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Product Datasheet

HP StorageWorks MSL5060 Tape Library

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MODELS

The HP StorageWorks MSL5060 Tape Library comes with 60 media slots (including two mail slots) and up to four HP StorageWorks LTO Ultrium 230 tape drives (number of drives determined by SKU chosen).

Libraries

| | |
|------------|---------------------------------------------------------|
| 301899-B21 | MSL5060, 0 DRV, Ultrium 230, RM Library |
| 301900-B21 | MSL5060, 2 DRV, Ultrium 230, TT Library |
| 301899-B22 | MSL5060, 2 DRV, Ultrium 230, RM Library |
| 301899-B23 | MSL5060, 2 DRV, Ultrium 230, embedded Fibre, RM Library |

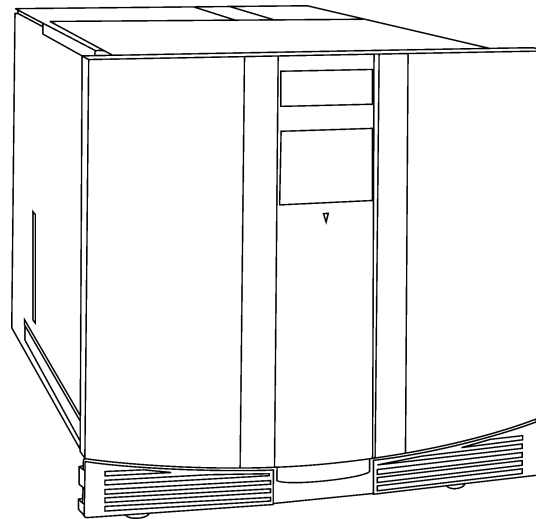
Upgrade Accessories

| | |
|------------|------------------------------------------------------------|
| 301901-B21 | MSL5000 LTO Ultrium 230 upgrade drive in hot plug canister |
| 304825-B21 | MSL5000 Universal Passthrough Mechanism |
| 231824-B23 | MSL5000 10U passthrough extender |

Each library installation will require, (1) library system, (1) geographically specific power cord, (1) SCSI cable for each LTO Ultrium 230 drive pair, and LTO Ultrium media with bar code labels for each MSL5060. Multiple configurations will require additional passthrough kits.

The minimum orderable configuration consists of a single library system (for instances where customer already has the necessary SCSI cables, power cord, and media).

Installation services may also be ordered for customers who want to have a certified Hewlett-Packard engineer perform an onsite library installation.



OVERVIEW

The HP StorageWorks MSL5060 Tape Library provides growth opportunities and investment protection for your rapidly growing storage needs. Designed for flexibility, HP's midrange system library (MSL) can be scaled with additional MSL libraries. This feature allows a single library to grow dynamically with capacity and technology needs (up to 16 drives and 240 slots). In addition, the MSL5000 libraries are easily managed through an intuitive GUI control panel and integrated remote Web management.

MSL5060 Library Customer Benefits Include:

- Multi-unit scalability permits future growth and provides investment protection
- Web-based remote management permits monitoring and managing the unit from across the room or across the world
- User-friendly intuitive front panel Graphical User Interface (GUI) makes operation fast and easy as well as minimizes future training costs
- Removable magazines for easy off-site backup storage
- Redundant power supplies and Hot-plug drives help to minimize downtime
- Reliable, cost effective backup, restoration and archival solution that fits a growing companies storage needs
- Efficient 5U form-factor provides 6TB (native) of storage with out consuming much valuable rack space
- Compatible with a wide variety of operating systems, software applications, and server platforms, the MSL5060 will fit in your environment

KEY FEATURES

- Multi-unit modular scalability – any combination of MSL5030 and 5060s up to 40U high
- Web-based remote management system
- Touch screen GUI panel for easy library operation
- Two 15-slot magazines
- Thirty data slots for a native capacity of 3.0 TB, giving the highest density in a 5U form factor in the mainstream segment (including one mail slot for quick load/unload and removable magazine)
- Hot plug drives for on line repair and capacity expansion, without interrupting library operations for minimum downtime
- One or two LTO Ultrium 230 drives, with a throughput of 15 MB/s (native) per drive for a backup performance of up to 108 GB/hr for a single unit
- Ultra 2 LVD SCSI Interface or Embedded Fibre (2Gb)
- 4 cPCI slots for added functionality through add-on cards in future
- Available as either a rackmount or tabletop configuration
- Qualified on a broad range of operating systems, ISV packages and hardware platforms (see Product Highlights for details)

PRODUCT HIGHLIGHTS

Multi-unit modular Scalability

The MSL 5060 has the capability for multi-unit scalability; up to four libraries can be scaled together in a virtual library. The first module houses the MSL5000 passthrough mechanism, which has the elevator mechanism for tape movement. Each additional module requires the MSL5000 10U passthrough extender.

Remote Management Interface

Web-based management is included to allow monitoring and managing the library from across the room or across the globe. Many of the functions that are available on the front panel are included in the remote management interface. These include, but are not limited to, library and drive status, moving media, load/unload tape drives, access to diagnostics, library configuration, library statistics, inventory check, and security settings.

High Availability and Hot Pluggable Drives

As data becomes more mission critical, and downtime becomes more costly, customers are requiring high availability features on tape automation devices. The MSL5060 supports (standard) dual redundant power supplies as well as hot pluggable drive carriers, allowing drive replacement without interrupting backup and restore functions. These hot pluggable drive trays allow for easy scalability of performance, as well as provide an easy upgrade path towards future Ultrium drive technologies.

NOTE: The MSL5060 accepts only library ready drives specifically modified for use in the MSL5060 library.

Proven Reliability

Using LTO Ultrium 230 tape drives, and proven library robotics with a rating of 2,000,000 robot load/unload cycles, the MSL5060 provides the necessary high reliability for today's demanding environment.

LTO Ultrium Technology

LTO Ultrium tape drives use best of breed technology. By taking the best features from other tape technologies and combining them into a single new technology Ultrium tape drives are in a league of their own. Inclusion of innovative features such as Adaptive Tape Speed (ATS) ensure that Ultrium drives can meet the performance and reliability demands of a library environment, whether it is direct attach SCSI (DAS) or a Storage Area Network (SAN). Linear Tape Open (LTO) technology is an industry open-standard format; thus data written on HP StorageWorks Ultrium tape drives can be interchanged directly with other Ultrium tape drives from other vendors.

Manageability

The MSL5060 library configurations are fully supported through Insight manager 7.0, providing information to administrators for robotic status, tape status changes and fault status. HP TSMC (tape storage management console) & HP Library and Tape Tools (LTT) provide diagnostics and easy firmware upgrade capabilities.

Server Support

Enterprise ProLiant Servers

ProLiant DL760
ProLiant ML750

Departmental ProLiant Servers

ProLiant DL580 G2
ProLiant ML570 G2
ProLiant ML530 G2

Workgroup ProLiant Servers

ProLiant ML330 G2
ProLiant DL380 G2
ProLiant ML370
ProLiant ML350
ProLiant DL360
ProLiant DL320

PRODUCT HIGHLIGHTS *(continued)*

Server Support

HP-UX servers

Superdome
 rp8400
 rp7400 (N class)
 rp5400 series (L Class)
 rp2450/2470 (A class)
 K class
 D Class

HP Netserver

HP lxr8500
 HP lh6000
 HP lh6000r
 HP lt6000r
 HP tc4100
 HP tc3100
 HP lh3000
 HP lc2000r
 HP lp2000r
 HP lp1000r
 HP e200
 HP e800

Application Support

| MSL5060 Supported under Direct Attach SCSI (DAS), Direct Attach Fibre, and Storage Area Networks (SAN) | Windows NT 4.0 SP6a | Windows 2000 SP2 | NetWare 5.1 SP3 | NetWare 6.0 | Solaris v7 | Solaris v8 | HP-UX 11.0 | HP-UX 11.i | Linux RH 7.1 | Linux RH 7.2 | Linux SuSe 7.3 | AIX 4.3.3 |
|-----------------------------------------------------------------------------------------------------------|---------------------|------------------|-----------------|-------------|------------|------------|------------|------------|--------------|--------------|----------------|-----------|
| HP Data Protector 5.0 | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| HP Omniback 4.1 | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| CA BrightStor ARCserve 2000 | ✓ | ✓ | | | | | | | | | | |
| CA BrightStor ARCserve 7 | | | ✓ | | | | | | | SCSI only | | |
| Legato NetWorker 6.1.2 | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| VERITAS Backup Exec 8.6 | ✓ | ✓ | | | | | | | | | | |
| VERITAS Backup Exec 9.0 | | | ✓ | ✓ | | | | | | | | |
| VERITAS NetBackup 3.4.3 | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| VERITAS NetBackup 4.5 | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| ✓ = supported | | | | | | | | | | | | |

SPECIFICATIONS

| | | | | | | | | |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------|------------|----------------|------------|-------------|-------------|
| Control Panel | Library and drive status Move tape cartridges Load/unload tape drives Maintenance (diagnostics) Library Configuration Statistics Inventory check Security level set: operator, user, service Mail slot access Offline/online Status Magazine removal/replacement | | | | | | | |
| SCSI Interface | Ultra 2 LVD SCSI, VHDCI interconnect | | | | | | | |
| Form Factor | 10U Rackmount | | | | | | | |
| Shipping Dimensions | Height [inches] | Height [cm] | Width [inches] | Width [cm] | Depth [inches] | Depth [cm] | Weight [lb] | Weight [kg] |
| Packaged | | | | | | | | |
| MSL5060 (0 Drive, RM) | 33.00 | 83.8 | 47.00 | 119.4 | 31.00 | 78.7 | 147.0 | 66.7 |
| MSL5060 (2 Drive, RM) | 33.00 | 83.8 | 47.00 | 119.4 | 31.00 | 78.7 | 161.0 | 73.0 |
| MSL5060 (2 Drive, TT) | 33.00 | 83.8 | 47.00 | 119.4 | 31.00 | 78.7 | 174.0 | 78.9 |
| Product Only | | | | | | | | |
| MSL5060 (0 Drive, RM) | 17.50 | 44.5 | 17.00 | 43.2 | 30.00 | 76.2 | 95.0 | 43.1 |
| MSL5060 (2 Drive, RM) | 17.50 | 44.5 | 17.00 | 43.2 | 31.50 | 80.0 | 109.0 | 49.4 |
| MSL5060 (2 Drive, TT) | 18.50 | 47.5 | 19.00 | 48.3 | 31.50 | 80.0 | 122.0 | 55.3 |
| Capacity (native) | MSL5060 base unit | | 6.0 TB | | | | | |
| Performance (native) | 15 MB/s per drive | | | | | | | |
| | MSL5060 base unit | | Supports up to four LTO Ultrium 230 drives for native transfer rates up to 216 GB/hour | | | | | |
| | Maximum configuration (four modules with multi-unit scalability) | | Supports up to 16 LTO Ultrium 230 drives for native transfer rates up to 864 GB/hour | | | | | |
| Storage Capacity (compressed @ 2:1) | 200GB per cartridge | | | | | | | |
| | MSL5060 base unit | | 60 slots (including two mail slots), for capacity of 12.0 TB (2:1 compressed) | | | | | |
| | Maximum configuration (four modules with multi-unit scalability) | | 240 slots, for capacity up to 48TB (2:1 compressed) | | | | | |
| Power Consumption | MSL5060 base unit | | 90 to 132V AC @ 47 to 63Hz 180 to 264V AC @ 47 to 63Hz | | | | | |
| | Power requirement | | 300 Watts (typical) 360 Watts (maximum) | | | | | |
| | Heat dissipation | | 1020 BTU's/hour (typical) 1224 BTU's/hour (maximum) | | | | | |
| | | | | | | | | |
| Acoustic Noise | Noise power emission level | | 8 bels, maximum | | | | | |
| | Avg. sound pressure level | | 52 dBA | | | | | |
| Robotics Performance | Initialization time | | 240 sec | | | | | |
| | Inventory time | | 110 sec | | | | | |
| | Cartridge swap (drive to slot) | | 22 sec average | | | | | |
| Reliability | MTBF | | 250,000 hours (100% duty cycle) (excludes drives) | | | | | |
| | MSBF | | 2,000,000 robot load/unload cycles | | | | | |
| Product Safety Requirements and Approvals | Safety EN60950/IEC950, UL, CSA/cUL, CE, VDE/TUV, GOST, BSMI MI, Class A FCC, C.I.S.P.R., ICES-003, CE, VCCI | | | | | | | |

Warranty

One year parts exchange, one year on-site next day service
Additional warranty protection can be purchased for all MSL5000 library products.

NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.

HEWLETT-PACKARD INSTALLATION AND CAREPAQS

Hewlett-Packard Services provides warranty support for the MSL5060 via Hewlett-Packard Global Services and a worldwide network of authorized service providers. Toll-free 7 x 24 hardware technical phone support is provided for the duration of the product warranty. In addition, available service offerings include a full range of CarePaqs packaged hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services

Hewlett-Packard Service and Warranty Support

Additional warranty service protection and/or Hewlett-Packard Installation packages can be purchased for the MSL5060 Library products:

Software Product Services

- Stand-alone telephone support
- Rights to a new license
- Media and documentation updates

Hardware Product Services

- Installation services
- On-site Maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage

For additional hardware installation and maintenance information please refer to the URLs listed below:

http://www.compaq.com/services/CarePaq/us/hardware/cp_storage.html

http://www.compaq.com/services/CarePaq/us/install/cp_storage.html

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4-hours
- Coverage - Extend hours of coverage from 5 days x 9 hours to 7 days x 24 hours
- Duration - Select duration of coverage for a period of 1, 3, or 5 years

NA CarePaq Information

Sample part numbers:

| | | |
|------------|---------------|------------------------------------------|
| 146840-002 | (FM-T8XHW-36) | 3-year, uplift to 5x9, Next Day Response |
| 146832-002 | (FM-T84HR-36) | 3-year, uplift to 5x9, 4 hour Response |
| 146835-002 | (FM-T8724-36) | 3-year, uplift to 7x24, 4 hour Response |
| 146839-002 | (FM-T8INS-IN) | MSL5000 Hardware Installation |

- CarePaq is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePaq is not available for less than the products warranty duration.
- CarePaq is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the warranty start date (delivery date to end user customer). Proof of purchase may be required.
- CarePaq services are prepaid.

For additional CarePaq (hardware & software) information, as well as, orderable part numbers please refer to the URL listed below:

<http://www.compaq.com/services/CarePaq/index.html>

EMEA CarePaq Information

Additional CarePaq services are being developed to cover a broader range of HP StorageWorks hardware and software. Existing CarePaqs are available today for LTO and SDLT technologies. Ask your local CarePaq Business Manager for the latest details.

CarePaq Priority Services (PS) Information for EMEA

- CarePaq Priority Services brings a totally new approach that removes the complexity from evaluating, planning and purchasing services on Hewlett-Packard Alpha and Storage platforms.
- CarePaq Priority Services are easy to purchase and easy to use and cover all external storage products not covered under server-based CarePaq services.

Standard Offerings

- CarePaq Priority Services provide an integrated hardware and software support that ensure consistent coverage across storage configurations.
- CarePaq Priority Service offers a rapid four-hour response with guaranteed work-through to completion for three years.
- CarePaq Priority Services have a standard call window of Monday to Friday 08:00 – 17:00 with uplifts to full 24x7 over three years with four-hour response time and work through to completion.
- CarePaq Priority Services also provide software support, with a two-hour response time for telephone access to highly trained support personnel.

For more information on how to order CarePaq Priority Services in EMEA please contact your local Certified Integration Partner or Authorized Reseller.

Customized Installation Services (including installation of vendor backup software) and contract based support services are available by contacting your local Services department.

RELATED OPTIONS

| | Part Description | UPC Code | Part Number |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| MSL5060 Library System | MSL5060, 0 DRV, RM Library | 613326560556 | 301899-B21 |
| | MSL5060, 2 DRV, LTO Ultrium 230, RM Library | 613326560532 | 301899-B22 |
| | MSL5060, 2 DRV, Ultrium 230, embedded Fibre, RM Library | 613326560518 | 301899-B23 |
| | MSL5060, 2 DRV, LTO Ultrium 230, TT Library | 613326560570 | 301900-B21 |
| | Supplied with each Library Unit: | | |
| | <ul style="list-style-type: none"> • Library Unit (pre-configured with drives) • Documentation Kit • EFIJS Translation CD • Users Guide • Diagnostic diskette/Software Guide • Warranty card • Safety card • Driver CD • One LTO Ultrium data Cartridge • Bar code labels • SCSI Terminators (1 per drive) • SCSI Jumper Cable VHDCI • Diagnostic Cable (for PC attach) • Software: Tape Storage Management Console Media Robot Utility | | |
| Power Cord (Pair Required) | Power Cord, US/Canada/Mexico (shipped with all units) | 720591673581 | 227099-001 |
| | Power Cord, (Australia/China/New Zealand) | 720591673567 | 227098-011 |
| | Power Cord, (South East Asia/India) | | 157220-AR1 |
| | Power Cord, (Central Europe) | | 157215-021 |
| | Power Cord, (United Kingdom/Hong Kong) | 720591547288 | 157216-031 |
| | Power Cord, (Switzerland) | 743172633156 | 157219-111 |
| | Power Cord, (Italy) | | 157217-061 |
| | Power Cord, (Denmark) | | 157218-081 |
| | Power Cord, (Japan) | | 139867-006 |
| | NOTE: (Shipped with all units.) Order Local power cords. | | |
| Passthrough Mechanism | MSL5000, universal passthrough mechanism (includes elevator mechanism and router, required to connect first two units in a stack) (capable of handling both SDLT and LTO media) | 613326628447 | 304825-B21 |
| | MSL5000, 10U passthrough extender | 720591743581 | 231824-B23 |
| Drive, capacity, and memory upgrade kits | MSL5000 LTO Ultrium 230 upgrade drive | 613326560594 | 301901-B21 |
| Media and Bar Code Labels | MSL5000 dual LTO magazine (2x15 slot magazine left and right) | 613326560617 | 301902-B21 |
| | LTO Ultrium media | | |
| | HP LTO Ultrium data cartridge | | C7971A |
| | HP LTO Ultrium universal cleaning cartridge | | C7978A |
| | HP Ultrium bar code labels, 100 pack | | C7970B |

RELATED OPTIONS *(continued)*

| | Part Description | UPC Code | Part Number |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| SCSI Cables | SCSI Cable, VHDCI/VHDCI, 6 feet | 743172660817 | 341174-B21 |
| | SCSI Cable, VHDCI/VHDCI, 12 feet | 743172660824 | 341175-B21 |
| | SCSI Cable, VHDCI/Wide, 6 feet | 743172660831 | 341176-B21 |
| | SCSI Cable, VHDCI/Wide, 12 feet | 743172660848 | 341177-B21 |
| | SCSI Cable, VHDCI/Wide, 10 meter | 720591469108 | 201160-B21 |
| | Check the cable-adapter matrix for tape libraries on: ftp://ftp.compaq.com/pub/products/storageworks/tape-and-optical-storage/adapter-cable-matrix.pdf | | |
| FC Host Bus Adapter | HSC-eff Tachlite Fibre Channel Adapter | | A6684A |
| | HSC Tachlite Fibre Channel Adapter | | A6685A |
| | PCI 4X 2Gbps single port Fibre Channel Adapter | | A6795A |
| SCSI Host Bus Adapters | ProLiant / Netserver | | |
| | 64-bit/66 MHz PCI dual channel Wide Ultra 3 SCSI adapter | 743172876379 | 129803-B21 |
| | Ultra 3 LVD, single channel controller | 743172991447 | 154457-B21 |
| | HP-UX server adapters | | |
| | U2 LVD single port | | A5149A |
| | U2 LVD dual port | | A5150A |
| | U3 LVD single port | | A6828 |
| | U3 LVD dual port | | A6829 |
| | LVD single port | | A4999A |
| | Rackmounting Kits | MSL5000 system/e bracket Kit (HP racks) | 613326628423 |
| MSL5026 TT-RM KIT, ProLiant Rack | | 720591734336 | 231894-B22 |
| MSL5026 TT-RM KIT, Alpha/HP Rack | | 720591734312 | 231894-B21 |
| Alpha Rail Kit | | 720591166243 | 254795-001 |
| | Part Description | Features | Part Number |
| OpenView Omniback backup Software | HP OpenView Omniback II v 4.1 | | |
| | Starter Packs | | |
| | Cell Manager | Required once as starter pack; includes license-to-use, unlimited number of disk agents and media agents, one drive extension, libraries with up to 60 slots, CD-ROM media, manuals, and more; for Windows NT, 2000, XP/HP-UX | B6961AA/B6951AA |
| | Drive Extensions | | |
| | Drive License | License-to-use for one concurrently used backup drive; for Windows NT, 2000, XP/Novell Netware/Linux | B963AA |
| Drive License | License-to-use for one concurrently used backup drive; for UNIX, NAS, SAN | B6953AA | |
| | For the most up-to-date information, visit: http://openview.hp.com/products/omniback/specifications/ | | |

CONFIGURATION INFORMATION

(for rackmount units only)

STEP 1 – SELECT A CONFIGURATION

The list below is not intended to show all possible configurations, but to show some of the most common. In some cases, it is advantageous to utilize MSL5030 and MSL5060 libraries in the scaled stack. Please refer to the MSL5030 library QuickSpecs for more details. The Ultrium MSL5000 series of libraries is scalable to 40U resulting in 16 drives and 240 slots.

IMPORTANT NOTE: Each library unit comes with a rack kit specially designed for HP 9000 & 10000 racks. If the unit is going to be installed into a HP Surestore SytemE rack or an Alpha rack, then 1 rack mount kit per library unit must be purchased. Please utilize "STEP 2" of the configuration information

Common Scaled Configurations for MSL5000 Libraries Direct Attach SCSI

| Slots | Drives | Interface | Qty | Description | Product # |
|-------|--------|-----------|-----|-----------------------------------|------------------------|
| 60 | 2 | SCSI | 1 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | MSL5030L1 0-drive RM | 301897-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 60 | 3 | SCSI | 1 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | MSL5030L1 1-drive RM | 301897-B22 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 60 | 4 | SCSI | 2 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 2 | SCSI | 1 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | MSL5060L1 0-drive RM | 301899-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 3 | SCSI | 1 | MSL5030L1 1-drive RM | 301897-B22 |
| | | | 1 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 4 | SCSI | 1 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 6 | SCSI | 1 | MSL5030L1 2-drive RM | 301897-B23 |
| | | | 1 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 2 | MSL5000 Ultrium 230 add-on drives | 301901-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |

CONFIGURATION INFORMATION

(for rackmount units only) *(continued)*

STEP 1 – SELECT A CONFIGURATION *(continued)*

Common Scaled Configurations for MSL5000 Libraries

Direct Attach SCSI *(continued)*

| Slots | Drives | Interface | QTY | Description | Product # |
|-------|--------|-----------|-----|-----------------------------------|------------------------|
| 120 | 4 | SCSI | 2 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| | | | | | |
| 120 | 6 | SCSI | 2 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 2 | MSL5000 Ultrium 230 add-on drives | 301901-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 120 | 8 | SCSI | 2 | MSL5060L1 2-drive RM | 301899-B22 |
| | | | 4 | MSL5000 Ultrium 230 add-on drives | 301901-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |

Common Scaled Configurations for MSL5000 Libraries

SAN or Direct Attach Fibre

| Slots | Drives | Interface | QTY | Description | Product # |
|-------|--------|---------------|-----|-------------------------------|------------------------|
| 60 | 2 | Fibre Channel | 1 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | MSL5030L1 0-drive RM | 301897-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 60 | 3 | Fibre Channel | 1 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | MSL5030L1FC 1-drive RM | 301897-B24 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 60 | 4 | Fibre Channel | 2 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 2 | Fibre Channel | 1 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | MSL5060L1 0-drive RM | 301899-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 3 | Fibre Channel | 1 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 1 | MSL5030L1FC 1-drive RM | 301897-B24 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |

CONFIGURATION INFORMATION

(for rackmount units only) *(continued)*

STEP 1 – SELECT A CONFIGURATION *(continued)*

Common Scaled Configurations for MSL5000 Libraries

SAN or Direct Attach Fibre *(continued)*

| Slots | Drives | Interface | QTY | Description | Product Number |
|-------|--------|---------------|-----|-----------------------------------|------------------------|
| 90 | 4 | Fibre Channel | 1 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 1 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 90 | 6 | Fibre Channel | 1 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 1 | MSL5030L1FC 2-drive RM | 301897-B25 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 5U pass-thru extender kit | 231824-B22 |
| | | | 2 | Rack kits | See step 2 for details |
| 120 | 4 | Fibre Channel | 2 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B23 |
| | | | 2 | Rack kits | See step 2 for details |
| 120 | 6 | Fibre Channel | 2 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 2 | MSL5000 Ultrium 230 add-on drives | 301901-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B23 |
| | | | 2 | Rack kits | See step 2 for details |
| 120 | 8 | Fibre Channel | 2 | MSL5060L1FC 2-drive RM | 301899-B23 |
| | | | 4 | MSL5000 Ultrium 230 add-on drives | 301901-B21 |
| | | | 1 | Universal pass-thru mechanism | 304825-B21 |
| | | | 1 | 10U pass-thru extender kit | 231824-B23 |
| | | | 2 | Rack kits | See step 2 for details |

STEP 2 – SELECT THE APPROPRIATE RACK

Depending on the environment, different rack kits are required. Each rackmounted version of MSL5000 libraries includes a rack kit designed for HP/Compaq 9000, 10000 and millennium racks. If installing into these racks no additional kits are needed. If the environment is different, one of the following kits is necessary (one for each library in a stack)

| | | | |
|--------------------------|------------------------------------|--------------|------------|
| Rackmounting Kits | MSL5000 system/e RM kit (HP racks) | 613326628423 | 304826-B21 |
| | Alpha Rail Kit | 720591166243 | 254795-001 |

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