English

Tape Drives

TANDBERG DATA
Securing your Information

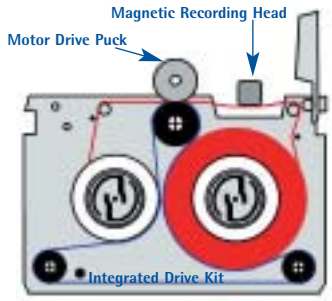
Linear Data Recording

SLR Technology

The SLR (Scalable Linear Recording) technology developed at the end of the seventies by TANDBERG DATA, is based on linear data recording and makes new dimensions possible in magnetic tape technology. The enormous increase in capacity and speed is possible thanks to the parallel use of several writing and reading ports. An additional reading port follows premarked servo tracks on the tape. This allows optimal positioning of the write/read head to be achieved and thus the best data integrity. The SLR tapes possess two integrated reels, between which the tape is transported, so that the magnetic tape is never threaded and pulled into the tape drive, but instead always remains protected in the cartridge.

With an annual failure rate of less than 1.5%, the Tandberg SLR series is the most reliable tape technology in the market. Thanks to the backwards compatibility and the option of migration to SLR autoloaders, users benefit from high safety of investment. In addition to the guaranteed backwards compatibility, the SLR technology is also distinguished by integrated media management, an intelligent method of analysing performance. SLR products of present and future generations offer peak values in the criteria of scalability, performance and reliability.

The well proven technology, with over 3 million drives installed, offers storage capacities of 4 to 140* GB on a single drive and up to 1.1* TB in SLR automation products.



Data Cartridge with a 1 mm thick aluminium sheet

The current product portfolio also includes the flagship SLR140 for the midrange segment as well as the entry level solutions SLR5, SLR7, SLR75 and SLR100. The Tandberg SLR series thus covers the demand and the requirements of a wide spectrum of the market.

* 2:1 Hardware Data Compression

DLT Technology

DLT is the abbreviation for Digital Linear Tape and describes the linear data recording on 1/2 inch magnetic tapes. The proven Tandberg DLT tape technology offers the necessary performance, capacity, reliability and migration capability for computer environments with extensive data sets. DLT drives use tapes with a width of half an inch and work with only one reel in the tape. The magnetic tape is loaded into the drive by means of a threading mechanism and wound onto the second spool, which is built into the streamer.

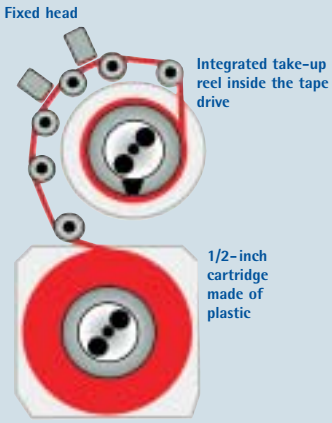
Thanks to the simple running path of the tapes and the precision which they are guided, the tapes have a long operational life.

The tapes can be up to 630 m long. The writeable tape surface is approx. 2.5 times as large as in presently available SLR cartridges and allows uncompressed capacities of up to 300 gigabytes. More than 2 million installed drives and more than 100 million cartridges sold vouch for the right technology for your data storage in the field of medium and large server installations. Of course, DLT drives can be used on practically every software platform. Common operating systems and backup-applications are supported.

SuperDLT Technology

The main technological difference between SDLT and DLT drives is the use of laser-optic leading lines on the SDLT tapes and drives. This system, also called the Laser Guided Optical Servo system, uses optical tracks at the back of the magnetic tape and enables an even lower track width than conventional systems.

Nevertheless, the write/read head always finds precisely the correct data track and guarantees high reliability in the writing and reading of the data. The newly developed magneto-resistive reading heads read even finer signals precisely and reliably from the tape. The SuperDLT drives SDLT320 and SDLT600 are especially useful for backup jobs, in which speed is important as well as capacity.



DLT VS Technology

Like the SDLT products, VS devices also use a track within the cartridge and another in the drive itself. Depending on the storage requirement and data transfer rates, TANDBERG DATA products can be used in the entry level, mid range and high end.

Professional Data Storage – for Servers and Networks

Entry Level Products:

Regarding the backup window, the time which is available for the data storage, users at the entry level move in an uncritical area. The data storage frequently takes place at night.

The Tandberg SLR product line completely covers the requirements of the market at the entry level with the following products: SLR5, SLR7, SLR75 and SLR100.

The smallest member of the SLR line, the SLR5 with 4/8 gigabyte storage capacity, is excellently suited to data storage of workstations and/or workplaces with only small data volumes. The SLR75 offers more capacity and more speed with 75* gigabytes and a transfer rate of 28,8 GB/h.

In the small to medium range one will need to provide more capacity and performance than comparable products.

The SLR100, with a storage capacity up to 100* GB, servers of smaller networks can be given optimal protection.

From the field of DLT drives, the DLT VS80 can be used at the entry level. In addition to performance advantages, there is the outstanding price performance ratio and the wide distribution of the DLT technology.

SLR™

Entry Level Network Environments or Small Business-Server Environments

- Single server environment
- Automatic data storage "over night"

Technical Specifications

Drive	SLR5	SLR7	SLR75	SLR100	DLT VS80
Capacity Native/Compr.*:	4/8 GB	20/40 GB	38/75 GB	50/100 GB	40/80 GB
Buffer Size:	256 KB	8 MB	8 MB	8 MB	2 MB
Data Transfer Rate Native:	380 KB/s	3.0 MB/s	4.0 MB/s, 3.0 MB/s	5.0 MB/s, 4.0 MB/s, 3.0 MB	3 MB/s
Compressed*:	760 KB/s	6.0 MB/s	8.0 MB/s, 6.0 MB/s	10.0 MB/s, 8.0 MB/s, 6.0 MB/s	6 MB/s
Burst:	3.0 MB/s[1,2]	40 MB/s	40 MB/s	40 MB/s	20 MB/s
File Access Time Typical:	55 s	< 35 s	< 68 s	< 89 s	<68s
System Interface:	Supports SCSI-2[3]	SCSI Wide, LVD/SE	SCSI Wide, LVD/SE	SCSI Wide, LVD/SE	SCSI Wide, LVD/SE
Format and Compatibility					
Backward Write (tape type):	QIC-2 GB / 1000 / 525	—	SLR40, SLR50, SLR60	SLR40, SLR50, SLR60, SLR75	—
Backward Read (tape type):	QIC-2 GB / 1000 / 525	SLR5	SLR4, SLR5, SLR7, SLR24, SLR32, SLR40, SLR50, SLR60	SLR7, SLR24, SLR32, SLR40, SLR50, SLR60, SLR75	DLT 4000
Dimensions	**Internal**			**External**	
Form Factor:	— 5.25-inch half height (HH) —				
	Height: 59 mm (64.5 mm)[3]	Height: 44 mm	Height: 44 mm	Height: 59 mm (64.5 mm)[3]	Intern: 44/148/22 mm - 1.4 kg
	Width: 198 mm (205 mm)[3]	Width: 150 mm	Width: 150 mm	Width: 198 mm (205 mm)[3]	Extern: 66/212/272 mm - 3.48 kg
	Depth: 267 mm	Depth: 218 mm	Depth: 218 mm	Depth: 257 mm; (SLR2-5: 267 mm)	
	Weight: 2.6 kg	Weight: 1.1 kg	Weight: 1.1 kg	Weight: 2.6 kg	
Power Requirements (typical)					
Voltage Variations:	+5Vdc (+12Vdc):+5Vdc ± 5% (+12Vdc ± 10%) including 125 mV for +5V / 200 mV for +12V				

*Assuming 2:1 data compression. [1]Asynchronous; [2]Synchronous; [3]with rubber feets

Midrange Products

The data volumes in the midrange area are distinctly higher than in the entry level area and the quantity of data also grows continually. From the product range of TANDBERG DATA, the SLR140 and the DLT VS160 out of the DLT product family are recommended for this segment. The flagship of the SLR product family stores 140* GB of data with a data transfer rate of 43 GB/h and thus opens up new perspectives in capacity, transfer rates and migration options.

With their backup performance, these devices provide a very prompt storage or recovery of data.

For companies which have a higher data yield and even smaller backup windows, one can alternatively use the DLT VS160 drive from the DLT range. Due to the high degree of compatibility within DLT products, it is possible to equip them with SDLT products later.

Midrange-Size Network Environment

- Higher data yield
- Single-server environment or multi-server environment (max. 5 servers)
- Homogenous operating system platforms

Technical Specifications

Drive		SLR140	DLT VS160
Capacity	Native/Compressed*:	70/140 GB	80/160 GB
Buffer Size:		8 MB	16 MB
Data Transfer Rate	Native:	6 MB/s	8 MB/s
	Compressed*:	12 MB/s	16 MB/s
	Burst:	40 MB/s	160 MB/s
File Access Time	Typical:	< 92 s	< 90 s
System Interface:		SCSI Ultra2 Wide	SCSI Ultra 160, LVD/SE
Format and Compatibility			
Backward Write (tape type):		SLR40, SLR50, SLR60, SLR75, SLR100	DLT VS80
Backward Read (tape type):		SLR7, SLR40, SLR50, SLR60, SLR100	DLT1/DLT VS80
Dimensions			
Form Factor:		5.25-inch half height (HH)	half height (HH)
Internal Height/Width/Depth - Weight:		44/150/218 mm - 1.1 kg	44/148/221 mm - 1.36 kg
ExternalHeight/Width/Depth - Weight:		59/198/257 mm - 2.6 kg	66/212/272 mm - 3.63 kg

*2:1 Hardware data compression

High End Level:

The high end drives from TANDBERG DATA take the high data yield in the high end segment into account. With extremely high backup and restore speeds, they use the few remaining backup windows. TANDBERG DATA is now offering the LTO2, LTO1, SDLT600 and the SDLT320.

The SDLT320 can store up to 115 GB compressed data on the tape in one hour. In the same time, the SDLT600 can manage 258 GB (compressed), the LTO1 108 GB/h and the LTO2 can manage 252 GB/h. The user data can be stored up to 600 GB on a single cartridge of the SDLT600. If the high end individual drives are no longer sufficient for the data to be saved, one can migrate to automated backup solutions like autoloaders or libraries. So migration remains possible in the event of any further growth, without having to change the backup technology.

High End-Network Environment

- High data yield
- Multi-server environment
- Heterogeneous network environment with different operating system platforms
- Securing databases
- Restricted data storage window
- 2:1 Hardware data compression

Technical Specifications

Drive		SDLT320	SDLT600	LTO1	LTO2
Capacity	Native /Compressed* :	160 / 320 GB	300 / 600 GB	100 / 200 GB	200 / 400 GB
Buffer Size:		64 MB	64 MB	32 MB	64 MB
Data Transfer Rate	Native :	16 MB/s	36 MB/s	15 MB/s	35 MB/s
	Compressed* :	32 MB/s	72 MB/s	30 MB/s	70 MB/s
	Burst :	40 MB/s / 80 MB/s	160 MB/s	40 MB/s	80 MB/s
File Access Time :		< 70 s	< 79 s	< 73 s	< 49 s
System Interface :		SCSI Wide, LVD/SE	SCSI Ultra Optical Fibre Channel	Ultra 160 SCSI LVD	Ultra 160 SCSI LVD
Format and Compatibility					
Backward	Write :	SDLT220			LTO1
Backward	Read :	DLT1 / DLT VS80 DLT4000 / 7000 / 8000	SDLT220 / 320, DLT VS160		LTO1
Dimensions					
Form Factor:		5,25-inch full height (FH)	5,25-inch full height (FH)	5,25-inch full height (FH)	5,25-inch full height (FH)
Internal: Height/ Width/ Depth-Weight:		86/148/212 mm - 2,38 kg	86/148/212 mm - 2,38 kg	85 / 149 / 211 mm - 3,0 kg	85 / 149 / 211 mm - 3,0 kg
External: Height/ Width/ Depth-Weight:		160/175/325 mm - 6,27 kg	160/175/325 mm - 6,27 kg	146 / 171 / 333 mm - 6,6 kg	146 / 171 / 333 mm - 6,6 kg

* 2:1 Hardware data compression

Service:

TANDBERG DATA offers extensive services. All tape drives have a manufacturer's guarantee of 3 years. If necessary, a 48-hour advance replacement is available, which can be requested via the central communication centre at Dortmund.

Services at a glance

- 3-year guarantee
- 48-hour advance replacement
- Free technical support

Complete Tape Storage Solutions

The TANDBERG DATA tape drives are not only available as internal and external individual drives, but also as complete server solutions. These bundles contain the storage management solution Yosemite TapeWare XE or BrightStor™ ARCserve Workgroup Edition for the storage of a server on Windows 2000/2003/NT or Novell NetWare and of a desired number of workstations. The Tandberg Storage Solutions also include the data cartridges and cleaning cartridges appropriate to the tape drive. They are delivered with a SCSI and a terminator cable.

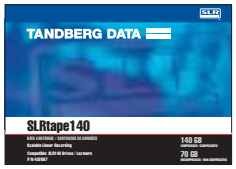
The LTO1 and LTO2 Tape Drives are just available as complete ´Storage Solutions´.

Media:

The product line of TANDBERG DATA includes a comprehensive media range incl. the appropriate cleaning cartridges. In addition to this, TANDBERG DATA offers the owner of the Tandberg branded media a very unique benefit. All customers who have a need for a professional data recovery service get a special rebate, if they choose the Norwegian company IBAS as their partner.

Which media for which Tape Drive?

SLR Drives	Data Cartridge	Cleaning Cartridge
SLR140	Data Cartridge SLR140, 140 GB	
SLR100	Data Cartridge SLR100, 100 GB	
SLR75	Data Cartridge SLR75, 75 GB	
SLR60	Data Cartridge SLR60, 60 GB	
SLR50	Data Cartridge SLR50, 50 GB	Cleaning Cartridge for SLR2 - SLR140
SLR40	Data Cartridge SLR40, 40 GB	
SLR32	Data Cartridge SLRt32, 32 GB	
SLR24	Data Cartridge SLRt24, 24 GB	
SLR7	Data Cartridge SLR7, 40 GB	
SLR5	Data Cartridge SLR5, 4 GB	
DLT Drives		
DLT8000	DLT Tape IV for DLT4-8000, DLT1, VS80 DLT4000	Cleaning Cartridge for DLT8000, DLT7000,
SDLT600	SDLTII Tape for SDLT600	Cleaning Cartridge for SDLT220, SDLT320
SDLT320	SDLTI for SDLT220, SDLT320	Cleaning Cartridge for SDLT220, SDLT320
SDLT220	SDLTI for SDLT220, SDLT320	Cleaning Cartridge for SDLT220, SDLT320
DLT VS160	DLT VSI Tape for VS160	Cleaning Cartridge for DLT1, VS80,VS160
DLT VS80	DLT Tape IV for DLT4-8000, DLT1, VS80	Cleaning Cartridge for DLT1, VS80,VS160
LTO Drives		
LTO1	Data Cartridge for LTO1	Cleaning Cartridge for LTO1 and LTO2
LTO2	Data Cartridge for LTO2	Cleaning Cartridge for LTO1 and LTO2



Tape Autoloaders

Network Attached Storage

Tape Libraries

Tape Media

Software

Service

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TANDBERG DATA

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