Seagate manufactures hard drives that specifically address the needs of the hyperscale storage market. As the flagship of the Seagate® X class, the Exos® X16 enterprise hard drives are the highest-capacity hard drives in the fleet.

**Maximum Storage Capacity for Highest Rack Space Efficiency**

- **Industry’s first 16TB drive** for 33% more petabytes per rack

- **Highest 16TB hard drive performance** with enhanced caching, making it perfect 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

- **Helium sealed-drive design** delivers lower total cost of ownership through lower power and weight

- **Next-generation 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](#)

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1 Compared to 12TB competitive product
### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>SATA 6Gb/s</th>
<th>12Gb/s SAS</th>
<th>SATA 6Gb/s</th>
<th>12Gb/s SAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>14TB</td>
<td>16TB</td>
<td>16TB</td>
<td>14TB</td>
</tr>
<tr>
<td>Standard Model FastFormat™ (512e/4Kn)¹</td>
<td>ST14000NM001G</td>
<td>ST16000NM002G</td>
<td>ST16000NM001G</td>
<td>ST14000NM002G</td>
</tr>
<tr>
<td>SED Model FastFormat (512e/4Kn)²</td>
<td>ST14000NM003G</td>
<td>ST16000NM004G</td>
<td>ST16000NM003G</td>
<td>ST14000NM004G</td>
</tr>
<tr>
<td>Power-FIPS FastFormat (512e/4Kn)¹,²</td>
<td>— ST16000NM009G</td>
<td>— ST16000NM012G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Features

- **Helium Sealed-Drive Design**: Yes
- **Protection Information (T10 DIF)**: —
- **SuperParity**: Yes
- **Low Halogen**: Yes
- **PowerChoice™ Idle Power Technology**: Yes
- **PowerBalance™ Power/Performance Technology**: Yes
- **Hot-Plug Support**: 3
- **Cache, Multisegmented (MB)**: 256
- **RSA 2048 Firmware Verification (SD&D)**: Yes

### Reliability/Data Integrity

- **Mean Time Between Failures (MTBF, hours)**: 2,500,000
- **Reliability Rating @ Full 24×7 Operation (AFR)**: 0.35%
- **Nonrecoverable Read Errors per Bits Read**: 1 sector per 10E15
- **Power-On Hours per Year (24×7)**: 8760
- **512e Sector Size (Bytes per Sector)**: 512
- **4Kn Sector Size (Bytes per Sector)**: 4096
- **Limited Warranty (years)**: 5

### Performance

- **Spindle Speed (RPM)**: 7200RPM
- **Interface Access Speed (Gb/s)**: 6.0, 3.0
- **Max. Sustained Transfer Rate OD (MB/s,MiB/s)**: 261, 249
- **Random Read/Write 4K QD16 WCD (IOPS)**: 170/440
- **Average Latency (ms)**: 4.16
- **Rotation Vibration @ 20-1500 Hz (rad/sec²)**: 12.5
- **Power-On Requirements**: +12 V and +5 V

### Environmental

- **Temperature, Operating (°C)**: 5°C – 60°C
- **Vibration, Nonoperating: 2 to 500Hz (Gms)**: 2.27
- **Shock, Operating 2ms (Read/Write) (Gs)**: 50
- **Shock, Nonoperating 2ms (Gs)**: 200

### Physical

- **Height (mm/in, max)**: 26.11mm/1.028in
- **Width (mm/in, max)**: 101.85mm/4.010in
- **Depth (mm/in, max)**: 147.00mm/5.787in
- **Weight (lb/g)**: 670g/1.477lb
- **Carton Unit Quantity**: 20

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

3 Supports Hotplug operation per Serial ATA Revision 3.2 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.