SPECTRA

Enterprise Libraries
In a Smaller Footprint

T380 **T680**

Designed for incremental growth, Spectra Enterprise tape libraries accommodate the storage requirements of organizations in every stage of their growth lifecycle. When your storage requires more slots than your library's current capacity, there's no need to buy a whole new library. By investing in a Spectra Enterprise tape library, all you need to change is your outgrown frame. Spectra transfers the components in your existing library and puts them into a larger chassis. Upgrading is also EASY and FAST—you can switch between models in less than half a day. The TranScale® architecture eliminates the need for realignment, host/server reconfiguration, worldwide name changes and switch rezoning.

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Preserve your storage investment with TranScale®

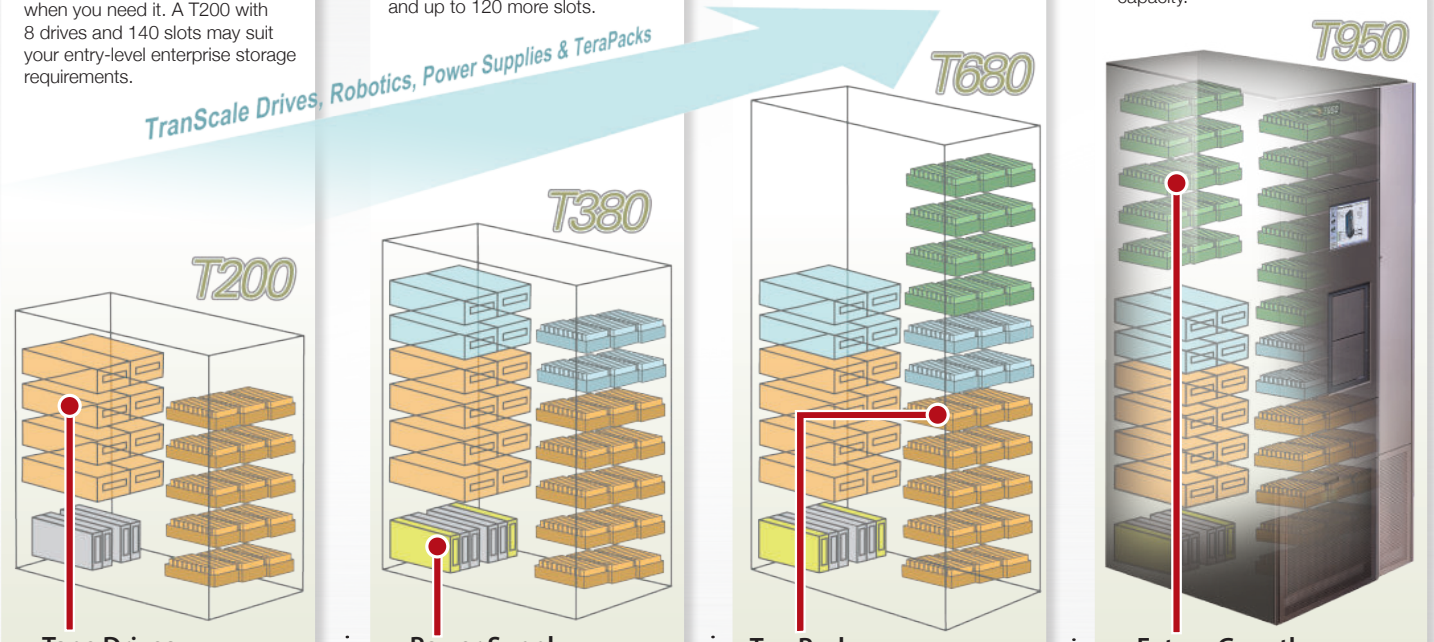
Data growth is endless and cost-effectively scaling storage is becoming a top priority for businesses and operations worldwide. Keeping up with unpredictable data growth is a daunting task. Organizations want to avoid making capital investments in storage that are far beyond their short-term capacity requirements, yet they must be prepared for the unexpected. Designed with your growth in mind, Spectra TranScale has been developed to preserve your initial investment in storage by providing a solution that addresses both your short-term and long-term storage needs. Spectra uses TranScale in our Enterprise libraries by interchanging the expensive components between the T200, T380, T680 and T950 libraries. As you grow, you continue to use your original tape drives, power supplies, TeraPacks and media in your new library. The frame is the only major component that changes when you are ready to upgrade to a larger tape library. TranScale provides a cost-effective lifetime investment in storage, allowing you to scale your hardware and software to make your capacity upgrades quick, seamless and affordable.

Start with only what you need, when you need it. A T200 with 8 drives and 140 slots may suit your entry-level enterprise storage requirements.

Over time, your data storage needs grow. TranScale to a T380, moving your 8 drives and 140 slots from the T200. Add up to 4 more drives and up to 120 more slots.

Data requirements have increased dramatically. TranScale to a T680, move your 12 drives and 260 slots from the T380. Expand with up to 280 additional slots for 12 drives and 540 slots.

When your data growth expands beyond the capacity of the T680, TranScale your components to our enterprise-level T950. The T950 expands to 7,614 TS slots in 8 frames, 120 drives and up to 285.5 PB of compressed IBM® TS1155 capacity.



Tape Drives
Tape drives easily add to the library when capacity and throughput requirements increase.

Power Supply
Extra power supplies can easily be installed for failover protection and for powering additional drives.

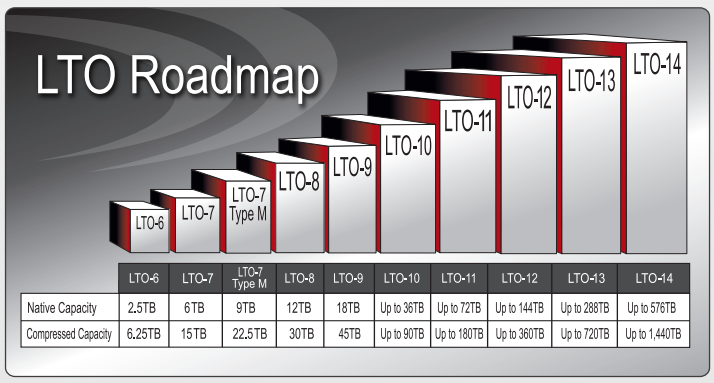
TeraPacks
Spectra's TeraPack® tape containers streamline loading and unloading, handling 9 TS* or 10 LTO tapes at once.

Future Growth
Spectra's T950: The next destination for your TranScale components that you have incrementally purchased.

*T380, T950 and TFinity only; and TS refers to IBM® TS11XX technology.

LTO Technology and IBM® TS1160 Technology Tape Drive Option for T380 and T950

LTO (Linear Tape-Open) Ultrium Technology is optimized for high capacity and performance with exceptional reliability in either a stand-alone or an automated environment. Ideally suited for backup and deep storage applications, the LTO tape format can meet the needs of the enterprise with a roadmap and migration path that extends well into the next decade.



	LTO-6	LTO-7	LTO-7 Type M	LTO-8	LTO-9	LTO-10	LTO-11	LTO-12	LTO-13	LTO-14
Native Capacity	2.5TB	6TB	9TB	12TB	18TB	Up to 36TB	Up to 72TB	Up to 144TB	Up to 288TB	Up to 576TB
Compressed Capacity	6.25TB	15TB	22.5TB	30TB	45TB	Up to 90TB	Up to 180TB	Up to 360TB	Up to 720TB	Up to 1,440TB

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.

IBM® TS1160 Technology Tape Drives and Media

Spectra has the unique capability to offer enterprise-class organizattions an even higher capacity and throughput tape drive and media solution within Spectra's T380 and T950 libraries. The IBM® TS1160 delivers 20TB and 400MB/s of uncompressed capacity and performance.

Simplified Management

BlueScale,® the common software interface for all Spectra library products, brings enterprise command and control features to the tape libraries. Available through the library's onboard LCD color touchscreen and remote web access, BlueScale is an easy-to-navigate, browser-based library interface built into Spectra libraries that enables our solutions to work easily, flexibly and safely with your data.

A single BlueScale user interface manages an entire library without any external servers. BlueScale manages your library, configurations, partitions, encryption key management and all library/media health monitoring. By consolidating all management functions in a single library, you save time managing the library and lower costs by eliminating the need for additional equipment, software license charges or additional power or cooling requirements of extra server hardware.

Spectra Enterprise tape libraries offer encryption and key management as seamless, integrated standard features. Spectra's BlueScale Encryption utilizes AES-256 bit encryption through the library for LTO-4 and newer drives.* It lets you easily and affordably add encryption to your backup strategy, with no changes to backup policies and no additional hardware or software.

*Spectra SKLM required for IBM® TS11XX Technology Tape Drives

Better Reliability Through Lifecycle Management

To ensure the viability of your data, Media Lifecycle Management (MLM) tracks and reports on health and security related statistics for Spectra Certified Media. Detailed reporting mitigates media problems and restore issues, allowing you to copy and move your data onto new tapes before degraded media affects your data.

Like MLM, Drive Lifecycle Management (DLM) extends the same proactive approach to drives by integrating tape drive analysis and reporting within the library. Using easy-to-manage, color-coded icons, you can quickly identify the health status of a drive. DLM also offers easy-to-use tape drive diagnostics to test and verify drive health and operation.

Managing the health of your library's critical components is made easy with Library Lifecycle Management (LLM). By delivering utilization metrics relative to the expected useful life of library robotics, filters and other critical components; you are able to service your library before issues occur.

Data Integrity Verification

To give you data integrity verification, Spectra offers a sophisticated suite of standard features that allow you to actively check data already written to tape. PreScan checks each imported tape and verifies that the tape can be written to, scanning the tape for potential issues including broken or dislodged leader and write-protected status. QuickScan scans a tape uni-directionally by reading the length of one track of the tape to provide a rapid indicator of integrity of data written. FullScan confirms that there are no media errors on the tape by reading the entire length of the tape up to the end of the recorded data. To ensure that the data is valid, you can set triggers to check the health of tapes over an interval of time or verify a specific tape's data integrity on request. This process allows for rapid spot-checks of data integrity.

Assisted Self-Maintenance (ASM)

An industry-first support supplement designed for customers requiring minimal downtime. ASM stocks a select group of customer replaceable parts at your site, giving you the ability to make immediate repairs and eliminate the delays that a site visit can involve.




Drive | Power Supply | Robotics | I/O Blade (RIM)

Our Assisted Self Maintenance feature enables you to replace select parts yourself.

SpectraGuard Support

Support for Spectra Enterprise tape libraries range from our standard worldwide next-business-day replacement to more advanced alternatives, including next day, same day, four-hour onsite service or our exclusive Assisted Self-Maintenance option.

Our expertise comes from over 40 years of solving real problems with hands-on lab work and on-site technical support. Our support staff is cross-trained over the entire storage environment—not just hardware—so we can assist you with all aspects of a problem. From open to close, we are committed to resolving any issue.

Consolidate Data Using Integrated Partitioning

With support for multiple connectivity protocols as well as all major backup software packages and operating systems, Enterprise tape libraries fit easily into any environment. BlueScale's Shared Library Services lets data centers implement simple, integrated partitioning so that a single library appears to the SAN as multiple libraries. Unlike other partitioning solutions that involve complicated and expensive external partitioning servers, network connections, and proprietary client software, you can easily partition your library using its BlueScale interface.

Product Specifications

Capacity and Throughput

Model	Max Cartridges	Max Drives	Media/Drive	Max Capacity (native/compressed*)	Max Throughput (native/compressed*)
T200	200	8	LTO-9 FH	3.6 PB / 9 PB*	11.5 TB/hr / 25.92 TB/hr
			LTO-8	2.4 PB / 6 PB*	10.4 TB/hr / 21.6 TB/hr
T380	380	12	LTO-9 FH	6.8 PB / 17.1 PB*	17.28 TB/hr / 38.8 TB/hr
			LTO-8	4.5 PB / 11.4 PB*	15.6 TB/hr / 32.4 TB/hr
	261	12	IBM® TS1160	5.2 PB / 13.05 PB*	17.28 TB/hr / 43.2 TB/hr
			IBM® TS1155	3.9 PB / 9.7 PB*	10.8 TB/hr / 28 TB/hr
T680	670	12	LTO-9 FH	12 PB / 30.1 PB*	17.28 TB/hr / 38.8 TB/hr
			LTO-8	8 PB / 20.1 PB*	15.6 TB/hr / 32.4 TB/hr

*Compressed capacity calculated using 2.5:1 ratio.

Power Requirements

- 110-240 VAC; 8-12 AMP per cord
- Optional 2N
- Heat Dissipation: 2,228 BTU/h (12 drives)

Interface Options

- Fibre Channel - 4 Gb/s, 8 Gb/s or 16Gb/s

Reliability Stats

- LTO: Mean Cycle Between Failures (MCBF): 1,000,000
- LTO: Mean Time Between Failures (MTBF) – 250,000 hours
- IBM® TS11XX: Mean Time Between Failures (MTBF): 250,000 hours
- Mean Time to Repair (MTTR):
  - 3 minutes for hot-swap components
  - 30 minutes average for non-hotswap components

Tape Drives Note: *Max capacity and throughput based on full height drives (FH).*

Physical Characteristics

Model	Dimensions & Weight
T200	Rack mountable with standard 19" rack - 20U Single Frame Dimensions: H: 35" W: 17.5" D: 41.0" (20U, 89cm H x 44.4cm W x 104cm D) Weight: 230 lbs (Base frame, no drives or media*)
T380	Rack mountable with standard 19" rack - 28U Single Frame Dimensions: H: 49" W: 17.5" D: 41.0" (28U, 125cm H x 44.4cm W x 104cm D) Weight: 305 lbs/138 kg (Base frame, no drives or media*)
T680	Standard 19" Rack Dimensions: H: 80.5" W: 24" D: 48" (42U, 204.5cm H x 61cm W x 122cm D) (T680 delivers in a 19" rack) Weight: 765 lbs (Base frame, no drives or media)

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.

GSA 47QTCA20D0064

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V1-092022

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