

Enterprise Capacity 3.5 HDD (Helium)

Data Sheet

Maximum Storage Capacity for Highest Rack Space Efficiency

- 10TB per drive¹ for 25% more petabytes per rack²
- Industry's lowest power and weight for optimum data center TCO
- Forged, wrought-aluminum base and a helium sealed-drive design with uniform density and no porosity
- Superior material and weld-width design for a more robust, hermetically sealed-drive enclosure that protects from helium leaks
- Digital environmental sensors for measuring internal humidity, pressure and temperature, helping to ensure high reliability, performance and quality
- Latest hermetic interconnect technology supporting higher data rate heads and higher pin counts for extreme thermal conditions
- Proven enterprise-class reliability backed by 2.5M-hr MTBF

Best-Fit Applications

- Hyperscale applications/cloud data centers
- Massive scale-out data centers
- High-capacity density RAID storage
- Mainstream enterprise external storage arrays
- Distributed file systems, including Hadoop and Ceph
- Enterprise backup and restore—D2D, virtual tape
- Centralized surveillance



¹ Seagate recommends validating your configuration with your HBA/RAID controller manufacturer to ensure full capacity capabilities.

² Compared to last-generation 8TB product.



Enterprise Capacity 3.5 HDD (Helium)



Specifications	SATA 6Gb/s
Capacity	10TB
Hyperscale Model (512e)	ST10000NM0016
Generation	V.6
Special Features	
Multi-Step Forged Helium Sealed-Drive Design	Yes
Superior Wide-Weld Hermetically Sealed-Drive Enclosure	Yes
Digital Sensors for Humidity, Helium Pressure and Temperature	Yes
Protection Information (T10 DIF)	—
SuperParity	Yes
Low Halogen	Yes
PowerChoice™ Idle Power Technology	Yes
PowerChoice™ Power/Performance Technology	Yes
RAID Rebuild	Yes
Hot-Plug Support ¹	Yes
Cache, Multisegmented (MB)	256
Organic Solderability Preservative	Yes
Reliability/Data Integrity	
Mean Time Between Failures (MTBF, hours)	2.5 Million
Reliability Rating @ Full 24x7 Operation (AFR)	0.35%
Nonrecoverable Read Errors per Bits Read, Max	1 sector per 10E15
Power-On Hours	8760
512e Sector Size (Bytes per Sector)	512
4Kn Sector Size (Bytes per Sector)	4096
Warranty, Limited (years)	5
Performance	
Spin Speed	7200RPM
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD (MB/s, MiB/s)	254, 243
Average Latency (ms)	4.16
Interface Ports	Single
Rotational Vibration @ 1500Hz (rad/s ²)	12.5
Power Consumption	
Idle Average (W)	4.5W
Max Operating, Random Write 4K/16Q (W)	6.5
Max Operating, Random Read 4K/16Q (W)	8
Power Supply Requirements	+12V and +5V
PowerChoice™ Technology	Yes
PowerBalance™ Technology	Yes
Environmental	
Temperature, Operating (*C)	5°C – 60°C
Vibration, Nonoperating: 10Hz to 500Hz (Gms)	2.27
Shock, Operating, 2rms (Read/Write) (Gs)	70/40Gs
Shock, Nonoperating, 1ms/2ms (Gs)	250Gs
Physical	
Height (mm/in, max) ²	26.11mm/1.028in
Width (mm/in, max) ²	101.85mm/4.010in
Depth (mm/in, max) ²	147.0mm/5.787in
Weight (g/lb)	650g/1.433lb
Carton Unit Quantity	20
Cartons per Pallet / Cartons per Layer	40 / 8

¹ Supports Hotplug operation per Serial ATA Revision 2.6 specification.

² 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.

SEAGATE.COM

AMERICAS Seagate Technology LLC 10200 South De Anza Boulevard, Cupertino, California 95014, United States, 408-658-1000

ASIA/PACIFIC Seagate Singapore International Headquarters Pte. Ltd. 7000 Ang Mo Kio Avenue 5, Singapore 569877, 65-6485-3888

EUROPE, MIDDLE EAST AND AFRICA Seagate Technology SAS 16-18, rue du Dôme, 92100 Boulogne-Billancourt, France, 33 1-4186 10 00

© 2016 Seagate Technology LLC. All rights reserved. Printed in USA. Seagate, Seagate Technology and the Spiral logo are registered trademarks of Seagate Technology LLC in the United States and/or other countries. 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. 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. DS1863.3-1603US March 2016