

# FUJIFILM

## LTO Ultrium 4 — DATA CARTRIDGE —



*Fujifilm LTO Ultrium 4 media is the first midrange data storage product to use Fujifilm's proprietary NANOCUBIC thin-film coating process to reach the higher capacity and quality levels currently only found in enterprise-class systems. The LTO technology is a powerful, scalable, adaptable open tape format developed and continuously enhanced to help address the growing demands of data protection in the midrange to enterprise-class server environments. In addition, the LTO Ultrium 4 technology introduces encryption capability that increases the performance value of tape storage in terms of security, and reinforces its importance as a reliable high-performance storage solution.*



# LTO Ultrium 4

## DATA CARTRIDGE

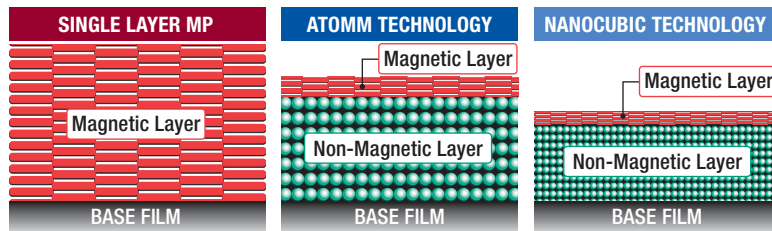
## TECHNOLOGY

### NANOCUBIC Technology

Although ATOMM technology made submicron metal coating possible, a much thinner layer was required in order to achieve even higher recording density. Fujifilm's NANOCUBIC technology has made possible an ultra-thin magnetic layer that is roughly one-tenth the thickness of the magnetic layers in ATOMM coating. This new technology also incorporates ultra-fine nano-particles to reduce media noise, and a uniform particle dispersion technology featuring a specially developed polymer compound. The result is a high-resolution, low-noise, ultra-thin magnetic layer that is the basis for the next generation of data recording media.



### Structural Comparison of Magnetic Media



### Fujifilm Servo Technology

The LTO Ultrium technology relies heavily on timing-based, highly precise servo control to achieve its remarkable performance level. LTO Ultrium data cartridges use dual servo tracks that have been precisely written along the entire length of each of its four data bands, providing extremely fine placement control and redundancy in the event of tape damage.

### High Capacity And Amazing Transfer Rates

Fujifilm LTO Ultrium 4, featuring the company's NANOCUBIC technology, achieves a remarkable 1.6TB capacity (at 2:1 compression; 800GB native) by recording 896 tracks within the 12.65mm tape width. By utilizing multi-channel recording technology, Fujifilm LTO Ultrium 4 features transfer rates of up to 240MB/sec. (at 2:1 compression; 120MB/sec. native).

### Enhanced Durability

NANOCUBIC technology improves the smoothness of the tape surface, which helps extend the head-lifetime and reduces errors even under heavy use. Moreover, storing the usage history and other information on a non-contact Passive Radio Frequency Interface Memory Chip further enhances the reliability of the tape media.

### Encrypted For Security

LTO Ultrium 4 systems introduce for the first time in a midrange tape the Advanced Encryption Standard (AES) 256-bit encryption algorithms. The hardware-based AES 256-bit encryption capability offers a higher level of security during tape storage and transportation of sensitive information.

## SPECIFICATIONS

LTO Ultrium 4 Specifications		Ultrium 4		Ultrium 4 WORM	
BASIC SPECIFICATIONS	Material Number	15716800		15750246	
	Capacity (Native / Compressed)	800/1,600GB*			
	Transfer Rate (Native / Compressed)	Up to 120MB*/sec./Up to 240MB*/sec			
	Number of Tracks	896			
	Servo Type	Timing-based servo			
PHYSICAL CHARACTERISTICS	Cartridge Memory	65,280bits/8,160bytes; Internal EEPROM			
	Tape Width	12.65mm			
	Tape Thickness	6.6µm			
	Tape Length	820m			
	Cartridge Dimensions	21.4 x 105.4 x 102.0mm (0.85" x 4.15" x 4.02") [W x H x L]			
ENVIRONMENTAL CONDITIONS		Operating Environment	Storage Environment	Archival Environment	
	Temperature	10°C to 45°C	16°C to 35°C	16°C to 25°C	
	Relative Humidity	10% to 80%	20% to 80%	20% to 50%	
	Wet Bulb Temp.	26°C max	26°C max	26°C max	

\*Assumes 2:1 data compression. Transfer rate is drive dependent. Specifications subject to change.

### LTO Ultrium Tape Drive Compatibility Chart

Cartridge	Drive			
	Ultrium 1	Ultrium 2	Ultrium 3	Ultrium 4
Ultrium 1	Read/Write	Read/Write	Read Only	Not Compatible
Ultrium 2	Not Compatible	Read/Write	Read/Write	Read Only
Ultrium 3	Not Compatible	Not Compatible	Read/Write	Read/Write
Ultrium 3 WORM	Not Compatible	Not Compatible	Read/Write Once	Read/Write Once
Ultrium 4	Not Compatible	Not Compatible	Not Compatible	Read/Write
Ultrium 4 WORM	Not Compatible	Not Compatible	Not Compatible	Read/Write Once
Ultrium Universal Cleaning Cartridge	Compatible	Compatible	Compatible	Compatible



Fujifilm's Ultrium Universal Cleaning Cartridge is designed for use with all Ultrium 1, 2, 3, 4 & 5 tape drives.

## FUJIFILM

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