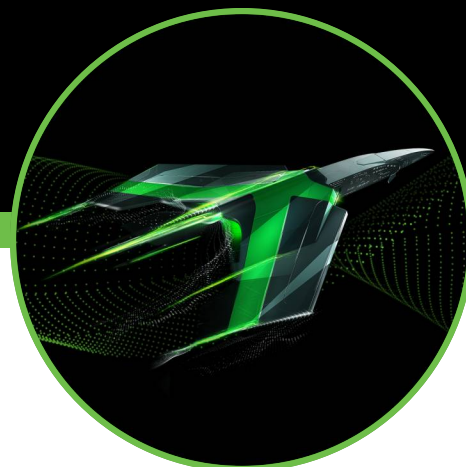




DATA SHEET

Maximize scale. Optimize 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 32TB of storage in an industry-standard 3.5-inch form factor delivers capacity at scale while optimizing space utilization in data centers.

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

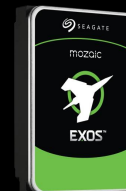
Proven helium side-sealing weld technology: For added handling, robustness, and leak protection.

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 optimizes 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 center.

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



Specifications	SATA 6Gb/s			
Product Name	Exos	Exos	Exos	Exos
CMR Capacity	32TB	30TB	28TB	24TB
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, Multisegmented (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)	2500000hr	2500000hr	2500000hr	2500000hr
Reliability Rating @ Full 24x7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%
Nonrecoverable 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)	8760	8760	8760	8760
512e Sector Size (Bytes per Sector)	512e	512e	512e	512e
Limited Warranty (years)	5	5	5	5
PERFORMANCE				
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM
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)	285MB/s / 272MiB/s	275MB/s / 262MiB/s	270MB/s / 257MiB/s	240MB/s / 229MiB/s
Random Read/Write 4K QD16 WCD (IOPS)	170 / 350	170 / 350	170 / 350	170 / 350
Average Latency (ms)	4.16ms	4.16ms	4.16ms	4.16ms
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	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
ENVIRONMENTAL				
Temperature, Operating (°C) - drive reported	10°C - 60°C	10°C - 60°C	10°C - 60°C	10°C - 60°C
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27	2.27	2.27	2.27
Shock, Operating 2ms (Read/Write) (Gs)	30Gs	30Gs	30Gs	30Gs
Shock, Nonoperating 2ms (Gs)	200	200	200	200
PHYSICAL				
Height (mm/in, max) ³	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in
Width (mm/in, max) ³	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in
Depth (mm/in, max) ³	147.0mm/5.787in	147.0mm/5.787in	147.0mm/5.787in	147.0mm/5.787in
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.

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