



LTO-9

Bring Greater Density to Your Spectra Tape Library

Regardless of size, most organizations face the same data management challenges – how to efficiently and cost-effectively protect and manage ever-growing data repositories. Spectra® Tape libraries with LTO-9 technology offer innovative storage solutions for small businesses up to the largest enterprises.

LTO-9 Highlights

- Delivers the only open tape format available, providing the first and only cooperative development effort in the industry
- Provides the lowest cost per gigabyte data storage available
- Provides high reliability with proven enterprise-level technology and quality assurance
- Retrieve data 73% faster with Open Recommended Access Order (oRAO)
- Get better protection with a physical air gap to mitigate ransomware attacks
- Avoid data corruption with data immutability with WORM capabilities
- Prevent data visibility with AES 256-bit data encryption at rest



ULTRIUM 9
LTO
18TB / 45TB
NATIVE / COMPRESSED

LTO-9 tape media requires optimization before use in a tape library.

LTO-9 requires a new initialization process that is used to optimize each new cartridge before it is used for writing data. Greater precision is required due to the increased number of tracks used to write data on an LTO-9 tape. The media optimization creates a referenced calibration for each cartridge that enables the tape drive's intelligent alignment to optimize data placement. This optimization automatically happens on the first loading of a brand new LTO-9 tape into an LTO-9 tape drive and typically takes one hour, but can range between 40 and 120 minutes before the tape is ready to be used for the first time.

Every Spectra LTO-9 tape has been optimized so you don't have to.

Spectra's LTO-9 optimized media is acclimated for a minimum of 24 hours in the ideal environment for LTO-9 optimization prior to being loaded into any drives. During the optimization process, temperature and absolute humidity are controlled to ensure Spectra LTO-9 media will perform within all areas in the allowable environmental specification range. Once optimized, each Spectra LTO-9 cartridge is now ready to write data on initial load in a customer environment without any initialization time penalty.

LTO-9 Spectra Certified Media includes optimization.

Spectra created a proprietary industry innovation called Spectra Certified Media. Spectra enhances its tape media by including Spectra's Media Lifecycle Management (MLM), Data Integrity Verification (DIV), and CarbideClean® features that produce Spectra Certified Media with a Spectra-backed lifetime guarantee. Any Spectra Certified Media LTO-9 tape also has been optimized per the new LTO-9 requirements. LTO-9 drives are backward-compatible with LTO-8 media, allowing for full read/write capability.

Spectra MigrationPassSM Service:

An innovative way to preserve drive and media investment

Both Spectra and the Spectra Stack Tape Library make any migration plan seamless. Tape is designed for long-term data storage, but too often users are required to sacrifice their existing investment in tape drives when they move to a new tape library. Spectra Stack's MigrationPass eliminates the need to make that costly decision. MigrationPass starts with the unique ability to migrate existing tape drives into the Spectra Stack library. It also includes a program to help migrate to newer LTO generations as they are released. This unprecedented offering protects user investment while providing a truly open approach to working with a technology designed for multi-generation use.





Maximize Spectra Tape Libraries with the Increased Capacity of LTO-9

LTO-9 Capacities and Spectra Tape Libraries

	Spectra Stack	T380	T680	T950 T950v 8-frame	TFinity ExaScale 45-frame
Maximum Number of Drives	42 Half-Height Drives 21 Full-Height Drives	12		Up to 120 (8-frame)	Up to 144 in a 45-frame
Max Throughput LTO-9 FH* (TB/hr native/compressed)	30.24 TB / 75.6 TB	17.28 TB / 43.2 TB		172.8 TB / 432 TB	207.36 TB / 518.4 TB
Max Throughput LTO-9 HH** (TB/hr native/compressed)	45.36 TB / 113.4 TB	N/A		N/A	N/A
Maximum Media/Slot Count	560	380	670	10,020 (8-frame)	56,400 (45-frame)
Max Capacity LTO-9 (native/compressed)	10.08 PB / 25.2 PB	6.8 PB / 17.1 PB	12 PB / 30.1 PB	180.3 PB / 450.9 PB	1.01 EB / 2.53 EB

* FH = Full-Height Drive **HH = Half-Height Drive

LTO-9 compressed capacity calculated at 2.5:1 ratio.

Spectra LTO-9 Tape Drive Specs

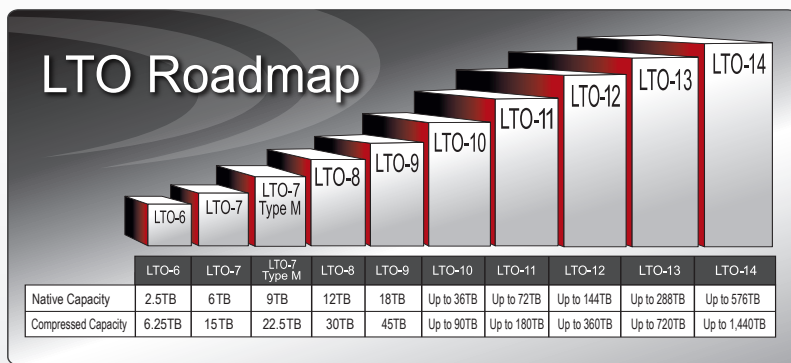
- Capacity:** Up to 45TB compressed 2.5:1 (18TB native)
- Data transfer rate:** Up to 900 MB/s compressed (400 MB/s native)
- Speed matching capable**
- Data compression:** Streaming Lossless Data Compression (SLDC)
- Data cartridge:** LTO-9 (rewritable) LTO-9 (WORM)
- Cleaning cartridge:** LTO Universal Cleaning Cartridge (UCC)
- Backwards Compatibility:** Read/write LTO-8 media
- Encryption:** AES 256-GCM (256-bit Advanced Encryption Standard). LTO-9 reads/writes LTO-8 encrypted media.
- Drive Head Type:** Tunneling Magnetoresistive (TMR)
- Power specifications:** Full Height: 35 W (typical)

Reliability

- Mean time between failures (MTBF):** 250,000 hours at 100 percent duty cycle.
- Mean swaps between failures (MSBF):** 100,000 tape load/unload cycles.

Operating Environment

- Operating temperature:** Recommended: 15° to 25° C (59° to 77° F)
Allowable: 15° to 35° C (59° to 95° F)
- Relative humidity:** Recommended: 20% to 50% (non-condensing)
Allowable: 20% to 80% (non-condensing)
22° C dew point max



Note: Compressed capacities assume 2.5:1 compression (achieved with larger compression history buffer).
Source: The LTO Program. The LTO Ultrium roadmap is subject to change without notice and represents goals and objectives only.

Long-Term LTO Roadmap

LTO's strong roadmap ensures a solid future for tape, and provides peace of mind to organizations that rely on tape for its superior benefits in capacity, performance, reliability, portability and affordability.

About Spectra Logic Corporation

Spectra Logic develops a full range of Attack Hardened™ data management and data storage solutions for a multi-cloud world. Dedicated solely to data storage innovation for more than 40 years, Spectra Logic helps organizations modernize their IT infrastructures and protect and preserve their data with a broad portfolio of solutions that enable them to manage, migrate, store and preserve business data long-term, along with features to make them ransomware resilient, whether on-premises, in a single cloud, across multiple clouds, or in all locations at once. To learn more, visit www.spectralogic.com.

