

Enterprise Capacity 3.5 HDD (Helium)

Data Sheet

Maximum Storage Capacity for Highest Rack Space Efficiency

- 10 TB per drive¹ for 25% more petabytes per rack²
- Industry's lowest power and weight for optimum data centre TCO
- Forged, wrought-aluminium 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
- Centralised surveillance



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

² Compared to last-generation 8 TB product.



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Specifications	SATA 6Gb/s
Capacity	10TB
Hyperscale Model (512e)	ST10000NM0016
Generation	V.6
Special Features	
Multi-Step Forged Helium Sealed-Drive Design	Yes
Helium Sealed-Drive Design With Wide Weld	Yes
Digital Environmental Sensors	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, Multi-segmented (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%
Non-recoverable Read Errors per Bits Read, Max	1 sector per 10E15
Power-on Hours	8,760
512e Sector Size (Bytes per Sector)	512
4Kn Sector Size (Bytes per Sector)	4,096
Warranty, Limited (years)	5
Performance	
Spin Speed	7200 RPM
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD (MB/s, MiB/s)	249, 237
Average Latency (ms)	4.16
Interface Ports	Single
Rotational Vibration @ 1,500Hz(rad/s ²)	12.5
Power Consumption	
Idling Average (W)	4.5 W
Max Operating, Random Write 4K/16Q (W)	6.5
Max Operating, Random Read 4K/16Q (W)	8.4
Power Supply Requirements	+12V and +5V
PowerChoice™ Technology	Yes
PowerBalance™ Technology	Yes
Environmental	
Temperature, Operating (*C)	5°C – 60°C
Vibration, Non-operating: 10Hz to 500Hz (Gms)	2.27
Shock, Operating, 2rms (Read/Write) (Gs)	70/40 Gs
Shock, Non-operating, 1ms/2ms (Gs)	250 Gs
Physical	
Height (mm/in, max) ²	26.11 mm/1.028 in
Width (mm/in, max) ²	101.85 mm/4.01 in
Depth (mm/in, max) ²	147 mm/5.787 in
Weight (lb/g)	650 g/1.433 lb
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.

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