Quantum

SCALAR i6000

FEATURES & BENEFITS

iLayer Intelligent Software: Intelligent software automates administrative tasks, reducing administrative time up to 75% compared to other tape library products.

Active/Active Dual Robots: Adds a second robot to the library for high availability and faster performance. Operations continue in the event of a robot failure. Robot service is non-disruptive to the application.

Multi-Factor Authentication (MFA): Protects library admin/user accounts with an additional layer of security via a time-based one-time password.

Extended Data Life Management (EDLM): Exclusive iLayer feature to ensure availability of your data placed in long-term storage, archive, or DR. Integrates with StorNext® Storage Manager to automate protection of archived data.

Active Vault: Protects data against ransomware and other cyber threats. Archive tapes inside the library, minimizing costs and cartridge handling while improving security and access to vaulted content.

Cloud-Based Analytics: Gain insight into your system with Real-Time Monitoring and Predictive Issue Resolution analytical tools.

High-Density Expansion Module: Can store up to 23.4 PB* in a single 19-inch rack without compromising cartridge access performance. Provides non-disruptive bulk loading and fast independent cartridge scan/inventory.

Advanced Reporting: Media, drive, and security reports improve understanding of library utilization and performance. Automated report scheduling and distribution save time.

Path Failover: Control path and data path failover features ensure library system stays operational and accessible even with a SAN fabric failure.

RESTful Web Services: Saves administrative time by easily automating repetitive tasks.

Scalar Key Manager Support: FIPS-validated solution makes it easy to manage keys, mitigating risk of lost data.

Assumes 2.5:1 compression.

LEARN MORE:
www.quantum.com/scalar

The Intelligent Tape Library for Long-Term Enterprise Archive, Ransomware Protection, and Disaster Recovery

With a successful attack comes downtime, millions of dollars in revenue losses, and damaged reputation. Protecting and retaining your data can be challenging. Keeping pace with fast, unpredictable data growth and constant cyber threats like ransomware in a cost-effective manner pushes IT staff to their limits. Ensuring that data is secure and available long term adds to these challenges. The Scalar® i6000 tape library was designed to solve these problems and simplify your environment.

Scalar i6000 scales up to 540 PB* of data, supporting large enterprise storage environments. Capacity-on-Demand (CoD) offers fast, flexible, and non-disruptive growth, easing the difficulties of managing dynamic storage requirements. Quantum customers experience significant time management savings due to Active Vault automating the handling of tapes and securing them in a partition without drives or network connection. Combined with WORM and encryption technology, data can be stored in an immutable vault at a fraction of the cost of alternative solutions. Intelligent and proactive features in iLayer™ management software provide up to 75% savings compared to other libraries. High-availability features like Dual Robot and Path Failover allow the library to continue to operate despite failures of library components—or even failures within the SAN fabric. The Extended Data Life Management (EDLM) feature ensures your archived media is trouble free, so the data is available when you need it. Security features like FIPS-compliant encryption key management safeguard your data while in the library and after export.

Scalar i6000 features ultra high density and a 19-inch rack form factor, and scales from 100 to 12,006 cartridges.

CAPACITY CONFIGURATIONS

TOTAL DRIVE, CARTRIDGE, AND CAPACITY RANGES

Drive Type	Media Type	Drives	Cartridges	Capacity (TB)[1]
LTO-9	LTO-9 (L9)[2]	1 to 192	100 to 12,006	540,270
LTO-8	LTO-8 (L8)	1 to 192	100 to 12,006	360,180
LTO-8	LTO-7 (M8)[3]	1 to 192	100 to 12,006	270,135
LTO-7	LTO-7 (L7)	1 to 192	100 to 12,006	180,090
LTO-6	LTO-6 (L6)	1 to 192	100 to 12,006	75,038

Please see www.quantum.com for more drive specifications.
[1] Assumes 2.5:1 compression.
[2] LTO-9 does not support read/write of LTO-8 Type M (M8) media.
[3] New, unused LTO generation 7 cartridges can be initialized as LTO-8 Type M media (M8).

CAPACITY-ON-DEMAND

Cartridge Slot Starting Points: 100, 200, 400, 700, 1,500, 3,000, 5,000, 7,000, 9,000, and 11,000

OPERATION

Drive Interface:	8 Gb Fibre Channel, 8 Gb native Fibre Channel
LTO-9 Only:	12 Gb Serial Attached SCSI (SAS)
Library Interface:	8 Gb Fibre Channel bridged through the drive for data; 1 GbE with remote GUI and RESTful Web Services for library management.
Inventory Speed:	For most modules, 1 minute 12 seconds; four modules <5 minutes.
Configuration:	Auto-discovery and auto-calibration for installed/added components (modules, tapes, drives, magazines, etc.)

IMPORT/EXPORT OPTIONS*

Control Module:	One I/E station with 24 slots
Expansion Modules:	Option for 0, 24, or 72 slot I/E stations per expansion module
Maximum I/E Station Slots:	1,104 slots
Extended Import/Export:	Allows licensed storage slots to be used as import/export elements
Bulk Load/Unload:	Up to 540 slots per High-Density Expansion Module (HDEM) without interrupting library operations
Auto-import:	Library automatically imports cartridges to multiple partitions based on user policies without needing cartridges placed in specific I/E slots
Export Redirect:	Automatically redirects cartridge exports to bulk unload areas or to an Active Vault based on user policies

*Up to 240 import/export elements supported per logical partition

OPERATIONAL/STORAGE ENVIRONMENTAL REQUIREMENTS

Environmental Factor	Recommended[1]	Allowable[2]	Shipping[3]
Dry-Bulb Temperature	LTO 6, 7. 8: 16 to 25° C (61 to 77° F) LTO 9: 15 to 25° C (59 to 77° F)	LTO 6, 7. 8: 16 to 35° C (61 to 95° F) LTO 9: 15 to 35° C (59 to 95° F)	-23 to 49° C (-9 to 120° F)
Relative Humidity	20 to 50% (non-condensing)	20 to 80% (non-condensing)	5 to 80% (non-condensing)
Maximum Temperature Change	5° C / hour	5° C / hour	n/a
Maximum Humidity Change	5% / hour	5% / hour	n/a
Temperature Limitation for Humidity Conditions	LTO 6, 7. 8: Wet Bulb Temperature <= 26° C (79° F) LTO 9: max Dew Point 22° C (72° F)	LTO 6, 7. 8: Wet Bulb Temperature <= 26° C (79° F) LTO 9: max Dew Point 22° C (72° F)	Wet Bulb Temperature <= 26° C (79° F)
Maximum Altitude	3048 m (10000 ft)	3048 m (10000 ft)	12192 m (40000 ft)

[1] Recommended: The recommended operational/storage environmental envelope provides guidance on the environmental range for optimal performance and high reliability. This environmental range protects for 30-year archival storage. (Derate the maximum recommended dry-bulb temperature by 1°C/300 m above 1,800 m (1.8°F/1,000 feet above 6,000 feet)).
[2] Allowable: The allowable operational/storage environmental envelope defines the test limits to verify that the equipment will function within the environmental envelope. This environmental range is defined for operational storage of less than 6 months. (Derate the maximum dry-bulb temperature by 1°C/300 m above 900 m (1.8°F/1,000 feet above 3,000 feet)).
[3] Shipping: When shipping media over extended environmental ranges, shipping times should be limited to minimize the duration of media being exposed to varying environmental conditions at lower and upper ranges. LTO tape media specifications provided by the LTO program at www.lto.org or specifications provided by the media manufacturer.

Note: The prolonged exposure to conditions outside the recommended range, especially approaching the extremes of the allowable operating environment, can result in decreased equipment reliability and longevity. An occasional short-term excursion into the allowable envelope is generally acceptable but may result in performance and reliability implications and higher power consumption. For additional information regarding tape cartridge storage, shipping and operational requirements, including acclimation requirements, please visit www.quantum.com/lto-media, or refer to specific LTO tape media specifications provided by the LTO consortium at www.lto.org or specifications provided by the media manufacturer.

ELECTRICAL AND POWER

Electrical:	100-240 VAC, 2-24 kVA -48 VDC, <1 kVA per module
Power:	80 PLUS® certified power supplies

RELIABILITY

Library MSBF:	Greater than 3 million
Library MTTR:	20 minutes, 10 minutes for Dual Robot replacement
Power:	Optional 2N power
Diagnostics:	Proactive Diagnostics embedded within the library monitor major subsystems, run self-diagnostic procedures, and send policy-based communications to system administrators

SOFTWARE AND PLATFORM COMPATIBILITY

For a complete list of software and platforms compatible with Scalar i6000, consult the most recent Software Compatibility Guide on https://www.quantum.com/swcompguide.aspx.

COMPLIANCE AND CERTIFICATION

Safety Standards:	TUV IEC-60950-1:2006 CB Scheme, EN 60950-1 2nd Edition
Emissions Standards:	Class A: FCC CFR-47 Part 15, CISPR 22, EN 55022, KN22, ICES-003
Immunity Standards:	EN 55024, KN24
International Certifications:	CE, cTUVus, KCC (MIC), GOST, VCCI, C-Tick

PHYSICAL

Module Type	H × W × D
Control Module (H × W × D):	77.4 in × 24.3 in × 38.3 in (196.6 cm × 61.7 cm × 97.4 cm)
Expansion Module (H × W × D):	77.4 in × 23.6 in × 38.3 in (196.6 cm × 59.9 cm × 97.4 cm)
Parking Module (H × W × D):	77.4 in × 23.6 in × 38.3 in (196.6 cm × 59.9 cm × 97.4 cm)

DRIVE CAPACITY AND PERFORMANCE

Drive Type	Media Type	Cartridge Capacity Native/Compressed[1] (TB)	Drive Throughput Native/Compressed[1] (MB/sec)
LTO-9	LTO-9 (L9) [2]	18 / 45	400 / 1,000
LTO-8	LTO-8 (L8)	12 / 30	360 / 900
LTO-8	LTO-7 (M8)[3]	9 / 22.5	300 / 750
LTO-7	LTO-7 (L7)	6.0 / 15.0	300 / 750
LTO-6	LTO-6 (L6)	2.5 / 6.25	160 / 400

Please see www.quantum.com for more drive specifications.
[1] Assumes 2.5:1 compression.
[2] LTO-9 does not support read/write of LTO-8 Type M (M8) media.
[3] New, unused LTO generation 7 cartridges can be initialized as LTO-8 Type M media (M8).

ADVANCED FEATURES

Offline Protection Against Ransomware

Advanced Reporting:	Media Integrity Analysis report, Media Usage report, Drive Utilization report, Security report and media removal notifications; report scheduling with automated report creation and delivery to distribution lists
Firmware Auto-leveling:	Maintains consistent firmware levels across all tape drives in the library
Active Vault:	Vault archive tapes inside the library Reduces software and hardware costs Reduces management time Included policy-based tape exports Improves data security
Extended Data Life Management:	Media health reports of cartridges stored for long-term archive and DR, information is collected outside of normal operations: -Automated scheduling for scanning tapes -Notifications on test results -Policy-based data migration to new cartridges (only available with StorNext Storage Manager)
Dual Robot:	Adds a second, redundant robot to the library for high availability
Path Failover:	Control Path Failover Data Path Failover, including support for path failure within the SAN fabric
Library Partitioning:	Supports up to 32 partitions for tape consolidation

www.quantum.com
800-677-6268