TOSHIBA
Leading Innovation

HDD

AL14SEBxxxN SERIES
ENTERPRISE PERFORMANCE HDD

Product image may represent a design model.

KEY FEATURES

- Industry Standard 2.5-inch 15mm Height Form Factor
- 1200 GB, 900 GB, 600 GB, 450 GB and 300 GB Capacity Models
- Rotational Speed of 10,500 rpm
- Dual-Port 12.0 Gbit/s SAS Interface
- MTTF of 2,000,000 hours
- 24/7 Mission Critical Workload Performance and Data Reliability
- RoHS Compatible, Halogen Free and Antimony Free

APPLICATIONS

- Mid-Range Volume Servers
- Hybrid and Mainstream Storage Arrays
- Blade and Rack mount Servers
- Edge Servers and Content Delivery Infrastructure
- Mission-Critical Systems

MAIN SPECIFICATIONS

Model Number		AL14SEB120N AL14SEB120NY AL14SEQ120N	AL14SEB090N AL14SEB090NY AL14SEQ090N	AL14SEB060N AL14SEB060NY AL14SEQ060N	AL14SEB045N AL14SEB045NY AL14SEQ045N	AL14SEB030N AL14SEB030NY AL14SEQ030N
Interface		SAS-3.0 (12.0 Gbit/s , 6.0 Gbit/s , 3.0 Gbit/s , 1.5 Gbit/s)				
Formatted Capacity		1.2 TB	900 GB	600 GB	450 GB	300 GB
Performance	Interface Speed	12.0 Gbit/s Max.				
	Rotation Speed	10,500 rpm				
	Average Latency Time	2.86 ms				
	Buffer Size	128 MiB				
Logical Data Block Length	HOST	512 to 528 B (fixed length)				
	DISK	512 to 528 B (fixed length)				
Supply Voltage	Allowable Voltage	5 V ± 5 % 12 V ± 5 %				
Power Consumption	Low Power Idle	4.0 W Typ.				

RELIABILITY

Model Number	AL14SEBxxxN, AL14SEBxxxNY, AL14SEQxxxN
MTTF	2,000,000 hours
Non-recoverable Error Rate	10 errors per 10^{17} bits read

MECHANICAL SPECIFICATIONS

Model Number	AL14SEBxxxN, AL14SEBxxxNY, AL14SEQxxxN
Height	15.0 mm ± 0,5 mm Max.
Width	69.85 mm ± 0.25 mm Max.
Length	100.45 mm Max.
Weight	230 g Max.

ENVIRONMENTAL LIMITS

Item		Specification
Temperature	Operating	5 °C to 55 °C
	Non-Operating	- 40 °C to 70 °C
Humidity	Operating	5 % to 90 % R.H. (No condensation)
	Non-Operating	5 % to 95 % R.H. (No condensation)
Shock	Operating	980 m/s^2 { 100 G } (1 ms duration)
	Non-Operating	3,920 m/s^2 { 400 G } (2 ms duration)
Vibration	Operating	9.8 m/s^2 { 1.0 G } (20 to 300 Hz)
	Non-Operating	49 m/s^2 { 5.0 G } (20 to 300 Hz)
Altitude	Operating	-305 m to +3,048 m { -1,000 to +10,000 feet }
	Non-Operating	-305 m to +12,192 m { -1,000 to +40,000 feet }

ENVIRONMENTAL FEATURE

Model Number	AL14SEBxxxN, AL14SEBxxxNY, AL14SEQxxxN
RoHS	Compatible

REMARKS

Model Number	AL14SEBxxxN, AL14SEBxxxNY, AL14SEQxxxN
Options	AL14SEBxxxNY Series : SIE , AL14SEQxxxN Series : SED

Definition of capacity: Toshiba defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^{30} = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

A kibibyte (KiB) means 2^{10}, or 1,024 bytes, a mebibyte (MiB) means 2^{20}, or 1,048,576 bytes, and a gibibyte (GiB) means 2^{30}, or 1,073,471,824 bytes.

MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.

Toshiba Semiconductor & Storage Products Company defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive (Directive 2011/65/EC of the European Parliament and of the Council of 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment). "Homogeneous Material" means a material of uniform composition that cannot be mechanically disjointed (meaning separated, in principle, by mechanical actions such as unscrewing, cutting, crushing, grinding and/or abrasive processes) into different materials. Examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

Toshiba Semiconductor & Storage Products Company defines halogen-free and antimony-free SSD and HDD products as those meeting all of the following requirements: (a) containing bromine (Br) and chlorine (Cl) at no more than 900 parts per million (ppm) by weight for each element, and containing bromine and chlorine in an aggregate amount not exceeding 1500 ppm by weight; and (b) containing no more than 1000 ppm antimony (Sb) by weight. For the avoidance of doubt, Halogen-Free/Antimony-Free SSD or HDD products may not be entirely free of bromine, chlorine, or antimony, and may contain other element of the halogen family.

Read and write speed may vary depending on the host device, read and write conditions, and file size.

"2.5-inch" and "3.5-inch" mean the form factor of HDDs or SSDs. They do not indicate drive's physical size.

Subject to Change: While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, and availability are all subject to change without notice.

Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant TOSHIBA information and the instructions for the application that Product will be used with or for.