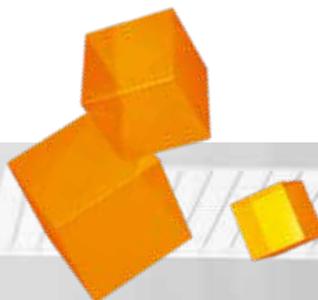


Data Centre Catalogue

2020



Data

- backup
- archiving
- Storage
- disposal

WE MAKE IT SIMPLE

STORAGE MEDIA
AND
PRINTER SUPPLIES

Table of contents

- 3 Who we are
- 4 **Enterprise Tapes**
 - Oracle Titanium
- 8 IBM 3592
- 10 **LTO Ultrium Technology**
- 13 LTO Ultrium Product Range
- 14 **Tape Services**
 - Labeling & Initialization
 - Library Pack
 - Data Migration / Conversion
- 15 Analysing / Health Check
 - Data Recovery
 - Cartridge Deletion Service
 - Data Disposal / Destruction
- 16 **Shredders**
 - Hard Drive Shredders
- 18 **Offsite tape vaulting and archiving**
- 19 **Accessories**
 - Data Tight carrying case
- 20 **Data Center Racks & Cabinets**
 - Stretch Rack System
 - Standard Shelf
 - Drawer Cabinets
- 21 Data Media Cabinets
- 22 **Data Center Infrastructure Solutions**
 - Planing & Installation
- 23 19" Server Racks
 - UPS Management
 - Micro Data Center
 - Data Center Container
- 24 **UPS Replacement Batteries**
- 25 Data Centre Cleaning
- 26 **Cables and more products for your Office**
- 27 Your OpenStorage Support Team Germany





Who we are

We are already providing our customers with optical and magnetic data storage devices and printer consumables for more than 25 years. In doing so, we keep our processes simple and react flexibly to your needs. We support our customers in a professional and solution-oriented way with:

Professionalism. Competent consultancy

Your personal contact in our team is available to deal with any issue and supports you professionally with expertise, data and information. With us, you will find professional and competent consultancy, including for particular requirements and special products.

Commitment. Through cooperative partnership

We concentrate on our commercial customers and work together with them long-term, in a partnership based on trust. This guarantees that you have a personal contact at our company, so that we can ensure that your wishes are dealt with quickly and reliably.

Unconventional. For our customers

We work hard for you, react flexibly to your needs and develop unusual ideas to tackle your challenges. Your satisfaction is particularly important to us. You can rely on us.

Solving problems. Creating room to manoeuvre

We work for your company flexibly and reliably. OpenStorage is not only a supplier of storage media and printer accessories; OpenStorage is a problem solver. We take care of things and create valuable time for you. Space that you can use to implement your corporate goals.

High quality products

You will only receive precision products from us. In a worst case scenario, even the smallest of errors in production could cause you as a company to go out of business. You need to be able to rely on the media you choose ensuring access to your data in full – whatever happens. That is why we work only with branded products and manufacturers who guarantee us just that.



Our services

We not only deliver the products; we also offer you individual services. We offer you a full range, from printing and applying labels, to initialisation, and even restoring or deleting and securely disposing of your data storage devices.

Our speed

Time is short? We deliver quickly and simply. Over 90% of our products are always in stock. Thanks to our longstanding cooperation with renowned manufacturers, we guarantee fast delivery times and short routes. We can even procure special products for you at short notice.

For small, medium or large storage space requirements – **we provide you with the best products from renowned manufacturers.**

Tape - the Storage Solution for Data

Tape is the most cost effective storage technology, even compared to public cloud. Unfortunately tape media is still subject to the prejudice that it requires a high level of manual effort. This is no longer true! Tape is no longer used as a primary backup target but as a second copy media protecting against ransomware attacks.

(As an offline storage media tape cannot be reached by "encryption software"). Tape is getting more and more popular as an archiving technology because it

is extremely cost effective (less energy consumption than any other storage technology in a data center). The new generation of tape libraries with a high storage density (using the new LTO-8) allows the storage of huge data volumes combined with fast data transfer rates (faster than HDD). Interestingly enough, data from companies going for a public cloud usually end up being stored on tape, because the vast majority of cloud storage providers use tape for the deep-archive.

Enterprise Tapes

StorageTek T10000 Tape

Oracle's StorageTek T10000 and T10000 T2 tape cartridges work in tandem with Oracle's StorageTek T10000, T10000B, T10000C and T10000D tape drives to address issues related to data growth, security, manageability and cost.



Store Far More in the Same Footprint

With up to 8.5 TB native capacity, the StorageTek T10000 T2 tape cartridge, for the StorageTek T10000D tape drive, stores more data in the same footprint. For the StorageTek T10000A and T10000B tape drives, the StorageTek T10000 tape cartridge can store up to 1 TB

of data to help you meet rapidly growing data storage requirements. Ultra-high capacity makes the StorageTek T10000 and T10000 T2 tape cartridges ideal for all high-volume backup, archiving and disaster recovery applications.

Increase the Security of Your Data

The StorageTek T10000/T10000 T2 tape cartridges' SafeGuide system increases data security and includes features that can increase reliability and extend media life. A unique hub lock stabilizes media within the cartridge shell. A redesigned buckler mechanism securely attaches the cartridge leader to the drive leader. A long tape path guides the media more accurately and reduces tension on the tape -

tape tension can reduce the life of heads and media. Data integrity is enhanced because the tape guides and rollers guide the media on its backside and do not contact the recording surface. The rollers also enhance stability by minimizing lateral tape motion. Data security is further enhanced by StorageTek VoISafe tape cartridge secure media technology, which provides write once, read many (WORM) protection.

Simplify Tape Operations

Simpler tape operations can improve access to data. The StorageTek T10000/T10000 T2 tape cartridges integrate simply and easily with your current

StorageTek automated tape systems. The cartridges are system tested for use with the StorageTek full lineup of StorageTek T10000 tape drives, as well as

StorageTek tape automation systems and software from Oracle and many third-party providers. The StorageTek T10000/T10000T2 tape cartridges also can help you use staff resources more efficiently. StorageTek tape cartridges can be labeled prior to delivery with volume serial number (VOLSER) labels, then initialized and verified with a triple quality check.

Prelabeling typically reduces the occurrence of operational intervention caused by poorly applied labels. The StorageTek T10000/T10000T2 tape cartridges include an RFID tag that provides cartridge redundancy data such as VOLSER, file directories and other data for improved data recovery and faster data access.



Key Features

- Store up to 8.5TB of uncompressed data per standard cartridge and 1.6TB per sport cartridge
- Unique hub lock design and the StorageTek T10000 tape cartridge SafeGuide system
- Minimize tape mounts and improve automation efficiency with a low-cost-per-gigabyte storage medium
- Reformat and reuse StorageTek T10000 tape cartridges with the next-generation tape
- Store confidently with performance-tested tape cartridge durability and longevity

Key Benefits

- Save valuable floor space
- Extend media durability
- Reduce costs
- Protect storage investments
- Boost confidence in business-critical applications

Protect Your Investment and Reduce Total Cost of Ownership

The StorageTek T10000/T10000T2 tape cartridges lower TCO through media reusability, higher cartridge capacity, and cartridge durability.

Each StorageTek T10000T2 tape cartridge can store up to eight and a half times as much data as the previous generation tape cartridge, enabling massive scalability to match any expected future growth requirements. The tapes written in the StorageTek T10000C tape drive can be rewritten in the StorageTek T10000D tape drive at up to 8.5TB capacity, enabling media reuse across two generations of tape drives.

Accordingly, you might be able to buy fewer cartridges and conserve valuable floor space compared to your current tape technologies, all while maintaining ability to scale storage environment. The StorageTek

T10000 tape cartridge can be used in the StorageTek T10000, T10000B, T10000C and T10000D tape drives. The tapes written in the StorageTek T10000 tape drive can be rewritten in the StorageTek T10000B tape drive at double the capacity, enabling media reuse across two generations of tape drives. StorageTek T10000 tape cartridges can be read back in StorageTek T10000C and T10000D tape drives, enabling customers to support existing tapes and promoting ease of migration to the next generation of StorageTek T10000 tape drives. As a result, you can extend initial media investment across four generations of drives.

Tape Cartridge	StorageTek T10000	StorageTek T10000T2
StorageTek T10000A tape drive	Read / Write	NA
StorageTek T10000B tape drive	Read / Write	NA
StorageTek T10000C tape drive	Read Only	Read / Write
StorageTek T10000D tape drive	Read Only	Read / Write

Enterprise Tapes

StorageTek T10000 Tape

Cartridge replacement due to damage or wear and tear can be an unexpected cost. The StorageTek T10000 and T10000T2 tape cartridges are built for long-term, cost-effective use. The heavy-duty casing of the StorageTek T10000 tape cartridge family, along with a lockable cartridge hub, reduces the risk of damage to data and ensures maximum level of protection for media.

Engage the Storage Experts

Oracle offers tailored mission-critical services and support for your storage environment. Oracle Advanced Customer Support Services helps you address storage challenges by delivering installation, configuration, optimization and on-going monitoring and tailored support. Oracle service professionals help you achieve the highest levels of system performance and availability with diagnostic and monitoring tools that

help anticipate, identify and remediate any potential issues. From tape library installation services to the design and implementation of key management encryption systems, Oracle service experts help you realize more value from your storage infrastructure - with less disruption to your business. For more information, contact your Oracle representative, email acsdirect_us@oracle.com or visit oracle.com/acs.

Use Optional Media Conversion Services

When you want to organize and optimize media to reduce downtime, risk and maintenance, turn to Oracle for expert assistance. Customized media conversion services can help you move data in optical, tape, and disk formats to new or different technology that offers higher capacity, lower cost and lower risk.

Sample service activities may include assistance converting WORM optical to WORM VolSafe tape. And when optimizing data center facilities, tailored tape relocation services can expedite data center relocation and rack relocation activities.

StorageTek T10000 and T10000 T2 Tape Cartridge Specifications

Specifications		
Formulation	StorageTek T10000 tape cartridge:	Advanced metal particle
	StorageTek T10000 T2 tape cartridge:	Barium Ferrite
Tape length and thickness	StorageTek T10000 tape cartridge:	3008.5 ft. (917 m) and 6.5 µm
	StorageTek T10000 T2 tape cartridge:	3763.0 ft. (1147 m) and 5.2 µm
Substrate	StorageTek T10000 tape cartridge:	Polyethylene naphthalate (PEN)
	StorageTek T10000 T2 tape cartridge:	Aramid
Track-following servo		Factory prerecorded

Capacity	
Capacity, native (uncompressed)	<p>StorageTek T10000 tape cartridge:</p> <ul style="list-style-type: none"> • 500 GB (StorageTek T10000) • 1 TB (StorageTek T10000B) <p>StorageTek T10000 tape cartridge, sport:</p> <ul style="list-style-type: none"> • 120 GB (StorageTek T10000) • 240 GB (StorageTek T10000B) <p>StorageTek T10000T2 tape cartridge:</p> <ul style="list-style-type: none"> • 5 TB (StorageTek T10000C) • 8.5 TB (StorageTek T10000D) <p>StorageTek T10000T2 tape cartridge, sport:</p> <ul style="list-style-type: none"> • 1 TB (StorageTek T10000C) • 1.6 TB (StorageTek T10000D)
Availability	
Archival life	30 years
Uncorrected bit error rate	1x10 ¹⁹
Loads/unloads	<ul style="list-style-type: none"> • 15,000 (T10000) • 25,000 (T10000 T2)
Compatibility	
Supported tape drives	<ul style="list-style-type: none"> • StorageTek T10000 tape cartridge: StorageTek T10000, StorageTek T10000B, StorageTek T10000C (read only), StorageTek T10000D (read only) • StorageTek T10000 T2 tape cartridge: StorageTek T10000C, StorageTek T10000D
Number of tracks	<ul style="list-style-type: none"> • 768 (StorageTek T10000A) • 3,584 (StorageTek T10000C) • 1,152 (StorageTek T10000B) • 4,608 (StorageTek T10000D)
Form factor	Half-inch, 3480/3490E
Cleaning Cartridge	
StorageTek T10000T2	Compatibility: StorageTek T10000A, B, C, D
Mechanical	
Height	1.0 in. (2.54 cm)
Depth	4.92 in. (12.50 cm)
Width	4.29 in. (10.90 cm)
Weight	<p>T10000: 9.31 oz. (263.9 g)</p> <p>T10000 T2: 9.52 oz (270 g)</p>
Environmental	
Relative Humidity	
Operating	20% – 80%
Storage up to four weeks	5% – 80%
Storage, archive	15% – 50%
Shipping	5% – 80%
Temperature (Noncondensing)	
Operating	<p>T10000: +50 °F to +113 °F (+10 °C to +45 °C)</p> <p>T10000 T2: +50 °F to +113 °F (+10 °C to +45 °C)</p>
Storage up to four weeks	+50 °F to +90 °F (+10 °C to +32 °C)
Storage, archive	+59 °F to +79 °F (+15 °C to +26 °C)
Shipping	- 9 °F to +120 °F (- 23 °C to +49 °C)
Wet Bulb Maximum	
Operating	+79 °F (+26 °C)
Storage up to four weeks	+79 °F (+26 °C)
Storage, archive	+79 °F (+26 °C)
Shipping	+79 °F (+26 °C)

Enterprise Tapes

Why IBM 3592 Media?

Data Storage Leadership

Since 1952, IBM has been developing media technologies and solutions. With over 65 years of industry knowledge, IBM continues to be committed to innovation. With tape media, IBM products reflect the high standards of a proven industry leader in storage technology.

As a total storage solutions provider, IBM has developed many of the storage technologies used throughout the world today and it continues to set new media standards for the future. IBM has hundreds of patents to prove this point.

Full range of IBM media – from desktop to enterprise-wide mainframe libraries

Best Warranty – IBM's limited lifetime warranty covers manufacturing and material defects for the life of the cartridge and all products are backed by IBM technical support.

Quick Resolution – IBM supplies drive, automation, media & software solutions which offers a single source and faster resolution of problems.

Not all Media is Created Equal – IBM media is built to rigorous IBM specifications and is tested in all IBM tape libraries. All IBM removable media products are precision manufactured to exact specifications. Each product is then certified before shipment to help ensure consistently high quality and reliability and IBM media is used as the Master Standard Reference Tape (MSRT) for the latest LTO generations. The MSRT is the tape media that all other vendors are compared against at the Measurement Assurance Corporation, the third party that performs compliance testing for the LTO Consortium.

Delivers Data Integrity through Stringent Quality Control – IBM's continuous extensive testing of media increases the reliability and durability of IBM tape products. Only IBM tape media is tested on all IBM drive and library configurations.

Optimized to Tape Solutions – IBM media and IBM drives are designed and developed together which means lower risk of data loss/errors, higher reliability, stability and prolonged media life and optimal performance.

Confidence with IBM's Experience and Roadmaps
IBM's tape history spans 65 years...
IBM's knowledge base continues to grow as IBM's media expertise grows and is refined. IBM has continued roadmaps for both IBM 3592 and IBM LTO tape for generations to come, and IBM continues to invest in tape research and development.

>> ibm.com/systems/storage/media



© Copyright IBM Corporation 2017. IBM, the IBM logo and ibm.com are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at
>> www.ibm.com/legal/copytrade.shtml.

3592 Compatibility

	TS1155-55F	TS1150-E08	TS1140-E07	TS1130-E06	TS1120-E05	J1A	R/W = Read & Write
JD/JZ/JL	R/W	R/W					
JC/JY/JK	R/W	R/W	R/W				
JB/JX			R/W	R/W	R/W		
JA/JW/JJ/JR			Read Only	R/W	R/W	R/W	

Highlights Enterprise Tape

- 3592 carts available in 3 lengths supporting fast access or high capacity requirements
- 3592 carts available in 2 formats: Re-writable and WORM
- Custom labeling and initialization services are available
- Packaged in Library Packs
- Enhanced smoothness of advanced media reduces spacing loss
- Barium Ferrite particles provide improved coercivity and magnetic stability of generation 3 and 4 media
- Newer generation drives increase capacity and protect your investment with existing cartridges
- Longitudinal recording technique increases capacity and reliability
- Linear serpentine recording
- High-capacity cartridges reduce the number of cartridges and tape mounts required in the tape environment, thereby lowering operational costs

Product	Technology	Length	Capacity	Part No.	Related Products		
EnterpriseTape		(m/feet)	Native Compressed				
	TS1155-55F Drive	3592 Adv. Type D (JD)	1072/3517	15 TB	45 TB	2727263	3592 Cleaning Cartridge 18P7535 Leader Pin Attachment Kit 18P8887 Label and Label & Initialize Options
	7680 Tracks	3592 Adv. Type D WORM (JZ)	1072/3517	15 TB	45 TB	2727265	
		3592 Adv. Type D Economy (JL)	281/992	3 TB	3 TB	2717164	
	TS1155-55F Drive	3592 Adv. Type C (JC)	880/2887	7 TB	21 TB	46X7452	
	4608 Tracks	3592 Adv. Type C WORM (JY)	880/2887	7 TB	21 TB	46X7454	
		3592 Adv. Type C Economy (JK)	146/479	900 GB	2.7 TB	46X7453	
	TS1150-E08 Drive	3592 Adv. Type D (JD)	1072/3517	10 TB	30 TB	2727263	
	5120 Tracks	3592 Adv. Type D WORM (JZ)	1072/3517	10 TB	30 TB	2727265	
		3592 Adv. Type D Economy (JL)	281/992	2 TB	6 TB	2717164	
		3592 Adv. Type C (JC)	880/2887	7 TB	21 TB	46X7452	
		3592 Adv. Type C WORM (JY)	880/2887	7 TB	21 TB	46X7454	
	TS1140-E07 Drive	3592 Adv. Type C (JC)	880/2887	4 TB	12 TB	46X7452	
	2560 Tracks	3592 Adv. Type C WORM (JY)	880/2887	4 TB	12 TB	46X7454	
		3592 Adv. Type C Economy (JK)	146/479	500 GB	1.5 TB	46X7453	
		3592 Extended (JB)	825/2706	1.6 TB	4.8 TB	23R9830	
	TS1130-E06 Drive	3592 Extended (JB)	825/2706	1 TB	3 TB	23R9830	
	1152 Tracks	3592 Cartridge WORM (JX)	825/2706	1 TB	3 TB	23R9831	
		3592 Cartridge (JA)	610/2001	640 GB	1.9 TB	18P7534	
		3592 Cart. WORM (JW)	610/2001	640 GB	1.9 TB	18P7538	
		3592 Economy (JJ)	246/807	128 GB	384 GB	24R0316	
	TS1120-E05 Drive	3592 Extended (JB)	825/2706	700 GB	2.1 TB	23R9830	
	896 Tracks	3592 Ext. WORM (JX)	825/2706	700 GB	2.1 TB	23R9831	
		3592 Cartridge (JA)	610/2001	500 GB	1.5 TB	18P7534	
		3592 Cart. WORM (JW)	610/2001	500 GB	1.5 TB	18P7538	
		3592 Economy (JJ)	246/807	100 GB	300 GB	24R0316	
	J1A-E02 Drive	3592 Cartridge (JA)	610/2001	300 GB	900 GB	18P7534	
	512 Tracks	3592 Cart. WORM (JW)	610/2001	300 GB	900 GB	18P7538	
		3592 Economy (JJ)	246/807	60 GB	180 GB	24R0316	

LTO Ultrium

What is LTO Technology?

Linear Tape Open (LTO) Ultrium is a high-capacity, single-reel tape storage solution developed and continually enhanced by Hewlett Packard Enterprise, IBM and Quantum and promoted by the LTO Program. It's a powerful, scalable and adaptable tape format that helps address the growing demands of data protection. It's also an open format, licensed by some of the most prominent names in the storage industry such as IBM, Oracle and HPE to ensure a broad range of compatible tape drives and cartridges.

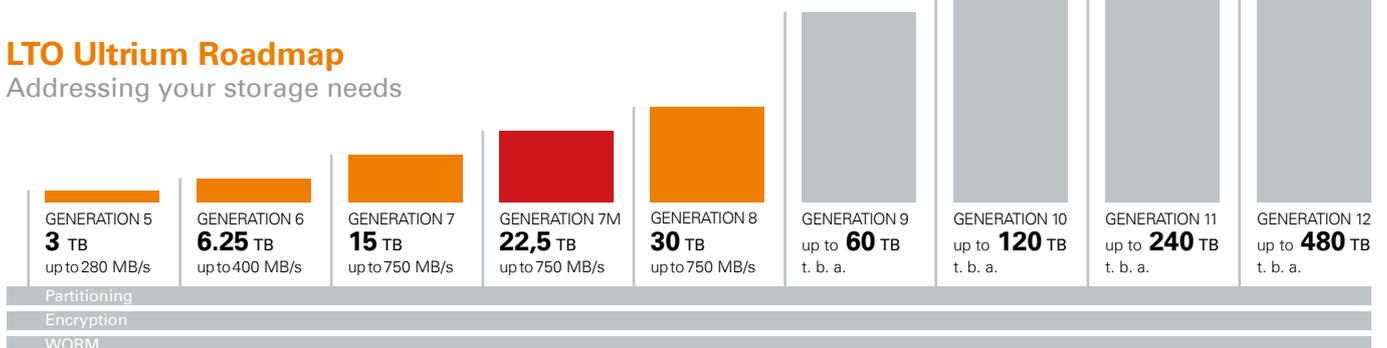
LTO-8 specifications support tape cartridge storage compressed capacity of up to 30 TB on 6.656 tracks and tape drive data transfer rates of up to 900 MB/s for over 3,24 terabytes of storage performance an hour per drive. New generations have been introduced regularly with higher capacity and transfer rates along with new features to further protect your data and content.

LTO technology is currently in its 8th generation.

Until LTO5, MP technology was the only process used to manufacture LTO tape. The technology has proved reliable, with more than 300 million LTO cartridges (MP and BaFe technology) and more than 5 million drives shipped since its introduction. However, MP technology was reaching its limits for a reliable high-capacity tape. Advancing to BaFe particles provided a more stable future for data storage. IBM was one of the first companies in the world to commercialize magnetic tapes using "BaFe magnetic particles" in 2011. The standard of the future generations is tape with BaFe particles. The expected archival life is with BaFe technology > 30 years.

LTO Ultrium Roadmap

Addressing your storage needs



Note: Compressed capacities for generations 1 - 5 assume 2:1 compression.

Compressed capacities for generations 6 - 12 assume 2.5:1 compression (achieved with larger compression history buffer).

Source: The LTO Program, The LTO Ultrium roadmap is subject to change without notice and represents goals and objectives only.

Linear Tape-Open, LTO, the LTO logo, Ultrium and the Ultrium logo are registered trademarks of Hewlett Packard Enterprise, IBM and Quantum in the US and other countries.



LTO tapes include a non-contact 16 KB cartridge memory chip, which enables storage of historical usage records, indexing and high-speed data searches by the drive.

The roadmap was extended to LTO Generation 12, with a storage capacity of 480 TB compressed. So you know that your investment is for the long run.

LTO specifications provide backwards compatibility to read/write with previous generations. LTO-1 to LTO-7 drives are able to read tapes from two generations prior and are able to write to tapes from the prior generation. The latest LTO-8 drive is only backwards compatible with the former generation LTO-7.

The new LTO-8 drives cannot read (and write) LTO-6 BaFe and LTO-6 MP media due to the new TMR-head technology in the LTO-8 drive. Former LTO drives used the GMR-head technology. LTO-9 will probably read again tapes from two generations prior.



	LTO Gen 8 Cartridge	LTO Gen 7M* Cartridge	LTO Gen 7 Cartridge	LTO Gen 6 Cartridge	LTO Gen 5 Cartridge	LTO Gen 4 Cartridge	LTO Gen 3 Cartridge
	12 / 30 TB	9 / 22,5 TB	6 / 15 TB	2.5 / 6.25 TB	1.5 / 3 TB	800 GB / 1.6 TB	400 / 800 GB
LTO Gen 8 Drive	Read & Write	Read & Write	Read & Write				
LTO Gen 7 Drive			Read & Write	Read & Write	Read only		
LTO Gen 6 Drive				Read & Write	Read & Write	Read only	
LTO Gen 5 Drive					Read & Write	Read & Write	Read only
LTO Gen 4 Drive						Read & Write	Read & Write
LTO Gen 3 Drive							Read & Write

*New LTO generation 7 cartridges initialized as LTO-7 Type M in a LTO GEN 8 drive
 Universal Cleaning Cartridge functions in all drives

Data Integrity

The truth is that most backup and restore failures are not due to hardware failures whether the backup was to disk or to tape. Most backup problems are attributed to administrative or software issues.

Despite some myths that are erroneously repeated – tape is actually one of the most reliable solutions available, with bit error rates that beat those of disk.

BER (Bit Error Rate) is a measure of the effectiveness of reading data from disk or tape drives. In the case of an unrecoverable error, BER is the number of user bits

transferred between two unrecoverable error events or in other words a single 1 or 0 that is incorrect will not go undetected in a huge amount of data.

To put this into data storage terms for LTO-8 tape, that would be 1 error event in 1.25 exabytes (300 days of YouTube video uploads) or every 200,000 LTO-8 cartridges compared to 1 error event in 125 TB or every 20 enterprise 6 TB SATA-disks. In other words you can write 10.000 x more data on an LTO-8 tape than on a SATA-disk before encountering a data error.

Published Values for Bit Error Rate (BER)

Tape drives		
Enterprise (IBM TS1155 drive)	Hard Error Rate	1×10^{20}
Midrange (typical LTO-8 Ultrium drive)	Hard Error Rate	1×10^{19}
DISK (FC, SAS, SATA)		
Enterprise FC/SAS	Hard Read Errors per Bits Read	1 sector per 1×10^{16}
Enterprise SATA	Hard Read Errors per Bits Read	1 sector per 1×10^{15}
Desktop SATA	Hard Read Errors per Bits Read	1 sector per 1×10^{14}

LTO Ultrium

What is LTO Technology?

WORM

LTO technology features a write-once, read-many (WORM) capability and is designed to provide users a very cost effective means of storing data in a non-rewriteable, non-erasable and unalterable format to address compliance regulations.

LTO WORM features robust algorithms using the Cartridge Memory (CM), in conjunction with low level encoding that is mastered on the tape media at the time of manufacture, and is designed to prevent tampering. It also appends data at the end of a WORM cartridge, which allows users to take full advantage of the high capacity tape media.

Encryption

LTO technology features strong encryption capabilities to enhance security and privacy during storage and transport of LTO tape cartridges.

LTO tape drive encryption is specified in all LTO generations since LTO-4. It features a 256-symmetric key AES-GCM algorithm that is implemented at the drive level, which enables compression before encryption to maximize tape capacities and deliver high performance during backup.

Partitioning / LTFS

Recent generations of LTO technology include a partitioning feature, which help to enhance file control and space management via LTFS.

Starting with Generation 5, LTO technology specifications include a partitioning feature that allows for a new standard in ease-of-use and portability: **LTFS**.

LTFS enables files to be stored on tape in a selfdescribing and open format and permits files on tape to be accessed without proprietary software.

Partitioning allows for a portion of the tape to be reserved for indexing, which tells the drive precisely where in the tape a file is stored. The second partition holds the actual file. With Linear Tape File System, the indexing information is first read by the drive and presented in a simple, easy-to-use format that allows for “drag and drop” capabilities – just like using a thumb drive.

Learn more about the benefits of partitioning in the LTFS section on the LTO Ultrium homepage
[>>> www.lto.org](http://www.lto.org)



OpenStorage LTO Product Range



LTO family available in 2 formats: **Re-Writable** | **WORM**

Packaging: **Plastic Box** | **Library Pack**

- LTO Ultrium Tape 8** · 12 / 30 TB
- LTO Ultrium Tape 7 M** · 9 / 22,5 TB*
- LTO Ultrium Tape 7** · 6 / 15 TB
- LTO Ultrium Tape 6** · 2,5 / 6,25 TB · **Barrium Ferrite Tape**
- LTO Ultrium Tape 6** · 2,5 / 6,25 TB · **Metal Particle Tape**
- LTO Ultrium Tape 5** · 1,5 / 3,0 TB
- LTO Ultrium Tape 4** · 800 GB / 1,6 TB
- LTO Ultrium Tape 3** · 400 / 800 GB
- LTO Ultrium Tape 2** · 200 / 400 GB
- LTO Ultrium Tape 1** · 100 / 200 GB
- LTO Universal Cleaning Tape**



*New LTO generation 7 cartridge initialized as LTO-7 Type M in a LTO GEN 8 drive

LTO Ultrium Data Cartridge Specifications

Basic Specifications Ultrium	Universal Cleaning Cartridge						
	LTO 8	LTO 7M	LTO 7	LTO 6	LTO 5	LTO 4	Universal Cleaning Cartridge
Capacity, native (uncompressed) TB	12.0/30**	9.0/22.5**	6.0/15**	2.5/6.25**	1.5/3.0*	0.8/1.6*	N/A
Tape length m	960	960	960	846	846	820	319 m
Number of tracks	6656	5376	3584	2176	1280	896	N/A
Recording Density kbits/inch	525	485	485	343	343	343	
Coercivity Oe	2200-2300	2200-2300	2200-2300	2200-2300 BaFe 2800-2900 MP	2500-2700	2500-2700	
External Dimensions inch / cm	1.8 x 4.45 x 4.37 / 2.1 x 11.3 x 11.1						
Tape width mm	12.65						
Tape thickness µm	5.6	5.6	5.6	6.1	6.4	6.6	8.9
Estimated Archival Tape Life years	> 30	> 30	> 30	> 30	30	30	N/A
EEPROM (Cartridge Memory) kbit	128 (16 kB)	128 (16 kB)	128 (16 kB)	128 (16 kB)	64 (8 kB)	64 (8 kB)	32 (4 kB)

Compressed capacities for generations *2 - 5 assume 2:1 compression. / **6 - 8 assume 2.5:1 compression.

Environmental	
Operating	+50 to +113 °F / +10 to +45 °C 10 – 80% RH +79 °F / +26 °C wet bulb maximum
Storage up to four weeks	+61 to +95 °F / +16 to +35 °C 20 – 80% RH +79 °F / +26 °C wet bulb maximum
Storage, archive	+61 to +77 °F / +16 to +25 °C 20 – 50% RH +79 °F / +26 °C wet bulb maximum
Shipping	-10 to +120 °F / -23 to +49 °C 20 – 80% RH +79 °F / +26 °C wet bulb maximum

Midrange & Enterprise

Tape Services

Barcode Labeling & Initialization



Time-consuming, laborious labeling and initializing is part of many highly-trained IT specialists' daily routine. But it isn't actually part of their job. That's why OpenStorage provides high-quality data cartridges and an appropriate labeling and initialization service, in accordance with the customer's wishes. The result is that the tape you need is ready when you want it to be, without any delay.

A bar code refers to an optoelectronically readable code consisting of parallel lines and spacings of variable width. The term „code“ here does not stand for encryption, but for representation of data in binary symbols. Data in a bar code is automatically read and electronically further processed using optical reading devices (scanners, cameras).

Library Pack

The Library Pack is perfect for today's automated storage environments. These special packs eliminate cumbersome and time-consuming individual media packaging. Removing the top lid reveals 20 tape cartridges ready to be immediately loaded into a library. The convenient built-in handles and stacking feature make it easy to keep fresh tapes on hand.



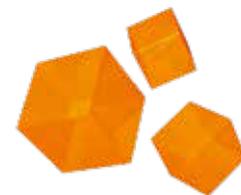
Not only can library packs shorten your backup window, but they also help reduce data center waste.

Data Migration / Conversion

Secure archiving can often be a major problem, especially if the data is to be merged from various types of storage media, data structures and formats and transferred onto a new backup system or archive. This is where our data migration and conversion service comes in – the ideal way of avoiding precisely these problems. We read data, transfer it from one platform to another, convert it, structure it and

process it so that it can ultimately be archived on a single platform. This means that our customers have ultra-fast access to all of their data at all times.

Migrating data from an old tape generation to the one currently in use is where our migration service comes in. Our detailed questionnaires for conversion and migration can be downloaded from our homepage.



Analysing / Health Check

Quality determination for used cassettes

Possible errors or damage to data media should be detected before they can cause serious mayhem. We check and analyse your data media thoroughly.

Their status is documented in detail and we evaluate the results thoroughly. If our health check discovers that your data is at risk, we will offer you suitable solutions to safeguard your information.

Data Recovery

Mechanical damage, humidity, smoke and other catastrophes both big and small can lead to a total loss of data. If the worst happens, our highly-qualified OpenStorage Service Team can help, with data

recovery services. The recovered data is copied to new data media, so that it can once again be accessed without any problem.

Cartridge Deletion Service

Protect yourself completely against unwittingly violating data protection laws or your data falling into the wrong hands. On request, we can destroy your data in such a way that it can no longer be restored and you can then re-use almost all of your tapes.

Multiple use of your backup tapes
(not for tapes with servo track)

Your magnetic tapes are deleted consistently and completely. **This means that the costs for new tapes are limited to the expansion of your system.**

Data Disposal / Destruction

To ensure that all of the data that is relevant to your company has been irrevocably destroyed when data media are being disposed of, OpenStorage will take care of the controlled and certified destruction of your data media. The data media is unmounted and definitively destroyed, in accordance with the prevailing legal guidelines. For particularly critical data, this destruction process can also be carried out in close agreement with the customer on site. On site destruction is more secure than off site destruction.

The tapes are shredded in a truck, behind bolted doors.



Inhouse Data Disposal / Destruction

Hard Drive Shredders

Countless amounts of confidential information are stored on our hard drives, USB sticks, magnetic tapes, CDs, DVDs and Blu-ray discs, credit cards and customer cards as well as discs. But what happens to these storage devices when they are no longer required? Many are disposed of carelessly; offered for sale at car boot sales or sold on eBay, the data allegedly having been deleted using conventional wiping routines. This is an open invitation for the data to be misused; it is extremely easy to restore and retrieve confidential data.

The solution is: **Decentralized mechanical destruction of data storage media.**

The HSM Powerline HDS 150 or HDS 230 hard drive shredder shreds digital and magnetic media into tiny particles, making retrieval practically impossible. **Safe and efficient to use, data protection compliant.**



Shredding
hard drives



Shredding
magnetic tapes



Shredding
CDs, DVDs and Blu-ray discs,
credit cards and customer cards



Shredding
USB sticks

We only deliver guaranteed quality:

- Made in Germany
- The machines have a one-year warranty.
- Durability and robustness characterise HSM devices, e. g. the specially hardened, indestructible, solid-steel cutting rollers.
- You can rely on our worldwide support as well as on the punctual delivery of spare parts and the processing of service orders.
- Service contracts, which include regular maintenance and inspections, ensure operational reliability and security.

Security Level examples



Particles of shredded hard drives
Cutting size: 40 mm.
Security level: H-3



Particles of shredded hard drives
Cutting size: 11,5 x 26 mm (<299 mm²).
Security level: H-5

Beside the Hard Drive Shredders we sell:

- Document Shredders
- Shredder-Baler-Combinations
- Multilevel Shredder-Systems

HSM Powerline HDS 230

11.5 x 26 mm (dual stage)

Article Number	000000000001777114
EAN	4026631037358
Cutting width	11.5 mm
Particle length	26 mm
Cutting type	Particle cut
Security level (DIN 66399)	H-5, O-3, T-3, E-2
Shredder material	Magnetic tapes up to 3.5", Floppy disk, Hard drives up to 3.5" Credit card, CD/DVD, USB stick

Driving power	6.2 kW
Noise level (idle operation)	57 dB (A)

Voltage	400 V
Frequency	50 Hz
Width x Height x Depth	1040 x 1696 x 3098 mm
Weight	1260 kg
Colour	anthracite, light grey

Cutting capacity HDD up to 3,5" 200 per hour



- For shredding hard drives and magnetic tapes (DLT, SDLT, LTO), optical media (CD/DVD, Blu-ray), credit and identity cards, USB Sticks, Solid State, Phones and PDAs.
- Material discharge via conveyor belt, suitable for all common container dimensions.
- High level of user convenience through a multifunctional operating and display element with automatic stop and reverse in the event of blockages.
- Low space requirement and flexible fields mobility due to castors.
- in accordance with IEC 60034 30
- With the double cutting unit (two stage), data storage media can be shredded very finely (security level H-5).

HSM Powerline HDS 150

40 mm (single stage)

Article Number	000000000001772111
EAN	4026631054652
Cutting width	40 mm
Cutting type	Strip cut
Security level (DIN 66399)	T-1, E-2, H-3
Shredder material	Magnetic tapes up to 3.5", Floppy disk, Hard drives up to 3.5" Credit card, CD/DVD, Staples and paper clips, USB stick

Driving power	1.5 kW
Noise level (idle operation)	61 dB (A)
Intake width	185 mm
Container volume / collecting	40 l

Cutting speed	22 mm/s
Voltage	230 V
Frequency	50 Hz
Width x Height x Depth	1200 x 1300 x 825 mm
Weight	667 kg
Colour	anthracite, light grey

Cutting capacity HDD up to 3,5" 210 per hour



- For shredding hard drives and magnetic tapes (DLT, SDLT, LTO, IBM 3480/3490, 3590/3592 xx and Oracle T10000 xx), optical media (CD/DVD, Blu-ray), credit and identity cards, USB Sticks, Solid State, Phones and PDAs.
- Powerful, energy-saving power unit enables long operation at a low noise level.
- Low maintenance due to closed direct drive unit.
- Energy-saving continuous operation due to energy efficient IE3 motors in accordance with IEC 60034 30.

Modular tape library

StorageTek SL150

Simple and scalable data storage

Oracle's StorageTek SL150 modular tape library is the first scalable tape library designed for growing businesses. Built from Oracle software and StorageTek library technology, it delivers an industry-leading combination of ease of use and scalability.

Ideal for backup and archival applications, the StorageTek SL150 modular tape library saves both time and money, setting the new standard for entry tape automation.



Key features

- Remote management capability and an installation wizard ensure swift installation and ease of use
- Scalability from 30 to 450 cartridge slots enables capacity to reach 13 PB, compressed
- Expansion modules offer seamless performance and capacity upgradeability
- Easy consolidation of multiple libraries with up to eight (8) partitions

Key benefits

- Reduce complexity - the tape library is customer installable and upgradable
- Reduce costs with low-cost scalability, reliability, and entrylevel pricing
- Enable consolidation of small tape libraries into one scalable tape library



Make simplicity a priority

The StorageTek SL150 emphasizes simplicity and reduces costs through exceptional scalability, common storage management tools and do-it-yourself installation and upgrades. The easy-to-use remote browser GUI, built from Oracle software, helps streamline library management and allows you to perform library operations, manage library settings, and proactively monitor the library's health.



For intelligent monitoring of StorageTek tape libraries, StorageTek Tape Analytics software provides tape storage customers with access to leading-edge tape monitoring software that goes far beyond exposing a red, yellow, or green indicator. Rather, StorageTek Tape Analytics software provides insights into hundreds of drive, media, and library health attributes that empower tape storage administrators to make proactive decisions about their tape environments prior to device failures. A proactive approach to managing the health of a tape environment improves the performance and reliability of existing tape investments and helps executives make informed decisions about future expenditures.

Modular tape library

StorageTek SL150

Scale seamlessly up to 10x more than comparable tape libraries

The StorageTek SL150 modular tape library scales up to 15x, from 30 to 450 slots, without consuming significant time and resources. In addition, it is the only library in the world that autodiscovers new modules via USB.

In the entry to midrange market segment, the StorageTek SL150 modular tape library offers higher density and lower-cost scaling than comparable products. Higher density saves rack space and enables you to store more data in the library. The StorageTek SL150 modular tape library's base module provides up to 360 TB (with StorageTek LTO8 half-height tape drives) and each expansion module adds an additional 360 TB of capacity as your storage needs grow. With two additional tape drives per expansion module, the StorageTek SL150 also allows for

increased performance as storage needs grow. The StorageTek SL150 supports a heterogeneous drive environment, so you can seamlessly use the drive types and generations that make sense for your access and storage needs – add new LTO generations or drive types as you scale your library. Choose the drive supplier, generation and interface to support your growing business.

The StorageTek SL150 currently supports LTO5, LTO6, LTO7 or LTO8 tape drives.



With the StorageTek SL150, simplicity begins with the library installation and continues throughout the life of the product, even as you expand for data growth.

The library can be initialized in a few steps via the local touchscreen operator panel, and upgrades are easy because they require no tools, complicated cabling, or technical support.



Count your savings

The market-leading scalability of the StorageTek SL150 modular tape library offers an important cost-saving advantage. Competitive systems require you to transition among three separate and distinct products in order to grow from an entry to a midrange library. Oracle launched the first library that can address the full breadth of scale from 30 to 450 slots with a single product.

As a result, the StorageTek SL150 negates the need to rip and replace smaller, individual products as your storage needs grow. In addition, single-product scalability saves media, drives, servicing, power, cooling, and other management costs. Scalability also allows you to do more with less by consolidating multiple libraries into a single product that is far less expensive than replacing libraries over time. For those who want to consolidate multiple libraries or manage distinct sections of the library, the StorageTek SL150 supports one to eight partitions. Native physical partitioning requires no extra hardware or software and provides great flexibility for users.

For more than 40 years, customers have trusted StorageTek reliability and quality. Oracle's StorageTek SL150 leverages technology and design from the award-winning StorageTek SL500 modular library system, and it provides StorageTek reliability at an entry-level price point.

Furthermore, by working with an end-to-end solution provider like Oracle, you can reduce management and service costs.

Maximize performance and availability with Oracle Support

The StorageTek SL150 has a CRU serviceability model—meaning it is customer installable and has customer replaceable spares. However, if you do need installation or service assistance, the following offerings are available from Oracle:

- Oracle Premier Support provides the complete system support you need to proactively manage your Oracle storage systems. With swift resolution and rapid-response hardware service when problems do arise, you can keep your business information available 24/7.
- Oracle Advanced Customer Support provides mission-critical support from a focused support team, proactive guidance to tailor storage systems for optimal performance and increased competitiveness, and preventative monitoring to help you achieve high availability and optimized system performance.

Modular tape library

StorageTek SL150 Specifications

Base Module Only 30 Slots	Medium Configuration 60 Slots	Large Configuration 120 Slots
------------------------------	----------------------------------	----------------------------------

Performance¹

Throughput per hour, native (uncompressed)	LTO8 - 2.1 TB/h (2 drives 300 MB/s)	LTO8 - 4.1 TB/h (4 drives 300 MB/s)	LTO8 - 8.2 TB/h (8 drives 300 MB/s)
		LTO7 - 2.1 TB/h (2 drives 300MB/s)	LTO7 - 4.1 TB/h (4 drives 300 MB/s)

Capacity²

Capacity, native (uncompressed)	LTO8 (12 TB/cartridge) - 360 TB (30 cartridges)	LTO8 (12 TB/cartridge) - 720 TB (60 cartridges)	LTO8 (12 TB/cartridge) - 1.440 TB (120 cartridges)
	LTO7 (6 TB/cartridge) - 180 TB (30 cartridges)	LTO7 (6 TB/cartridge) - 360 TB (60 cartridges)	LTO7 (6 TB/cartridge) - 720 TB (120 cartridges)
Number of cartridges slots	<ul style="list-style-type: none"> • 30 – 450 cartridge slots • Base module: 30 slots • Up to 14 expansion modules: 30 slots each modul 		
Number of expansion modules	N/A	1 expansion module	3 expansion modules
Number of tape drives/types/suppliers	1 to 30 half-height drives (each module holds up to 2 drives) in any combination of supported drive, including: <ul style="list-style-type: none"> • StorageTek LTO 5, 6,7 or 8 half-height tape drives (FC or SAS) 		
Mail slot	Base module: 4-cartridge capacity Optional expand mail slot configuration: 19-cartridge capacity		

Availability

Non-disruptive serviceability	Hot-swappable drives; redundant hot swappable power supplies with redundant fans
Mean swaps between failures (MSBF)	2 million robot load/unload cycles

Compatibility

Supported host platforms	Oracle Solaris, UNIX, Windows, Oracle Linux (IPv4, IPv6)
--------------------------	--

¹ Maximum performance, native: LTO 6—17.25 TB/hr, LTO7— 32.4 TB/hr, LTO8 – 37.1 TB/hr (30 drives)

² Maximum capacity, native: LTO 6—1.1 PB, LTO7 – 2.7 PB, LTO8 – 5.4 PB (450 cartridges)



Management

Operator panel	User-friendly configuration and diagnostic controls, status display and viewing window
Library management	Remote browser (10/100 Ethernet) or support for Oracle's StorageTek Automated Cartridge System Library Software (StorageTek ACSLS) management software
Auto cleaning support	Configurable auto cleaning support, with no host application or operator action required to clean tape drives
Automatic self-discovery via USB	Self-configuring for cells, drives, and cartridge access ports; hot-swappable drives; redundant hot-swappable power supplies with redundant fans

Mechanical

	Base Module (Minimum Configuration)	Expansion Module (each Module, Modules 2 - 14)
Height	5.15 in., 3U rack space	3.5 in., 2U rack space
Depth	36.42 in.	36.42 in.
Width	18.94 in.	18.94 in.
Weight	47 lb.*	23.1 lb.**

Environmental

Operating Temperature	• +50°F to +104°F, 20%–80% relative humidity, noncondensing
Nonoperating Temperature	• –40°F to +140°F, 10%–95% relative humidity, noncondensing

Power

Voltage	100 VAC–240 VAC at 50 Hz–60 Hz single phase (auto-ranging)
Library (operating max. continuous - not peak)	1.42 A at 120 V or 0.75 A at 240 V, 614 BTU/hr
Drives	Drive power consumption varies (refer to individual drive specifications)

Regulatory Compliance

Elektromagnetic compatibility	FCC (47CFR15 Subpart B) Class A; EN55022 Class A; EN55024; EN61000-3-2; EN61000-3-3; ICES-003 Class A; AS/NZS CISPR22 Class A; VCCI V-3 Class A; KN22 Class A; KN24; CNS13438 Class A
Safety	UL 60950-1, CAN/CSA 22.2 No. 60950-1-07, EN 60950-1, IEC 60950-1, 60825-1, Class 1 Laser Product

*Weight includes library with one drive installed and one power supply

**Weight is expansion only, no drives or power supplies

Data Media Safes

Fire Safety & Burglary Protection

S - Perfect Fire Safety

Certified Fire Safety
(S 120 DIS EN 1047-I)

The novel combination of insulating materials provides the highest resistance in the event of a disaster. A four-sided rotating labyrinth-body groove provides additional protection against direct flame strike into the interior of the safe. The compact design maximizes the capacity and reduces the weight of the safe by 40% to 60%. Ideal for use in rooms with limited load-bearing capacity. This data safe is reliable protection against fire, corrosive fumes and fire water effects.

Better security means lower insurance premiums.

Insurance companies reward the purchase of data safes with significantly reduced rates.

SE - Double Safety

Certified Fire Safety
(S 120 DIS EN 1047-I)
and certified burglary protection
(resistance level II)

The intelligent design, this safe-generation covers equally from the risk factors burglary and fire. In this combination safe highest civil protection and excellent burglary protection are placed on the highest common denominator.

Instantaneous locking in the event of danger.

Thanks to the standard quick-release lock, gently closing the safe door locks it immediately.

Both safes are equipped with quick release and double-bit lock (DSS) equipped with 8 tumblers and 2 keys.

Other lock types are available on request.



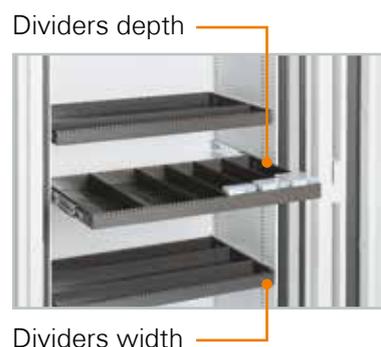
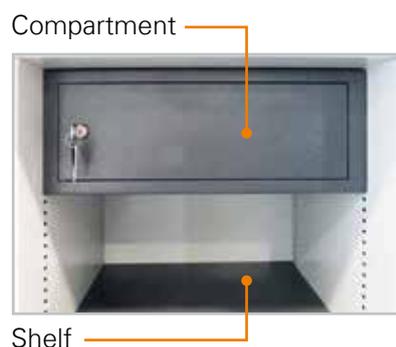


Specifications

Model Number	S/SE11	S/SE12	S/SE13	S/SE14	S/SE15
Quality	S120 DIS				
Outside dimensions in mm					
height	732	1052	1295	1850	1850
width	786	786	786	786	1195
depth	918	918	918	918	918
Case depth without door	770	770	770	770	770
inner dimensions in mm					
height	332	652	895	1450	1450
width	444	444	444	444	855
depth	470	470	470	470	470
Capacity					
liter	71	139	191	310	590
levels	2	5	7	12	12
LTO per level	56	56	56	56	112
LTO with cover	112	280	392	672	1344
Weight in kg approx.					
S	288	380	445	631	922
SE	320	460	543	785	1150

Special finishes and RAL colors available on request

Accessories



Offsite tape vaulting and archiving



OpenStorage AG offers you the possibility to store safety copies (disaster recovery) in an ISO 27001:2013 certified remote IT-shelter under strictest security conditions. This offers reliable protection against environmental disaster and sabotage. Upon request we check and analyse your data media thoroughly at regular intervals. In the highly unlikely case our health check discovers that your data is at risk, we will offer you suitable solutions to safeguard your information.

Another possibility we are offering is to store your archive data in an open and neutral format in a highly secure computing centre disconnected from the internet (air gap). We harmonize your data in an open and neutral format. All back-up formats can be processed including API structures and according to requirements. As a result costly conversions or migrations and periodic data security checks will be a actions of the past!

Your data can be made available at any time regardless of storage medium, back-up software version or format, or it can be delivered via a secure FTP server.

This all results not only in significant cost reduction but a legally compliant, flexible, long-term solution geared for the future. All archive data is/are displayed on a clearly organised web portal; where the archive data can be consolidated and data recall processes initiated.

Restoration of program and system environments

– Additionally, upon request, entire program and system environments can be requested as a special service. In this case our specialists will be glad to advise and assist you in reintegrating the archive data in your company.



Accessories

DataTight carrying case

DataTight transport cases are the latest development for the storage and transport of data media. DataTight transport cases are used for offsite vaulting of data media. They provide optimum protection against moisture, dirt particles in the air, vibration and other dangerous influences. A special hard resin mixture gives the suitcase extreme stability and security.

Advantages and Properties

- Fitted foam for perfect grip of the media
- 2 protected buckles
- Additional flaps for optimum safety
- Air valve for pressure equalization
- Storage of different media in a suitcase
- A "Divider-System" allows a safe transport, even if the case should not be completely filled
- stackable
- The red "Soft handle" provides a special comfort



DataTight
14



DataTight
20



DataTight
30



DataTight
40



DataTight
2800

dimensions exterior	405 x 330 x 165 mm	405 x 330 x 165 mm	480 x 385 x 190 mm	480 x 385 x 190 mm	585 x 810 x 480 mm
dimensions interior	375 x 265 x 162 mm	375 x 265 x 162 mm	450 x 320 x 175 mm	450 x 320 x 175 mm	525 x 745 x 458 mm
lid depth / bottom depth	45 / 107 mm	45 / 107 mm	46 / 129 mm	46 / 129 mm	73 / 385 mm
weight incl. shape form trays	2,38 kg	2,38 kg	3,71 kg	3,71 kg	13,20 kg
temperature range	min.-40 / max. +80 °C				
capacity LTO in pieces	14 incl. plastic case		33 incl. plastic case		256 incl. plastic case
capacity MTC in pieces		20	30	40	360

Accessories

Data Media Racks

Archiving of storage media and optical media

Regardless of the quantity of media you want to archive OpenStorage has the optimal archiving solution for you. From the stretch rack for small quantities, the standard rack for medium quantities to a sliding rack for very large media volumes you find the required rack system at OpenStorage.



Stretch Rack System

Smaller amounts of data carriers are conveniently archived in the stretch rack. This system is as a single and double sided rack available. The stretch rack system is available in single sided racks for use against walls or double sided to create aisles. Additionally with easy to install extension boxes one can double the capacity again.

Capacity

LTO	168 to 672 tapes
3592	100 to 400 tapes
T10000	100 to 400 tapes



Standard Shelf

The standard shelf system is saving space and ease to use. Due to its modular system it provides quick access to all tapes. This system is as single and double sided shelf available. The standard shelves are available in single sided racks for use against walls or double sided to create aisles.

Capacity

LTO	480 to 960 tapes
3592	600 to 1200 tapes
T10000	600 to 1200 tapes



Data Media Drawer Cabinets

Drawer cabinets are ideal for companies who want to combine storing data cartridges and other media and have only very limited space available. Drawers are fully extendable; optimized for easy reach.

Colors

white, wood, red, blue

Capacity

LTO	
3592	352 to 736 tapes
T10000	

Height

Four, six or eight drawers

Accessories

- Soft-Stopp for drawers
- Central locking
- adjustable flat dividers



Data media Cabinets

All storage media can be archived also combined in this media cabinet. Height adjustable shelves are set to the different media.

Features

- Media cupboard made of steel with 2 fully extendible vertical drawers on telescopic rails
 - Height 1870 mm, width 612 or 832 mm, depth 680 mm (when closed)
 - Total depth with pulled-thrust: approx 1400 mm
 - Shelf dimensions: length 595 mm, width 245 mm or 358 mm, edge height 8 mm
 - Shelves are adjustable in height by 15 mm
 - Weight at standard equipment: about 140/160 KG (empty)
 - Cabinet finishes according to our color scheme. Standard color gray, other colors on request
 - Central locking; equal or keyed different, also known as master key system available
 - Spacer strips of flexible plastic material filling the space between the two rows of cartridges which are locked in this inwardly
- Ball bearing rollers under the drawers allow the simultaneous pull of both relapses and prevent tipping
 - Buy any closet facilities for future retrofit at any time
 - Upon delivery of the cabinets are our hand ready mounted (bolted together and justified)

Capacity

LTO, 3592, T10000 (up to 1.196 tapes can be stored)

and others can be locked by means of special equipment components.



Data Center Infrastructure Solutions

First
consultation
free of charge incl.
site inspection

Planning and installation of Data Centers

Micro Data Center

Gen Sets

19" Server Racks

UPS Systems

And many other products of IT infrastructure

eps
rechenzentrum **infrastruktur**

Increase the availability and efficiency in your Data Center

Power supply for your IT



EFFICIENT.

BORRI UPS Galileo 1000VA / 2000VA / 3000VA

Operating mode: double conversion / online double conversion

LCD display with measured value display

UPS with output power factor 0.9

Rack and tower model

output rating:

1000VA / 900 watts, 6 min

2000VA / 1800 watts, 6 min

3000VA / 2700 watts, 6 min

External bypass switch for UPS Galileo

EBS 3000 RM LOCK C13 / C14 / 1HE
19" External Bypass Switch with IEC Lock
Dimensions: WxHxD 19" x 1U x 155mm



HIGHEST AVAILABILITY.

Rack RZ / Micro Data Center

Individual small data center in different versions
incl. 19" climate system, UPS system, EBS bypass
switch and many more available rack models:

- 1 * 42U / 22U - 2 * 42U / 44U

- 2 * 42U / 64U - 3 * 42U / 86U



RELIABLE.

Data Center Container DC CONT

Security containers with integrated data center infrastructure

modular and mobile high-security room

20f EI90 / 120 incl. IT infrastructure

Buy or rent option

ideal for indoor or outdoor use



New power for your UPS

UPS REPLACEMENT BATTERIES

UPS SYSTEMS

The power from the socket is often characterized by power failures or voltage dips. This can damage your hardware or your data.

With our UPS systems you can be relaxed. In combination with a sophisticated power distribution and the use of precisely calculated battery systems, your equipment is well supplied.

Make an appointment now!



UPS BATTERY UPDATE

You are still satisfied with your UPS, but the batteries are already getting old? By replacing the batteries and inspecting the system, you are preparing for the next few years.

UPS CHANGE

Your company has grown recently? Your UPS system should grow with you. The latest UPS devices on the market not only save operating costs, but also **demonstrably increase availability**. Give your IT new power and be equipped for the future.

SERVICE - MAINTENANCE AGREEMENT

To ensure that your UPS system meets your requirements, our service specialists ensure that your system is regularly checked. Through our **24-hour hotline**, we are always available for you and help you in emergency case immediately. Our service packages provide you with **comprehensive protection and guaranteed response time**.

IT INFRASTRUCTURE EXPANSION

UPS systems can protect your business from short failures. For a total failure-safety you should include external bypass switches, an automatic transfer switch or a fail-safe IEC Lock cable. Increase your efficiency while saving on operating costs. Whether for small or medium-sized businesses, **we plan and install your individual solution for more availability and security for your IT**.

Any questions? We look forward to your call or mail.



Data Centre Cleaning

Specialist data centre cleaning and decontamination services



We support you to be compliant with ISO 14644-1 especially to achieve cleanroom class 8 requested by companies like IBM, Cisco, Oracle or DELL EMC.

We can ensure the highest quality and appearance, inspiring trust and confidence. With dust reduction becoming increasingly important our daily cleaning to ISO 14644-1 (cleanrooms and controlled environments) ensures a bespoke solution, that includes full cleaning, intensive treatments, control systems for entering/exiting the data rooms and air particulate testing.

This approach supports a dust-free environment aiding efficient temperature control and reducing your energy costs, as well as helping prevent costly downtime. We actively seek to innovate, influence and contribute to establishing quality standards, and to understand the needs in a rapidly evolving cloud and hosting market, through our market leading approach:

- Accredited to ISO 14644-1
- Data Centre Alliance partners
- Localised data centre cleaning teams
- Specific training programmes based - with full certification
- Undergo full site specific risk assessments and quality assurance tests
- Focused on safety, reliability and trust

Whether supporting customers with data hosting or cloud requirements, computer rooms or server cabinets we understand the key issues you're facing, so that. So whether you're operating a large data hall or a single server cabinet, we ensure you receive the highest standards in cleanliness.

Cables and accessories

... and more products for your office

IT Accessories & Network engineering

Network components

Ethernet-Adapter
Fast-Ethernet-Switches



Network connection technology

patch cables Kat.xxx
Patchpanel
Junction boxes
Connector assembly / Accessories
LWL patch cable
LWL accessories

KVM Switch boxes & hubs

KVM-Switches
Accessories for KVM switches
Switch boxes manually
Switch boxes automatically
USB hubs

ATEN Solutions

ATEN Accessories for KVM switches
ATEN Video Splitter



PC cables

USB cables
cables parallel/seriell
VGA cables
DVI cables
HDMI High Speed cables
HDMI High Speed with Ethernet cables
HDMI Ultra HD with Ethernet cables
DisplayPort cables
Power cable internally
Power cable externally
S-ATA cables
A/V cables with 3,5 mm plugs
A/V cables with Cinch plugs
A/V Toslink cable
TV-Antenna cable

Adaptors & Converters

VGA / DVI / HDMI / DP Adaptors
Converters USB
USB extension
Ferrite for cables



Mobile Computing

Smartphone Accessories
Table Accessories
Car accessories

Drives & housing

Card-Reader



Multimedia

Microphones / Headsets
Video selector / -Switch

Telecommunication

Phone adaptors

Office organisation

LCD monitor mounts

UPS Power supply

Power supply

Multiple socket outlets
Multiple socket outlets 19"
Desk connection panels
Plug-in power supplies

Tapes

DLT / S-DLT
4 mm



Optical / Flash / HDD

DVD / BLU-RAY
CD-R
UDO / MOD
RDX
Solid State Drive
HDD
Flash / USB



Accessories

Batteries / Light
Storage
Notebook Bags
Cleaning
Audio / Video
Network Technology
Tesa Clean Air
Paper Shredder
Water Filters
LED Lamps



Printing

HP Ink
HP Toner
Paper
Ink / Toner
Xerox Toner
3D-Filament
Printer





OpenStorage

Team

Managing Board



Dieter Wandelt



Gerd Henneveld



Annette Metzler



Latifa Ziani



Haja Andrianaivo



Holger Hessel



Stefan Lauf



Robert Georger



Patrick Fylok

Accounting

Purchasing Printer Supplies

Purchasing Storage Media

Sales / Key Account



Richard Breisch



Oliver Kaul



Stephan Schmaltz



Joseph Douglas



Michael Rex



Simona Nowak



Stefan Funk



Harald Hock



Hans-Jörg Müsch

Order Processing



Oliver Buttler



Marcus Wehsolek



Stephan Quent



Pedro Lopes



Dennis Rau



Tobias Bauer



Steffen Krulikowski



Wolfgang Reis



Bodo Schnabel

Logistics



Kai Richter



Jaouad Nemar



Emilio Caputo



Hicham Nemar



Mohamed Ziani



Stephen Williams



Sandra Valerio



Christina Wesp



Manuela Hartmann

RMA

Marketing

IT-Services



Gennaro Esposito



Erek Mayer



Jörg Kreusel



Joannis Goulas



Giacomo Boelts



Fabian Fücke



Simon Hansche



Gina Moßner

E-Services

Trainees

Team Switzerland



Joe Zürcher



Urs Albrecht



Adrian Herzog



Ida Caminada

Team France, Belgium



Claude Neukermans

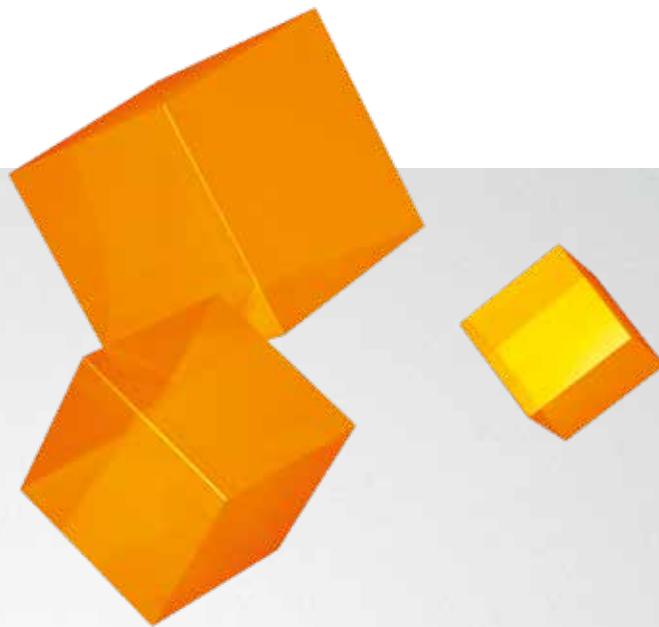


Sandrine Kawecki

Team Italy



Gianmaria di Paola



Open Storage AG

OpenStorage AG

Peter-Sander-Straße 13
D-55252 Mainz-Kastel
Germany

+49 6134 25722-0
www.openstorage.de

OpenStorage Schweiz AG

Oberneuhofstrasse 3
6340 Baar
Switzerland

+41 41 7688200
www.openstorage.ch

OpenStorage Sales-Agency

Claude Neukermans +33 607 313322
France / Benelux c.neukermans@openstorage.fr
c.neukermans@openstorage.be
www.openstorage.fr | www.openstorage.be | www.openstorage.nl

Eric Dries +32 496 593929
Benelux e.dries@openstorage.be
www.openstorage.fr | www.openstorage.be | www.openstorage.nl

Gianmaria Di Paola +39 33 56358236
Via Copernico 53 www.openstorage.it
20125 Milano
Italy

