



DATA SHEET

Scalable. Responsive. Innovative.
Exos 2X14



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® 2X14 enterprise dual-actuator hard drive utilizes 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 centers
- Massive scale-out data centers
- 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
- Centralized 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 14TB hard drive performance, making it perfect for cloud data center and massive scale-out data center applications

14TB of capacity available as two independently addressable, 7TB logical units

PowerBalance™ feature optimizes 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	12Gb/s SAS
Capacity	14TB
Hyperscale (4Kn)	ST14000NM0001
Capacity per Logical Unit	7TB
Features	
Helium Sealed-Drive Design	Yes
Protection Information (T10 DIF)	No
SuperParity	Yes
Low Halogen	Yes
PowerChoice™ Idle Power Technology	Yes
PowerBalance™ Power/Performance Technology	Yes
Hot-Plug Support ¹	Yes
Cache, Multisegmented (MB)	256
Organic Solderability Preservative	Yes
RSA 2048 Firmware Verification (SD&D)	Yes
Reliability/Data Integrity	
Mean Time Between Failures (MTBF, hours)	2,500,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.35%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15
Power-On Hours per Year (24x7)	8760
512e Sector Size (Bytes per Sector)	—
4Kn Sector Size (Bytes per Sector)	4096
Limited Warranty (years)	5
Performance	
Spindle Speed (RPM)	7200RPM
Interface Access Speed (Gb/s)	12.0, 6.0, 3.0
Max. Sustained Transfer Rate OD (MB/s, MiB/s) ²	524, 500
Random Read/Write 4K QD16 WCD (IOPS) ²	304/384
Average Latency (ms)	4.16
Interface Ports	Single
Rotation Vibration @ 20-1500 Hz (rad/sec ²)	12.5
Power Consumption	
Idle A (W) Average	7.0W
Random Read/Write 4K/16Q (W) ²	12.1/8.7
Sequential Read/Write 256K/16Q (W) ²	13.4/11.8
Power Supply Requirements	+12 V and +5 V
Environmental	
Temperature, Operating (°C)	5°C – 60°C
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27
Shock, Operating 2ms (Read/Write) (Gs)	50
Shock, Nonoperating 2ms (Gs)	200
Physical	
Height (in/mm, max) ³	1.028in/26.1mm
Width (in/mm, max) ³	4.010in/101.85mm
Depth (in/mm, max) ³	5.787in/147.00mm
Weight (g/lb)	685g/1.510lb
Carton Unit Quantity	20
Cartons per Pallet/Cartons per Layer	40/8

¹ Supports Hotplug operation per the SAS-3 and SPL-3 specifications

² When operating both actuators simultaneously

³ 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.

© 2019 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, MACH.2, PowerBalance, and PowerChoice 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. Seagate reserves the right to change, without notice, product offerings or specifications. DS2015.2-1912US December 2019