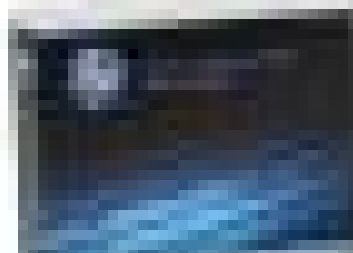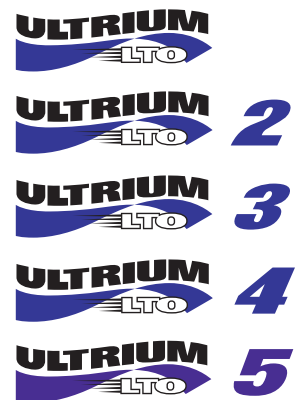# HP LTO Ultrium Media

HP Ultrium tape technology has been designed to deliver exceptional reliability and performance at the lowest cost per GB. The Ultrium format builds on the best of existing technologies; open standards increase innovation and widen customer choice in terms of performance, capacity, and form factor. Backed by HP's exhaustive media qualification process, HP Ultrium data cartridges support all HP StorageWorks and non-HP Ultrium tape devices.
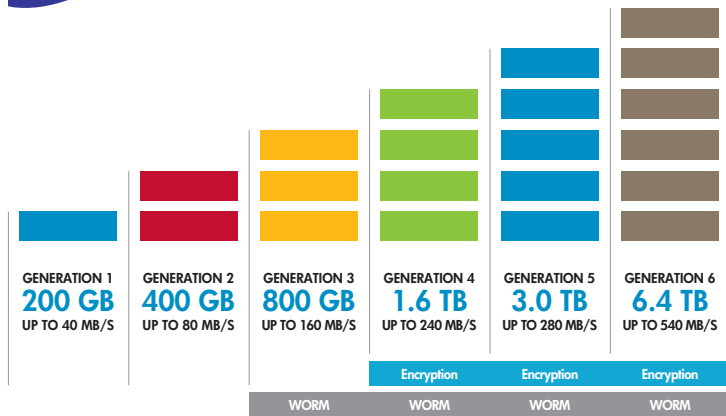
Key Features and Benefits

- **Up to 3 TB compressed capacity.**

- **Supports transfer speeds** of 140 MB/s (native), 280 MB/sec (2:1) with Generation 5.

- **For use in all HP** and non-HP LTO Ultrium products.

- **Unique coloured cartridge** to assist with identification in mixed media environments.

- **Improved cartridge design** to prevent the leader pin from being pulled from inside the tape housing (a key weakness of some other technologies).

- **Very low media cost** per GB.

- **LTO cartridge memory in media** to improve access time and provide enhanced media monitoring.

- **Durable cartridge** designed to minimise wear and debris (important in automation).

- **Tested to extremes** in HP's media laboratory, to a level of specification unique to Hewlett-Packard. Many of the test procedures required for HP Brand qualification (e.g. load/unload, shoeshine, drop testing and environmental stress testing) are not required for the LTO Ultrium logo.

- **HP LTO-4 and LTO-5 offer data encryption** for enhanced data security.

- **HP offers both** labelled (Custom Labelled and Non-Custom Labelled) and non-labelled data cartridges.

- **Custom labelled offerings** allow automation customers the ability to customise their label to their specific needs. This includes the ability to define the barcode label type and to specify an exact label sequence. Custom labels are pre-attached to the media before shipment. Available in Europe and the USA. Europe requires a Minimum Order Quantity of 5 units or 100 total data cartridges (5 units X 20 cartridges).

- **HP Non-Custom Labelled media** allows automation customers the ability to receive labelled media without having to wait for a custom labelled solution. Barcode sequences are pre-determined by HP and are guaranteed to be unique. LTO-1 and LTO-2 products utilise the double barcode format whereas LTO-3 and above utilise the single barcode format. HP Non-Custom media is available worldwide.

ULTRIUM LTO — LTO Ultrium Roadmap

GENERATION 1
200 GB
UP TO 40 MB/S

GENERATION 2
400 GB
UP TO 80 MB/S

GENERATION 3
800 GB
UP TO 160 MB/S

GENERATION 4
1.6 TB
UP TO 240 MB/S

GENERATION 5
3.0 TB
UP TO 280 MB/S

GENERATION 6
6.4 TB
UP TO 540 MB/S

		Encryption	Encryption	Encryption
	WORM	WORM	WORM	WORM

Drive/Media Compatibility

		LTO-1 Drive	LTO-2 Drive	LTO-3 Drive	LTO-4 Drive	LTO-5 Drive
Backward Read Compatible	LTO-1 Media	Read/Write	Read/Write	Read Only	Not Compatible	Not Compatible
	LTO-2 Media	Not Compatible	Read/Write	Read/Write	Read Only	Not Compatible
	LTO-3 Media	Not Compatible	Not Compatible	Read/Write	Read/Write	Read Only
	LTO-4 Media	Not Compatible	Not Compatible	Not Compatible	Read/Write	Read/Write
	LTO-5 Media	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write

For full Hardware and Media compatibility go to
www.hptapecompat.com

Specifications

All capacities and performance compressed.

Product No.	C7971A	C7972A	C7973A	C7973W	C7974A	C7974W	C7975A	C7975W
Reseller Product Number								
Model	LTO-1	LTO-2	LTO-3 RW	LTO-3 WORM	LTO-4 RW	LTO-4 WORM	LTO-5 RW	LTO-5 WORM
Format								
Storage Capacity	100/200 GB	200/400 GB	400/800 GB	400/800 GB	800 GB/1.6 TB	800 GB/1.6 TB	1500 GB/3 TB	1500 GB/3 TB
Transfer Speed*	30 MB/sec	60 MB/sec	120 MB/sec	120 MB/sec	240 MB/sec	240 MB/sec	280 MB/sec	280 MB/sec
Magnetic Material	Metal Particle	Metal Particle	Metal Particle	Metal Particle	Metal Particle	Metal Particle	Metal Particle	Metal Particle
Number of Data Tracks	384	512	704	704	896	896	1,280	1,280
Recording Density	124 kbits/inch	188 kbits/inch	245 kbits/inch	245 kbits/inch	343 kbits/inch	343 kbits/inch	384.6 kbits/inch	384.6 kbits/inch
Magnetic Characteristics								
Coercivity	1900-2200 Oe	2050-2550 Oe	2500-2850 Oe	2500-2850 Oe	2550-2750 Oe	2550-2750 Oe	2750-2850 Oe	2750-2850 Oe
Physical Characteristics								
Tape Thickness (um)	8.9	8.9	8.0	8.0	6.6	6.6	6.4	6.4
Tape Width (mm)	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65
Tape Length (m)	609	609	680	680	820	820	846	846
Durability	1,000,000 passes on any area of tape, equates to over 20,000 end to end passes/260 full tape backups							
Environmental Properties								
Operating Temperature	50 °F to 113 °F (10 °C to 45 °C)							
Day to Day Storage Temperature	60 °F to 90 °F (16 °C to 32 °C)							
Long Term Storage Temperature – Ambient	41 °F to 73 °F (5 °C to 23 °C)							
Maximum Wet Bulb Temperature	79 °F (26 °C)							
Non Condensing Relative Humidity	10 to 80% (Operating) 20 to 60% (Archival)							
Archival Life	30 years							
Logistics								
Unit (in case)								
External Dimensions (cm)	Length 11.1 x Width 11.3 x Height 2.8							
Weight (g)	285.2	285.2	280	280	280	280	270	270
Quantity	1	1	1	1	1	1	1	1
UPC	0-25184-16341-6	8 08736-39584 7	8 29160-62177 7	8 29160-71420 2	8 827808-6982 0	8 82780-86983 7	8 8496292534 8	8 8496292540 9
Sub Carton								
External Dimensions (cm)	Length 12.0 x Width 15.1 x Height 12.5							
Weight (g)	1511	1511	1490	1490	1490	1490	1430	1430
Quantity	5x1 units = 5 cartridges							
ITF-14	1 00 25184-16342 3	1 08 08736-39584 4	1 08 29160-62177 4	1 08 29160-71420 9	1 08 82780-86982 7	1 0 882780-86983 4	1 0 88496292534 5	1 0 88496292540 6
Master Carton								
External Dimensions (cm)	Length 33 x Width 27.3 x Height 15.2							
Weight (kg)	6.57	6.57	6.48	6.48	6.48	6.48	6.2	6.2
Quantity	4 x 5 units = 20 cartridges							
ITF-14	2 00 25184-16342 0	2 08 08736-39584 1	2 08 29160-62177 1	2 08 29160-71420 6	2 08 82780-86982 4	2 08 82780-86983 1	2 0 88496292534 2	2 0 88496292540 3

* Transfer speeds and capacities assume 2:1 compression. Actual performance is data dependent.

For full product specs, visit www.hptapecompat.com
For Custom Labelled media, visit www.hptapemedia.com
For specifications of all Ultrium media products, please go to: http://www.hp.com/go/storagemedia

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