EXOS™

DATA SHEET

Maximise scale. Optimise TCO.
Sustain the future.

Seagate's Exos hard drives deliver extraordinary storage capacity and power efficiency for AI and data-intensive applications in cutting-edge cloud and enterprise environments.

Best-Fit Applications

- High-capacity, dense RAID or erasure coded storage
- Content delivery and distribution
- Virtualized environments
- Big-data analytics
- Enterprise backup and restore — D2D, virtual tape
- Distributed file systems, including Hadoop and Ceph
- Mainstream enterprise external storage arrays
- NAS systems exceeding 16 drive bays
- Data archiving

Unmatched Capacity: Up to 32 TB of storage in an industry-standard 3.5 inch form factor delivers capacity at scale while optimising space utilisation in data centres.

Breakthrough Areal Density: Exos hard drives now boast an industry-leading 3 TB per platter, enabling massive storage capacity in the same footprint for maximised AI- driven data centre efficiency.

Time-Tested Excellence Meets Next-Gen Innovation: The latest generation of Exos blends 90% of trusted, proven components from previous generations with cutting-edge Mozaic™ technology.

Enterprise-Class Reliability: Designed for the stringent demands of cloud service providers and enterprise data centres, Exos drives deliver durable, always-on performance essential for critical enterprise applications and backed by a 5-year limited warranty and 2.5M-hr MTBF rating.

Proven helium side-sealing weld technology: For added handling, robustness and leak protection.

Sustainability: Built with more renewable energy and recycled materials than any previous Seagate product, the latest generation of Exos drives enable businesses to align with their sustainability initiatives while reducing environmental impact. Additionally, the PowerBalance™ feature optimises watts per terabyte.

Compatibility and Interoperability: Maintains the same form factor, interface, and cooling as previous generations, simplifying integration into existing infrastructure and reducing upgrade complexities.

Efficient cooling: Engineered for optimal heat dissipation, ensuring reliable performance without increasing cooling requirements in your data centre.

Seagate Secure™: Built-in reliable data protection enhances security, safeguarding your data against threats in enterprise environments.

Specifications	SATA 6 Gb/s			
Product Name	Exos	Exos	Exos	Exos
CMR Capacity	32 TB	30 TB	28 TB	24 TB
Standard Model - Seagate Instant Secure Erase (ISE) - 512e[1]	ST32000NM004K	ST30000NM004K	ST28000NM003K	ST24000NM001K
FEATURES				
CMR	Yes	Yes	Yes	Yes
Helium Sealed-Drive Design	Yes	Yes	Yes	Yes
Super Parity	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[2]	Yes	Yes	Yes	Yes
Cache, Multi-segmented (MB)	512	512	512	512
Organic Solderability Preservative	Yes	Yes	Yes	Yes
RSA 3072 Firmware Verification (SD&D)	Yes	Yes	Yes	Yes
RELIABILITY and DATA INTEGRITY				
Mean Time Between Failures (MTBF, hours)	2500000 hr	2500000 hr	2500000 hr	2500000 hr
Reliability Rating at Full 24×7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%
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)	512e	512e	512e	512e
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)	6.0, 3.0	6.0, 3.0	6.0, 3.0	6.0, 3.0
Max. Sustained Transfer Rate OD (MB/s,MiB/s)	285 MB/s/272 MiB/s	275 MB/s/262 MiB/s	270 MB/s/257 MiB/s	240 MB/s/229 MiB/s
Random Read/Write 4K QD16 WCD (IOPS)	170 / 350	170 / 350	170 / 350	170 / 350
Average Latency (ms)	4.16 ms	4.16 ms	4.16 ms	4.16 ms
Interface Ports	Single	Single	Single	Single
Rotation Vibration @ 20-1500 Hz (rad/sec)	12.5	12.5	12.5	12.5
POWER CONSUMPTION				
Idle A (W) Average	6.9W	6.9W	6.9W	6.9W
Max Operating, Random Read 4K/16Q (W)	9.5W	9.5W	9.5W	9.5W
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) - drive reported	10°C - 60°C	10°C - 60°C	10°C - 60°C	10°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)	30 Gs	30 Gs	30 Gs	30 Gs
Shock, Nonoperating 2ms (Gs)	200	200	200	200
PHYSICAL				
Height (mm/in, max)[3]	26.1 mm/1.028 in	26.1 mm/1.028 in	26.1 mm/1.028 in	26.1 mm/1.028 in
Width (mm/in, max)[3]	101.85 mm/4.010 in	101.85 mm/4.010 in	101.85 mm/4.010 in	101.85 mm/4.010 in
Depth (mm/in, max)[3]	147.0 mm/5.787 in	147.0 mm/5.787 in	147.0 mm/5.787 in	147.0 mm/5.787 in
Weight (gm/lb)	695g/1.532lb	695g/1.532lb	695g/1.532lb	695g/1.532lb
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 Supports Hotplug operation per Serial ATA Revision 3.3 specification

3 These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at https://www.snia.org/sff. For connector-related dimensions, see SFF-8323.