



Changing The World of Storage

2007 Product Guide

SPECTRALOGIC.COM



Changing The World of Storage

Spectra Logic is the leading innovator in data archive and backup. We help customers all over the world protect data with power-efficient products that let users reduce risk, lower cost and save time. Spectra Logic's archive and backup products are designed specifically for secondary storage needs and are compatible with every major operating system, backup application, tape and disk format. Spectra products provide integrated library encryption and key management options through the intuitive BlueScale 10 interface. Spectra's energy efficient tape libraries and disk products use far less power than other comparable products. The company's tape, disk and encryption solutions are designed to evolve over time. Spectra products are an excellent investment for IT managers who project growth and plan for years into the future. Since Spectra Logic was founded in 1979, the company has introduced innovative, industry-leading products including: Archive and Backup Servers (nTier-2007); hardware-based, VTL encryption with compression (RXT-2006); hardware-based, library-enabled encryption with compression (BlueScale Encryption-2005); and integrated tape and disk in a single library (Spectra T950 with RXT-2004). Spectra Logic is changing the world of storage.

Products

Products by Capacity

Enterprise Storage / Large Organizations

T950 with optional RXT VTL, 64K, nTier900

Medium-Large Organizations

T680, T380, T120, RXT350, 20K, nTier700

Small-Medium Organizations

T200, T120, T50, 20K, 2K, RXT150, RXT350, nTier500

Small Organizations

T50, T24, 2K, iSCSItape, DASTape, RXT150, RXT350, nTier500

Products for All Organizations

Certified Media, SpectraGuard Support

BlueScale Encryption, library-based: T950, T680, T380, T200, T120

BlueScale Encryption and Key Management , LTO-4 based:

T950, T680, T380, T200, T120, T50

Products by Drive Type

LTO: T950, T680, T380, T200, T120, T50, T24, iSCSItape, DASTape

SAIT: T950, T680, T380, T200, T120, iSCSItape, DASTape

SDLT: T950, T680, T380, T200, iSCSItape, DASTape

AIT: 64K, 20K, 2K, iSCSItape, DASTape

RXT Virtual Tape Library: T950, T680, T380, T200, RXT150, RXT350

SATA Disk: nTier500, nTier700, nTier900

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T950

Enterprise Storage Without Compromise: The Spectra T950 Library

For enterprise organizations, the award-winning Spectra T950 library is the best tape and VTL backup platform on the market. It offers the most features, highest reliability, the most storage and is the only data protection platform offering the options of integrated tape, VTL and AES-256 bit encryption with complete key management. Spectra Logic BlueScale Encryption provides key management through the standard library interfaces for both library-based encryption and LTO-4 drive-based encryption.

Scale the Spectra T950 Library As Needed: Investment Protection

The Spectra T950 library grows along with your data. You can expand the Spectra T950 library in large or small increments, adding capacity, drives and VTL storage as you go. You can expand beyond one frame to as many as eight frames, up to 120 drives, and as many as 10,050 cartridges.



Single-Frame Spectra T950



By adding an RXT drive, you instantly add VTL capabilities to your library.

H x W x D: 78.77 x 30.63 x 43.21 in /200 x 77.8 x 109.8 cm

Weight (loaded): 1850 lb (LTO) /839.2 kg

Connectivity: Fibre Channel, iSCSI

Min/Max Slots: 100/10,050

	Media	Quantity	Max. Capacity
Max. Capacity Single-Frame T950	LTO-4	950 tapes	1520 TB*
	SDLT 600	855 tapes	513 TB*
	SAIT-1	950 tapes	1235 TB*
	RXT VTL	95 packs	114 TB
Max. Capacity Eight-Frame T950	LTO-4	10,050 tapes	16.08 PB*
	SDLT 600	9,045 tape	5.43 PB*
	SAIT-1	10,050 tapes	13.07 PB*
	RXT VTL	1,005 packs	1.2 PB native
	Drive	Quantity	Max. Throughput
Max. Performance Single-Frame T950	LTO-4	24	20.7 TB/hr*
	SDLT 600	24	6.2 TB/hr*
	SAIT-1	24	6.7 TB/hr*
	RXT VTL	22	7.9 TB/hr
Max. Performance Eight-Frame T950	LTO-4	120	103.68 TB/hr*
	SDLT 600	120	31.1 TB/hr*
	SAIT-1	120	33.7 TB/hr*
	RXT VTL	110	39.6 TB/hr native

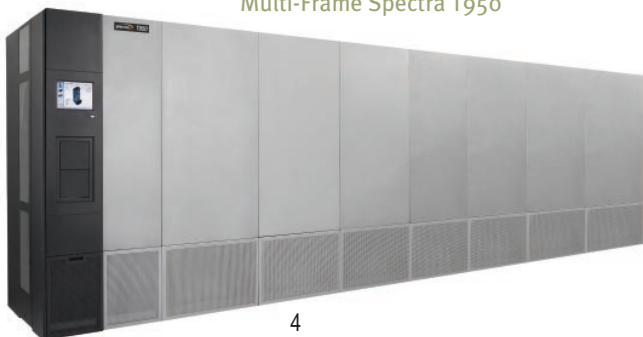
* Capacity and throughput values calculated using compression unless otherwise noted

Drives Supported:

LTO-2, LTO-3, LTO-4, SAIT-1, SDLT

Support planned for future drive generations

Multi-Frame Spectra T950



T-Series Mid-Range Libraries

T200 T380

Designed for mid-range growth and scalability:

The Spectra® T200, T380 and T680 Libraries

The Spectra mid-range T-Series libraries are engineered, from the ground up, to preserve your initial investment in storage. Investment protection is realized by utilizing components which are interchangeable between the T200, T380 and T680 libraries, allowing you to seamlessly scale (TranScale™) between libraries as your organization grows. Integrating both tape and disk, Spectra's industry-first TranScalable™ architecture is designed with your growth in mind and will meet your future capacity and feature needs.

Drives Supported:

LTO-2, LTO-3, LTO-4, SAIT-1, SDLT

Support planned for future drive generations



T680

Model	Maximum Slots	Media	Maximum Capacity*
T200	200	LTO-4 1.6 TB Compressed	320 TB
		RXT VTL 2.0 TB Native	40 TB
T380	380	LTO-4 1.6 TB Compressed	608 TB
		RXT VTL 2.0 TB Native	76 TB
T680	680	LTO-4 1.6 TB Compressed	1.1 PB
		RXT VTL 2.0 TB Native	136 TB

Drive	Model	Maximum Drives	Maximum Throughput*
LTO-4 240 MB/sec Compressed	T200	8 Full Height	6.9 TB/Hour Compressed
		16 Half Height	13.8 TB/Hour Compressed
	T380	12 Full Height	10.4 TB/Hour Compressed
		24 Half Height	20.8 TB/Hour Compressed
	T680	12 Full Height	10.4 TB/Hour Compressed
		24 Half Height	20.8 TB/Hour Compressed

* Maximum capacity and throughput may change according to configuration.

Interfaces for the T200, T380, T680

Native SCSI
 Native Fibre Channel (4Gb)
 FC I/O Blade

- 2 Gb, dual port
- 4 Gb, dual port

 iSCSI I/O Blade

- 1 Gb, dual port
- iSCSI TCP/IP Offload Engine (TOE)

Physical Characteristics:

T200	• H: 35" W: 17.5" D: 40.5" 20U
T380	• H: 49" W: 17.5" D: 40.5" 28U
T680 ¹	• H: 73.5" W: 17.5" D: 40.5" 42U

1. Ships with a standard 19" rack.

Weights:

T200	• Base Frame (No Drives or Media): 185lbs
T380	• Base Frame (No Drives or Media): 250lbs
T680	• Base Frame (No Drives or Media): 375lbs
All	• Drive/Sled: 12lbs • TeraPack Case (with Media): 6lbs

T120

Affordable Storage Without Compromise: The Spectra T120 Library

The Spectra T120 library is a rack mountable solution that installs easily while still offering enterprise-class feature options, such as BlueScale Encryption with an integrated key management suite. The T120 saves you time—up to 80%—through ease of use, lowers costs by up to 40% through long life-span and energy efficiency, and reduces risk of exposure through tape loss by 100% using optional BlueScale Encryption. The high-density Spectra T120 library supports up to 6 drives, and starts with 30 slots. Expand to 120 slots quickly and easily using CoD (Capacity on Demand). The Spectra T120 library simultaneously supports multiple generations of LTO and SAIT.

Spectra T120 Capacity*

Media	Quantity	Maximum Capacity
LTO-4	120	192 TB
LTO-3	120	96 TB
SAIT-1	120	156 TB

Spectra T120 Throughput*

Drive	Quantity	Maximum Capacity
LTO-4	6	5.2 TB/hr
LTO-3	6	3.5 TB/hr
SAIT-1	6	1.7 TB/hr

* Capacity and throughput values calculated using compression

H x W x D: 24.5 x 17.5 x 36.5 in / 62 x 44 x 93 cm

Rack height: 14U

Weight (loaded): 305 lb / 138.3 kg

Connectivity: Fibre Channel, SCSI, iSCSI

Min/Max Slots: 30 / 120

Drives Supported:

LTO-2, LTO-3, LTO-4, SAIT-1

Support planned for future drive generations

Spectra T120



T50

Agile, Advanced, and Affordable: The Spectra T50 Library

The Spectra T50 is an easy-to-use library that includes BlueScale Encryption, so you can encrypt and backup data in a single step. The Spectra T50 library scales easily, growing with your data. Add drives to increase throughput, and add slots in just minutes to increase capacity. The library is easy to manage using the BlueScale 10 library interface, available either through the library's touch-screen front panel or through a Web browser from anywhere. Manage encryption through the same interface, using BlueScale key management features that let you create, protect, and encrypt copies of keys for safekeeping. The Spectra T50 library provides features and an ease-of-use that are unmatched.

Spectra T50 Library*

Maximum Capacity: 50 tapes, 80 TB LTO-4

Maximum Throughput: 2 LTO-4; 1.7 TB/hr

Connectivity: SCSI, iSCSI, Fibre Channel

H x W x D: 7 x 17.5 x 29 in / 18 x 44.5 x 73.7 cm

Reliability: MCBF greater than 500,000/hrs

Increase capacity: 5 slot increments

Min/Max slots: 10/50

** Capacity and throughput values calculated using compression*

Drives Supported:

Full-height: LTO-3, LTO-4,

Half-height: LTO-2

Support planned for future drive generations

Spectra T50



T-Series Libraries

T24

Worry free, budget friendly backup: The Spectra T24 library

Back up data without worry, thanks to the Spectra T24 library. The T24 lets you automate backup using proven, reliable LTO technology, without breaking the budget. The Spectra T24 library needs only 2U—a few inches—of rack space, and supports up to 2 LTO drives and 24 LTO tapes—up to 19.2 TB of compressed data.

Spectra T24 Capacity*

Media	Quantity	Maximum Capacity
LTO-3	24	19.2 TB
LTO-2	24	9.6 TB

Spectra T24 Throughput*

Drive	Quantity	Maximum Throughput
LTO-3	2	864 GB/hr
LTO-2	2	345 GB/hr

* Capacity and throughput values calculated using compression

H x W x D: 3.5 x 17.6 x 29.1 in

Rack height: 2U Standard Rack/ 3.5"/ 8.9cm

Connectivity: SCSI

Max Slots: 24

Drives Supported:

LTO-2, LTO-3

Support planned for future drive generations

Spectra T24



Spectra T-Series:
Enterprise to Mid-Range to Small
Storage Solutions



Virtual Tape Library



RXT: Virtual Tape Library

The RXT product family includes RXT VTL for the T-Series, the rack-mount RXT350, and the stand-alone RXT150. All RXT RAID solutions use the RXT drive, which in many respects works like a tape drive. The main difference being that RXT drives write to mobile media composed of multiple Serial ATA (SATA) disks. The disks are sealed in a rugged, shock-dampened enclosure and protected by RAID.

The RXT350 and RXT150 products also have the ability to format their RXT media packs for NFS. Easily interchangeable with RXT VTL media packs, NFS-formatted media packs can be connected to a file system and used like other NFS drives while retaining their RAID configuration and portability.

RXT Installation and Setup

RXT VTL for T-Series: 20 minutes to configure a partition and load RXT media

RXT350: 2u, 20 minutes to install and configure

RXT150: 5 minutes to install

RXT Flexibility

Multiple choices of media capacities and RAID Levels:

Gold RXT Media (1.2-2.4TB*) — rugged, fast

Silver RXT Media (500 GB, 1TB, 2TB*) — broad applicability

Green RXT Media (2TB*)—cost-effective

RAID Levels: 0, 1 and 5

** Native capacity - Subject to change as higher capacities become available*

Spectra RXT150



iSCSI DAS

Spectra iSCSItape and DAStape: A Workgroup Solution

With Spectra Logic's iSCSItape and DAStape, small organizations, businesses, and workgroups have data protection options that are easy-to-use and easily connected. DAStape supports direct-attached storage; iSCSItape supports network-attached storage. Because these units can handle a wide range of tape and interconnection technologies they work reliably and easily to handle backup requirements for smaller organizations.

iSCSItape

Connectivity: iSCSI, Gigabit Ethernet

H x W x D: 6.0 x 9.75 x 15.5 in / 15.2 x 24.8 x 39.4 cm

Drives Supported

AIT, SDLT, LTO, SAIT

DAStape

Connectivity: SCSI

H x W x D: 6.0 x 9.75 x 15.5 in / 15.2 x 24.8 x 39.4 cm

Drives Supported

AIT, SDLT, LTO, SAIT

Spectra iSCSItape and DAStape



nTier FAMILY

nTier Archive and Backup Servers

Spectra Logic nTier archive and backup servers are a complete solution designed specifically to meet your data archive, backup and retrieval requirements. nTier connects seamlessly with tape libraries, providing a complete platform for archiving and backing up data to disk and to tape.

The nTier servers support NFS/CIFS file systems and multiple optional applications. With flexible file system support, you can assign a disk partition to its own network drive letter and display NFS/CIFS data in the standard drive directory structure. Along with NFS/CIFS, nTier offers a wide range of archive and backup applications. Select only the applications you need; if you need more applications later, you can easily add them.

The nTier product family combines Spectra Logic's RAID 6 protected disk array with powerful processors and an open operating system – all in a compact unit. Because organizational needs often differ, the nTier solution lets you choose which of a variety of software features to use, including;

- | | |
|-------------------------------|---------------------|
| NFS/CIFS | Spectra Encryption |
| Disk-based backup | Replication |
| Master/Media Server | Data Classification |
| Tiered Storage Services (HSM) | Data Deduplication |
| Snapshot (Microsoft DPM 2007) | Email Archive |

nTier500

Rackmount in 3U
Capacity: 4 TB - 16 TB



nTier700

Rackmount in 4U
Capacity: 10 TB - 60 TB



nTier900

Rackmount in 4U-32U
Capacity: 60 TB - 400+TB
Cluster failover



64K 20K

Powerful, Enterprise-level Data Protection: 64K and 20K Libraries

The Spectra 64K and 20K libraries automate AIT tape technology, providing superior storage density and enterprise-class features. The easy-to-use libraries have color touch-screens and support remote management. The Spectra 64K scales to 645 tapes, and the 20K to 200 tapes. Select the library that fits your requirements.

Spectra 64K Capacity*

Media	Quantity	Max. Capacity
AIT-5	645	670 TB

Spectra 64K Throughput*

Drive	Quantity	Max. Capacity
AIT-5	32	7.2 TB/hr

Connectivity: Fibre Channel, iSCSI

H x W x D: 80.5 x 24 x 35in / 204 x 61 x 89 cm

Weight (fully loaded): 810 lb /67.4 kg

Min/Max Slots: 100/645

* Capacity and throughput values calculated using compression

Spectra 20K Capacity*

Drive	Quantity	Max. Capacity
AIT-5	200	208 TB/hr

Spectra 20K Throughput*

Drive	Quantity	Max. Capacity
AIT-5	8	1.8 TB/hr

Connectivity: Fibre Channel, Ethernet-iSCSI

H x W x D: 24.5 x 17.4 x 34in / 62 x 44 x 86 cm

Weight (fully loaded): 267 lb /121.1 kg

Min/Max Slots: 30/200

* Capacity and throughput values calculated using compression

Drives Supported:

AIT-2, AIT-3, AIT-4, AIT-5



Spectra 20K

Spectra 64K



2K

Entry-Level, Reliable, High-Capacity Automated Storage: Spectra 2K Libraries

The Spectra 2K library with AIT-5 is cost effective, reliable, and extremely easy to use. Storing up to 31.2 TB of data, the library can easily handle data growth, and at the same time, it's small enough to fit on a desktop.

Spectra 2K Capacity*

Media	Quantity	Max. Capacity
AIT-5	30	31.2 TB

Spectra 2K Throughput*

Drive	Quantity	Max. Capacity
AIT-5	2	449 GB/hr

Connectivity: SCSI, iSCSI

H x W x D: 8.6 x 16.9 x 16.5 in / 22 x 43 x 41.2 cm

Weight (fully loaded): 31.4 lb / 14.243 kg

Min/Max Slots: 15/30

* Capacity and throughput values calculated using compression

Drives Supported:

AIT-3, AIT-4, AIT-5



Spectra 2K



Bluescale Environment

Spectra libraries use a sophisticated software environment—the BlueScale 10 environment—that is the result of hundreds of staff-years of development effort. This environment supports the features listed below plus much more.

Management Tools

- Manage from anywhere using Web-browser secured with SSL
- Manage multiple Spectra libraries through a single screen using Observatory
- Monitor power use with EnergyAudit™
- Monitor drive throughput

Support Options

- ASM - Assisted self-maintenance: user-installable parts on-site
- AutoSupport: email to SpectraGuard created automatically with complete description of issue
- Health Odometer: track component status and set notification limits

Expansion on Demand

- Add capacity
- Add features
- Upgrade drives/interfaces
- Create virtual libraries as needed using SLS

Security Features

- Password controlled role-based user access to library
- Network-attach storage
- AES-256 library-based BlueScale Encryption
- LTO-4 encryption support with BlueScale Encryption Key Management
- SLS partitioning to permit data set isolation



Bluescale Encryption

BlueScale Encryption and Key Management let you encrypt data and back it up in a single step. BlueScale Encryption is integrated in the library, and provides comprehensive key management tools. Optionally, use LTO-4 drive-based encryption and manage keys using BlueScale Key Management. Since key management and encryption are fully integrated into the library's BlueScale management interface, you can seamlessly and affordably add encryption to your backup strategy – with no changes to backup policies and no additional hardware or software.

Some of the highlights of BlueScale Encryption include:

- Use of the federally approved AES-256 encryption algorithm - the most secure method of encrypting data, and considered unbreakable by the US Government
- A single point of management for both encryption and data backup, along with the flexibility to manage it all from any where with a Web-based Remote Library Controller (RLC), secure through the use of SSL
- BlueScale Key Management provides superior key management features for library- and drive-based encryption without requiring third-party software or network resources
- Platform-independent, and compliant with every major backup software application
- Library-based encryption works with all major media types, including LTO, SDLT, SAIT, WORM-media, and RXT virtual tape library



**Storage Network
Security**

**Spectra Logic
BlueScale Encryption**

Spectra Logic Awards and Support

Awards

Spectra Logic's innovative solutions make backups easier, reduce risk due to excellent support services, and expand to grow with customer needs and changing technology. Spectra Logic and its products have won several industry awards because of its solid 25+ year history and commitment to better data protection.



Energy-Efficient Storage

Spectra's T-Series libraries are engineered for optimal energy efficiency. By using innovative TeraPack containers stored in horizontal shelves, the T-Series components operate in a smaller space. The result of our design is a highly dense storage unit that consumes less power and provides you with an environmentally-friendly storage solution.



With more power-centric features than any other comparable solution on the market, the T-Series also includes tools to track your power usage. Our patented BlueScale EnergyAudit™ feature allows you to display and record actual power consumption, giving you greater control of your data center and budget.

Support

Spectra Logic's SpectraGuard customer support staff are committed to solving your storage problems, with the largest number of service options—many unique in the storage industry—and simply the best support. Spectra Logic is proud to be the first and only company in the data storage industry to offer guaranteed support response time.



Standard plans include Next Business Day Replacement, Next Business Day onsite, Same Business Day onsite, Four Hour onsite, custom onsite and even a Spectra T950 Platinum Package. You can also choose from a wide range of innovative options, including Assisted Self-Maintenance (ASM) and AutoSupport. ASM provides an on-site cache of parts that your staff can replace in minutes. With the AutoSupport option, BlueScale libraries offer advanced notification features, automatically sending e-mail to SpectraGuard Support directly from the library to report on status.

Certified Media: Media with a Guarantee

Order directly from Spectra Logic any media used in Spectra data protection products. Media packs are supplied in TeraPack® containers, with snap-on dust covers and filled with media that has Spectra's lifetime guarantee. Spectra also provides a wide range of media options, such as individual tape cartridges, cleaning cartridges, custom and standard bar-code labels, packs to store media and more. Order using your library front panel, the Remote Library Controller (RLC), online at www.SpectraLogic.com or call your Spectra Logic sales representative.



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