TOSHIBA

MG07ACA SERIES
ENTERPRISE CAPACITY HDD

Using the world's first[1] 9-disk Helium-sealed design, the MG07ACA Enterprise Capacity SATA HDD provides up to 14TB[2] of conventional magnetic recording (CMR) capacity and 7,200 rpm performance. The industry-standard 3.5-inch[3] form-factor integrates easily into cloud-scale storage infrastructure, business-critical servers and storage, and File and Object storage solutions.

The MG07ACA Series utilizes Toshiba precision laser welding technology to seal helium inside the 9-disk mechanics for the life of the drive. The helium-sealed design reduces aerodynamic drag to deliver a lower operational power profile, helping to achieve TCO objectives for cloud-scale and software-defined data center infrastructure.



Product image may represent a design model.

KEY FEATURES

- 14TB and 12TB capacity models
- Innovative 9-disk helium-sealed design for superior storage density
- Industry Standard 3.5-inch 26.1 mm Form Factor
- 7,200 rpm Performance
- SATA 6.0 Gbit/s Interface[4]
- Low operational power profile, providing excellent power efficiency (W/TB) for better TCO
- 550 Total TB Transferred per Year Workload Rating[5]
- Sanitize Instant Erase (SIE[6]) option model available

APPLICATIONS

- Cloud-scale Storage Infrastructure
- Software-defined data center infrastructure
- File- and Object-based storage infrastructure
- Mid-line / Nearline Business Critical Workloads
- Tier 2 Business-Critical Servers and Storage Systems

SPECIFICATIONS

Item		MG07ACA14TA MG07ACA14TE	MG07ACA12TA MG07ACA12TE
Interface		SATA-3.3	
Formatted Capacity		14 TB	12 TB
Performance	Interface Speed	6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s	
	Rotation Speed	7,200 rpm	
	Buffer Size	256 MiB [7]	
	Maximum Data Transfer Speed [8] (Sustained)	248 MiB/s Typ.	242 MiB/s Typ.
Logical Data Block Length	MG07ACAxxxA (fixed length)	4,096 B	
	MG07ACAxxxE (emulation) [9]	HOST: 512 B, DISK: 4,096 B	
Supply Voltage	Allowable Voltage	12 V [10] ± 10 % / 5 V [10] + 10% / -7% [11]	
Power Consumption	Random Read / Write 4KB Q1	8.09 W Typ.	7.83 W Typ.
	Active Idle (Idle-A)	4.53 W Typ.	4.25 W Typ.
Acoustics (Sound Power) [12]	Idle	20 dB Typ.	

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ENVIRONMENTAL LIMITS

Item		Specification
Ambient temperature	Operating	5 °C to 55 °C
	Non-Operating [13] [14]	- 40 °C to 70 °C
Relative Humidity	Operating	5 % to 90 % R.H. (No condensation)
	Non-Operating	5 % to 95 % R.H. (No condensation)
Altitude	Operating	- 305 m to 3,048 m
	Non-Operating [13]	- 305 m to 12,192 m
Shock [15]	Operating	686 m/s^2 { 70 G } (2 ms duration)
	Non-Operating	2,450 m/s^2 { 250 G } (2 ms duration)
Vibration [15]	Operating [16]	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 [17]	29.4 m/s^2 { 3.0 G } (5 to 500 Hz)

RELIABILITY

Item	Specification
MTTF [18]	2,500,000 hours
Non-recoverable Error Rate	10 error per 10^{16} bits read
Load / Unload	600,000 times
Availability	24 hours/day, 7 days/week
Rated Annual Workload (Total TB Transferred per Year, R/W)	550 TB/year

MECHANICAL SPECIFICATIONS

Item	Specification
Width	101.85 mm Max
Height	26.1 mm Max
Length	147.0 mm Max
Weight	720 g Max .

[1] Source: Toshiba Electronic Devices & Storage Corporation, as of December, 2017.
[2] Definition of capacity: A terabyte (TB) is 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1TB = 2^{40} = 1,099,511,627,776 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 and/or pre-installed software applications, or media content. Actual formatted capacity may vary.
[3] "3.5-inch" means the form factor of HDDs. They do not indicate drive's physical size.
[4] Read and write speed may vary depending on the host device, read and write conditions, and file size.
[5] Workload is defined as the amount of data written, read or verified by commands from host system.
[6] SIE: Sanitize Instant Erase. SIE is a function to invalidate the data recorded on the magnetic disks at a blink.
[7] A mebibyte (MiB) means 2^{20}, or 1,048,576 bytes.
[8] The maximum sustained data rate and interface speed may be restricted to the response speed of host system and by transmission characteristics. 1 Gbit/s = 1,000,000,000 bits/s. 1 MiB/s = 1,048,576 bytes/s
[9] Read–modify-write is supported.
[10] Input voltages are specified at the HDD connector side, during HDD ready state.
[11] Make sure the value is not less than -0.3V DC (less than -0.6V, 0.1ms) when turning on or off the power.
[12] The measuring method is based on ISO 7779.
[13] Non-operating condition(except storage condition) assumes short term transportation.
[14] The range of altitude is 3,048 m or less. Up to 55°C at 7,620m. Up to 40°C at 12,192m.
[15] Vibration applied to the HDD is measured at near the mounting screw hole on the frame as much as possible.
[16] At random seek write/read and default on retry setting with log sweep vibration.
[17] At power-off state after installation
[18] 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.

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

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