

> 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.



> 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	MG07ACAxxA (fixed length)	4,096 B	
	MG07ACAxxE (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	7.80 W Typ.	7.50 W Typ.
	Active Idle (Idle-A)	4.22 W Typ.	3.93 W Typ.
Acoustics (Sound Power) ^[12]	Idle	20 dB Typ.	

> 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 = 2⁴⁰ = 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 2²⁰, 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.