



DATA SHEET—SEAGATE CONFIDENTIAL

Scalable. Responsive. Innovative.  
**Exos X18**



Seagate manufactures hard drives that specifically address the demand for hyperscale cloud scalability. As the flagship of the Seagate® X class, the Exos® X18 enterprise hard drives are the highest-capacity hard drives in the fleet.



## Maximum Storage Capacity for Highest Rack Space Efficiency

**Market-leading 18TB HDD** offering the highest capacity available for more petabytes per rack<sup>1</sup>

**Highly reliable performance** with enhanced caching, making it the logical choice for cloud data center and massive scale-out data center applications

**Hyperscale SATA model** tuned for large data transfers and low latency

**PowerBalance™** feature optimizes Watts/TB

**Maximize total cost of ownership savings** through lower power and weight with helium sealed-drive design

**Proven helium side-sealing weld technology** for added handling robustness and leak protection

**Digital environmental sensors** to monitor internal drive conditions for optimal operation and performance

**Data protection and security**— Seagate Secure™ features for safe, affordable, fast, and easy drive retirement

Proven enterprise-class reliability backed by **5-year limited warranty and 2.5M-hr MTBF rating**

### Best-Fit Applications

- Scalable hyperscale applications/cloud data centers
- Massive scale-out data centers
- Big data applications
- 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

<sup>1</sup> Compared to 14TB competitive product



Specifications	SAS 12Gb/s	SATA 6Gb/s	SAS 12Gb/s	SATA 6Gb/s	SATA 6Gb/s
Capacity	18TB	18TB	16TB	16TB	14TB
Standard Model 4Kn	ST18000NM019J	ST18000NM018J	ST16000NM022J	ST16000NM021J	ST14000NM021J
SED-FIPS Model (4Kn)	ST18000NM026J	ST18000NM025J	—	—	—
<b>Features</b>					
Helium Sealed-Drive Design	Yes	Yes	Yes	Yes	Yes
TCG Opal 2.01	Yes	Yes	Yes	Yes	Yes
Conventional Magnetic Recording (CMR)	Yes	Yes	Yes	Yes	Yes
Protection Information (T10 DIF)	Yes	—	Yes	—	—
SuperParity	Yes	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes	Yes
PowerChoice™ Idle Power Technology	Yes	Yes	Yes	Yes	Yes
PowerBalance™ Power/Performance Technology	Yes	Yes	Yes	Yes	Yes
Hot-Plug Support <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256	256
Organic Solderability Preservative	Yes	Yes	Yes	Yes	Yes
RSA 3072 Firmware Verification (SD&D)	Yes	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>					
Mean Time Between Failures (MTBF, hours)	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%	0.35%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15				
Power-On Hours per Year (24x7)	8760	8760	8760	8760	8760
4Kn Sector Size (Bytes per Sector)	4096	4096	4096	4096	4096
Limited Warranty (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM	7200RPM
Interface Access Speed (Gb/s)	12.0, 6.0, 3.0	6.0, 3.0	12.0, 6.0, 3.0	6.0, 3.0	6.0, 3.0
Max. Sustained Transfer Rate OD (MB/s, MiB/s)	270/258	270/258	260/249	260/249	270/258
Random Read/Write 4K QD16 WCD (IOPS)	170/310	170/310	170/310	170/310	170/310
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single	Single
Rotation Vibration @ 20-1500 Hz (rad/sec <sup>2</sup> )	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Idle A (W) Average	5.6W	5.3W	5.6W	5.3W	4.9W
Max Operating, Random Read/Write 4K/16Q (W)	9.8, 7.0	9.4, 6.4	9.8, 7.0	9.4, 6.4	9.2, 6.3
Power Supply Requirements	+12 V and +5 V				
<b>Environmental</b>					
Temperature, Operating (°C)	5°C – 60°C				
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27	2.27	2.27	2.27	2.27
Shock, Operating 2ms (Read/Write) (Gs)	50	50	50	50	50
Shock, Nonoperating 2ms (Gs)	200	200	200	200	200
<b>Physical</b>					
Height (in/mm, max) <sup>2</sup>	1.028in/26.1mm	1.028in/26.1mm	1.028in/26.1mm	1.028in/26.1mm	1.028in/26.1mm
Width (in/mm, max) <sup>2</sup>	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max) <sup>2</sup>	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (gm/lb)	670g/1.477lb	670g/1.477lb	670g/1.477lb	670g/1.477lb	670g/1.477lb
Carton Unit Quantity	20	20	20	20	20
Cartons per Pallet/Cartons per Layer	40/8	40/8	40/8	40/8	40/8

<sup>1</sup> Supports Hotplug operation per Serial ATA Revision 3.3 specification

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8323.



Specifications	SATA 6Gb/s
Capacity	12TB
Standard Model 4Kn	ST12000NM021J
SED-FIPS Model (4Kn)	—
<b>Features</b>	
Helium Sealed-Drive Design	Yes
TCG Opal 2.01	Yes
Conventional Magnetic Recording (CMR)	Yes
Protection Information (T10 DIF)	—
SuperParity	Yes
Low Halogen	Yes
PowerChoice™ Idle Power Technology	Yes
PowerBalance™ Power/Performance Technology	Yes
Hot-Plug Support <sup>1</sup>	Yes
Cache, Multisegmented (MB)	256
Organic Solderability Preservative	Yes
RSA 3072 Firmware Verification (SD&D)	Yes
<b>Reliability/Data Integrity</b>	
Mean Time Between Failures (MTBF, hours)	2,500,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.35%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15
Power-On Hours per Year (24x7)	8760
4Kn Sector Size (Bytes per Sector)	4096
Limited Warranty (years)	5
<b>Performance</b>	
Spindle Speed (RPM)	7200RPM
Interface Access Speed (Gb/s)	6.0, 3.0
Max. Sustained Transfer Rate OD (MB/s, MiB/s)	270/258
Random Read/Write 4K QD16 WCD (IOPS)	170/310
Average Latency (ms)	4.16
Interface Ports	Single
Rotation Vibration @ 20-1500 Hz (rad/sec <sup>2</sup> )	12.5
<b>Power Consumption</b>	
Idle A (W) Average	4.4W
Max Operating, Random Read/Write 4K/16Q (W)	8.6,5.8
Power Supply Requirements	+12 V and +5 V
<b>Environmental</b>	
Temperature, Operating (°C)	5°C – 60°C
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27
Shock, Operating 2ms (Read/Write) (Gs)	50
Shock, Nonoperating 2ms (Gs)	200
<b>Physical</b>	
Height (in/mm, max) <sup>2</sup>	1.028in/26.1mm
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Depth (in/mm, max) <sup>2</sup>	5.787in/147.0mm
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