Data Sheet

Constellation® ES
High-Capacity Storage Designed for Seamless Enterprise Integration

Key Advantages
• Fifth-generation, enterprise, nearline drive designed for 24×7 operation
• Up to 2TB capacity for data-hungry enterprise business applications
• Best-in-class rotational vibration tolerance ensures unrivalled performance in high-density applications for continuous data access.
• Enhanced efficiencies with PowerChoice™ host-selectable power options for unprecedented savings during slow or idle periods
• Seagate RAID Rebuild™ development platform significantly reduces hours of lost productivity.
• Multi-drive firmware maximized for enterprise system availability
• 6Gb/s SAS performance with error detection and correction (IOEDC/IOECC) capabilities and PI (Protection Information)
• Self-Encrypting Drive (SED) option cuts IT drive retirement expenses while securely protecting data and is one of the easiest, most cost-effective security measures you can implement.¹
• FIPS Self-Encrypting Drive option provides all the benefits of SED and is NIST certified to meet U.S., Canada and U.K. government data encryption compliance requirements.¹ ²

Best-Fit Applications
• High-capacity data center storage
• Mainstream enterprise external storage arrays
• Enterprise backup and restore
• Cloud storage

¹ Self-Encrypting Drive (SED) and FIPS Self-Encrypting Drive options may require TCG-compliant host or controller support. Not available in all countries.
<table>
<thead>
<tr>
<th>Specifications</th>
<th>6Gb/s SAS</th>
<th>SATA 6Gb/s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2TB</td>
<td>1TB</td>
</tr>
<tr>
<td>Standard Model</td>
<td>ST2000NM0011</td>
<td>ST1000NM0011</td>
</tr>
<tr>
<td>SED 256 Model</td>
<td>ST2000NM0021</td>
<td>ST1000NM0021</td>
</tr>
<tr>
<td>SED 128 with FIPS Model</td>
<td>ST2000NM0031</td>
<td>ST1000NM0031</td>
</tr>
</tbody>
</table>

### Features

- **Protection Information**: Yes* | Yes* | Yes* | — | — | — | —
- **Low Halogen**: Yes | Yes | Yes | Yes | Yes | Yes | Yes
- **Self-Encrypted Drive (SED) Option**: Yes | Yes | Yes | Yes | Yes | Yes | Yes

#### Configuration/Organization

- **Bytes per Sector**: 512, 520, 528
- **Power-On Hours (annual)**: 8760
- **Mean Time Between Failures (MTBF, hours)**: 1.2 million
- **Reliability Rating at Full 24x7 Operation (AFR)**: 0.73% | 0.73% | 0.73% | 0.73% | 0.73% | 0.73%

#### Performance

- **Spindle Speed (RPM)**: 7200
- **Seek Time, Average Read/Write (ms)**: 8.5/9.5
- **Max Sustained Transfer Rate (MB/s)**: 150
- **Cache, Multisegmented (MB)**: 64
- **Interface Access Speed (Gbps)**: 6.0, 3.0, 1.5
- **Rotational Vibration @ 1500Hz (rad/s²)**: 12.5, 12.5, 12.5, 12.5, 12.5, 12.5

#### Power Management

- **Power Supply Requirements**: +12V and +5V
- **Power (W)**: 7.26 | 7.26 | 7.26 | 6.39 | 4.61 | 3.74
- **Typical Operating Power (W)**: 10.43
- **Random Read Time**: 7.28
- **Interface Speed (AFR)**: 6.0, 3.0, 1.5
- **Environmental**
  - **Operating Temperature Range (˚C)**: 5 to 60
  - **Vibration (G)**: 0.5
  - **Nonoperating: 10 to 500Hz**: 2.0
  - **Shock (G)**: 70
  - **Cartons per Layer**: 8

#### Physical

- **Height (in/mm)**: 1.028/26.10
- **Width (in/mm)**: 4.010/101.85
- **Depth (in/mm)**: 5.787/147.00
- **Weight (lb/kg)**: 1.57/710
- **Carton Unit Quantity**: 20
- **Cartons per Pallet**: 40

---

1 One gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes when referring to drive capacity.
2 Self-Encrypting Drive model. May require TCG-compliant host or controller support. Not available in all countries.
3 FIPS Self-Encrypting Drive model. May require TCG-compliant host or controller support. Not available in all countries.
4 Nearline products shipped between December 31, 2011, and June 30, 2012, have a 3-year limited warranty. Nearline products shipped before December 31, 2011, or after June 30, 2012, have a 5-year limited warranty.
5 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.
6 Protection Information included

---

*Seagate Technology LLC. All rights reserved. Printed in USA. Seagate, Seagate Technology and the Wave logo are registered trademarks of Seagate Technology LLC in the United States and/or other countries. Constellation and PowerChoice are either trademarks or registered trademarks of Seagate Technology LLC or one of its affiliated companies in the United States and/or other countries. The FIPS logo is a certification mark of NIST, which does not imply product endorsement by NIST, the U.S., or Canadian governments. All other trademarks or registered trademarks are the property of their respective owners. When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer’s operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. The export or re-export of hardware or software containing encryption may be regulated by the U.S. Department of Commerce, Bureau of Industry and Security (for more information, visit www.bis.doc.gov), and controlled for import and use outside of the U.S. Seagate reserves the right to change, without notice, product offerings or specifications. DS1697.8-1207-US, July 2012*