S3700 SATA MLC Enterprise SSDs

Product Guide (withdrawn product)

The S3700 SATA MLC Enterprise solid-state drives (SSDs) employ MLC NAND flash memory with High Endurance Technology and a 6 Gbps SATA interface to provide an affordable solution with industry leading performance. They are targeted at databases and other enterprise workloads that require high I/O performance in random read and write operations, including applications caching and tiering. The 1.8-inch SSDs can also be used in the eXFlash solution for maximum capacity and performance.

Figure 1 shows the S3700 SATA 2.5-inch MLC Enterprise SSD.

Figure 1. S3700 SATA 2.5-inch MLC Enterprise SSD

Did you know?

With High Endurance Technology, S3700 SATA MLC Enterprise SSDs can be fully rewritten up to ten times per day throughout their entire five-year life expectancy. These solid-state drives provide outstanding performance, endurance, reliability, and energy efficiency for both read- and write-intensive enterprise applications, such as databases, data warehouses, corporate email and collaboration, actively connected users, medical imaging, and other applications.

Rigorous testing of S3700 SATA Enterprise MLC SSDs by Lenovo through the ServerProven® program assures a high degree of confidence in storage subsystem compatibility and reliability. Providing an additional peace of mind, these drives are covered under Lenovo warranty.

Part number information

Table 1 lists the information for ordering part numbers and feature codes.

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
1.8-inch SSDs		
S3700 200GB SATA 1.8" MLC Enterprise SSD	41Y8366	A4FS
S3700 400GB SATA 1.8" MLC Enterprise SSD	41Y8371	A4FT
2.5-inch SSDs - G3 hot-swap		
S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	00AJ156	A4U3
S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	00AJ161	A4U4
S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	00AJ166	A4U5
2.5-inch SSDs - hot-swap		
S3700 200GB SATA 2.5" MLC HS Enterprise SSD	41Y8331	A4FL
S3700 400GB SATA 2.5" MLC HS Enterprise SSD	41Y8336	A4FN
S3700 800GB SATA 2.5" MLC HS Enterprise SSD	41Y8341	A4FQ
2.5-inch SSDs - Simple Swap		
S3700 200GB SATA 2.5" MLC SS Enterprise SSD	41Y8351	A4FM
S3700 400GB SATA 2.5" MLC SS Enterprise SSD	41Y8356	A4FP
S3700 800GB SATA 2.5" MLC SS Enterprise SSD	41Y8361	A4FR
2.5-inch SSDs for Flex System x222		
S3700 400GB SATA 2.5" MLC Enterprise SSD for Flex System x222	00AJ320	A51S
S3700 800GB SATA 2.5" MLC Enterprise SSD for Flex System x222	00AJ325	A51T
3.5-inch SSDs - hot-swap		
S3700 200GB SATA 3.5" MLC HS Enterprise SSD	00AJ480	A56G
S3700 400GB SATA 3.5" MLC HS Enterprise SSD	00AJ485	A56H
S3700 800GB SATA 3.5" MLC HS Enterprise SSD	00AJ490	A56J

The part numbers include the following items:

- One SSD without a drive tray (1.8-inch SSDs) or one SSD with a 2.5-inch hot-swap or simple-swap drive tray (2.5-inch SSDs) or one SSD with a 3.5-inch hot swap drive tray (3.5-inch SDDs)
- Technical Update Flyer
- Warranty Flyer
- *Important Notices* document

Features

The S3700 SATA MLC Enterprise SDDs have the following features:

- Industry standard 1.8-inch, 2.5-inch, or 3.5-inch form factors
- Support for a standard 2.5-inch or 3.5-inch drive bay (2.5-inch SSDs or 3.5-inch SSDs, respectively), eXFlash drive bay (1.8-inch SSDs), or SSD drive bay (1.8-inch SSDs) on selected System x®, iDataPlex®, BladeCenter®, and Flex System™ servers
- Cost-effective Intel 25 nm MLC NAND flash memory with High Endurance Technology (HET)
- High Endurance Technology combines NAND silicon enhancements and SSD NAND management techniques to extend the write endurance of an SSD
- SATA MLC solid-state drive with high read and write performance and consistently low latencies to fulfill client needs in the enterprise space
- High endurance, with up to 14.6 PB of total bytes written (TBW) to enable applications with intensive read/write workloads
- High reliability and enhanced ruggedness
- Energy saving, with as little as 6 W power consumption per drive
- Absence of moving parts to reduce potential failure points in the server
- S.M.A.R.T. support
- Advanced Encrypting Standard (AES) 256-bit encryption
- Full end-to-end data path protection
- Thermal throttling to extend the life of the drive
- Enhanced power loss data protection

The key difference between Enterprise SSDs and Enterprise Value SSDs is their endurance (or life expectancy). SSDs have a huge but finite number of program/erase (P/E) cycles, which affect how long they can perform write operations and thus their life expectancy. Enterprise SSDs have better endurance but a higher cost/IOPS ratio compared to Enterprise Value SSDs. SSD write endurance is typically measured by the number of program/erase cycles that the drive can incur over its lifetime, which is listed as TBW in the device specification.

For example, with S3700 SATA MLC Enterprise SSDs, the entire drive can be fully rewritten up to ten times per day to meet the five-year lifetime expectation of the drive, but the Enterprise Value SSD can sustain only up to 0.4 full writes per day (25 times less) to provide the same five-year lifetime.

Technical specifications

Table 2 presents technical specifications for the S3700 SATA MLC Enterprise solid-state drives.

Table 2. S3700 SATA MLC Enterprise SSD technical specifications (Part 1: 2.5-inch SSDs)

Feature	200 GB		400 GB		800 GB	
Part number	41Y8331 00AJ156	41Y8351	41Y8336 00AJ161	41Y8356 00AJ320	41Y8341 00AJ166	41Y8361 00AJ325
Interface	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA
Hot-swap drive	Yes	No	Yes	No	Yes	No
Form factor	2.5-inch	2.5-inch	2.5-inch	2.5-inch	2.5-inch	2.5-inch
Capacity	200 GB	200 GB	400 GB	400 GB	800 GB	800 GB
Endurance	5-year lifetime (3.65 PB TBW)	5-year lifetime (3.65 PB TBW)	5-year lifetime (7.3 PB TBW)	5-year lifetime (7.3 PB TBW)	5-year lifetime (14.6 PB TBW)	5-year lifetime (14.6 PB TBW)
Data reliability	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read
MTBF, hours	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
IOPS reads*	75,000	75,000	75,000	75,000	75,000	75,000
IOPS writes*	32,000	32,000	36,000	36,000	36,000	36,000
Sequential read rate†	500 MBps	500 MBps	500 MBps	500 MBps	500 MBps	500 MBps
Sequential write rate†	365 MBps	365 MBps	460 MBps	460 MBps	460 MBps	460 MBps
Read latency	50 ?s	50 ?s	50 ?s	50 ?s	50 ?s	50 ?s
Write latency	65 ?s	65 ?s	65 ?s	65 ?s	65 ?s	65 ?s
Shock, operating	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms
Vibration, operating	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz
Vibration, non-operating	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz
Typical power	6 W	6 W	6 W	6 W	6 W	6 W

* 4 KB block transfers
† 128 KB block transfers

Table 3. S3700 SATA MLC Enterprise SSD technical specifications (Part 2: 1.8-inch and 3.5-inch SSDs)

Feature	200 GB		400 GB		800 GB
Part number	41Y8366	00AJ480	41Y8371	00AJ485	00AJ490
Interface	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA
Hot-swap drive	Yes§	Yes	Yes§	Yes	Yes
Form factor	1.8-inch	3.5-inch	1.8-inch	3.5-inch	3.5-inch
Capacity	200 GB	200 GB	400 GB	400 GB	800 GB
Endurance	5-year lifetime (3.65 PB TBW)	5-year lifetime (3.65 PB TBW)	5-year lifetime (7.3 PB TBW)	5-year lifetime (7.3 PB TBW)	5-year lifetime (14.6 PB TBW)
Data reliability	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read	< 1 in 10^{17} bits read
MTBF, hours	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
IOPS reads*	75,000	75,000	75,000	75,000	75,000
IOPS writes*	29,000	32,000	36,000	36,000	36,000
Sequential read rate†	500 MBps	500 MBps	500 MBps	500 MBps	500 MBps
Sequential write rate†	365 MBps	365 MBps	460 MBps	460 MBps	460 MBps
Read latency	50 ?s	50 ?s	50 ?s	50 ?s	50 ?s
Write latency	65 ?s	65 ?s	65 ?s	65 ?s	65 ?s
Shock, operating	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms	1000 *g,* 0.5 ms
Vibration, operating	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz	2.17 *g* rms 5-700 Hz
Vibration, non-operating	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz	3.13 *g* rms 5-800 Hz
Typical power	6 W	6 W	6 W	6 W	6 W

§ This SSD can be a hot-swap or non-hot-swap drive depending on the server in which it is installed.
* 4 KB block transfers
† 128 KB block transfers

The TBW value that is assigned to a solid-state device is the total bytes of written data that a drive can be guaranteed to complete. Reaching this limit does not cause the drive to immediately fail; the TBW simply denotes the maximum number of writes that can be guaranteed. A solid-state device does not fail upon reaching the specified TBW, but at some point after surpassing the TBW value (and based on manufacturing variance margins), the drive reaches the end-of-life point, at which time the drive goes into read-only mode. Because of such behavior, careful planning must be done to use SSDs in the application environments to ensure that the TBW of the drive is not exceeded before the required life expectancy.

Supported servers

The S3700 SATA MLC Enterprise SSDs and supported RAID controllers can be installed in the System x, iDataPlex, and NeXtScale servers that are listed in Table 3 and the BladeCenter and Flex System servers that are listed in Table 4.

Table 4. System x, iDataPlex, and NeXtScale compatibility (Part 1)

Part number	Description	x3100 M5 (5457)	x3250 M5 (5458)	x3500 M5 (5464)	x3550 M5 (5463)	x3650 M5 (5462)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465)
1.8-inch SSDs								
41Y8366	S3700 200GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	N	Y	N
41Y8371	S3700 400GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	N	Y	N
2.5-inch SSDs - G3 hot-swap								
00AJ156	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	Y	Y	Y	N
00AJ161	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	Y	Y	Y	Y	N
00AJ166	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	Y	Y	Y	N
2.5-inch SSDs - hot-swap								
41Y8331	S3700 200GB SATA 2.5" MLC HS Enterprise SSD	Y	N	N	N	N	N	N
41Y8336	S3700 400GB SATA 2.5" MLC HS Enterprise SSD	Y	N	N	N	N	N	N
41Y8341	S3700 800GB SATA 2.5" MLC HS Enterprise SSD	Y	N	N	N	N	N	N
2.5-inch SSDs - Simple Swap								
41Y8351	S3700 200GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N
41Y8356	S3700 400GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N
41Y8361	S3700 800GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N
2.5-inch SSDs for Flex System x222								
00AJ320	S3700 400GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N
00AJ325	S3700 800GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N
3.5-inch SSDs - hot-swap								
00AJ480	S3700 200GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	Y	N	N
00AJ485	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	Y	N	N
00AJ490	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	Y	N	N

Table 3. System x, iDataPlex, and NeXtScale compatibility (Part 2)

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (7912, E5-2600 v2)	nx360 M4 (5455)
1.8-inch SSDs														
41Y8366	S3700 200GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	N
41Y8371	S3700 400GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	Y	N	Y	Y	Y	Y	Y	N	N
2.5-inch SSDs - G3 hot-swap														
00AJ156	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ161	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
00AJ166	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	Y	Y	N	N
2.5-inch SSDs - hot-swap														
41Y8331	S3700 200GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N
41Y8336	S3700 400GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N
41Y8341	S3700 800GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N
2.5-inch SSDs - Simple Swap														
41Y8351	S3700 200GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	N	N	N	N	N	N	N	Y	N
41Y8356	S3700 400GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	N	N	N	N	N	N	N	Y	N
41Y8361	S3700 800GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	N	N	N	N	N	N	N	Y	N
2.5-inch SSDs for Flex System x222														
00AJ320	S3700 400GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N	N	N	N	N	N	N
00AJ325	S3700 800GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N	N	N	N	N	N	N
3.5-inch SSDs - hot-swap														
00AJ480	S3700 200GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	N	N	N	N	N	N	N	N	N
00AJ485	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	N	N	N	N	N	N	N	N	N

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (7912, E5-2600 v2)	nx360 M4 (5455)
00AJ490	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	Y	N	N	N	N	N	N	N	N	N

Table 3. System x, iDataPlex, and NeXtScale compatibility (Part 3)

Part number	Description	x3100 M4 (2582)	x3250 M4 (2583)	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3650 M4 (7915, E5-2600)	x3690 X5 (7147)	x3750 M4 (8722)	x3850 X5/x3950 X5 (7143)	dx360 M4 (7912, E5-2600)
1.8-inch SSDs													
41Y8366	S3700 200GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	N	N	N	Y	Y	Y	Y	N
41Y8371	S3700 400GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	N	N	N	Y	Y	Y	Y	N
2.5-inch SSDs - G3 hot-swap													
00AJ156	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N	N	N
00AJ161	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N	N	N
00AJ166	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N	N	N
2.5-inch SSDs - hot-swap													
41Y8331	S3700 200GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N
41Y8336	S3700 400GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N
41Y8341	S3700 800GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N
2.5-inch SSDs - Simple Swap													
41Y8351	S3700 200GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	Y	N	N	N	N	N	N	Y
41Y8356	S3700 400GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	Y	N	N	N	N	N	N	Y
41Y8361	S3700 800GB SATA 2.5" MLC SS Enterprise SSD	N	Y	N	N	Y	N	N	N	N	N	N	Y
2.5-inch SSDs for Flex System x222													
00AJ320	S3700 400GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N	N	N	N	N	N
00AJ325	S3700 800GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N	N	N	N	N	N	N	N
3.5-inch SSDs - hot-swap													
00AJ480	S3700 200GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	Y	N	N	N	N	N
00AJ485	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	Y	N	N	N	N	N
00AJ490	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	Y	N	N	N	N	N

Table 4. BladeCenter and Flex System compatibility (Part 1)

Part number	Description	HS22 (7870)	HS23 (7875, E5-2600)	HS23 (7875, E5-2600 v2)	HS23E (8038)	HX5 (7873)
1.8-inch SSDs						
41Y8366	S3700 200GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	Y
41Y8371	S3700 400GB SATA 1.8" MLC Enterprise SSD	N	N	N	N	Y
2.5-inch SSDs - G3 hot-swap						
00AJ156	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N
00AJ161	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N
00AJ166	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N
2.5-inch SSDs - hot-swap						
41Y8331	S3700 200GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N
41Y8336	S3700 400GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N
41Y8341	S3700 800GB SATA 2.5" MLC HS Enterprise SSD	Y	Y	Y	Y	N
2.5-inch SSDs - Simple Swap						
41Y8351	S3700 200GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N
41Y8356	S3700 400GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N
41Y8361	S3700 800GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N
2.5-inch SSDs for Flex System x222						
00AJ320	S3700 400GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N
00AJ325	S3700 800GB SATA 2.5" MLC Enterprise SSD (x222)	N	N	N	N	N
3.5-inch SSDs - hot-swap						
00AJ480	S3700 200GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N
00AJ485	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N
00AJ490	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N

Table 4. BladeCenter and Flex System compatibility (Part 2)

Part number	Description	x220 (7906)	x222 (7916)	x240 (8737, E5-2600)	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7917)	x440 (7167)	x280/x480/x880 X6 (7903)	x280/x480/x880 X6 (7196)
1.8-inch SSDs											
41Y8366	S3700 200GB SATA 1.8" MLC Enterprise SSD	Y	N	Y	Y	Y	Y	Y	Y	N	Y
41Y8371	S3700 400GB SATA 1.8" MLC Enterprise SSD	Y	N	Y	Y	Y	Y	Y	Y	N	Y
2.5-inch SSDs - G3 hot-swap											
00AJ156	S3700 200GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	Y	N	N	Y	Y
00AJ161	S3700 400GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	Y	N	N	Y	Y
00AJ166	S3700 800GB SATA 2.5" MLC G3HS Enterprise SSD	N	N	N	N	N	Y	N	N	Y	Y
2.5-inch SSDs - hot-swap											
41Y8331	S3700 200GB SATA 2.5" MLC HS Enterprise SSD	Y	N	Y	Y	Y	N	Y	Y	N	N
41Y8336	S3700 400GB SATA 2.5" MLC HS Enterprise SSD	Y	N	Y	Y	Y	N	Y	Y	N	N
41Y8341	S3700 800GB SATA 2.5" MLC HS Enterprise SSD	Y	N	Y	Y	Y	N	Y	Y	N	N
2.5-inch SSDs - Simple Swap											
41Y8351	S3700 200GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N	N	N	N
41Y8356	S3700 400GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N	N	N	N
41Y8361	S3700 800GB SATA 2.5" MLC SS Enterprise SSD	N	N	N	N	N	N	N	N	N	N
2.5-inch SSDs for Flex System x222											
00AJ320	S3700 400GB SATA 2.5" MLC Enterprise SSD (x222)	N	Y	N	N	N	N	N	N	N	N
00AJ325	S3700 800GB SATA 2.5" MLC Enterprise SSD (x222)	N	Y	N	N	N	N	N	N	N	N
3.5-inch SSDs - hot-swap											
00AJ480	S3700 200GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N
00AJ485	S3700 400GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N
00AJ490	S3700 800GB SATA 3.5" MLC HS Enterprise SSD	N	N	N	N	N	N	N	N	N	N

For the latest compatibility information for System x, BladeCenter, iDataPlex, NeXtScale, and Flex System servers, see the ServerProven website: http://ibm.com/servers/eserver/serverproven/compat/us/

Supported storage controllers

The S3700 SATA MLC Enterprise SSDs require a supported disk controller. Tables 5 and 6 list the System x, BladeCenter, and Flex System controllers that support the SSDs that are installed in a supported server.

Table 5. Controllers for System x, iDataPlex, and NeXtScale servers supported with the SSDs (Part 1)

Part number	Description	x3100 M5 (5457)	x3500 M5 (5464)	x3550 M5 (5463)	x3650 M5 (5462)	x3850 X6/x3950 X6 (6241, E7 v3)	nx360 M5 (5465)
46C9110	ServeRAID M5210 SAS/SATA Controller	N	Y	Y	Y	Y	Y
81Y4481	ServeRAID M5110 SAS/SATA Controller	Y	N	N	N	N	N
46C9114	ServeRAID M1215 SAS/SATA Controller	N	Y	Y	Y	N	Y
81Y4448	ServeRAID M1115 SAS/SATA Controller	Y	N	N	N	N	N
81Y4492	ServeRAID H1110 SAS/SATA Controller	Y	N	N	N	N	N
46C8988	N2115 SAS/SATA HBA	Y	N	N	N	N	N
47C8675	N2215 SAS/SATA HBA	N	Y	Y	Y	Y	Y

Table 5. Controllers for System x, iDataPlex, and NeXtScale servers supported with the SSDs (Part 2)

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (7912, E5-2600 v2)
Onboard	ServeRAID M5210e SAS/SATA Controller	N	N	N	N	N	Y	Y	Y	N	N	N
46C9110	ServeRAID M5210 SAS/SATA Controller	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y
46C9114	ServeRAID M1215 SAS/SATA Controller	Y	N	Y	N	N	N	N	N	N	N	N
Onboard	ServeRAID M5110e SAS/SATA Controller	N	N	N	N	Y	N	N	N	N	N	N
81Y4481	ServeRAID M5110 SAS/SATA Controller	Y	Y	Y	Y	Y	N	N	N	N	N	Y
81Y4448	ServeRAID M1115 SAS/SATA Controller	Y	Y	Y	Y	N	N	N	N	N	N	Y
81Y4492	ServeRAID H1110 SAS/SATA Controller	N	Y	Y	Y	N	Y	N	N	N	N	Y
46M0912	6Gb Performance Optimized HBA	Y	Y	Y	Y	Y	N	N	N	N	N	Y
46C8988	N2115 SAS/SATA HBA	Y	N	Y	Y	Y	N	N	N	N	N	N
47C8675	N2215 SAS/SATA HBA	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y

Table 5. Controllers for System x, iDataPlex, and NeXtScale servers supported with the SSDs (Part 3)

Part number	Description	x3100 M4 (2582)	x3250 M4 (2583)	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3650 M4 (7915, E5-2600)	x3690 X5 (7147)	x3750 M4 (8722)	x3850 X5/x3950 X5 (7143)	dx360 M4 (7912, E5-2600)
46C9110	ServeRAID M5210 SAS/SATA Controller	N	N	N	Y	N	Y	N	Y	N	N	N	Y
46C9114	ServeRAID M1215 SAS/SATA Controller	N	N	N	Y	N	Y	N	N	N	N	N	N
Onboard	ServeRAID M5110e SAS/SATA Controller	N	N	N	N	N	N	N	Y	N	N	N	N
81Y4481	ServeRAID M5110 SAS/SATA Controller	N	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y
81Y4448	ServeRAID M1115 SAS/SATA Controller	N	N	Y	Y	Y	Y	Y	N	N	N	N	Y
81Y4492	ServeRAID H1110 SAS/SATA Controller	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y
90Y4304	ServeRAID M5016 SAS/SATA Controller	N	N	N	N	N	N	N	N	Y	N	Y	N
46M0829	ServeRAID M5015 SAS/SATA Controller	Y	Y	N	N	N	N	N	N	Y	N	Y	N
46M0916	ServeRAID M5014 SAS/SATA Controller	Y	Y	N	N	N	N	N	N	Y	N	Y	N
46M0831	ServeRAID M1015 SAS/SATA Controller	Y	Y	N	N	N	N	N	N	Y	N	Y	N
46M0912	6Gb Performance Optimized HBA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46C8988	N2115 SAS/SATA HBA	N	N	Y	Y	N	Y	Y	Y	N	Y	Y	N
47C8675	N2215 SAS/SATA HBA	N	N	N	Y	N	Y	N	Y	N	N	N	Y

Table 6. Controllers for BladeCenter and Flex System servers supported with the SSDs (Part 1)

Part number	Description	HS22 (7870)	HS23 (7875, E5-2600)	HS23 (7875, E5-2600 v2)	HS23E (8038)	HX5 (7873)
90Y4750	ServeRAID H1135 Controller	N	N	N	Y	N
Onboard	Integrated LSI SAS2004	N	Y	Y	N	N
Onboard	Integrated LSI SAS1064e	Y	N	N	N	N
46M6908	SSD Expansion Card for BladeCenter HX5	N	N	N	N	Y

Table 6. Controllers for BladeCenter and Flex System servers supported with the SSDs (Part 2)

Part number	Description	x220 (7906)	x222 (7916)	x240 (8737, E5-2600)	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7917)	x440 (7167)	x280/x480/x880 X6 (7903)	x280/x480/x880 X6 (7196)
00JX142	ServeRAID M5215 with 2GB Flash Enablement	N	N	N	N	N	Y	N	N	N	N
Onboard	ServeRAID M1210e SAS/SATA Controller	N	N	N	N	N	N	N	N	Y	Y
44T1316	ServeRAID M1200 Series Flex System Flash Kit for X6	N	N	N	N	N	N	N	N	N	Y
44T1178	ServeRAID M5100 Series Flex System Flash Kit for X6*	N	N	N	N	N	N	N	N	N	Y
90Y4390	ServeRAID M5115 SAS/SATA Controller	Y	N	Y	Y	Y	N	Y	Y	N	N
90Y4750	ServeRAID H1135 Controller	Y	N	N	N	N	N	N	N	N	N
Onboard	Integrated SATA Controller (Intel C600 chipset)	N	Y	N	N	N	N	N	N	N	N

* Includes ServeRAID M5115 adapter.

SSD Caching: The S3700 solid-state drives support the SSD Caching feature of certain controllers that have this feature enabled as an optional upgrade.

For the latest information about the adapters that are supported by each System x server type, see the ServerProven website: http://ibm.com/servers/eserver/serverproven/compat/us/

Supported operating systems

SSDs operate transparently to users, storage systems, applications, databases, and operating systems. The controllers that support SSDs are supported by the following operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2012
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Server 2008 Foundation
- Microsoft Windows Server 2008 HPC Edition
- Microsoft Windows HPC Server 2008
- Microsoft Windows Small Business Server 2008 Premium Edition
- Microsoft Windows Small Business Server 2008 Standard Edition

- Microsoft Windows Essential Business Server 2008 Premium Edition
- Microsoft Windows Essential Business Server 2008 Standard Edition
- Red Hat Enterprise Linux 7
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 AS for x86
- SUSE Linux Enterprise Server 11 for AMD64/EM64T
- SUSE Linux Enterprise Server 11 for x86
- SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T
- SUSE Linux Enterprise Server 10 for AMD64/EM64T
- SUSE Linux Enterprise Server 10 for x86
- SUSE Linux Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE Linux Enterprise Server 10 with Xen for x86
- VMware vSphere 5.5 (ESXi)
- VMware vSphere 5.1 (ESXi)
- VMware vSphere 5.0 (ESXi)
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware ESX 4.0
- VMware ESXi 4.0

For the latest information about the specific supported versions and service packs, see the ServerProven website: http://ibm.com/servers/eserver/serverproven/compat/us/. Click **System x**, then **Storage controllers & SSD adapters**, to see the support matrix. Select the check mark box that is associated with the System x server in question to see the details about operating system support.

Warranty

The S3700 SATA MLC Enterprise SSDs carry a one-year, customer-replaceable unit (CRU) limited warranty. When the SSDs are installed in a supported server, the drives assume the system's base warranty and any warranty service upgrades.

Solid State Memory cells have an intrinsic, finite number of program/erase cycles that each cell can incur. As a result, each solid state device has a maximum amount of program/erase cycles to which it can be subjected. The warranty for Lenovo solid state drives (SSDs) is limited to drives that have not reached the maximum guaranteed number of program/erase cycles, as documented in the Official Published Specifications for the SSD product. A drive that reaches this limit may fail to operate according to its Specifications.

Physical specifications

The S3700 SATA 1.8-inch MLC Enterprise SSDs have the following physical specifications.

Dimensions and weight (approximate):

- Height: 5 mm (0.2 in.)
- Width: 54 mm (2.1 in.)
- Depth: 79 mm (3.1 in.)
- Weight: 49 g (0.1 lb)

Shipping dimensions and weight (approximate):

- Height: 32 mm (1.3 in.)
- Width: 226 mm (8.9 in.)
- Depth: 150 mm (5.9 in.)
- Weight: 399 g (0.9 lb)

The S3700 SATA 2.5-inch MLC Enterprise SSDs have the following physical specifications.

Dimensions and weight (approximate):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.16 lb)

Shipping dimensions and weight (approximate):

- Height: 63 mm (2.5 in.)
- Width: 174 mm (6.9 in.)
- Depth: 133 mm (5.2 in.)
- Weight: 434 g (1.0 lb)

The S3700 SATA 3.5-inch MLC Enterprise SSDs have the following physical specifications.

Dimensions and weight (approximate, without a 3.5-inch tray):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 74 g (0.2 lb)

Shipping dimensions and weight (approximate):

- Height: 95 mm (3.7 in.)
- Width: 257 mm (10.1 in.)
- Depth: 193 mm (7.6 in.)
- Weight: 484 g (1.1 lb)

Operating environment

The S3700 SATA MLC Enterprise SSDs are supported in the following environment:

- Temperature: 0 - 70 °C (32 - 158°F)
- Relative humidity: 8 - 85% (noncondensing)
- Maximum altitude: 3,050 m (10,000 ft)

Agency approvals

The S3700 SATA MLC Enterprise SSDs conform to the following regulations:

- UL
- CSA
- TUV
- FCC
- EMC
- CE Mark
- C-Tick Mark
- Taiwan (BSMI Certification)
- KCC

Related publications and links

For more information, see the following documents:

- US Announcement Letter for the S3700 SATA MLC G3HS Enterprise SSDs
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS114-031
- US Announcement Letter for the S3700 SATA 3.5-inch MLC Enterprise SSDs
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS114-019
- US Announcement Letter for the S3700 SATA 1.8-inch and 2.5-inch MLC Enterprise SSDs
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS113-116
- ServeRAID Adapter Quick Reference
  http://lenovopress.com/tips0054
- *System x Configuration and Options Guide*
  http://www.ibm.com/systems/xbc/cog/
- ServerProven
  http://ibm.com/servers/eserver/serverproven/compat/us/

Related product families

Product families related to this document are the following:

- Drives

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