

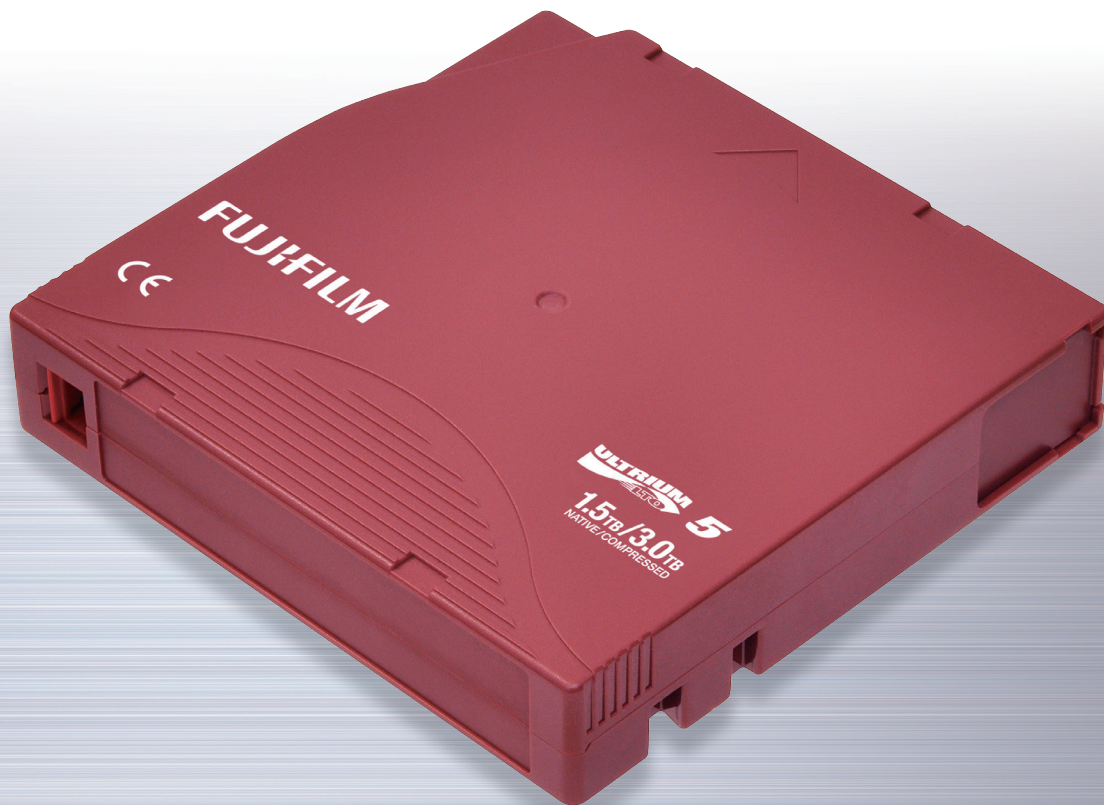
FUJIFILM

FUJIFILM NANOCUBIC Technology



LTO ULTRIUM DATA CARTRIDGE

# Generation 5



## LTO Ultrium 5

DATA CARTRIDGE

High Capacity of **3.0** TB.

Amazing Transfer Rates of up to **280** MB/sec.

# The Linear Tape-Open Ultrium (LTO) data cartridge now reached to its latest generation 5.

The high capacity of 3.0TB and transfer rates of up to 280MB/sec. (at 2:1 compression)



## High Capacity and Transfer Rates

FUJIFILM's NANOCUBIC technology has enabled the LTO G5 data cartridge to achieve the capacity of 3.0TB (at 2:1 compression; 1.5TB native) by recording 1,280 data tracks within 12.65mm tape width. Also with the utilization of multi-channel recording technology, LTO G5 data cartridge features transfer rates of up to 280MB/sec. (at 2:1 compression; 140MB/sec. native).

## New Reel Design

As the tape length increases, there is a tendency of increased pressure on the hub. The potential risk of causing hub deformation may increase. This will lead to unexpected deformation, such as tape edge damage or other physical anomalies. In order to avoid such hub deformation, FUJIFILM has strengthened the hub structure by applying a new design and materials. As a result, FUJIFILM has successfully achieved both running stability in the drive and high archival life.

## Improvement in "NANOCUBIC Technology"

For LTO G5 development, FUJIFILM has further advanced the NANOCUBIC technology with the following key technologies and has successfully achieved higher recording density:

- (1) Development of finer metal particles (78% of the size of LTO G4)
- (2) Nano-dispersion technology with a new binder system
- (3) Advanced nano-coating technology to achieve a much smoother and more uniform magnetic layer resulting in significant decrease in the tape surface defects.

## Environmental Products

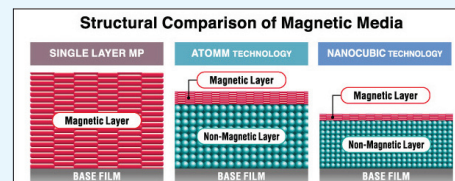
BFR (Brominated Flame Retardants) has been eliminated from all LTO G5 mechanical parts in order to become more environmentally friendly.



## NANOCUBIC Technology

Although the ATOMM technology made submicron metal coating possible, a much thinner magnetic layer was required in order to achieve high resolution for higher recording density. FUJIFILM's **NANOCUBIC technology** has made possible an ultra-thin magnetic layer, **nano-coating** technology, which is about one tenth of the thickness of magnetic layers under the ATOMM technology. It also incorporates **nano-particle** technology, with

ultra-fine magnetic particles to reduce media noise, and **nano-dispersion** technology, a uniform particle dispersion technology featuring a newly developed polymer compound. Utilizing the NANOCUBIC technology as the basis of its next-generation data media production technology, FUJIFILM has succeeded in prototyping a high-resolution, low-noise ultra thin magnetic layer media coating that has nano-order microstructure.



## WORM is also available

WORM (Write Once Read Many) functionality provides a cost-effective means for storing data in a non-rewritable format to help address compliance requirements.



## LTO Ultrium Cartridge Line Up



## Media/Drive Compatibility

Drive	Ultrium 1	Ultrium 2	Ultrium 3	Ultrium 4	Ultrium 5
Media	○	○	△	×	×
	×	○	○	△	×
	×	×	○	○	△
	×	×	×	○	○
	×	×	×	×	○

○: Able to Read / Write   △: Able to Read Only   ×: Not Compatible

## FUJIFILM Brand LTO G5/G5 WORM -Media Specification-

LTO Generation	LTO G1	LTO G2	LTO G3 / G3 WORM	LTO G4 / G4 WORM	LTO G5 / G5 WORM	Universal Cleaning Cartridge*	
Basic Specifications	Capacity (Native / Compressed)	100GB (200GB)	200GB (400GB)	400GB (800GB)	800GB (1.6TB)	1.5TB (3.0TB)	—
	Transfer Rate (Native / Compressed)	Up to 20MB/sec. (Up to 40MB/sec.)	Up to 40MB/sec. (Up to 80MB/sec.)	Up to 80MB/sec. (Up to 160MB/sec.)	Up to 120MB/sec. (Up to 240MB/sec.)	Up to 140MB/sec. (Up to 280MB/sec.)	—
	Number of Tracks	384	512	704	896	1,280	—
	Servo Method	Timing-based servo					—
Physical Characteristics	Cartridge Memory	32,768 bits (4,096 bytes) ; Internal EEPROM			65,280bits (8,160bytes) ; Internal EEPROM		32,768 bits (4,096 bytes) ; Internal EEPROM
	Encryption function	—					○
	Tape Width	12.65mm					—
	Tape Thickness	8.9 μm	8.0 μm		6.6 μm	6.4 μm	—
Operating Environmental Conditions	Tape Length	609m	680m		820m	846m	319m
	Cartridge Dimensions (H×W×D)	102.0 × 105.4 × 21.5mm					—
	Temperature	10-45°C					—
Archival Environmental Conditions	Humidity	10-80% (No Dew Condensation)					—
	Max. Wet Bulb Temperature	26°C					—
	Temperature	16-32°C					—
Archival Environmental Conditions	Humidity	20-80% (No Dew Condensation)					—
	Max. Wet Bulb Temperature	26°C					—

Note: Specifications are subjected to change without notice.

\*The universal cleaning cartridge is capable of being used in all generation 1/2/3/4/5 Ultrium format tape drives. Specific revisions of firmware may be required for proper operation.