

## MG08-D SERIES ENTERPRISE CAPACITY HDD

The Enterprise Capacity 7200 rpm HDD models offer up to 8 TB<sup>[1]</sup>, a choice of interface (SATA -MG08ADA Series, and SAS - MG08SDA Series), as well as a choice of 512 Native(512n) sector or 512 emulation(512e) sector technologies. All models utilize a power-efficient mechanical design incorporating the latest advancements in HDD technology. MG08-D Series models are designed to provide plug-and-play robustness using the industry standard 3.5-inch<sup>[2]</sup> form factor. Model options supporting Sanitize Instant Erase (SIE) and Self-Encrypting Drive (SED).



Product image may represent a design model.

### KEY FEATURES

- Industry Standard 3.5-inch 26.1 mm Height Form Factor
- Up to 8 TB Capacity
- 7200 rpm Performance
- Choice of SATA 6 Gbit/s or Dual-Port SAS 12 Gbit/s Interface
- 550 Total TB Transferred per Year Workload Rating<sup>[3]</sup>
- Choice of 512n or 512e (Advanced Format) Sector Technology
- Sanitize Instant Erase (SIE) and Self-Encrypting Drive (SED) Option Models Available

### APPLICATIONS

- Engineered for Mid-line / Nearline Business Critical Workloads
- Tier 2 Business-Critical Servers and Storage Systems
- Servers Supporting Workloads that Benefit from Higher Capacity per Spindle
- Capacity-Optimized Data Center Storage Systems
- IT infrastructure designed around Enterprise Capacity HDD performance
- Applications and hypervisors that require legacy 512 Native Sector Technology

Item		MG08ADA800A/AY(4Kn) MG08ADA800E/EY(512e) MG08ADP800A(4Kn) MG08ADP800E(512e)	MG08ADA600A/AY(4Kn) MG08ADA600E/EY(512e) MG08ADP600A(4Kn) MG08ADP600E(512e)	MG08ADA400A/AY(4Kn) MG08ADA400E/EY(512e) MG08ADA400N/NY(512n) MG08ADP400A(4Kn) MG08ADP400E(512e) MG08ADP400N(512n)
Interface		SATA-3.3		
Formatted Capacity		8 TB	6 TB	4 TB
Performance	Interface Speed <sup>[4]</sup>	6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s		
	Rotation Speed	7200 rpm		
	Buffer Size	256 MiB <sup>[5]</sup>		
	Maximum Sustained Data Transfer Speed (Typ.)	4Kn/512e: 248 MiB/s	4Kn/512e: 239 MiB/s	4Kn/512e: 243 MiB/s 512n : 222 MiB/s
Logical Data Block Length	4Kn	4096 B		
	512e	Host:512 B, Disk:4096 B		
	512n	-	-	512 B
Supply Voltage	Allowable Voltage	12 V <sup>[6]</sup> ± 10 % / 5 V <sup>[6]</sup> + 10% / -7% <sup>[7]</sup>		
Power Consumption	Write / Read 4KB Q1(Typ.)	9.29 W	8.50 W	7.76 W
	Active Idle (Idle-A) (Typ.)	5.61 W	4.90 W	4.07 W
Acoustics <sup>[8]</sup>	Active Idle (Typ.)	31 dB		

Item	MG08SDA800A/AY (4Kn) MG08SDA800E/EY (512e) MG08SDP800A(4Kn) MG08SDP800E(512e)	MG08SDA600A/AY (4Kn) MG08SDA600E/EY (512e) MG08SDP600A(4Kn) MG08SDP600E(512e)	MG08SDA400A/AY (4Kn) MG08SDA400E/EY (512e) MG08SDA400N/NY(512n) MG08SDP400A(4Kn) MG08SDP400E(512e) MG08SDP400N(512n)	
Interface	SAS-3			
Formatted Capacity	8 TB	6 TB	4 TB	
Performance	Interface Speed <sup>[4]</sup>	12.0 Gbit/s, 6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s		
	Rotation Speed	7200 rpm		
	Buffer Size	256 MiB <sup>[5]</sup>		
	Maximum Sustained Data Transfer Speed (Typ.)	4Kn/512e: 248 MiB/s	4Kn/512e: 239 MiB/s	4Kn/512e: 243 MiB/s 512n : 222 MiB/s
Logical Data Block Length	4Kn	4096 B / 4160 B / 4224 B		
	512e	Host: 512 B Disk:4096 B / Host 520 B Disk:4160 B		
	512n	-	512 B / 520B	
Supply Voltage	Allowable Voltage 12 V <sup>[6]</sup> ± 10 % / 5 V <sup>[6]</sup> + 10% / -7% <sup>[7]</sup>			
Power Consumption	Write / Read 4KB Q1(Typ.)	9.72 W	9.03 W	8.16 W
	Active Idle (Idle-A) (Typ.)	6.06 W	5.39 W	4.50 W
Acoustics <sup>[8]</sup>	Active Idle (Typ.)	31 dB		

## ENVIRONMENTAL LIMITS

Item	Specification	
Ambient temperature	Operating	5 °C to 55 °C (No condensation)
	Non-Operating	-40 °C to 70 °C (No condensation)
Enclosure surface temperature	Operating	5 °C to 60 °C (No condensation)
Relative Humidity	Operating	5 % to 90 % R.H. (No condensation)
	Non-Operating	5 % to 95 % R.H. (No condensation)
Altitude	Operating	- 305 m to 3048 m
	Non-Operating	- 305 m to 12 192 m
Shock <sup>[9]</sup>	Operating	686 m/s <sup>2</sup> { 70 G } ( 2 ms duration )
	Non-Operating	2940 m/s <sup>2</sup> { 300 G } ( 2 ms duration ) 4TB 2450 m/s <sup>2</sup> { 250 G } ( 2 ms duration ) 8/6TB
Vibration <sup>[9]</sup>	Operating <sup>[10]</sup>	7.35 m/s <sup>2</sup> { 0.75 G } ( 5 to 300 Hz ) 2.45 m/s <sup>2</sup> { 0.25 G } ( 300 to 500 Hz )
	Non-Operating <sup>[11]</sup>	29.4 m/s <sup>2</sup> { 3.0 G } ( 5 to 500 Hz )

## RELIABILITY

Item	Specification
MTTF / AFR <sup>[12]</sup>	2 000 000 hours / 0.44 %
Non-recoverable Error Rate	10 error per 10 <sup>16</sup> bits read
Load / Unload	600 000 times
Availability	24 hours/day, 7 days/week
Rated Annual Workload	550 TB per year

[1] Definition of capacity: Toshiba defines 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 1TB = 2<sup>40</sup> = 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, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

[2] "3.5-inch" mean the form factor of HDDs. They do not indicate drive's physical size.

[3] Workload is defined as the amount of data written, read or verified by commands from host system.

[4] 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 bit/s. 1 MiB/s = 1 048 576 B/s

[5] A mebibyte (MiB) means 2<sup>20</sup>, or 1 048 576 bytes.

[6] Input voltages are specified at the HDD connector side, during HDD ready state.

[7] Make sure the value is not less than DC -0.3 V DC (less than -0.6 V, 0.1 ms) when turning on or off the power.

[8] The measuring method is based on ISO 7779.

[9] Vibration applied to the HDD is measured at near the mounting screw hole on the frame as much as possible.

[10] At random seek write/read and default on retry setting with log sweep vibration.

[11] At power-off state after installation

[12] MTTF (Mean Time to Failure) of the HDDs during its life time is 2 000 000 hours and AFR (Annualized Failure Rate) is 0.44 %. (POH: 8760 hours per one year (24 hours per one day, 7 days per one week). Average HDA surface temperature:40°C or less, workloads: 550 TB/year, which is defined as the amount of data written, read or verified by commands from host system). Continual or sustained operation at case HDA surface temperature above 40°C may degrade product reliability.