half-inch cartridge	Linear serpentine recording half-inch cartridge	Linear serpentine recording half-inch cartridge	Linear serpentine recording half-inch cartridge
Magnetic Material	Barium Ferrite	Barium Ferrite	Barium Ferrite	Barium Ferrite
Data capacity	18 TB native 45 TB with 2.5:1 data compression	12 TB native 30 TB with 2.5:1 data compression	6 TB native 15 TB with 2.5:1 data compression	2.5 TB native Up to 6.25 TB with 2.5:1 data compression
Cartridge models	LTO Ultrium 9 18 TB - Rewritable data cartridge - Non-erasable, non-rewritable WORM cartridge	LTO Ultrium 8 12 TB - Rewritable data cartridge - Non-erasable, non-rewritable WORM cartridge	LTO Ultrium 7 6 TB - Rewritable data cartridge - Non-erasable, non-rewritable WORM cartridge	LTO Ultrium 6 2.5 TB - Rewritable data cartridge - Non-erasable, non-rewritable WORM cartridge
Tape characteristics				
Total tape thickness	5.6 μ (0.00022 in.)	5.6 μ (0.00022 in.)	5.6 μ (0.00022 in.)	6.1 μ (0.00024 in.)
Tape length	960 m (3,149.61 ft)	960 m (3,149 ft)	960 m (3,149 ft)	846 m (2775 ft)
Data Cartridge characteristics				
Cartridge color	Green	Brick Red	Purple	Black
Cartridge size (L x W x D)	102.0 mm x 105.4 mm x 21.55 mm (4.0 in. x 4.1 in. x 0.8 in.)	102.0 mm x 105.4 mm x 21.55 mm (4.0 in. x 4.1 in. x 0.8 in.)	102.0 mm x 105.0 mm x 21.0 mm (4.0 in. x 4.1 in. x 0.8 in.)	102.0 mm x 105.4 mm x 21.5 mm (4.02 in. x 4.15 in. x 0.85 in.)
Data cartridge weight	200 g (0.441 lb)	200 g (0.441 lb)	200 g (0.441 lb)	200 g (0.441 lb)
Cleaning cartridge weight	115 g (0.254 lb)	115 g (0.254 lb)	115 g (0.254 lb)	115 g (0.254 lb)
Safety characteristics	Toxicity: nonhazardous to human health in anticipated use Flammability: self-extinguishing per UL94			

IBM LTO Ultrium 9 tape cartridges at a glance

Environmental recommendations	LTO 9	LTO 8	LTO 7	LTO 6
Operating conditions	Recommended: 15°C - 25°C (59°F - 77°F); 20% - 50% RH Allowable: 15°C - 35°C (59°F - 95°F); 20% - 80% RH; 22°C (71.6°F) dew point maximum	10°C - 45°C (50°F - 113°F); 10% - 80% RH; 26°C (79°F) wet bulb maximum		
Short-term storage conditions	See operating conditions	16°C - 35°C (61°F - 95°F); 20% - 80% RH; 26°C (79°F) wet bulb maximum		
Long-term storage conditions	See operating conditions	16°C - 25°C (61°F - 77°F); 20% - 50% RH; 26°C (79°F) wet bulb maximum	16°C - 25°C (61°F - 77°F); 20% - 50% RH; 26°C (79°F) wet bulb maximum	
Shipping conditions	-23°C - 49°C (-9°F - 120°F); 10% - 90% non-condensing RH; 22°C (71.6°F) dew point maximum	-23°C - 49°C (-9°F - 120°F); 5% - 80% RH; 26°C (79°F) wet bulb max	-23°C - 49°C (-9°F - 120°F); 20% - 80% RH; 26°C (79°F) wet bulb max	
Cartridge disposal	Classified as nonhazardous waste per EPA regulation 40CFR261; can be disposed of as normal office trash			
Machine type, Model				
LTO Ultrium data cartridge	3589-653 (p/n 02XW568, 3589-553 (p/n 02XW568L)	3589-652 (p/n 01PL041), 3589-552 (p/n 01PL041L)	3589-651 (p/n 38L7302)	3589-650 (p/n 00V7590)
LTO Ultrium WORM cartridge*	p/n 02XW569 (unlabeled, p/n 02XW569L (labeled)	p/n 01PL042 (unlabeled), p/n 01PL042L (labeled)	3589-671 (p/n 38L7303)	3589-670 (p/n 00V7591)
LTO Ultrium universal cleaning cartridge	3589-004 (p/n 35L2086)	3589-004 (p/n 35L2086)	3589-004 (p/n 35L2086)	3589-004 (p/n 35L2086)
Limited lifetime warranty	Free from defects in manufacturing and material defects for the useful life of the product, or until end of support of the product.			

\*Through media distributor network.

At a glance Part II

## Why IBM?

LTO architecture is developed by a consortium of world-class storage producers. Compatible LTO tape drives and media are available from multiple vendors. Purchasing LTO Ultrium data cartridges from IBM provides peace of mind with IBM experience and continued roadmaps. In fact, IBM media and IBM drives are designed together and built to rigorous IBM specifications. Only IBM tape media is tested on all IBM drive and library configurations, increasing the reliability and durability of IBM tape products.

## For more information

For more information about the IBM LTO family data cartridges, please [visit our solutions page](#), or contact your IBM representative or IBM Business Partner. If you don't yet have an IBM representative, IBM business partner, or authorized IBM media distributor you can [fill out this form](#) to schedule a consult with our storage experts.

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full life cycle management of IT products and services, from acquisition to disposition. For more information, visit: [ibm.com/financing](https://ibm.com/financing)

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