MG10-D SERIES

ENTERPRISE CAPACITY HDD

Harness the raw power of our cutting-edge MG10-D Series hard drive, delivering increased performance and power efficiency than prior models.

The 7200 rpm 3.5-inch[1] HDD delivers up to 10 TB[2] of storage capacity and a choice of interface (SATA and SAS) with 512n and 512e sector options available.

Crafted with precision engineering and years of Toshiba experience MG10-D Series delivers unrivaled quality and reliability. With SIE and SED options, valuable data is safeguarded by a storage solution known for its robust performance and unwavering dependability.



Product image may represent a design model.

KEY FEATURES

- Extensive Lineup.
- Conventional Magnetic Recording (CMR) for broad compatibility
- Industry Standard 3.5-inch 26.1 mm height Form Factor
- 7200 rpm Performance
- Lower operational power profile, providing excellent power efficiency (W/TB) for better TCO
- 550 Total TB Transferred per Year Workload Rating [4]
- Toshiba Persistent Write Cache Technology for Data-Loss Protection in Sudden Power-Loss Events
- Sanitize Instant Erase (SIE) and Self-Encrypting Drive (SED) Option Models [5] available

APPLICATIONS

- Business-Critical Enterprise Servers and Storage Systems
- Enterprise storage arrays (RAID, Software defined)
- Distributed file systems, big data
- Enterprise and cloud archive, data recovery systems
- Applications and hypervisors that require legacy 512 Native Sector Technology

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SPECIFICATION

SATA

Item			MG10ADA10T MG10ADP10T	MG10ADA800 MG10ADP800	MG10ADA600 MG10ADP600	MG10ADA400 MG10ADP400	MG10ADA200 MG10ADP200	MG10ADA100 MG10ADP100
Interface			SATA-3.3					
Formatted Capacity			10 TB	8 TB	6 TB	4 TB	2 TB	1 TB
Performance	Interface Speed [3]		6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s					
	Rotation Speed		7200 rpm					
	Buffer Size [6]		512 MiB					
	Maximum Sustained Data Transfer Speed [7] (Typ.)	MG10ADxxx xE/EY	268 MiB/s					—
		MG10ADxxx xN/NY	—			227.8 MiB/s	211 MiB/s	
Logical Data Block Length	MG10ADxxxxE/EY[8]		HOST 512 B, DISK 4096 B					—
	MG10ADxxxxN/NY		—			HOST 512 B, DISK 512 B		
Supply Voltage	Allowable Voltage		12 V[9] +/-10 %, 5 V[9] +10/-7 %[10]					
Power Consumption	Write / Read (4KB Q1) (Typ.)	MG10ADxxx xE/EY	9.63 W	8.74 W	7.97 W	7.29 W	6.57 W	—
		MG10ADxxx xN/NY	—			7.96 W	7.17 W	6.26 W
	Active Idle (Typ.)	MG10ADxxx xE/EY	5.74 W	4.92 W	4.14 W	3.49 W	2.88 W	—
		MG10ADxxx xN/NY	—			4.21 W	3.47 W	2.93 W
Acoustics (Sound Power) [11] (Typ.)			Idle: 34 dB					

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SAS

Item			MG10SDA10T MG10SDP10T	MG10SDA800 MG10SDP800	MG10SDA600 MG10SDP600	MG10SDA400 MG10SDP400	MG10SDA200 MG10SDP200
Interface			SAS-3.0				
Formatted Capacity			10 TB	8 TB	6 TB	4 TB	2 TB
Performance	Interface Speed [3]		12.0 Gbit/s, 6.0 Gbit/s, 3.0 Gbit/s, 1.5 Gbit/s				
	Rotation Speed		7200 rpm				
	Buffer Size [6]		512 MiB				
	Maximum Sustained Data Transfer Speed [7] (Typ.)	MG10SDxxxxE/EY	268 MiB/s				
		MG10SDxxxxN/NY	—			227.8 MiB/s	211 MiB/s
Logical Data Block Length	MG10SDxxxxE/EY[8]		HOST 512 B, DISK 4096 B HOST 520 B, DISK 4160 B HOST 528 B, DISK 4224 B				
	MG10SDxxxxN/NY		—			HOST 512 B, DISK 512 B	
Supply Voltage	Allowable Voltage		12 V[9] +/-10 %, 5 V[9] +10/-7 %[10]				
Power Consumption	Write / Read (4KB Q1) (Typ.)	MG10SDxxxxE/EY	9.91 W	9.16 W	8.33 W	7.67 W	6.93 W
		MG10SDxxxxN/NY	—			8.29 W	7.51 W
	Active Idle (Typ.)	MG10SDxxxxE/EY	6.15 W	5.41 W	4.55 W	3.87 W	3.26 W
		MG10SDxxxxN/NY	—			4.53 W	3.85 W
Acoustics (Sound Power) [11] (Typ.)			Idle:34 dB				

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ENVIRONMENTAL LIMITS

Item		Specification
Ambient Temperature	Operating	5 °C to 55 °C (No condensation)
	Non-Operating [12]	-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 [12]	5 % to 95 % R.H. (No condensation)
Altitude	Operating	-305 m to +3048 m
	Non-Operating [12][13]	-305 m to +12 192 m
Shock [14]	Operating	686 m/s^2 {70 G} (2 ms duration)
	Non-Operating [12]	2450 m/s^2 {250 G} (2 ms duration)
Vibration [14]	Operating [15]	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 [12] [16]	29.4 m/s^2 {3.0 G} (5 to 500 Hz)

RELIABILITY

Item	Specification
MTTF / MTBF (AFR) [17]	2 000 000 hours (0.44 %)
Non-recoverable Error Rate	10 per 10^{16} bits read
Load / Unload	600 000 times
Availability	24 hours/day, 7 days/week
Rated Annual Workload	550 TB per year

[1] "3.5-inch" mean the form factor of HDDs. They do not indicate drive's physical size.
[2] Definition of capacity: One terabyte (TB) = one trillion bytes, but storage capacity actually available may vary depending on operating environment and formatting. 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] Read and write speed may vary depending on the host device, read and write conditions, and file size.
[4] Workload is defined as the amount of data written, read or verified by commands from host system.
[5] SED supports TCG Enterprise SSCs. And the HDDs which have any security function may not be available in the countries where the use of such HDDs is prohibited or limited due to export control and local regulations.
[6] A mebibyte (MiB) means 2^{20}, or 1 048 576 bytes.
[7] 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
[8] Read–modify-write is supported.
[9] Input voltages are specified at the HDD connector side, during HDD ready state.
[10] Make sure the value is not less than -0.3 V DC (less than -0.6 V, 0.1 ms) when turning on or off the power.
[11] The measuring method is based on ISO 7779.
[12] Non-operating condition (except storage condition) assumes short term transportation.
[13] The range of altitude is 3048 m or less. Up to 55 °C at 7620 m. Up to 40 °C at 12 192 m.
[14] Vibration applied to the HDD is measured at near the mounting screw hole on the frame as much as possible.
[15] At random seek write/read and default on retry setting with log sweep vibration.
[16] At power-off state after installation
[17] MTTF / MTBF (Mean Time to Failure / Mean Time Between 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 per one 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.

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MODEL NUMBER

SATA

Capacity	Interface	Sector Format	Optional Security	Model number
10 TB	SATA-3.3	512e / 4Kn *	-	MG10ADA10TE
8 TB	SATA-3.3	512e / 4Kn *	-	MG10ADA800E
6 TB	SATA-3.3	512e / 4Kn *	-	MG10ADA600E
4 TB	SATA-3.3	512e / 4Kn *	-	MG10ADA400E
2 TB	SATA-3.3	512e / 4Kn *	-	MG10ADA200E
4 TB	SATA-3.3	512n	-	MG10ADA400N
2 TB	SATA-3.3	512n	-	MG10ADA200N
1 TB	SATA-3.3	512n	-	MG10ADA100N
10 TB	SATA-3.3	512e / 4Kn *	SIE	MG10ADA10TEY
8 TB	SATA-3.3	512e / 4Kn *	SIE	MG10ADA800EY
6 TB	SATA-3.3	512e / 4Kn *	SIE	MG10ADA600EY
4 TB	SATA-3.3	512e / 4Kn *	SIE	MG10ADA400EY
2 TB	SATA-3.3	512e / 4Kn *	SIE	MG10ADA200EY
4 TB	SATA-3.3	512n	SIE	MG10ADA400NY
2 TB	SATA-3.3	512n	SIE	MG10ADA200NY
1 TB	SATA-3.3	512n	SIE	MG10ADA100NY
10 TB	SATA-3.3	512e / 4Kn *	SED	MG10ADP10TE
8 TB	SATA-3.3	512e / 4Kn *	SED	MG10ADP800E
6 TB	SATA-3.3	512e / 4Kn *	SED	MG10ADP600E
4 TB	SATA-3.3	512e / 4Kn *	SED	MG10ADP400E
2 TB	SATA-3.3	512e / 4Kn *	SED	MG10ADP200E
4 TB	SATA-3.3	512n	SED	MG10ADP400N
2 TB	SATA-3.3	512n	SED	MG10ADP200N
1 TB	SATA-3.3	512n	SED	MG10ADP100N

***** Default configuration is 512e. 512e models can be converted to 4Kn format.

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SAS

Capacity	Interface	Sector Format	Optional Security	Model number
10 TB	SAS-3.0	512e / 4Kn *	-	MG10SDA10TE
8 TB	SAS-3.0	512e / 4Kn *	-	MG10SDA800E
6 TB	SAS-3.0	512e / 4Kn *	-	MG10SDA600E
4 TB	SAS-3.0	512e / 4Kn *	-	MG10SDA400E
2 TB	SAS-3.0	512e / 4Kn *	-	MG10SDA200E
4 TB	SAS-3.0	512n	-	MG10SDA400N
2 TB	SAS-3.0	512n	-	MG10SDA200N
10 TB	SAS-3.0	512e / 4Kn *	SIE	MG10SDA10TEY
8 TB	SAS-3.0	512e / 4Kn *	SIE	MG10SDA800EY
6 TB	SAS-3.0	512e / 4Kn *	SIE	MG10SDA600EY
4 TB	SAS-3.0	512e / 4Kn *	SIE	MG10SDA400EY
2 TB	SAS-3.0	512e / 4Kn *	SIE	MG10SDA200EY
4 TB	SAS-3.0	512n	SIE	MG10SDA400NY
2 TB	SAS-3.0	512n	SIE	MG10SDA200NY
10 TB	SAS-3.0	512e / 4Kn *	SED	MG10SDP10TE
8 TB	SAS-3.0	512e / 4Kn *	SED	MG10SDP800E
6 TB	SAS-3.0	512e / 4Kn *	SED	MG10SDP600E
4 TB	SAS-3.0	512e / 4Kn *	SED	MG10SDP400E
2 TB	SAS-3.0	512e / 4Kn *	SED	MG10SDP200E
4 TB	SAS-3.0	512n	SED	MG10SDP400N
2 TB	SAS-3.0	512n	SED	MG10SDP200N

***** Default configuration is 512e. 512e models can be converted to 4Kn format.

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