



T950

SPECTRA LOGIC

THE SPECTRA T950 AUTOMATED TAPE LIBRARY

- ✓ GIGABIT ETHERNET/ISCSI
- ✓ WORLDWIDE ON-SITE SUPPORT
- ✓ TWO TERAPACK ACCESS PORTS
- ✓ ENTERPRISE-CLASS FEATURES
- ✓ CAPACITY ON DEMAND
- ✓ GIGABIT ETHERNET/ISCSI
- ✓ OBSERVATORY
- ✓ 10 SLOT INCREMENTS
- ✓ AUTO SUPPORT
- ✓ HOT-SWAP DRIVES AND QIPS
- ✓ SIXTH-GENERATION DESIGN
- ✓ CASCADING EXPANSION FRAMES
- ✓ HOT-SWAP COMPONENTS
- ✓ ENTERPRISE-CLASS FEATURES
- ✓ RXT DISK MEDIA
- ✓ BAR CODED TERAPACK CASES
- ✓ FIBRE CHANNEL
- ✓ PARTITIONING
- ✓ HOT-SWAP COMPONENTS
- ✓ ENDURA RAS
- ✓ SPECTRAGUARD SUPPORT
- ✓ COLOR TOUCH SCREEN
- ✓ REMOTE WEB ACCESS
- ✓ OBSERVATORY

✓ UNCOMPROMISED ENTERPRISE STORAGE

- ✓ SIXTH-GENERATION DESIGN
- ✓ CASCADING EXPANSION FRAMES
- ✓ CAPACITY ON DEMAND
- ✓ HOT-SWAP DRIVES AND QIPS



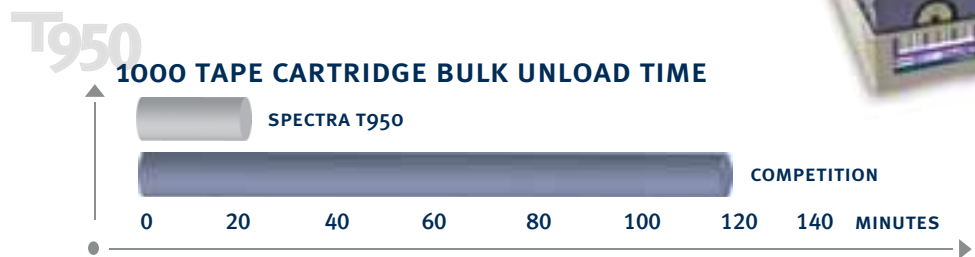
SPECTRA T950: INNOVATIVE EXCELLENCE

The Spectra T950 enterprise-class library is designed and built to directly address customer frustration with the entire process of data backup. The Spectra T950 library reduces staff involvement tremendously, supports the only truly automated and integrated RAID solution with removable RXT disk, scales in performance and capacity, supplies a range of support options from around-the-clock, worldwide, on-site support to a unique self-service option, and all with a design that yields up to ten times the storage density of competing libraries.

REDUCED TIME AND EFFORT HANDLING & MANAGING MEDIA: TERAPACK® TECHNOLOGY

One problem that seems outside the scope of an automated library is handling and managing the high quantity of tape cartridges storing data. The Spectra T950 brings an elegant, straightforward solution to the problem: TeraPack containers, each container holding multiple tapes and its own unique bar code.

Although users can easily access individual cartridges in the T950 they are no longer required to do so. With hundreds or thousands of cartridges in a single library, this technology automatically reduces handling time by 90 percent. For example, with ten LTO tapes per TeraPack case, users can load ten TeraPack containers in under three minutes, compared to the hour it would take to load 100 cartridges into a competing library. Because cartridges are very rarely handled one-by-one, cartridges are protected from mishandling and damage. It's easy to protect exported TeraPack media with dust covers that simply snap on, protecting cartridges and letting containers stack easily. Further, because TeraPack containers themselves are bar coded, users can track each pack of cartridges using a single identifier, even outside the library. TeraPack containers are compatible with off-site shipping containers provided by media storage companies such as Iron Mountain.



JUST ADD RAID: TRULY INTEGRATED AND AUTOMATED RAID PORTABLE RXT MEDIA

Another extraordinary option for the Spectra T950 is removable RAID, available in TeraPack cases. Portable RXT combines the reliability of disk with the mobility of tape, plugging the gap between fixed disk and tape. By combining the best of tape and disk, RXT supplies a truly integrated disk-to-disk-to-tape solution: portable RAID.

RXT technology expands on the drive-and-media model of tape. But, instead of a tape drive, RXT technology is embedded in a docking station that contains a RAID controller. And, instead of writing to tape cartridges, RXT technology writes to portable media, each composed of multiple SATA disks sealed in a rugged enclosure. Because RXT supports tape virtualization, RXT media is transparent to backup software. RXT gives you the performance and reliability advantages of fixed disk, yet stores data to RAID that can be easily moved off-site. Using RXT in the Spectra T950, you add disk to your data center without a huge initial investment, and without any change to your backup environment, strategy, and storage footprint. The Spectra T950 library lets you automate RAID, using RXT TeraPack media in addition to tape media, within a single unit.



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T950: ENTERPRISE STORAGE

INVESTMENT PROTECTION: SCALABILITY

With the Spectra T950, your enterprise investment is protected. You can tailor the library to suit your current data requirements, and expand the library to keep up with data as it grows over years. A minimum initial configuration has as few as 100 tape slots and two drives, and can scale to over 6,150 slots and 120 tape drives. And because the T950 also handles half-height drives, the T950 is compatible with future generations of tape technologies as they evolve. Our philosophy: pay only for what you need today, not what you might need a year from now. This lowers the up-front investment, and expansion capabilities guarantee that the library can handle future demands.

For example, as your data grows, you may require additional slots in your library. Use CoD, Spectra Logic's capacity-on-demand feature, to unlock additional tape storage chambers, with no site visit required. If you need more slots than your current configuration permits, Spectra Logic supplies an additional Spectra T950 expansion frame automatically and at no charge. (Note that some restrictions do apply; contact Spectra Logic for details.)



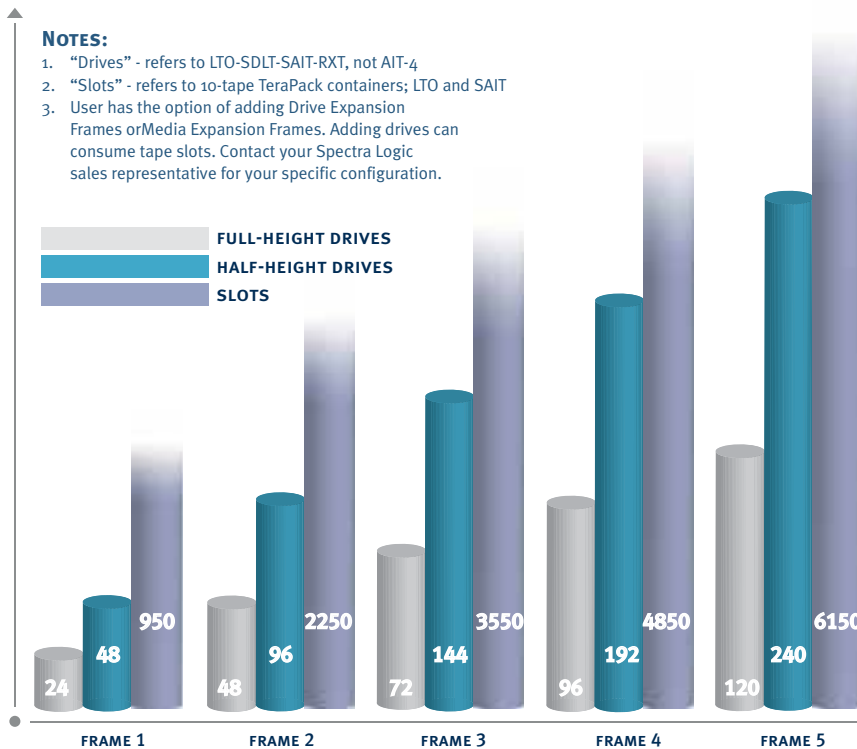
2 Frame 950, 2250 slot capacity

T950 TAPE DRIVES AND STORAGE CAPACITIES

NOTES:

1. "Drives" - refers to LTO-SDLT-SAIT-RXT, not AIT-4
2. "Slots" - refers to 10-tape TeraPack containers; LTO and SAIT
3. User has the option of adding Drive Expansion Frames or Media Expansion Frames. Adding drives can consume tape slots. Contact your Spectra Logic sales representative for your specific configuration.

FULL-HEIGHT DRIVES
 HALF-HEIGHT DRIVES
 SLOTS



Investment protection

GROWTH

CUSTOMIZE SUPPORT

ASM, 24-hour telephone, 4-hour response, next business day, worldwide, on-site

SIMPLIFY MANAGEMENT

Observatory and Telescope local and remote

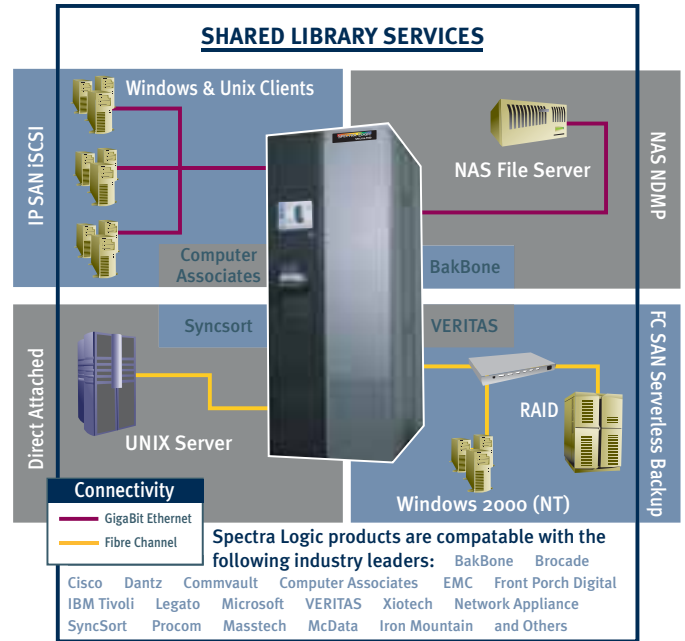
UPGRADE CONNE

Direct-attach Fib Channel QIP, Gig

WITHOUT COMPROMISE

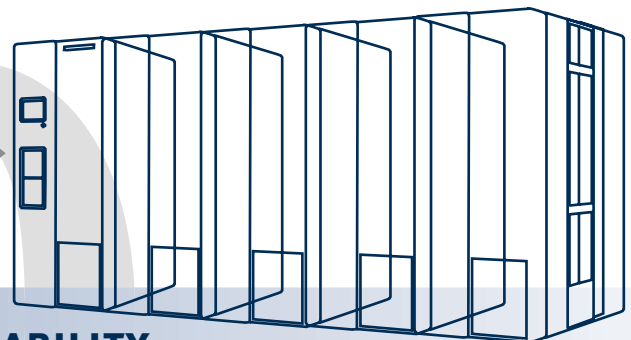
MULTIPLE LOGICAL LIBRARIES FOR THE PRICE OF ONE: EMBEDDED LOGICAL LIBRARY PARTITIONING

Library partitioning lets users logically segment libraries, with multiple applications simultaneously accessing their own portions of a single Spectra T950 library. Shared Library Services (SLS) lets data centers implement simple, integrated partitioning, so that a single library appears to the network as multiple libraries. Unlike other partitioning solutions that involve complicated external partitioning servers, network connections, and proprietary client software, SLS lets users partition the Spectra T950 quickly through the library's easy-to-use touch-screen interface. The user simply names the partition, then designates drives and slots associated with it. The partition is implemented, transparent to all applications; partition geometry is stored in non-volatile RAM, where all information is retained, even if drives and interface modules are replaced.



TERABYTES OF DATA IN A SMALL FOOTPRINT: EXTREME STORAGE DENSITY

The Spectra T950 library delivers up to ten times greater storage density than its competitors. It seems that every library makes that claim; the fact is, we can prove it. Examine the Spectra T950's library interior; we've redefined library geometry through the combined use of 'shelves' instead of slots, and TeraPack containers in place of individual cartridges. The storage density lets you maximize the amount of data that can be stored per square foot of expensive data center real estate. This — combined with the library's media, cartridges, interchangeable drive and media bays, interchangeable interface connectors, and multiple frame capabilities — lets you scale capacity across the smallest possible data center footprint.



Spectra T950 with Four Expansion Frames

FLEXIBILITY

CONNECTIVITY

RELIABILITY

ACTIVITY

Channel, direct-attach SCSI Fibre
bit Ethernet (iSCSI) QIP

UNPARALLELED EASE OF USE: GRAPHICAL USER INTERFACE WITH REMOTE ACCESS

The Spectra T950 library uses an icon-based intuitive interface on a 10 inch color touch screen built into the library front panel. This same interface can be displayed using a Web browser from a remote location. Another option for monitoring your Spectra T950 is Observatory, a browser-based application that monitors the activity of one or more Spectra Logic libraries. Information such as drive status, media inventory, and general library status are displayed in an overview screen, from which you can also view information about specific libraries.



SUPPORT WHEN, WHERE, AND THE WAY YOU WANT IT: SPECTRAGUARD ON-SITE OR SELF-SERVICE SUPPORT

You need the kind of support you want, right when you need it. The Spectra T950 support options range from worldwide, on-site support to a unique self-service option that eliminates the delay and expense that can be involved with a site visit. Regardless of which option you choose, library components are modularly designed so they can be fixed in minutes, not hours. These components include:

- Power supplies
- Tape drives
- Interface modules (QIPs)
- Transporter assembly
- Library Control Module (user interface controller)
- Robotics Control Module



With the optional Assisted Self-Maintenance (ASM) program, these components are stored on-site and are customer-replaceable. Another option is Spectra T950 AutoSupport; an innovative feature that proactively and immediately alerts you and SpectraGuard technical support of maintenance requirements and even impending problems. If an error occurs, AutoSupport sends diagnostic and troubleshooting information to Spectra Logic for analysis. By proactively monitoring library status, Spectra Logic can head off trouble before it has an operational impact. And, with the library’s inherent Endura reliability and availability, the Spectra T950 library is incredibly robust and reliable.

T950 ASSISTED SELF-MAINTENANCE (ASM) —————▶ SWAP-IN COMPONENTS



DRIVE



POWER SUPPLY



ROBOTICS



FIBRE INTERFACE

UPGRADES ARE THAT EASY TOO. YOU, OR IF YOU PREFER, A FIELD ENGINEER, CAN RAPIDLY UPGRADE THE T950.



SpectraGuard Worldwide On-site Support

ADDITIONAL SPECTRA T950 FEATURES AND CAPABILITIES

Single frame library configurations:

- 100 to 950 cartridges
- 2 to 24 drives
- LTO, SAIT and SDLT or AIT-4
- Remote management
- Compatibility with major operating systems
- ISV certification (see www.SpectraLogic.com for a compatibility matrix)
- Hot swappable components
- 2 Gb Fibre Channel and Gigabit Ethernet connectivity
- Physical Characteristics:
H 200.1 cm, W 77.8 cm, D 109.8 cm
H 78.77 in, W 30.63 in, D 43.21 in

·Power Requirements: Input Power: 8.2-6.8 Amps (RMS) at 200-240 VAC, 50/60 Hz (max config)

Weights:

- Base Frame (no drives or media) - 800 lbs
- Drive Expansion Frame (no drives or media) - 750 lbs
- Media Expansion Frame (no media) - 700 lbs
- Drive/Sled - 12 lbs
- TeraPack (with media) - 6 lbs

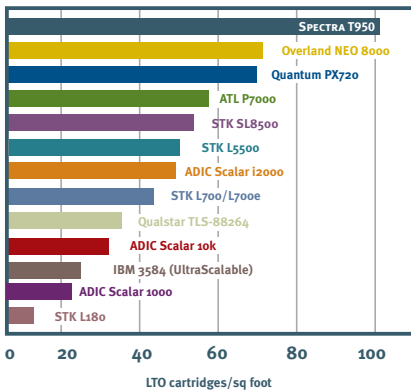
INTERFACES

- Fibre Channel
 - 2 Gb/sec, dual port
- Serverless Backup
- 4 GB/sec Q4 2004
- Gigabit Ethernet
 - 1 Gb/sec, dual port
- iSCSI and NDMP
- TCP/IP Offload

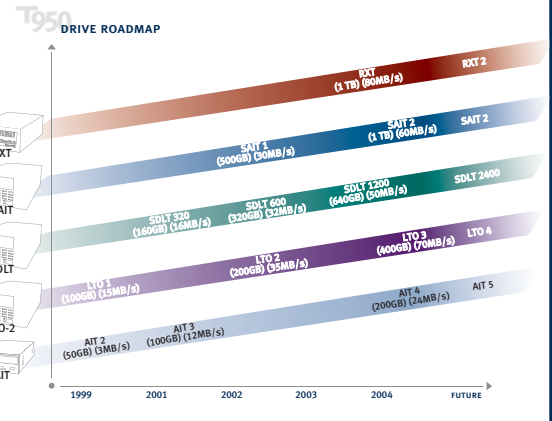
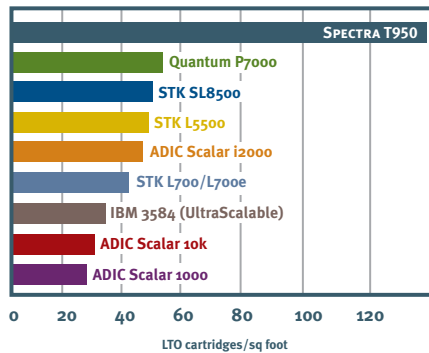
RELIABILITY STATS

- Mean Cycles Between Failures (MCFB)
 - 2,000,000
- 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-hot swap components

SINGLE-FRAME CARTRIDGE DENSITY



MAXIMUM-FRAME CARTRIDGE DENSITY



CAPACITY

THROUGHPUT

	One Frame (T950) TeraPacks/Cartridges/Capacity (TB)*	Five Frames (T950-5) TeraPacks / Cartridges / Capacity(TB)*	Max Throughput TB/hour*	Drives
LTO-2 (IBM) (Single LTO-2 drive capacity is 200GB native/400GB compressed and throughput is 35MB/second native / 70MB/second compressed)	95 / 950 / 190TB - 380TB 83 / 830 / 166TB - 332TB - - -	615 / 6,150 / 1,230TB - 2,460TB 603 / 6,030 / 1,206TB - 2,412TB 439 / 4,390 / 878TB -1,756TB	1.51/3.02 3.02/6.05 15.12/30.24	12 Drives 24 Drives 120 Drives
SDLT 600 (Quantum) (Single SDLT drive capacity is 300GB native/600GB compressed and throughput is 35MB/second native / 70MB/second compressed)	95 / 855 / 257TB - 513TB 83 / 747 / 224TB - 448TB - - -	615 / 5,535 / 1,661TB -3,321TB 603 / 5,427 / 1,628TB -3,256TB 439 / 3,951 / 1,195TB -2,370TB	1.38/2.76 2.76/5.53 13.82/27.65	12 Drives 24 Drives 120 Drives
SAIT-1 (Sony) (Single SAIT-1 drive capacity is 500GB native/1.3TB compressed and throughput is 30MB/second native / 78MB/second compressed)	95 / 950 / 475TB - 1,235TB 83 / 830 / 415TB - 1,079TB - - -	615 / 6,150 / 3,075TB - 7,995TB 603 / 6,030 / 3,015TB - 7,839TB 439 / 4,390 / 2,195TB - 5,707TB	1.30/3.37 2.59/6.74 12.96/33.70	12 Drives 24 Drives 120 Drives
AIT-4 (Sony) (Single AIT-4 drive capacity is 200GB native/520GB compressed and throughput is 30MB/second native / 78MB/second compressed)	95 95 / 1,140 / 228TB -593TB 83/ 996 / 199TB -518TB - - -	615 7,380 1,476TB - 3,838TB 603 7,236 1,447TB - 3,763TB 439 5,268 1054TB - 2,740TB	2.07/5.39 4.15/10.78 20.74/53.91	24 Drives 48 Drives 240 Drives
RXT (Spectra Logic) (Single Terapack of disks is 960GB and the controller is 80MB/sec)	95 / - / 91.2 83 / - / 79.68 - - -	615 / - / 590.4 603 / - / 578.88 439 / - / 421.44	3.46 6.91 34.56	12 24 120

Note that the AIT half-height form factor allows twice as many drives. Sample configurations shown for comparison. Contact Spectra Logic for capacity and throughput specifications for other configurations and mixed media libraries. *native/compressed

SPECTRA LOGIC is a leading designer and manufacturer of data protection products for companies worldwide. Spectra Logic was the first in the industry to automate AIT and to offer native Fibre Channel connectivity and iSCSI in a library. Currently, Spectra Logic has more than 15,000 libraries installed worldwide

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