DATA SHEET

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.

### Best-Fit Applications

- Scalable hyperscale applications/cloud data centers
- Massive scale-out data centres
- 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
- Centralised surveillance

## Maximum Storage Capacity for Highest Rack Space Efficiency

**Market-leading 18 TB HDD** offering the highest capacity available for more petabytes per rack[1]

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

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

**PowerBalance**™ feature optimises Watts/TB

**Maximise 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**

1 Compared to 14 TB competitive product

| Specifications | SATA 6 Gb/s | 12 Gb/s SAS | SATA 6 Gb/s | 12 Gb/s SAS |
|---|---|---|---|---|
| Capacity | 18TB | 18TB | 16TB | 16TB |
| Standard Model FastFormat™ (512e/4Kn)[1] | ST18000NM000J | ST18000NM004J | ST16000NM000J | ST16000NM004J |
| SED Model FastFormat (512e/4Kn)[1,2] | ST18000NM001J | ST18000NM005J | ST16000NM001J | ST16000NM005J |
| SED-FIPS FastFormat (512e/4Kn)[1,2] | — | ST18000NM007J | — | ST16000NM007J |
| Features | | | | |
| Helium Sealed-Drive Design | Yes | Yes | Yes | Yes |
| Conventional Magnetic Recording (CMR) | Yes | Yes | Yes | Yes |
| Protection Information (T10 DIF) | — | Yes | — | Yes |
| SuperParity | 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[3] | Yes | Yes | Yes | Yes |
| Cache, Multi-segmented (MB) | 256 | 256 | 256 | 256 |
| Organic Solderability Preservative | Yes | Yes | Yes | Yes |
| RSA 3072 Firmware Verification (SD&D) | Yes | Yes | Yes | Yes |
| Reliability/Data Integrity | | | | |
| Mean Time Between Failures (MTBF, hours) | 2,500,000 | 2,500,000 | 2,500,000 | 2,500,000 |
| Reliability Rating @ 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 (24×7) | 8,760 | 8,760 | 8,760 | 8,760 |
| 512e Sector Size (Bytes per Sector) | 512 | 512, 520, 528 | 512 | 512, 520, 528 |
| 4Kn Sector Size (Bytes per Sector) | 4,096 | 4,096, 4,160, 4,224 | 4,096 | 4,096, 4,160, 4,224 |
| 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 | 12.0, 6.0, 3.0 | 6.0, 3.0 | 12.0, 6.0, 3.0 |
| Max. Sustained Transfer Rate OD (MB/s, MiB/s) | 270/258 | 270/258 | 261/249 | 261/249 |
| Random Read/Write 4K QD16 WCD (IOPS) | 170/550 | 170/550 | 170/550 | 170/550 |
| Average Latency (ms) | 4.16 | 4.16 | 4.16 | 4.16 |
| Interface Ports | Single | Dual | Single | Dual |
| Rotation Vibration @ 20-1500 Hz (rad/sec²) | 12.5 | 12.5 | 12.5 | 12.5 |
| POWER CONSUMPTION | | | | |
| Idle A (W) Average | 5.3 W | 5.8 W | 5.3 W | 5.8 W |
| Max Operating, Random Read/Write 4K/16Q (W) | 9.4, 6.4 | 9.9, 7.0 | 9.4, 6.4 | 9.9, 7.0 |
| 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) | 5°C – 60°C | 5°C – 60°C | 5°C – 60°C | 5°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) | 50 | 50 | 50 | 50 |
| Shock, Non-operating 2 ms (GS) | 200 | 200 | 200 | 200 |
| Physical | | | | |
| Height (mm/in, max)[4] | 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)[4] | 101.85 mm/4.01 in | 101.85 mm/4.01 in | 101.85 mm/4.01 in | 101.85 mm/4.01 in |
| Depth (mm/in, max)[4] | 147 mm/5.787 in | 147 mm/5.787 in | 147 mm/5.787 in | 147 mm/5.787 in |
| Weight (lb/g) | 670 g/1.477 lb | 670 g/1.477 lb | 670 g/1.477 lb | 670 g/1.477 lb |
| 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 fomat.

2 Self-Encrypting Drives (SED) and FIPS 140-2 Validated drives available through franchised authorised distributors. May require TCG-compliant host or controller support.

3 Supports Hotplug operation per Serial ATA Revision 3.3 specification

4 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.