QUALSTAR®

XLS

ENTERPRISE LIBRARY SYSTEM

SIMPLY RELIABLE ENTERPRISE DATA STORAGE

◄ ADD MEM | START WITH LRM | ADD MEM ► | ADD MODULES AS YOUR NEEDS GROW ►

FEATURING

COMPASS ARCHITECTURE

- **Readily grows from 435 to over 11,700 tapes**

- **Scales easily up to 127 drives**

- **Encryption key management protects data on tapes in transit**

- **Very high density - over 1.4 PB per square foot**

- **Up to eight independent host connections**

- **Advanced single-view, browser-based interface provides uniform local and worldwide management**

- **Highly efficient power design: low power consumption, reduced cooling requirements**

XLS

ENTERPRISE LIBRARY SYSTEM

SIMPLY RELIABLE ENTERPRISE DATA STORAGE

XLS is Qualstar's highly modular enterprise library system delivering intelligence, density, flexibility, scalability, and ease of use, coupled with our proven record of reliability and value.

COMPASS ARCHITECTURE

XLS features Compass Architecture™, an advanced robotics design that yields superior reliability and density; X-Link™, a single-view worldwide management interface, as well as N+1 power management, redundant cooling, and hot-swap components for high reliability.

XLS ADVANCED MODULAR DESIGN

Start with 435 tapes and grow in easy increments to over 11,700 tapes as your storage needs grow. Cartridge slots and tape drives can be readily added in the field only when needed, to help control costs.

XLS combines two distinct modules to deliver high-density, cost-effective and flexible library systems. The Library Resource Module (LRM) is a complete, self-contained library and forms the base unit for larger systems. Two LRM models are available – the 8161100 and the 832700. The Memory Expansion Module (MEM) contains 1,075 tape storage slots in a very compact footprint.

Each LRM is highly scalable, making it easy to vary drive and slot ratios to optimize resources. Support for up to eight logical library partitions is built into each XLS, giving administrators the flexibility needed to economically handle multiple applications in a single Simply Reliable ™ library.

LRM 832700   MEM

When additional storage is required, one or two MEMs can be easily added to each LRM. Each MEM contains 1,075 tape slots. Qualstar's trademark rotary carousel design yields very high storage density, with over 125 tapes per square foot in a MEM unit.

In just 21" of horizontal travel the XLS robot can access over 3,200 tapes.

If more data transfer capability is required, adding LRMs expands the number of tape drives up to 127. Or, two MEMs can be added to one LRM to deliver a configuration that packs over 38 petabytes (native) in just 28 square feet of valuable IT floor space. Capacity expansion is both quick and cost effective.

XLS HIGHLIGHTS

COMPONENT	LRM 832700
Drive Bays - Standard	2 with 4 drive slots each
Drive Bays – Optional*	Up to 6 additional bays with 4 drive slots in each
Cartridge Slots - Standard	435*
Door-Mounted Slots - Optional	Add 110 or 220
I/O Slots - Standard	20
I/O Slots - Optional	Add 10 or 20 (total: 40 maximum)
Supported Tape Drives[†]	LTO-6, LTO-7 and LTO-8
Library Interface	Fibre Channel added in increments of 2 (maximum 8)

* Each additional drive bay subtracts 30 tape slots   † Single port and dual port Fibre Channel drives

ENCRYPTION ENABLED

XLS single-key library managed encryption eliminates data loss if tapes in transit are lost. The XLS key manager enables use of the powerful data encryption capability built into every LTO tape drive. Simple, easy-to-use, library-based encryption key management allows administrators to assign a separate key to the tapes in each partition.

POWERFUL COMPASS ARCHITECTURE

Qualstar's patented Compass Architecture delivers a library system where one highly reliable robot travels an average of just 21 inches horizontally to select over 3,200 tapes. Robotics located in each LRM simply reach into adjacent MEMs to access cartridges located there. The robotics always remain within the LRM cabinet, eliminating the power consumption, reliability problems and delays that can occur with robots that must traverse long distances between cabinets at high speed to locate distant cartridges.

FLEXIBILITY

LRM models can hold up to 32 LTO tape drives. Bays holding up to 4 tape drives or 30 cartridge slots can be mixed and matched to meet changing requirements. Up to 40 I/O slots are supported in each LRM.

Robotics never leave the LRM to access cartridges in the MEM, insuring fast access times and high reliability.

LRM 8161100	MEM
2 with 8 drive slots	
Up to 2 additional bays with 4 drive slots in each*	
836*	1075
Add 110 or 220	
20	
Add 10 or 20 (total: 40 maximum)	
LTO-6, LTO-7 and LTO-8	
Fibre Channel added in increments of 2 (maximum 8)	

The XLS accommodates up to four dual-channel LIAs yielding up to eight independent library control channels.

LOGICAL LIBRARY PARTITIONS

Up to eight logical library partitions can be established. Each partition contains tape drives, cartridge slots, and a dedicated library control interface. X-Link provides complete information about and control of the storage elements assigned to each partition, making setup, administration and re-configuration easy.

DATA-GUARD™ UPS INVENTORY SENTRY™

XLS delivers built-in power failure protection for the library robotics, independent of any external power protection hardware. If input power to the library fails, the Data-Guard UPS maintains system power long enough to protect any media in transition from harm.

It also carries out an orderly shutdown of the library controllers to allow problem-free restarts when power returns. UPS protection is restored within 10 minutes of restart as normal operation recharges the onboard battery.

Inventory Sentry senses whether tapes have actually been moved when a door is opened. If they haven't, operation is resumed without causing a time consuming re-inventory.

EASE OF SERVICE

XLS uses a modern design incorporating easily exchanged modules. The power supplies, cooling fans, and tape drives are all designed for easy replacement. MTTR for any service operation is less than 30 minutes. Remote access by Qualstar Technical Support will speed monitoring and diagnosis to eliminate service interruptions.

HIGH AVAILABILITY

N+1 power is standard on the XLS-832700 and XLS-8161100. XLS uses a distributed control intelligence connected by a high reliability CAN bus. Advanced diagnostics and error recovery procedures are incorporated in the XLS firmware design.

SINGLE-VIEW, WORLDWIDE MANAGEMENT INTERFACE

X-Link, the XLS management interface provides intelligent, powerful tools and comprehensive information to monitor and manage library operations.

X-Link combines an easy to use graphical interface with sophisticated library control and management tools.

FLEXIBLE, WORLDWIDE ACCESS

X-Link is accessed locally using the 15-inch, color touch screen or the Ethernet port built into the library, or remotely via a local area network or the Internet.

Each connection mode provides the same security features. Multiple simultaneous connections are supported. Remote access requires nothing more than a standard browser. Authorized users receive a unique ID and password, and assignment to one or more user groups. Access through a VPN or firewall ensures complete system security.

LOGICAL LIBRARY MANAGEMENT

X-Link can group tape drives, cartridge slots and I/O ports into up to eight logical libraries. Applications control each partition over a dedicated command and control port. Events for each logical library are reported by X-Link.

SIMPLE INSTALLATION AND SETUP

The X-Link homepage provides a high-level summary of library status and streamlined access to library settings and policies, to operations of the physical library, the logical library partitions, the user groups and the event log.

EVENT MONITORING AND NOTIFICATION

X-Link can send detailed event notices via e-mail to designated administrators and service personnel. Diagnostics can be run remotely speeding recovery, saving both time and money.

Qualstar's trademark robotic mechanisms provide precise positioning and flawless media handling for years of Simply Reliable operation.

XLS CONFIGURATION EXAMPLES

Configuration	Tape Drive Slots	Cartridge Slots [1]	Native Capacity LTO-7	Native Capacity LTO-8	Native Data Rate LTO-7	Native Data Rate LTO-8	TB per Square Foot LTO-8	Cartridges per Square Foot
XLS-832700	8	655	3.9 PB	7.8 PB	8.6 TB/hr.	10.3 TB/hr.	732	61
XLS-832700 + 1 MEM	12	1,700	10.2 PB	20.4 PB	13.0 TB/hr.	15.6 TB/hr.	1056	88
3 XLS-832700 + 4 MEM	36	6,175	37.0 PB	74.0 PB	38.9 TB/hr.	46.7 TB/hr.	1116	93
XLS-8161100	4	1,056	6.3 PB	12.6 PB	4.3 TB/hr.	5.2 TB/hr.	1188	99
XLS-8161100 + 1 MEM	4	2,131	12.8 PB	25.6 PB	4.3 TB/hr.	5.2 TB/hr.	1332	111
2 XLS-8161100 + 3 MEM	8	5,337	32.0 PB	64.0 PB	8.6 TB/hr.	10.3 TB/hr.	1368	114
5 XLS-8161100 + 6 MEM	20	11,730	70.4 PB	140.8 PB	21.6 TB/hr.	25.9 TB/hr.	1356	113

(1) May include optional cartridge slots

Configurations containing up to 5 LRMs and 6 MEMs store over 11,700 tapes.

XLS SPECIFICATIONS

Specifications	LRM 832700	LRM 8161100	MEM
Dimensions (w, d, h)	44.6 x 34.8 x 78 in. *114 x 89 x 198 cm.*	44.6 x 35.7 x 78 in. *114 x 91 x 198 cm.*	34.8 x 34.8 x 78 in. *89 x 89 x 198 cm.*
Weight (fully populated)	1,193 lbs. / 541 kg.	1,550 lbs. / 703 kg.	1,057 lbs. / 479 kg.
Power Requirements	100 – 240 VAC • 48 – 62 Hz		
Reliability	> 2,000,000 MEBF		
MTTR	< 30 minutes		

XLS Performance

• Load a drive or slot within an LRM: 11 seconds average

• Load a drive or slot to/from a MEM: 13 seconds average

Learn more at www.Qualstar.com

Qualstar Corporation does not warrant the MEBF to be representative of any particular unit installed for customer use. Failure rates are derived from a large database of test samples. The individual failure rate will vary from unit to unit.

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