



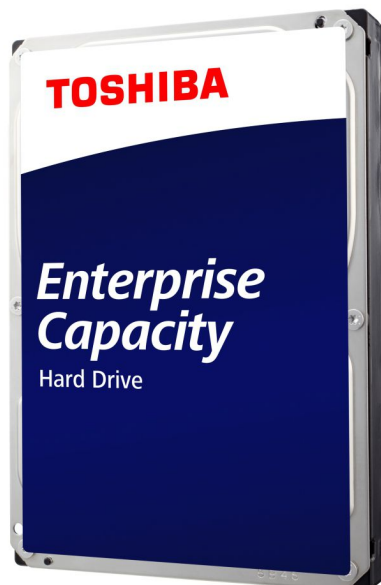
# High Storage Capacity and Reliability for Cloud and On-premise Data Centers

Enterprise Capacity HDDs are perfect in situations such as cloud data centers, which have to manage a massive volume of data. The MG Series include the world's first 9 disks\* storage device, and offer up to 16TB of conventional magnetic recording capacity. Helium-sealed models also achieve higher storage recording density and significantly lower power consumption by reducing aero-dynamic resistance.

\*Source: Toshiba Electronic Devices & Storage Corporation, as of December, 2017 for the 3.5-inch, 26.1mm high.

## Enterprise Capacity

Hard Disk Drive



## MG Series

### Choice of SATA or SAS models up to 16TB

The lineup includes products with a wide range of uses such as large-scale cloud data centers and more conventional server/storage systems. The highest capacity models help contribute to reduce TCO and a lower cost per unit of storage capacity.

### Durability and Reliability

With an annual workload of 550TB and a maximum MTTF of 2.5 million hours, MG series is designed for business critical workloads that require consistent 24/365 performance with high reliability.

### Toshiba's Persistent Write Cache technology

Helps to enhance write performance between the host and the drive, and also prevents data loss in the event of a sudden loss of power (512e models).

# MG Hard Disk Drive

## Application

- 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

| Formatted Capacity                |               | 16 TB  | 14 TB       | 12 TB       | 10 TB       | 8 TB             | 6 TB        | 4 TB   | 2 TB        | 1 TB        |             |
|-----------------------------------|---------------|--|-------------|-------------|-------------|------------------|-------------|--|-------------|-------------|-------------|
| Model Number                      | SATA          | 4Kn  | MG08ACA16TA | MG07ACA14TA | MG07ACA12TA | MG06ACA10TA      | MG06ACA800A | MG06ACA600A  | MG04ACA400A | MG04ACA200A | -           |
|                                   |               | 512e   | MG08ACA16TE | MG07ACA14TE | MG07ACA12TE | MG06ACA10TE      | MG06ACA800E | MG06ACA600E  | MG04ACA400E | MG04ACA200E | -           |
|                                   |               | 512n   | -           | -           | -           | -                | -           | -  | MG04ACA400N | MG04ACA200N | MG04ACA100N |
|                                   | SAS           | 4Kn  | MG08SCA16TA | MG07SCA14TA | MG07SCA12TA | MG06SCA10TA      | MG06SCA800A | MG06SCA600A  | MG04SCA40EA | MG04SCA20EA | -           |
|                                   |               | 512e   | MG08SCA16TE | MG07SCA14TE | MG07SCA12TE | MG06SCA10TE      | MG06SCA800E | MG06SCA600E  | MG04SCA40EE | MG04SCA20EE | -           |
|                                   |               | 512n   | -           | -           | -           | -                | -           | -  | MG04SCA40EN | MG04SCA20EN | -           |
| <b>Specification</b>              |               |  |             |             |             |                  |             |  |             |             |             |
| Mechanical Design                 |               | Helium-Sealed  |             |             |             | Conventional Air |             |  |             |             |             |
| Form Factor                       |               | 3.5-inch ( Height:26.1 mm, Length: 147.0 mm, Wide:101.85 mm )  |             |             |             |                  |             |  |             |             |             |
| Maximum Weight                    |               | 720 g  |             |             | 770 g       |                  |             | 720 g  |             |             |             |
| Interface                         |               | SATA : 6.0 Gbit/s SAS : 12.0 Gbit/s  |             |             |             |                  |             |  |             |             |             |
| Rotation Speed                    |               | 7,200 rpm  |             |             |             |                  |             |  |             |             |             |
| Buffer Size                       |               | 512 MiB  | 256 MiB     |             |             |                  | 128 MiB     |  |             |             |             |
| <b>Reliability</b>                |               |  |             |             |             |                  |             |  |             |             |             |
| MTTF                              |               | 2,500,000 hours  |             |             |             |                  |             | 1,400,000 hours                                    |             |             |             |
| Workload Rating                   |               | 550 Total TB Transferred per Year  |             |             |             |                  |             |  |             |             |             |
| <b>Environmental Requirements</b> |               |  |             |             |             |                  |             |  |             |             |             |
| Temperature                       | Operating     | 5 °C to 55 °C  |             |             |             |                  |             |  |             |             |             |
| Vibration                         | Operating     | 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 | 29.4 m/s <sup>2</sup> { 3.0 G } ( 5 to 500 Hz )  |             |             |             |                  |             | 49 m/s <sup>2</sup> { 5 G } ( 5 to 500 Hz )        |             |             |             |
| Shock                             | Non-Operating | 2,450 m/s <sup>2</sup> { 250 G } ( 2 ms duration )   |             |             |             |                  |             | 2,940 m/s <sup>2</sup> { 300 G } ( 2 ms duration ) |             |             |             |
| Acoustic                          | Idle          | 20 dB  |             |             | 34 dB       |                  |             | 31 dB  |             |             |             |

Limited Warranty: 5 years

• 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<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 and/or pre-installed software applications, or media content. Actual formatted capacity may vary. • A mebibyte (MiB) means 2<sup>20</sup>, or 1,048,576 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. • Read and write speed may vary depending on the host device, read and write conditions, and file size. • "3.5-inch" means the form factor of HDDs. They do not indicate drive's physical size. • Workload is a measure of the data throughput of the year, and it is defined as the amount of data written, read or verified by commands from the host system.

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