

Enterprise Capacity 3.5 HDD

Data Sheet

Capacity-Optimised Enterprise Hard Drive for Bulk-Data Applications

- 8TB, 3.5-inch enterprise drive with industry-leading 6-disk technology,¹ resulting in 33% more storage in the same storage slot
- Advanced Write Caching feature to utilise enhanced algorithms, resulting in the industry's highest nearline storage workload performance efficiencies - 100% performance improvement in random writes over last-generation drive
- Widely accepted, proven ninth-generation conventional perpendicular recording technology for reliable access to unstructured data in bulk storage applications
- 12Gb/s SAS and SATA 6Gb/s interfaces in industry-standard advanced formats for easy integration into replicated and RAID multi-drive storage servers and systems
- State-of-the-art cache, on-the-fly error-correction algorithms, super parity and end-to-end SAS-based data integrity for accurate data storage
- Industry-leading rotational vibration tolerance design helps ensure consistent performance in dense multi-drive systems
- Engineered for 24x7 workloads of 550TB/yr - 10x that of desktop drives
- Robust performance with dual processors, ramp load technology, top-cover-attached motor and humidity sensor for optimum performance in all chassis
- On-demand PowerBalance™ feature available for lower power/performance in random read/write environments
- Seagate Secure™ Self-Encrypting Drive featuring Instant Secure Erase for cost-saving drive retirement and secure data-at-rest protection²
- Seagate SeaTools™ diagnostic software to provide drive self-tests ensuring unnecessary downtime and maximising TCO



Best-Fit Applications

- Hyperscale applications/cloud data centres with replicated storage
- Massive scale-out data centres and big data analytics
- High-capacity density RAID storage
- Mainstream enterprise external storage arrays (SAN, NAS, DAS)
- 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 Self-Encrypting Drives (SED) are not available in all models or countries. May require TCG-compliant host or controller support.



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Specifications	SATA 6Gb/s	12Gb/s SAS
	8TB ^{1,2}	8TB ^{1,2}
Standard Model Number (4K Native)	ST8000NM0045	ST8000NM0065
Standard Model Number (512 Emulation)	ST8000NM0055	ST8000NM0075
SED Model Number (4K Native)	ST8000NM0115 ³	ST8000NM0095 ³
SED Model Number (512 Emulation)	ST8000NM0105 ³	ST8000NM0085 ³
Features		
Protection Information (T10 DIF)	—	Yes
Humidity Sensor	Yes	Yes
Super Parity	Yes	Yes
Low Halogen	Yes	Yes
PowerChoice™ Technology	Yes	Yes
PowerBalance™ Technology	Yes	Yes
Cache, Multisegmented (MB)	256	256
Advanced Write Caching (2M Internal NOR Flash)	Yes	Yes
Reliability/Data Integrity		
Mean Time Between Failures (MTBF, hours)	2.0M	2.0M
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%
Non-recoverable Read Errors per Bits Read	1 sector per 10 ¹⁵	1 sector per 10 ¹⁵
Power-On Hours per Year	8,760 (24x7)	8,760 (24x7)
Sector Size (Bytes per Logical Sector)	512 and 4,096	512, 520, 528, 4,096, 4,160 and 4,224
Limited Warranty (years)	5	5
Performance		
Spindle Speed (RPM)	7,200	7,200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	12.0, 6.0, 3.0
Max IOPS Efficiency, Random Writes (IOPS/W)	36	36
Random Read/Write - 16QD WCE (IOPS)	165/380	165/380
Max. Sustained Transfer Rate OD (MB/s)	up to 237	up to 237
Average Latency (ms)	4.16	4.16
Interface Ports	Single	Dual
Rotational Vibration @ 1500 Hz (rad/s ²)	12.5	12.5
Power Consumption		
Idle A Power, Average (W)	7.5	8.0
Max Operating, Random Read 4KQ16 (W)	10.4	11.4
PowerBalance Max Operating, Random Read 4KQ16 (W)	8.8	8.8
Power Supply Requirements	+12V and +5V	+12V and +5V
Environmental		
Temperature, Operating (°C)	5 to 60	5 to 60
Vibration, Non-operating: 10Hz to 500Hz (Grms)	5.0	4.9
Shock, Operating, 2ms (Read/Write) (Gs)	70/40	70/40
Shock, Non-operating, 1ms and 2ms (Gs)	250	250
Physical		
Height (in/mm, max) ⁴	1.028/26.1	1.028/26.1
Width (in/mm, max) ⁴	4.010/101.85	4.010/101.85
Depth (in/mm, max) ⁴	5.787/147.0	5.787/147.0
Weight (lb/g)	1.720/780	1.720/780
Carton Unit Quantity	20	20
Cartons per Pallet	40	40
Cartons per Layer	8	8

¹ One gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes when referring to drive capacity.

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⁴ These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at www.sffcommittee.org. For connector-related dimensions, see SFF-8223.



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