



DATA SHEET

Scalable. Responsive. Innovative.

Exos 2X18



Seagate manufactures hard drives that specifically address the needs of the hyperscale storage market. As the highest-performing hard drive in the Seagate® X class, the Exos® 2X18 enterprise dual-actuator hard drive utilises MACH.2™ technology enabling up to 2× the performance of an enterprise single-actuator 3.5-inch hard drive.



Best-Fit Applications

- Hyperscale applications/cloud data centres
- Massive scale-out data centres
- Big data applications
- content delivery networks
- Mainstream enterprise external storage arrays
- Distributed file systems, including Hadoop and Ceph
- Enterprise backup and restore — D2D, virtual tape
- Centralised surveillance
- High-bandwidth streaming applications



Highest Performance for Highest Rack Space Efficiency

MACH.2 technology enables up to 2× the performance of an enterprise single-actuator 3.5-inch hard drive¹

Highest 18 TB hard drive performance, making it the logical choice for cloud data centre and massive scale-out data centre applications. Available as two independently addressable, 9 TB logical units for SAS or one 18 TB logical device for SATA

PowerBalance™ feature optimises IOPS/Watt

Helium sealed-drive design delivers lower total cost of ownership through lower power and weight

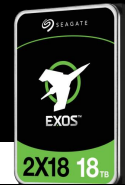
Next-generation helium side-sealed weld technology for added handling robustness and leak protection

Digital environmental sensors to monitor internal drive conditions for optimal operation and performance

Latest hermetic interconnect technology supporting higher data rate heads and higher pin counts for extreme thermal conditions

Proven enterprise-class reliability backed by **5-year limited warranty and 2.5M-hr MTBF rating**

¹ When operating both actuators simultaneously



| Specifications | SAS 12Gb/s | SATA 6Gb/s | SAS 12Gb/s | SATA 6 Gb/s |
|--|--------------------|--------------------|--------------------|--------------------|
| Capacity | 18TB | 18TB | 16TB | 16TB |
| Standard Model FastFormat™ (512e/4Kn) ¹ | ST18000NM0272 | ST18000NM0092 | ST16000NM0002 | ST16000NM0092 |
| SED Model FastFormat™ (512e/4Kn) ^{1 2} | ST18000NM0012 | — | ST16000NM0012 | — |
| Capacity per Logical Unit | 9TB | — | 8 TB | — |
| Capacity per Actuator | 9TB | 9TB | 8 TB | 8 TB |
| Features | | | | |
| Helium Sealed-Drive Design | Yes | Yes | Yes | Yes |
| Protection Information (T10 DIF) | No | No | No | No |
| SuperParity | Yes | Yes | Yes | Yes |
| Low Halogen | Yes | Yes | Yes | Yes |
| PowerChoice™ Idle Power Technology | Yes | Yes | Yes | Yes |
| PowerBalance™ Power/Performance Technology | Yes | Yes | Yes | Yes |
| Hot-Plug Support ³ | Yes | Yes | Yes | Yes |
| Cache, Multi-segmented (MB) | 256 | 256 | 256 | 256 |
| Organic Solderability Preservative | Yes | Yes | Yes | Yes |
| Reliability/Data Integrity | | | | |
| Mean Time Between Failures (MTBF, hours) | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 |
| Reliability Rating @ Full 24x7 Operation (AFR) | 0.35% | 0.35% | 0.35% | 0.35% |
| RSA 2048 Firmware Verification (SD&D) | Yes | Yes | Yes | Yes |
| Non-recoverable Read Errors per Bits Read | 1 sector per 10E15 | 1 sector per 10E15 | 1 sector per 10E15 | 1 sector per 10E15 |
| Power-On Hours per Year (24x7) | 8,760 | 8,760 | 8,760 | 8,760 |
| 512e Sector Size (Bytes per Sector) | 512 | 512 | 512 | 512 |
| 4Kn Sector Size (Bytes per Sector) | 4,096 | 4,096 | 4,096 | 4,096 |
| Limited Warranty (years) | 5 | 5 | 5 | 5 |
| Performance | | | | |
| Spindle Speed (RPM) | 7,200 RPM | 7,200 RPM | 7,200 RPM | 7,200 RPM |
| Interface Access Speed (Gb/s) | 12.0, 6.0, 3.0 | 6.0, 3.0 | 12.0, 6.0, 3.0 | 6.0, 3.0 |
| Max. Sustained Transfer Rate OD (MB/s, MiB/s) ⁴ | 554 MB/s/528 MiB/s | 545 MB/s/520 MiB/s | 554 MB/s/528 MiB/s | 545 MB/s/520 MiB/s |
| Random Read/Write 4K QD16 (IOPS) ⁴ | 304/560 | 304/560 | 304/560 | 304/560 |
| Average Latency (ms) | 4.16 | 4.16 | 4.16 | 4.16 |
| Interface Ports | Single | Single | Single | Single |
| Rotation Vibration @ 20-1500 Hz (rad/sec ²) | 12.5 | 12.5 | 12.5 | 12.5 |
| POWER CONSUMPTION | | | | |
| Idle A (W) Average | 8 W | 7.8 W | 8 W | 7.8 W |
| Random Read/Write 4K/16Q (W) ⁴ | 11.5 W/9.6 W | 11.1 W/9.2 W | 11.5 W/9.6 W | 11.1 W/9.2 W |
| Sequential Read/Write 256K/16Q (W) ⁴ | 13.5 W/12.8 W | 13.1 W/12.3 W | 13.5 W/12.8 W | 13.1 W/12.3 W |
| Power Supply Requirements | +12 V and +5 V | +12 V and +5 V | +12 V and +5 V | +12 V and +5 V |
| Environmental | | | | |
| Temperature, Operating (°C) | 5°C – 60°C | 5°C – 60°C | 5°C – 60°C | 5°C – 60°C |
| Vibration, Non-operating: 2 to 500 Hz (Grms) | 2.27 | 2.27 | 2.27 | 2.27 |
| Shock, Operating 2 ms (Read/Write) (Gs) | 40 | 40 | 40 | 40 |
| Shock, Non-operating 2 ms (GS) | 200 | 200 | 200 | 200 |
| Physical | | | | |
| Height (in/mm, max) ⁵ | 1.028 in/26.1 mm | 1.028 in/26.1 mm | 1.028 in/26.1 mm | 1.028 in/26.1 mm |
| Width (in/mm, max) ⁵ | 4.01 in/101.85 mm | 4.01 in/101.85 mm | 4.01 in/101.85 mm | 4.01 in/101.85 mm |
| Depth (in/mm, max) ⁵ | 5.787 in/147 mm | 5.787 in/147 mm | 5.787 in/147 mm | 5.787 in/147 mm |
| Weight (lb/g) | 1.466 lb/665 g | 1.466 lb/665 g | 1.466 lb/665 g | 1.466 lb/665 g |
| Carton Unit Quantity | 20 | 20 | 20 | 20 |
| Cartons per Pallet / Cartons per Layer | 40/8 | 40/8 | 40/8 | 40/8 |

¹ FastFormat models ship in 512e format state. When switching from 512e to 4Kn by executing the FastFormat routine, all data on the drive will be deleted. Note that data must be aligned to 4K sectors to see improved performance in 4Kn format.

² Self-Encrypting Drives (SED) available through franchised authorised distributors. May require TCG-compliant host or controller support.

³ Supports Hotplug operation per the SAS-3, SPL-3, and/or Serial ATA Revision 3.3 specifications

⁴ When operating both actuators simultaneously

⁵ These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at www.sffcommittee.org. For connector-related dimensions, see SFF-8323.

©2022 Seagate Technology LLC. All rights reserved. Seagate, Seagate Technology, and the Spiral logo are registered trademarks of Seagate Technology LLC in the United States and/or other countries. Exos, the Exos logo, and PowerBalance are either trademarks or registered trademarks of Seagate Technology LLC or one of its affiliated companies in the United States and/or other countries. All other trademarks or registered trademarks are the property of their respective owners. When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer's operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. Actual data rates may vary depending on operating environment and other factors, such as chosen interface and disk capacity. The export or re-export of Seagate hardware or software is regulated by the U.S. Department of Commerce, Bureau of Industry and Security (for more information, visit www.bis.doc.gov), and may be controlled for export, import, and use in other countries. Seagate reserves the right to change, without notice, product offerings or specifications DS2093.1-2202GB