

Table of Contents	
Introduction	Server support - Flex System
Do you know?	Operating system support
Part number information	Warranty
Product Guide	
Features	
Technical specifications	Physical specifications
Author: David Watts (/author/david-watts/)	Operating environment
Server support - System x	Agency approvals
Updated: 21 Feb 2017	Related publications and links
Server support - ThinkServer	Related product families
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Abstract

The S3520 Enterprise Entry SATA solid-state drives (SSDs) for System x, ThinkServer and Flex System use Intel 3D NAND flash memory technology with a SATA 6Gbps interface to provide an affordable solution with industry leading performance.

This product guide provides essential presales information to understand the S3520 SSD offerings, their key features and specifications, components and options, and configuration guidelines. This guide is intended for technical specialists, sales specialists, sales engineers, IT architects, and other IT professionals who want to learn more about S3520 SSDs and consider their use in IT solutions.

Change History

Changes in the February 21 update:

- Added ThinkServer TS460 to the Server support - ThinkServer section

Introduction

The S3520 Enterprise Entry SATA solid-state drives (SSDs) for System x, ThinkServer and Flex System use Intel 3D NAND flash memory technology with a SATA 6Gbps interface to provide an affordable solution with industry leading performance. Compared with the Intel S3510 series, these new drives offer significantly improved

endurance and lower power consumption. The S3520 SSDs are optimized for read-intensive applications such as boot, web servers, lower data rate operational databases and analytics.

The S3520 is shown in the following figure.



Figure 1. Intel S3520 Enterprise Entry SATA SSD in a 2.5-inch hot-swap form factor

Did you know?

By combining the latest MLC NAND flash memory technology with Intel's latest controller technology, the design of the S3520 Enterprise Entry SATA SSDs delivers consistent performance, reduced power consumption, and end-to-end data protection, as well as being optimized for IOPS/watt and cost/IOPS.

Rigorous testing of S3520 Enterprise Entry SATA SSDs by Lenovo through the ServerProven® program assures a high degree of storage subsystem compatibility and reliability. Providing additional peace of mind, these drives are covered under Lenovo warranty.

Part number information

The following table lists the System x part numbers and feature codes.

Table 1. System x ordering information

Part number	Feature	Description
2.5-inch hot-swap drives - System x		
01GR726	AUEM	Intel S3520 240GB Enterprise Entry SATA G3HS 2.5" SSD
01GR731	AUEP	Intel S3520 480GB Enterprise Entry SATA G3HS 2.5" SSD
01GR736	AUER	Intel S3520 960GB Enterprise Entry SATA G3HS 2.5" SSD
3.5-inch hot-swap drives - System x		
01GR741	AUF0	Intel S3520 240GB Enterprise Entry SATA HS 3.5" SSD
01GR746	AUF1	Intel S3520 480GB Enterprise Entry SATA HS 3.5" SSD

Part number	Feature	Description
01GR751	AUF2	Intel S3520 960GB Enterprise Entry SATA HS 3.5" SSD
2.5-inch non-hot-swap drives for NeXtScale		
01GR756	AUEL	Intel S3520 240GB Enterprise Entry SATA 2.5" SSD for NeXtScale
01GR761	AUEN	Intel S3520 480GB Enterprise Entry SATA 2.5" SSD for NeXtScale
01GR766	AUEQ	Intel S3520 960GB Enterprise Entry SATA 2.5" SSD for NeXtScale

The following table lists the ThinkServer part numbers.

Table 2. ThinkServer ordering information

Part number	Description
2.5-inch hot-swap drives - ThinkServer	
4XB0K12326	LTS Gen 5 2.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD
4XB0K12329	LTS Gen 5 2.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD
4XB0K12332	LTS Gen 5 2.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD
3.5-inch hot-swap drives - ThinkServer	
4XB0K12327	LTS Gen 5 3.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD
4XB0K12330	LTS Gen 5 3.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD
4XB0K12333	LTS Gen 5 3.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD
3.5-inch non-hot-swap drives for TS150	
4XB0K12328	LTS TS150 2.5" 240GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray
4XB0K12331	LTS TS150 2.5" 480GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray
4XB0K12334	LTS TS150 2.5" 960GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray

The part numbers include the following items:

- One SSD (hot-swap drives have a hot-swap tray attached to the drive)
- Support flyer for SSDs
- Warranty flyer and Important Notices document

Features

The Intel S3520 Enterprise Entry SATA SSDs have the following features:

- Industry standard 2.5-inch or 3.5-inch form factors
- Cost-effective Intel 3D Multi-Level Cell (MLC) NAND flash memory

- Endurance of 1.0 drive writes per day (DWPD) for 5 years, using Intel Standard Endurance Technology (SET). This equates to a total bytes written (TBW) value of:
 - 240 GB drive: 599 TB
 - 480 GB drive: 945 TB
 - 800 GB drive: 1750 TB
- SATA MLC solid-state drive with high read performance and consistently low latencies to fulfill client needs in the enterprise space
- High reliability and enhanced ruggedness
- Energy savings, with 3.5 W typical 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

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 Entry SSDs typically have a better cost per read IOPS ratio but lower endurance and performance compared to Enterprise Performance 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 total bytes written (TBW) in the device specification.

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. However, 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.

For example, the Intel S3520 480 GB drive has an endurance of 945 TB of total bytes written (TBW). This means that for full operation over five years, write workload must be limited to no more than 518 GB of writes per day, which is equivalent to 1.1 full drive writes per day (DWPD). For the device to last three years, the drive write workload must be limited to no more than 863 GB of writes per day, which is equivalent to 1.8 full drive writes per day.

Technical specifications

The following table presents technical specifications for the Intel S3520 Enterprise Entry SATA SSDs.

Table 3. Technical specifications

Feature	240 GB drive	480 GB drive	960 GB drive
Form factor	2.5-inch & 3.5-inch	2.5-inch & 3.5-inch	2.5-inch & 3.5-inch
Interface	6 Gbps SATA	6 Gbps SATA	6 Gbps SATA
Capacity	240 GB	480 GB	960 GB
Endurance (drive writes per day)	1.4 DWPD	1.1 DWPD	1.0 DWPD
Endurance (total bytes written)	599 TB	945 TB	1750 TB
Data reliability	< 1 in 10 ¹⁷ bits read	< 1 in 10 ¹⁷ bits read	< 1 in 10 ¹⁷ bits read
MTBF	2,000,000 hours	2,000,000 hours	2,000,000 hours
IOPS reads (4 KB blocks)	67,500	67,500	67,500
IOPS writes (4 KB blocks)	17,000	17,000	17,000
Sequential read rate (128 KB blocks)	450 MBps	450 MBps	450 MBps
Sequential write rate (128 KB blocks)	380 MBps	380 MBps	380 MBps
Read latency (seq)	40 μ s	40 μ s	40 μ s
Write latency (seq)	42 μ s	42 μ s	42 μ s
Shock, operating	1,000 G (Max) at 0.5 ms	1,000 G (Max) at 0.5 ms	1,000 G (Max) at 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)
Vibration, non-operating	3.13 G _{RMS} (5-700 Hz)	3.13 G _{RMS} (5-700 Hz)	3.13 G _{RMS} (5-700 Hz)
Typical power	3.5 W	3.5 W	3.5 W

Server support - System x

The following tables list the System x servers that are compatible.

Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Table 4. Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Part number	Description	x3250 M6 (3943)	x3250 M6 (3633)	x3550 M5 (8869)	x3650 M5 (8871)	x3850 X6/x3950 X6 (6241, E7 v4)	nx360 M5 (5465, E5-2600 v4)	sd350 (5493)
01GR726	Intel S3520 240GB Enterprise Entry SATA G3HS 2.5" SSD	Y	Y	Y	Y	Y	N	Y
01GR731	Intel S3520 480GB Enterprise Entry SATA G3HS 2.5" SSD	Y	Y	Y	Y	Y	N	Y
01GR736	Intel S3520 960GB Enterprise Entry SATA G3HS 2.5" SSD	Y	Y	Y	Y	Y	N	Y
01GR741	Intel S3520 240GB Enterprise Entry SATA HS 3.5" SSD	Y	Y	Y	Y	N	N	N
01GR746	Intel S3520 480GB Enterprise Entry SATA HS 3.5" SSD	Y	Y	Y	Y	N	N	N
01GR751	Intel S3520 960GB Enterprise Entry SATA HS 3.5" SSD	Y	Y	Y	Y	N	N	N
01GR756	Intel S3520 240GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	Y	N
01GR761	Intel S3520 480GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	Y	N
01GR766	Intel S3520 960GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	Y	N

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Support for System x and dense servers with Intel Xeon v3 processors

Table 5. Support for servers with Intel Xeon v3 processors

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)

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)
01GR726	Intel S3520 240GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	Y	N
01GR731	Intel S3520 480GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	Y	N
01GR736	Intel S3520 960GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	Y	N
01GR741	Intel S3520 240GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR746	Intel S3520 480GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR751	Intel S3520 960GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR756	Intel S3520 240GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	Y
01GR761	Intel S3520 480GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	Y
01GR766	Intel S3520 960GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	Y

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Support for servers with Intel Xeon v2 processors

Table 6. Support for servers with Intel Xeon v2 processors

Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3750 M4 (8753)	x3850 X6/x3950 X6 (6241, E7 v3)

Part number	Description	x3300 M4 (7382)	x3500 M4 (7383, E5-2600 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3750 M4 (8753)	x3850 X6/x3950 X6 (6241, E7 v2)
01GR726	Intel S3520 240GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	N	N	Y
01GR731	Intel S3520 480GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	N	N	Y
01GR736	Intel S3520 960GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	N	N	N	N	N	Y
01GR741	Intel S3520 240GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N
01GR746	Intel S3520 480GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N
01GR751	Intel S3520 960GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N	N
01GR756	Intel S3520 240GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N	N
01GR761	Intel S3520 480GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N	N
01GR766	Intel S3520 960GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N	N



Server support - ThinkServer

The following tables list the ThinkServer systems that are compatible.

Support for sd350: The drives supported with the sd350 are listed in Table 4.

The following tables list the ThinkServer systems that are compatible.

Support for ThinkServer Gen 5 servers with E5 v4 or E3 v5 processors

Table 7. Support for ThinkServer Generation 5 servers with E5 v4 or E3 v5 processors

Part number	Description	TS150 (E3 v5)	TS450 (E3 v5)	TS460 (E3 v5)	RS160 (E3 v5)	TD350 (E5 v4)	RD350 (E5 v4)	RD450 (E5 v4)	RD550 (E5 v4)	RD650 (E5 v4)
4XB0K12326	LTS Gen 5 2.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	N	Y	Y	Y	Y
4XB0K12329	LTS Gen 5 2.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	N	Y	Y	Y	Y
4XB0K12332	LTS Gen 5 2.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	N	Y	Y	Y	Y
4XB0K12327	LTS Gen 5 3.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	Y	Y	Y	Y	Y
4XB0K12330	LTS Gen 5 3.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	Y	Y	Y	Y	Y
4XB0K12333	LTS Gen 5 3.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	Y	Y	N	Y	Y	Y	Y	Y
4XB0K12328	LTS TS150 2.5" 240GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	Y	N	N	N	N	N	N	N	N
4XB0K12331	LTS TS150 2.5" 480GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	Y	N	N	N	N	N	N	N	N
4XB0K12334	LTS TS150 2.5" 960GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	Y	N	N	N	N	N	N	N	N



Support for ThinkServer Gen 5 servers with E5 v3 processors

Table 8. Support for ThinkServer Generation 5 servers with E5 v3 processors

Part number	Description	TD350 (E5 v3)	RD350 (E5 v3)	RD450 (E5 v3)	RD550 (E5 v3)	RD650 (E5 v3)
4XB0K12326	LTS Gen 5 2.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N
4XB0K12329	LTS Gen 5 2.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N
4XB0K12332	LTS Gen 5 2.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N
4XB0K12327	LTS Gen 5 3.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	Y	N	N	N	N



Part number	Description	TD350 (E5 v3)	RD350 (E5 v3)	RD450 (E5 v3)	RD550 (E5 v3)	RD650 (E5 v3)	RQ750 (E5 v3)
4XB0K12330	LTS Gen 5 3.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	Y	N	N	N	N	N
4XB0K12333	LTS Gen 5 3.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	Y	N	N	N	N	N
4XB0K12328	LTS TS150 2.5" 240GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N
4XB0K12331	LTS TS150 2.5" 480GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N
4XB0K12334	LTS TS150 2.5" 960GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N

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Support for ThinkServer Gen 4 servers

Table 9. Support for ThinkServer Generation 4 servers

Part number	Description	TS140	TS440	RS140	TD340	RS140	RD340	RD440	RD540
4XB0K12326	LTS Gen 5 2.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12329	LTS Gen 5 2.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12332	LTS Gen 5 2.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12327	LTS Gen 5 3.5" 240GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12330	LTS Gen 5 3.5" 480GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12333	LTS Gen 5 3.5" 960GB S3520 Entry SATA 6Gbps Hot Swap SSD	N	N	N	N	N	N	N	N
4XB0K12328	LTS TS150 2.5" 240GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N	N	N
4XB0K12331	LTS TS150 2.5" 480GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N	N	N

Part number	Description	TS140	TS440	RS140	TD340	RS140	RD340	RD440	RD540	RD640
4XB0K12334	LTS TS150 2.5" 960GB S3520 Entry SATA 6Gbps SSD with 3.5" Tray	N	N	N	N	N	N	N	N	N



Server support - Flex System

The following table lists the compatibility information for Flex System servers.

Table 10. Support for Flex System servers

Part number	Description	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7167)	x880/x480/x280 X6 (7903)	x280/x480/x880 X6 (7196)	Storage Expansion Node
01GR726	Intel S3520 240GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	Y	N	N	Y	N
01GR731	Intel S3520 480GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	Y	N	N	Y	N
01GR736	Intel S3520 960GB Enterprise Entry SATA G3HS 2.5" SSD	N	N	Y	N	N	Y	N
01GR741	Intel S3520 240GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR746	Intel S3520 480GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR751	Intel S3520 960GB Enterprise Entry SATA HS 3.5" SSD	N	N	N	N	N	N	N
01GR756	Intel S3520 240GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N
01GR761	Intel S3520 480GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N
01GR766	Intel S3520 960GB Enterprise Entry SATA 2.5" SSD for NeXtScale	N	N	N	N	N	N	N



Operating system support

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 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 2012
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- Red Hat Enterprise Linux 7
- SUSE LINUX Enterprise Server 10 for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 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
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware vSphere 5.0 (ESXi)
- VMware vSphere 5.1 (ESXi)
- VMware vSphere 5.5 (ESXi)

For the latest information about the specific supported operating system versions and service packs, see [ServerProven](http://www.lenovo.com/us/en/serverproven/xseries/controllers/matrix.shtml):

<http://www.lenovo.com/us/en/serverproven/xseries/controllers/matrix.shtml>
(<http://www.lenovo.com/us/en/serverproven/xseries/controllers/matrix.shtml>)

Select the check mark box that is associated with the Controller and server combination in question to see the details about operating system support.

Warranty

The Intel S3520 Enterprise Entry SATA SSDs carry a one-year, customer-replaceable unit (CRU) limited warranty. When the SSDs are installed in a supported server, these drives assume the system's base warranty and any warranty 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 drives have the following physical specifications (approximate, without the tray):

- Height: 7 mm (0.3 in.)
- Width: 70 mm (2.8 in.)
- Depth: 100 mm (4.0 in.)
- Weight: 66 g (0.15 lb)

Shipping dimensions and weight - 2.5-inch drives (approximate, including the tray):

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

Shipping dimensions and weight - 3.5-inch drives (approximate, including the tray):

- 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 SSDs are supported in the following environment:

- Temperature: 0 - 70°C (32 - 158°F)
- Relative humidity: 5 - 95% (noncondensing)
- Maximum altitude: 3,050 m (10,000 ft)

Agency approvals

The Intel S3520 Enterprise Entry SATA SSDs conform to the following regulations:

- FCC Title 47, Part 15B, Class B
- CA/CSA-CEI/IEC CISPR 22:02
- EN 55024: 1998
- EN 55022: 2006
- EN-60950-1 2nd Edition
- UL/CSA EN-60950-1 2nd Edition
- Low Voltage Directive 2006/95/EC
- C-Tick: AS/NZS3584
- BSMI: CNS 13438
- KCC Article 11.1
- RoHS DIRECTIVE 2011/65/EU
- WEEE Directive 2002/96/EC

Related publications and links

For more information, see the following documents:

- Lenovo Enterprise SSD product page
<http://shop.lenovo.com/us/en/systems/servers/options/systemx/storage/solid-state/enterprise/>
(<http://shop.lenovo.com/us/en/systems/servers/options/systemx/storage/solid-state/enterprise/>)
- Intel SSD Data Center S3520 Series product page
<http://www.intel.com/content/www/us/en/solid-state-drives/solid-state-drives-dc-s3520-series.html> (<http://www.intel.com/content/www/us/en/solid-state-drives/solid-state-drives-dc-s3520-series.html>)
- ServerProven for SSDs
<http://www.lenovo.com/us/en/serverproven/xseries/storage/hssdmatrix.shtml>
(<http://www.lenovo.com/us/en/serverproven/xseries/storage/hssdmatrix.shtml>)
- Lenovo RAID Introduction
<https://lenovopress.com/lp0578-lenovo-raid-introduction>
(<https://lenovopress.com/lp0578-lenovo-raid-introduction>)
- Lenovo RAID Management Tools and Resources
<https://lenovopress.com/lp0579-lenovo-raid-management-tools-and-resources>
(<https://lenovopress.com/lp0579-lenovo-raid-management-tools-and-resources>)
- ServeRAID Adapter Quick Reference
<http://lenovopress.com/tips0054> (<http://lenovopress.com/tips0054>)

Related product families

Product families related to this document are the following:

- Drives (/servers/options/drives)

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