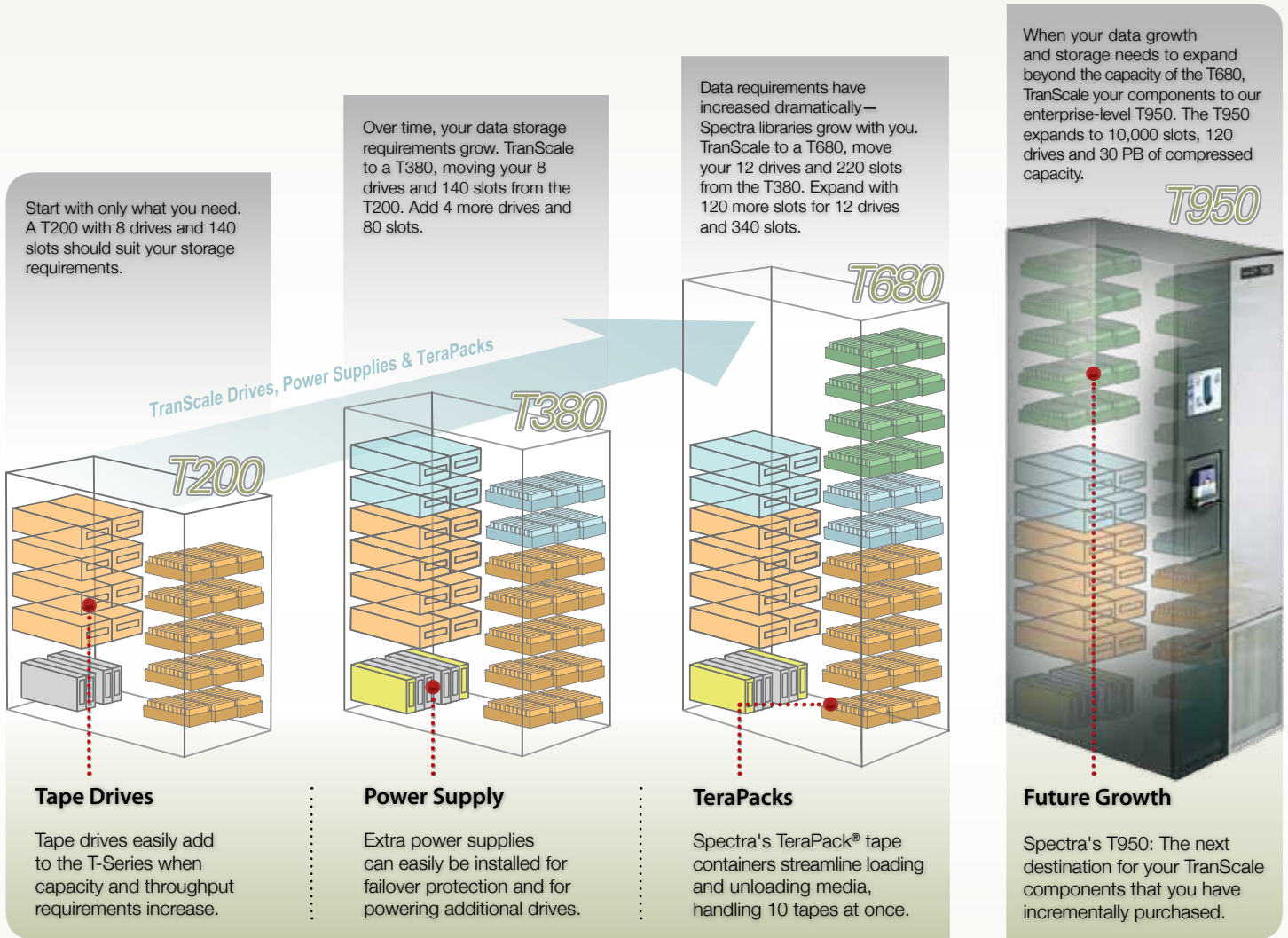# Mid-Range Libraries
The Right Way to Scale

T200 **T380** **T680**

Designed for incremental growth, Spectra T-Series Mid-Range 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 T-Series Mid-Range library, all you need to change is your outgrown frame. Spectra transfers the components in your existing Mid-Range library and puts them into a larger chassis. You even have the same serial number/asset tag for the library that you've always had. 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, serial number changes, world-wide name changes and switch rezoning.

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 T-Series Mid-Range libraries by interchanging the expensive components between the T200, T380 and T680 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 T-Series 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. A T200 with 8 drives and 140 slots should suit your storage requirements.

Over time, your data storage requirements grow. TranScale to a T380, moving your 8 drives and 140 slots from the T200. Add 4 more drives and 80 slots.

Data requirements have increased dramatically—Spectra libraries grow with you. TranScale to a T680, move your 12 drives and 220 slots from the T380. Expand with 120 more slots for 12 drives and 340 slots.

When your data growth and storage needs to expand beyond the capacity of the T680, TranScale your components to our enterprise-level T950. The T950 expands to 10,000 slots, 120 drives and 30 PB of compressed capacity.

T950

T680

T380

TranScale Drives, Power Supplies & TeraPacks

T200

Tape Drives

Tape drives easily add to the T-Series 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 media, handling 10 tapes at once.

Future Growth

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

LTO Technology

ULTRIUM LTO

GENERATION 1 200GB UP TO 40MB/s	GENERATION 2 400GB UP TO 80MB/s	GENERATION 3 800GB UP TO 160MB/s	GENERATION 4 1.6TB UP TO 240MB/s	GENERATION 5 3TB UP TO 280MB/s	GENERATION 6 6.25TB UP TO 400MB/s	GENERATION 7 UP TO 16TB UP TO 750MB/s	GENERATION 8 UP TO 32TB UP TO 1180MB/s

LTO ULTRIUM ROADMAP
ADDRESSING YOUR STORAGE NEEDS

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. It uses a single reel cartridge to maximize capacity. Ideally suited for backup, restore, and archive applications, the LTO tape format establishes a new benchmark for large volume backup and archive. LTO technology will meet the needs of the enterprise through a single-server user with a roadmap and migration path that extends well into the next decade.

Simplified Management

BlueScale, the common software interface for all Spectra libraries, brings enterprise command and control features to the T-Series Mid-Range libraries. Available through the library's on-board 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 T-Series Mid-Range 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 seamlessly and affordably add encryption to your backup strategy, with no changes to backup policies and no additional hardware or software.

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. PostScan 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 T-Series Mid-Range libraries ranges 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 30 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, T-Series Mid-Range libraries fits 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	Max Capacity	Max Throughput
T200	200	8	LTO-6[1]	500 TB 1.3 PB+	4.6 TB/hr 11.5 TB/hr+
			LTO-5	300 TB 600 TB*	4.0 TB/hr 8.1 TB/hr*
T380	380	12	LTO-6[1]	950 TB 2.4 PB+	6.9 TB/hr 17.3 TB/hr+
			LTO-5	570 TB 1.1 PB*	6.0 TB/hr 12.1 TB/hr*
T680	670	12	LTO-6[1]	1.7 PB 4.2 PB+	6.9 TB/hr 17.3 TB/hr+
			LTO-5	1.0 PB 2.0 PB*	6.0 TB/hr 12.1 TB/hr*

*LTO-5 values calculated using 2:1 compression. +LTO-6 values calculated using 2.5:1 compression. [1]Estimated LTO-6 availability: early 2013.

Power Requirements
- 110-240 VAC; 13.6 AMP @110; 6.25 AMP @ 240
- Optional 2N
- Heat Dissipation: 2,391 BTU/h (12 drives)

Interface Options
- Fibre Channel - 4 Gb/s and 8 Gb/s

Reliability Stats
- Mean Cycle Between Failures (MCBF): 1,000,000
- Mean Time Between Failures (MTBF): 250,000 power-on hrs.
- Mean Time to Repair (MTTR):
  - 3 minutes for hot-swap components
  - 30 minutes average for non-hotswap components

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 (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)* **Weight:** 765 lbs (Base frame, no drives or media*)

*T680 delivers in a 19" rack.

About Spectra Logic Corporation

At Spectra Logic we define, design and deliver innovative data protection through tape and disk-based backup, recovery and archive storage solutions. By igniting innovation we challenge expectations of the data protection market with intelligent, integrated, and simple to use backup and archive technologies. Throughout our 30-plus-year history we have delivered high-density, feature rich storage with unmatched service and support to customers worldwide. In 2010, our tape library product line swept Storage magazine/ SearchStorage.com's Quality Awards in all seven categories for both enterprise and midrange tape libraries.