

FUJIFILM

LTO Ultrium 6 — DATA CARTRIDGE —



Barium Ferrite

Fujifilm's Linear Tape-Open (LTO) Ultrium 6 is the first in the world produced with Barium Ferrite magnetic particles using Fujifilm's core NANOCUBIC technology. The Fujifilm LTO Ultrium 6 data cartridge offers a super high native/compressed storage capacity of 2.5/6.25TB, transfer rates up to 160/400MB per second, WORM capability and LTFS dual partitioning functionality to facilitate file management. Fujifilm's Barium Ferrite magnetic particles are chemically stable leading to enhanced performance and longer archival life. Fujifilm's LTO Ultrium 6 and future generations of LTO will use Barium Ferrite particles with NANOCUBIC technology for a thin and uniformly coated magnetic layer. Barium Ferrite is Fujifilm's patented technology.

LTO Ultrium 6

DATA CARTRIDGE

TECHNOLOGY



Barium Ferrite

Barium Ferrite Technology

Barium Ferrite is a new type of magnetic particle which can be greatly reduced in size to improve recording density without magnetic signal loss. Barium Ferrite can maintain critical magnetic properties such as coercivity, frequency characteristics and lower noise even with a smaller particle size, resulting in

the LTO Ultrium 6 cartridge having higher capacity compared to past generations of LTO cartridges.

Barium Ferrite is chemically stable (already oxidized) and does not get easily demagnetized by outside energy interference. Therefore, magnetic tape using Barium Ferrite can achieve a long archival life of more than 30 years based upon Fujifilm's accelerated life tests. With better frequency characteristics than metal particles, Barium Ferrite has a significantly increased margin of recording capability even when the ability of the drive head has diminished after repeated use.

High Capacity and Transfer Rates

Fujifilm's NANOCUBIC technology has enabled LTO Ultrium 6 to achieve a native/compressed capacity of 2.5/6.25TB by recording 2,176 data tracks within 12.65mm tape width. With the utilization of multi-channel recording technology, LTO 6 features native/compressed transfer rates of up to 160/400MB per second.

Improvement in NANOCUBIC Technology:

For LTO Ultrium 6 development, Fujifilm has further advanced the NANOCUBIC technology with the following key technologies and has successfully achieved a higher recording density:

- 1.) Development of finer magnetic particles (70% of the size of LTO Ultrium 5)
- 2.) Developed uniform particle dispersion technology by applying high-dispersed binder technology
- 3.) Advanced nano-coating technology was improved to achieve a smoother and even thinner magnetic layer resulting in a significant decrease in tape surface defects.

SPECIFICATIONS

LTO Ultrium 6 Specifications		Ultrium 6	Ultrium 6 WORM	
BASIC SPECIFICATIONS	Material Number	16310732	16310756	
	Capacity (Native / Compressed)	2.5/6.25TB*		
	Transfer Rate (Native / Compressed)	Up to 160MB/sec./Up to 400MB*/sec		
	Number of Tracks	2,176		
	Servo Type	Timing-based servo		
	Cartridge Memory	130,816bits/16,352bytes; Internal EEPROM		
PHYSICAL CHARACTERISTICS	Tape Width	12.65mm		
	Tape Thickness	6.1µm		
	Tape Length	846m		
	Cartridge Dimensions	21.5(l) x 105.4(w) x 102.0mm(h) (0.85" x 4.15" x 4.02") [L x W x H]		
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 2.5:1 data compression. Transfer rate is drive dependent.
Specifications subject to change.

New Reel Design

As the tape length increases, there is a tendency of increased pressure on the hub with the potential risk of causing hub deformation. This may lead to potential problems, 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 with new materials. As a result, Fujifilm has successfully achieved both running stability in the drive and a highly reliable archival life expectancy.

Environmentally Friendly

BFR (brominated flame retardants) have been eliminated from all LTO 6 mechanical parts in order to become more environmentally friendly.

LTO Ultrium Tape Drive Compatibility Chart

Cartridge	Drive					
	Ultrium 1	Ultrium 2	Ultrium 3	Ultrium 4	Ultrium 5	Ultrium 6
Ultrium 1	Read/Write	Read/Write	Read Only	Not Compatible	Not Compatible	Not Compatible
Ultrium 2	Not Compatible	Read/Write	Read/Write	Read Only	Not Compatible	Not Compatible
Ultrium 3	Not Compatible	Not Compatible	Read/Write	Read/Write	Read Only	Not Compatible
Ultrium 3 WORM	Not Compatible	Not Compatible	Read/Write Once	Read/Write Once	Read Only	Not Compatible
Ultrium 4	Not Compatible	Not Compatible	Not Compatible	Read/Write	Read/Write	Read Only
Ultrium 4 WORM	Not Compatible	Not Compatible	Not Compatible	Read/Write Once	Read/Write Once	Read Only
Ultrium 5	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write	Read/Write
Ultrium 5 WORM	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write Once	Read/Write Once
Ultrium 6	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write
Ultrium 6 WORM	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Not Compatible	Read/Write Once
Ultrium UCC*	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible

*UCC = Universal Cleaning Cartridge



Fujifilm's Ultrium Universal Cleaning Cartridge is designed for use with all Ultrium 1, 2, 3, 4, 5 & 6 tape drives.

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