

Quantum®

# LTO TAPE DRIVES

Low-Cost, Simple and Easy to Deploy  
Offline Solution for Small IT Environments



## DATASHEET

### FEATURES & BENEFITS

#### Quickly Back Up and Restore Data from Tape

With performance up to 750 MB/sec (2.7 TB/hr)\*

\*2.5:1 compression LTO-9, LTO-8, and LTO-7 Half-Height drives only

#### Meet Compliance and Security Requirements

Secure protection with AES 256-bit hardware-based encryption standard. WORM (Write Once, Read Many) functionality with use of WORM cartridges.

#### Low-Cost and Reliable Long-Term Data Storage

Protect up to 45 TB\* of data on each cartridge.

\*2.5:1 compression LTO-9, LTO-8, and LTO-7 Half-Height drives only

As data continues to grow, and cyber threats continue to escalate, organizations need a simple and dependable way to keep data protected. Quantum's LTO tape drives are an ideal solution for backing up small data sets to tape and are available in a variety of form factors to help you store, manage, and protect your data.

## Tape is a Key Part of a Comprehensive Data Protection Strategy

Backing up data using the backup best practice rule such as 3-2-1-1 – 3 copies of your data, in 2 different forms of media, 1 copy offsite (cloud) and 1 copy offline (on-prem tape) – is crucial for every organization, no matter what the size of the budget or the IT staff is. Quantum offers LTO-9, LTO-8, and LTO-7 tape drives in a half-height form factor, and every tape drive sold includes DATASTOR backup software with deduplication to provide a complete backup solution.

## Quantum LTO Tape Drives Provide a Simple, Reliable Solution

Quantum LTO Tape Drives deliver fast, reliable data protection at an affordable price. They offer backup speeds up to 750 MB/sec\* and when paired with an LTO-9 cartridge, you can store up to 45 TB\* (compressed) of data on a single cartridge gaining more than 50% storage capacity in the same footprint. Quantum's LTO cartridges or any LTO media, provide easily transportable backup storage for DR protection, and their AES 256-bit encryption makes sure that no one else can access, delete, or encrypt your data. The WORM-cartridge option provides an even higher level of security.

\*Assumes 2.5:1 compression for LTO-9, LTO-8, and LTO-7, 20:1 deduplication for DATASTOR Shield

LEARN MORE:

[www.quantum.com/lto](http://www.quantum.com/lto)





QUANTUM LTO TAPE DRIVE OFFERINGS AND OPTIONS			
<b>Form Factor</b>	<b>Tabletop</b>	<b>1U Rackmount</b>	<b>Internal</b>
<b>Ideally Suited for</b>	Direct connect to a workstation	Mounting in a rack, options for 1 or 2 HH drives	Integration into a third-party server
<b>Dimensions (in/mm)</b>			
<b>Width</b>	8.4 / 213	18.7 / 480	5.72 / 146
<b>Height</b>	2.3 / 58	1.7 / 43	1.61 / 41
<b>Length</b>	13.10 / 332	17.6 / 438	8.07 / 205
<b>Weight (lb/kg)</b>	9.4 / 4.3	14.2 / 6.4	3.55 / 1.61
<b>Drive Type Offered</b>	LTO-9 HH LTO-8 HH LTO-7 HH See table below for drive specifications	LTO-9 HH LTO-8 HH LTO-7 HH See table below for drive specifications	LTO-9 HH LTO-8 HH LTO-7 HH See table below for drive specifications
<b>Backup Software Included</b>	DATASTOR Backup Software		
<b>Items Included</b>	<b>Base Kit:</b> (1) LTO Drive, (1) Data cartridge magazine (1) Cleaning Cartridge; 2 Meter Mini-SAS cable and worldwide power cords <b>Optional:</b> with HBA bundle	<b>Base Kit:</b> 1U Rack with (1) LTO Drive, and (1) cartridge magazine (1) Cleaning Cartridge; 5 Meter Mini-SAS cable and worldwide power cords <b>Optional:</b> 2nd Drive option kit	<b>Base Kit:</b> (1) LTO Drive <b>Option 1:</b> (1) Data cartridge magazine (1) Cleaning Cartridge; <b>Option 2:</b> (1) Data cartridge magazine (1) Cleaning Cartridge and HBA Bundle

LTO DRIVE SPECIFICATIONS			
<b>Drive Generation</b>	<b>LTO-9 HH Tape Drives</b>	<b>LTO-8 HH Tape Drives</b>	<b>LTO-7 HH Tape Drives</b>
<b>Media Compatibility</b>	Read/Write to LTO-9 and LTO-8 media	Read/Write to LTO-8, LTO-7 M8, and LTO-7 media	Read/Write to LTO-7 and LTO-6 media, read from LTO-5 media
<b>Connectivity</b>	12 Gb SAS	6 Gb SAS	6 Gb SAS
<b>Sustained Transfer Rate, Native</b>	300 MB/s	300 MB/s	300 / MB/s
<b>Burst Transfer Rate</b>	1,200 MB/s	600 MB/s	600 / MB/s

LTO MEDIA SPECIFICATIONS				
<b>Media Type</b>	<b>LTO-9</b>	<b>LTO-8</b>	<b>LTO-7 M8<sup>2</sup></b>	<b>LTO-7</b>
<b>Capacity (Raw / Compressed)<sup>1</sup></b>	18 / 45 TB	12 / 30 TB	9 / 22.5 TB	6 / 15 TB

<sup>1</sup>Assumes 2.5:1 compression. <sup>2</sup>New, unused LTO generation 7 cartridges can be initialized as LTO-8 type M media (M8). <sup>3</sup>See compatibility guide for Quantum compatible media: [www.quantum.com/swcompguide.aspx](http://www.quantum.com/swcompguide.aspx)

LTO DRIVE ADDITIONAL SPECIFICATIONS

BACKUP SOFTWARE		TAPE FORMAT	
<b>Included Software:</b>	DATASTOR Shield Single-Server Backup	<b>Recording Density</b>	LTO-9: 21,459 KB/mm, LTO-8: 20,579 KB/mm, LTO-7: 19,107 KB/mm
<b>Deduplication Rate:</b>	20:1 (typical)	<b>Encoding Density:</b>	LTO-9, LTO-8, LTO-7: 32 Channel 32/33 RLL
<b>Software Compatibility:</b>	Windows only	<b>Data Compression:</b>	LTO-9, LTO-8, LTO-7: 2.5:1
<b>Backup Methods:</b>	Disk-to-disk-to-tape, disk-to-tape, archive-to-tape in native format	<b>SAFETY STANDARDS AND COMPLIANCE CERTIFICATION</b>	
<b>Upgradeable:</b>	Yes to multiple servers, SQL, Exchange, SharePoint, Bare Metal, Cloud, and other functionality	<b>Tabletop</b>	
<b>RELIABILITY:</b>		<b>Safety Standards:</b>	IEC 60950-1 and IEC 62368-1 with worldwide deviations, EN62368-1, UL 62368-1, CNS14336-1
<b>MSTBF (Hours):</b>	250,000 @ 100% duty cycle	<b>Emission Standards:</b>	FCC Part 15 Class A, EN 55032 Class A, KN 32, VCCI, CNS 13438 Class A, ICES-003 Class A
<b>MSBF:</b>	100,000 cycles	<b>Immunity Standards:</b>	EN 55024, EN 55035, KN 35; KN24
<b>MTTR:</b>	N/A	<b>International Certifications:</b>	cNEMKOus (US and Canada), FCC (US), ICES (Canada) CE (Europe), UKCA (United Kingdom), GS (Germany), Nemko (Norway), Morocco (C-Mark), BIS (India), VCCI (Japan), KC (Korea), BSMI (Taiwan), RCM (AUSTRALIA/NEW ZEALAND)
<b>Power:</b>	LTO-9, 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	<b>Internal (Quantum Branded)</b>	
<b>Management Requirements:</b>	N/A	<b>Safety Standards:</b>	IEC 60950-1 and IEC 62368-1 with worldwide deviations, EN62368-1, UL 62368-1, CNS14336-1
<b>Load/Unload Life:</b>	LTO-8, LTO-7: 80,000 cycles; LTO-9: HH TBD	<b>Emission Standards:</b>	FCC Part 15 Class A, EN 55032 Class A, KN 32, VCCI, CNS 13438 Class A, ICES-003 Class A
<b>Non-Recoverable Error Rate:</b>	1 in 1 x 10 <sup>19</sup> bits (LTO-9, LTO-8, LTO-7 non-media error, clean drive)	<b>Immunity Standards:</b>	EN 55024, EN 55035, KN 35; KN24
<b>Archive Storage:</b>	30 Years	<b>International Certifications:</b>	cNEMKOus (US and Canada), FCC (US), ICES (Canada) CE (Europe), UKCA (United Kingdom), Bauart (Germany), Morocco (C-Mark), VCCI (Japan), KC (Korea), BSMI (Taiwan), RCM (AUSTRALIA/NEW ZEALAND)
<b>Durability:</b>	20,000 load/unload cycles	<b>Warranty:</b>	3 years Limited Rapid Exchange

\*Compatibility: OS: Microsoft Windows, Red Hat Linux, SUSE Linux, Mac OS.  
Software/Hardware: For the most up-to-date tested solutions, visit [www.quantum.com](http://www.quantum.com)  
Please see [www.quantum.com](http://www.quantum.com) for more drive specifications.

OPERATIONAL/STORAGE ENVIRONMENTAL REQUIREMENTS			
<b>Environmental Factor</b>	<b>Recommended<sup>1</sup></b>	<b>Allowable<sup>2</sup></b>	<b>Shipping<sup>3</sup></b>
<b>Dry-Bulb Temperature</b>	LTO-6, LTO-7, LTO-8: 16 to 25 °C (61 to 77 °F) LTO-9: 15 to 25 °C (59 to 77 °F)	LTO-6, LTO-7, LTO-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)
<b>Relative Humidity</b>	20 to 50% (non-condensing)	20 to 80% (non-condensing)	5 to 80% (non-condensing)
<b>Maximum Temperature Change</b>	5 °C / hour	5 °C / hour	n/a
<b>Maximum Humidity Change</b>	5% / hour	5% / hour	n/a
<b>Temperature Limitation for Humidity Conditions</b>	LTO-6, LTO-7, LTO-8: Wet Bulb Temperature <= 26 °C (79 °F) LTO-9: Max Dew Point 22 °C (72 °F)	LTO-6, LTO-7, LTO-8: Wet Bulb Temperature <= 26 °C (79 °F) LTO-9: Max Dew Point 22 °C (72 °F)	Wet Bulb Temperature <= 26 °C (79 °F)
<b>Maximum Altitude</b>	3,048 m (10,000 ft)	3,048 m (10,000 ft)	12,192 m (40,000 ft)

<sup>1</sup>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 1800 m (18 °F/1,000 feet above 6,000 feet)).  
<sup>2</sup>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 (18 °F/1,000 feet above 3,000 feet)).  
<sup>3</sup>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](http://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](http://www.quantum.com/lto-media), or refer to specific LTO tape media specifications provided by the LTO consortium at [www.lto.org](http://www.lto.org) or specifications provided by the media manufacturer.



Quantum technology, software, and services provide the solutions that today's organizations need to make video and other unstructured data smarter – so their data works for them and not the other way around. With over 40 years of innovation, Quantum's end-to-end platform is uniquely equipped to orchestrate, protect, and enrich data across its lifecycle, providing enhanced intelligence and actionable insights. Leading organizations in cloud services, entertainment, government, research, education, transportation, and enterprise IT trust Quantum to bring their data to life, because data makes life better, safer, and smarter. Quantum is listed on Nasdaq (QMCO) and the Russell 2000® Index. For more information visit [www.quantum.com](http://www.quantum.com).

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