Quantum

LTO Drives



> DATASHEET

Quantum LTO Tape Drive: Now with DATASTOR Shield Deduplication Software

Quantum's LTO stand-alone drives deliver a simple, affordable, all-in-one data protection solution that customers can depend on. Many companies can store all their data on a single cartridge, thanks to the tremendous capacity LTO technology provides. In addition, companies can keep this data secure using AES 256-bit encryption as tapes are transported off-site for disaster recovery or long-term archiving. Quantum's LTO tape drives are WORM capable, allowing companies from healthcare, financial, and other related industries to meet tough regulatory requirements. LTO technology offers backward read and write capability, providing an archive tape recovery solution with newer-generation drives.

Linear Tape File System (LTFS) software allows customers to simply drag and drop files to Quantum LTO tape drives as they would to a hard drive. This eliminates the need for backup software and allows the information written on tape to be exchanged easily between different users, operating systems, and software. This is highly beneficial for many applications—including media and entertainment, video and imaging, long-term archiving, among others—where removing the dependence on a proprietary format is important. LTFS is compatible with Windows, Linux, and Apple Mac operating systems.

Quantum tape drives now include DATASTOR Shield™ backup software with deduplication to supercharge your backup. Quantum and DATASTOR have teamed up to provide the first backup with deduplication straight to tape. This technology, which reduces backups significantly (up to 20x), allows you to store more data per tape than competitive models.

**Assumes 2.5:1 compression for LTO-8, LTO-7, and LTO-6, 2:1 for LTO-5, 20:1 deduplication for DATASTOR Shield.*

ULTRIUM LTO 5 ULTRIUM LTO 6 ULTRIUM LTO 7 ULTRIUM LTO 8

FEATURES & BENEFITS

Performance*

LTO-8 and LTO-7: Up to 750 MB/sec compressed transfer rate
LTO-6: Up to 400 MB/sec compressed transfer rate
LTO-5: Up to 280 MB/sec compressed transfer rate

Capacity*

LTO-8: Up to 30 TB with standard compression; up to 240 TB with DATASTOR Shield
LTO-7: Up to 15 TB with standard compression; up to 120 TB with DATASTOR Shield
LTO-6: Up to 6.25 TB with standard compression; up to 50 TB with DATASTOR Shield
LTO-5: Up to 3.0 TB with standard compression; up to 30 TB with DATASTOR Shield

Security/Ease of Use

AES 256-bit data encryption security, WORM functionality, and partitioning capability

Compatibility

Investment protection with two generations of backward read and one generation of backward write capability

LTFS Software

Free LTFS software can be downloaded at www.quantum.com

Backup with Deduplication

Includes DATASTOR Shield backup software with deduplication, which reduces data by up to 20x

> **LEARN MORE:**
> **www.quantum.com/lto**

TECHNICAL SPECIFICATIONS

DRIVE CAPACITY AND PERFORMANCE

Drive Type	Media Type	Cartridge Capacity Native/Compressed/ Deduplicated* (TB)	Drive Throughput Native/Compressed/ Deduplicated* (MB/sec)
LTO-8	LTO-8 (L8)	12.0 / 30.0 / 240.0	300 / 750 / 6,000
LTO-8	LTO-7 (M8)	9.0 / 22.5 / 180.0	300 / 750 / 6,000
LTO-7	LTO-7 (L7)	6.0 / 15.0 / 120.0	300 / 750 / 6,000
LTO-6	LTO-6 (L6)	2.5 / 6.25 / 50.0	160 / 400 / 3,200
LTO-5	LTO-5 (L5)	1.5 / 3.0 / 30.0	140 / 280 / 2,800

Configurations: Internal bare, internal kit, tabletop kit, and 1U rack mount
Interface Connector Type:
6 Gb/sec SAS — SFF8482 with integrated power (internal), SFF8088 (tabletop and rack)
Burst Transfer Rate (MB/sec):
SAS (maximum) — 600
Data Buffer Size: LTO-8, LTO-7: 1 GB; LTO-6: 512 MB; LTO-5: 256 MB

BACKUP SOFTWARE

Included Software: DATASTOR Shield Single-Server Backup
Deduplication Rate: 20:1 (typical)
Software Compatibility: Windows Only
Backup Methods: Disk-to-disk-to-tape, disk-to-tape, archive-to-tape in native format
Upgradeable: Yes to multiple servers, SQL, Exchange, SharePoint, Bare Metal, Cloud, and other functionality

TAPE/FORMAT COMPATIBILITY

	Media Read/Write	Media Read Only
LTO-8 Drive	LTO-8 (L8), LTO-8 WORM, LTO-7 (L7), LTO-7 WORM, LTO-7 (M8)	N/A
LTO-7 Drive	LTO-7 (L7), LTO-7 WORM, LTO-6 (L6), LTO-6 WORM	LTO-5 (L5), LTO-5 WORM
LTO-6 Drive	LTO-6 (L6), LTO-6 WORM, LTO-5 (L5), LTO-5 WORM	LTO-4 (L4), LTO-4 WORM
LTO-5 Drive	LTO-5 (L5), LTO-5 WORM, LTO-4 (L4), LTO-4 WORM	LTO-3 (L3), LTO-3 WORM

RELIABILITY

MTBF (hours): 250,000 @ 100% duty cycle
MSBF: 100,000 cycles
Load/Unload Life: 80,000 cycles
Non-Recoverable Error Rate: 1 in 1 x 10^{19} bits (LTO-8, LTO-7 non-media error, clean drive)
1 in 1 x 10^{17} bits (LTO-5, LTO-6 non-media error, clean drive)

PHYSICAL

Form Factor	Internal w/o bezel	Internal with bezel	Tabletop	1U Rack Mount
Width (in / mm)	5.75 / 146	5.83 / 148	8.4 / 213	18.7 / 480
Height (in / mm)	1.61 / 41	1.68 / 42.7	2.3 / 58	1.7 / 43
Length (in / mm)	8.07 / 205	8.27 / 210	13.10 / 332	17.6 / 438
Weight (lb / kg)	3.55 / 1.61	3.57 / 1.62	9.4 / 4.3	14.2 / 6.4

ENVIRONMENTAL

OPERATING
Temperature: 50 °F to 100 °F (10 °C to 38 °C) @ 5 CFM
Humidity: LTO-8, LTO-7: 20% to 80% (non-condensing); LTO-6, LTO-5: 10% to 80% (non-condensing)
Altitude (maximum): LTO-8, LTO-7: 10,000 ft (3,048 m); LTO-6, LTO-5: 13,000 ft (4,000 m)

NON-OPERATING
Temperature: LTO-8, LTO-7: -40 °F to 140 °F (-40 °C to 60 °C) excluding media; LTO-6, LTO-5: -40 °F to 149 °F (-40 °C to 66 °C) excluding media
Humidity: LTO-8, LTO-7: 10% to 90% (non-condensing); LTO-6, LTO-5: 10% to 95% (non-condensing)

VOLTAGE (V): +5, +12

POWER CONSUMPTION (HALF-HEIGHT)
LTO-8: Idle:11.0 Watts, Typical: 30 Watts, Peak: 42.0 Watts
LTO-7: Idle: 21.1 Watts, Typical: 32 Watts, Peak: 64.5 Watts
LTO-6: Idle: 13.2 Watts, Typical: 24.7 Watts, Peak: 69 Watts
LTO-5: Idle: 13.3 Watts, Typical: 23.7 Watts, Peak: 69 Watts

TAPE FORMAT

Format: LTO Ultrium 8, LTO Ultrium 7, LTO Ultrium 6, LTO Ultrium 5
Recording Density: LTO-8: 20,579 KB/mm; LTO-7: 19,107 KB/mm; LTO-6, LTO-5: 15,143 KB/mm
Encoding Method: LTO-8, LTO-7: 32 Channel 32/33 RLL; LTO-6, LTO-5: 16 Channel 32/33 RLL NPML
Data Compression: LTO-8, LTO-7, LTO-6: 2.5:1; LTO-5: 2:1

COMPATIBILITY

Operating Systems: Microsoft Windows, Red Hat Linux, SUSE Linux, Mac OS
Software/Hardware: For the most up-to-date tested solutions, visit www.quantum.com.

TAPE

Cartridge Dimensions (L × W × H): 4 in × 4.15 in × .85 in (102 mm × 105.4 mm × 21.5 mm)
Archive Storage: 30 years
Durability: 20,000 load/unload cycles

WARRANTY

Tape: Limited lifetime
Tape Drive: 3 years limited with Rapid Exchange

**Assumes 2.5:1 compression for LTO-7 and LTO-6, 2:1 for LTO-5, 20:1 deduplication for DATASTOR Shield.*

Model Numbers and Descriptions

TC-L82AN-BR LTO-8 HH, Internal, 6 Gb/sec SAS, 5.25 in, black, bare
TC-L82AN-EY LTO-8 HH, Internal, 6 Gb/sec SAS, 5.25 in, black
TC-L82AN-EZ LTO-8 HH, Internal, SAS HBA Bundle, 6 Gb/sec SAS, 5.25 in, black
TC-L82BN-AR LTO-8 HH, Tabletop, 6 Gb/sec SAS, black
TC-L82BN-EZ LTO-8 HH, Tabletop, SAS HBA Bundle, 6 Gb/sec SAS, black
TC-L83CN-AR LTO-8 HH, Single, 1U Rack Mount, 6 Gb/sec SAS, black
TC-L82GN-BR LTO-8 HH, Internal Drive Option for 1U Rack Mount, 6 Gb/sec SAS, black, bare

TC-L62AN-BR-C LTO-6 HH, Internal, 6 Gb/sec SAS, 5.25 in, black, bare
TC-L62AN-EY-C LTO-6 HH, Internal, 6 Gb/sec SAS, 5.25 in, black
TC-L62AN-EZ-C LTO-6 HH, Internal, SAS HBA Bundle, 6 Gb/sec SAS, 5.25 in, black
TC-L62BN-AR-C LTO-6 HH, Tabletop, 6 Gb/sec SAS, black
TC-L62BN-EZ-C LTO-6 HH, Tabletop, SAS HBA Bundle, 6 Gb/sec SAS, black
TC-L62BN-EM-C LTO-6 HH, Tabletop, SAS HBA and Media (5 pcs) Bundle, 6 Gb/sec SAS, black
TC-L63CN-AR-C LTO-6 HH, Single, 1U Rack Mount, 6 Gb/sec SAS, black
TC-L62GN-BR-C LTO-6 HH, Internal Drive Option for 1U Rack Mount, 6 Gb/sec SAS, black, bare

TC-L72AN-BR-C LTO-7 HH, Internal, 6 Gb/sec SAS, 5.25 in, black, bare
TC-L72AN-EY-C LTO-7 HH, Internal, 6 Gb/sec SAS, 5.25 in, black
TC-L72AN-EZ-C LTO-7 HH, Internal, SAS HBA Bundle, 6 Gb/sec SAS, 5.25 in, black
TC-L72BN-AR-C LTO-7 HH, Tabletop, 6 Gb/sec SAS, black
TC-L72BN-EZ-C LTO-7 HH, Tabletop, SAS HBA Bundle, 6 Gb/sec SAS, black
TC-L73CN-AR-C LTO-7 HH, Single, 1U Rack Mount, 6 Gb/sec SAS, black
TC-L72GN-BR-C LTO-7 HH, Internal Drive Option for 1U Rack Mount, 6 Gb/sec SAS, black, bare

TC-L52AN-BR-C LTO-5 HH, Internal, 6 Gb/sec SAS, 5.25 in, black, bare
TC-L52AN-EY-C LTO-5 HH, Internal, 6 Gb/sec SAS, 5.25 in, black
TC-L52AN-EZ-C LTO-5 HH, Internal, SAS HBA Bundle, 6 Gb/sec SAS, 5.25 in, black
TC-L52BN-AR-C LTO-5 HH, Tabletop, 6 Gb/sec SAS, black
TC-L52BN-EZ-C LTO-5 HH, Tabletop, SAS HBA Bundle, 6 Gb/sec SAS, black
TC-L52BN-EM-C LTO-5 HH, Tabletop, SAS HBA and Media (5 pcs) Bundle, 6 Gb/sec SAS, black
TC-L53CN-AR-C LTO-5 HH, Single, 1U Rack Mount, 6 Gb/sec SAS, black
TC-L52GN-BR-C LTO-5 HH, Internal Drive Option for 1U Rack Mount, 6 Gb/sec SAS, black, bare

ABOUT QUANTUM
Quantum is a leading expert in scale-out tiered storage, archive, and data protection, providing solutions for capturing, sharing, and preserving digital assets over the entire data lifecycle. From small businesses to major enterprises, more than 100,000 customers have trusted Quantum to address their most demanding data workflow challenges. Quantum's end-to-end, tiered storage foundation enables customers to maximize the value of their data by making it accessible whenever and wherever needed, retaining it indefinitely and reducing total cost and complexity. See how at **www.quantum.com/customerstories**.

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