TOSHIBA

HDD

❯ MG04SCAxxEx SERIES
ENTERPRISE CAPACITY HDD

❯ KEY FEATURES
- Industry Standard 3.5-inch 26.1 mm Height Form-Factor
- Large Capacity (6 / 5 / 4 / 2 TB Models)
- 7,200rpm Performance
- Dual-Port 12.0 Gbit/s SAS Interface
- 550 total TB Transferred per Year Workload Rating
- 4Kn or 512e Advanced Format Sector Technology
- Introducing Toshiba Persistent Write Cache Technology for Data-Loss Protection in Sudden Power-Loss Events
- Sanitize Instant Erase (SIE) Option Available

Product image may represent a design model.

❯ APPLICATIONS
- Engineered for Mid-line / Nearline Business Critical Workloads
- Tier 2 Business-Critical Servers and Storage Systems
- Servers Supporting Application Workloads that Benefit from High Capacity per Spindle
- Capacity-Optimized Data Center Storage Systems

❯ MAIN SPECIFICATIONS

Model Number		MG04SCA60EE MG04SCA60EA	MG04SCA50EE MG04SCA50EA	MG04SCA40EE MG04SCA40EA	MG04SCA20EE MG04SCA20EA
Interface		SAS-3.0 (6.0 Gbit/s , 3.0 Gbit/s , 1.5 Gbit/s)			
Formatted Capacity		6 TB	5 TB	4 TB	2 TB
Performance	Interface Speed	12.0 Gbit/s Max.			
	Rotation Speed	7,200 rpm ± 0.1 %			
	Average Latency Time	4.17 ms			
	Buffer Size	128 MiB			
	Data Transfer Speed (Sustained)	205 MiB/s			
Logical Data Block Length	HOST - MG04SCAxxEE	512 / 520 / 528 B (emulation)			
	HOST - MG04SCAxxEA	4,096 / 4,160 / 4,224 B			
	DISK	4,096 / 4,160 / 4,224 B			
Supply Voltage	Allowable Voltage	5 V ± 5% 12 V ± 5 %			
Power Consumption	Read / Write	11.8 W Max.			
	Low Power Idle	6.1 W Typ.			

❯ RELIABILITY

Model Number	MG04SCAxxEx
MTTF	1,400,000 hours
Non-recoverable Error Rate	10 errors per 10^{16} bits read
24 x 7 Operation	Yes
Workloads	550 TB/y

MECHANICAL SPECIFICATIONS

Model Number	MG04SCA60EE MG04SCA60EA	MG04SCA50EE MG04SCA50EA	MG04SCA40EE MG04SCA40EA	MG04SCA20EE MG04SCA20EA
Height	26.1 mm Max.			
Width	101.6 mm ± 0.25 mm Max.			
Length	147 mm Max.			
Weight	770 g Max.	720 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	686 m/s^2 { 70 G } (2 ms duration)
	Non-Operating	2,940 m/s^2 { 300 G } (2 ms duration)
Vibration	Operating	7.35 m/s^2 { 0.75 G } (5 to 300 Hz) 2.45 m/s^2 { 0.25 G } (300 to 500 Hz)
	Non-Operating	49 m/s^2 { 5.0 G } (5 to 500 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	MG04SCAxxEx
RoHS	Compatible

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.

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.

PWC (Persistent Write Cache) with PLP (Power Loss Protection) : PWC with PLP is a function to handle the write data that the drive reports "Normal completion" to the host but not being stored to hard disk media yet. The write data may be written to the commanded LBA on the hard disk media. The un-written data to hard disk media is stored to Flash memory using back up power by PLP when the power supply to the drive suddenly is shut down. And, after PLP operation, it may be required more time to start up the drive than in case of normal shutdown. 1) PLP does not secure data in the mode of all the power shutdowns. When power supplies other than recommended procedure are intercepted, data might be lost. 2) In the power shutdown before it reports on the Write completion, data not anticipated might be lost.