



DATA SHEET

Trusted. Efficient. Versatile.  
**Exos 7E8**



The Seagate® Exos™ 7E8 enterprise hard drive confidently stores up to 8TB of data without sacrificing performance. The secure, high-capacity, high-performance drives are optimized for demanding enterprise bulk data applications.



### Best-Fit Applications

- Hyperscale applications/cloud data centers
- Massive scale-out data centers
- OLTP and HPC 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

### Enterprise Drive for Bulk Data Applications

Exos 7E8 hard drives support up to 8TB per drive,<sup>1</sup> offering bulk data storage for data center infrastructures requiring a highly reliable enterprise hard drive. Exos 7E8 provides cost-effective, reliable access to unstructured data. Built on field-proven 10th-generation conventional magnetic recording (CMR) technology, the Exos 7E8 drive helps to catalyze the datasphere, enabling data center architects and IT professionals to deliver trusted performance, rock-solid reliability, ironclad security, and low TCO for demanding 24x7 operations.

### Robust Bulk Data Storage for a 24x7 World

Exos 7E8 drives are backed by a 2 million hour MTBF rating and support workloads of 550TB per year—10x that of desktop hard drives. With state-of-the-art cache, on-the-fly error-correction algorithms, and rotational vibration design, the Exos 7E8 helps ensure consistent performance in replicated and RAID multi-drive systems.

### High Performance for Mainstream Data Center Applications

Meet your storage workload requirements in the most efficient and cost-effective data center footprint on the market today. The Exos 7E8 delivers easy integration into bulk storage systems with 12Gb/s SAS and SATA 6Gb/s interface options. With user-definable innovative technology advancements like PowerChoice™ and Seagate RAID Rebuild®, you can tailor your nearline storage requirements for even greater improvements in lowering your TCO.

### Enhanced Reliability, Data Protection, and Security

Advanced security features help protect data where it lives—on the drive. Exos 7E8 prevents unauthorized drive access and safeguards stored data with security features that include Secure Downloads & Diagnostics, TCG-compliant Self-Encrypting Drive, and government-grade FIPS/Common Criteria tamper-resistant hard drive.<sup>2</sup> Seagate Secure™ drives simplify drive repurposing and disposal, help protect data-at-rest, and comply with corporate and federal data security mandates.



<sup>1</sup> Seagate recommends validating your configuration with your HBA/RAID controller manufacturer to ensure full capacity capabilities.

<sup>2</sup> Self-Encrypting Drives (SED) are not available in all models or countries. May require TCG-compliant host or controller support.



Specifications	512n SATA				
	6TB	4TB	3TB	2TB	1TB
Capacity	6TB	4TB	3TB	2TB	1TB
Base Model	ST6000NM002A	ST4000NM000A	ST3000NM000A	ST2000NM000A	ST1000NM000A
PowerBalance™ Model	—	—	—	—	—
Seagate Secure™ SED Model <sup>1</sup>	—	ST4000NM006A	—	—	ST1000NM002A
Seagate Secure SED-FIPS Model <sup>1</sup>	—	ST4000NM013A	ST3000NM004A	—	—
<b>Features</b>					
Protection Information (T10 DIF)	—	—	—	—	—
Humidity Sensor	Yes	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>					
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%	0.44%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8760	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512	512	512	512	512
Warranty, Limited (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7200	7200	7200	7200	7200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD	215MB/s	215MB/s	215MB/s	215MB/s	215MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single	Single
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Idle Power, Average (W)	7.1	5.38	5.38	4.48	4.48
Typical Operating, Random Read (W)	12.91	10.77	10.77	9.91	9.91
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>					
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300	150/300
<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 (g/lb)	716g/1.58lb	649g/1.43lb	649g/1.43lb	620g/1.37lb	620g/1.37lb
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> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.



Specifications	512n SAS				
	6TB	4TB	3TB	2TB	1TB
Capacity	6TB	4TB	3TB	2TB	1TB
Base Model	ST6000NM003A	ST4000NM003A	ST3000NM001A	ST2000NM003A	ST1000NM001A
PowerBalance™ Model	—	—	—	—	—
Seagate Secure™ SED Model <sup>1</sup>	—	ST4000NM007A	ST3000NM003A	ST2000NM007A	—
Seagate Secure SED-FIPS Model <sup>1</sup>	—	ST4000NM015A	ST3000NM005A	—	—
<b>Features</b>					
Protection Information (T10 DIF)	Yes	Yes	Yes	Yes	Yes
Humidity Sensor	Yes	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>					
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%	0.44%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8760	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512	512	512	512	512
Warranty, Limited (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7200	7200	7200	7200	7200
Interface Access Speed (Gb/s)	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0
Max. Sustained Transfer Rate OD	215MB/s	215MB/s	215MB/s	215MB/s	215MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual	Dual
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Idle Power, Average (W)	7.97	5.94	5.94	4.86	4.86
Typical Operating, Random Read (W)	13.18	11.33	11.33	10.09	10.09
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>					
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300	150/300
<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 (g/lb)	716g/1.58lb	649g/1.43lb	649g/1.43lb	620g/1.37lb	620g/1.37lb
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> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.



Specifications	512e/4KN (FastFormat™) SATA			
Capacity	8TB	6TB	4TB	2TB
Base Model	ST8000NM000A	ST6000NM021A	ST4000NM002A	ST2000NM001A
PowerBalance™ Model	ST8000NM016A	ST6000NM037A	—	—
Seagate Secure™ SED Model <sup>1</sup>	ST8000NM004A	—	ST4000NM010A	—
Seagate Secure SED-FIPS Model <sup>1</sup>	ST8000NM008A	ST6000NM025A	ST4000NM012A	—
<b>Features</b>				
Protection Information (T10 DIF)	—	—	—	—
Humidity Sensor	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%
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	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512	512	512	512
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD	249MB/s	245MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Power, Average (W)	7.64	6.20	5.40	4.42
Typical Operating, Random Read (W)	12.81	11.67	10.89	9.83
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>				
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300
<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
Width (in/mm, max) <sup>2</sup>	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
Weight (g/lb)	716g/1.58lb	693g/1.53lb	649g/1.43lb	620g/1.37lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

<sup>1</sup> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.



Specifications	512e/4KN (FastFormat) SAS			
Capacity	8TB	6TB	4TB	2TB
Base Model	ST8000NM001A	ST6000NM029A	ST4000NM005A	ST2000NM004A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ SED Model <sup>1</sup>	ST8000NM006A	—	ST4000NM011A	—
Seagate Secure SED-FIPS Model <sup>1</sup>	ST8000NM010A	ST6000NM033A	ST4000NM014A	—
<b>Features</b>				
Protection Information (T10 DIF)	Yes	Yes	Yes	Yes
Humidity Sensor	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%
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	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512, 520, 528	512, 520, 528	512, 520, 528	512, 520, 528
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Interface Access Speed (Gb/s)	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0
Max. Sustained Transfer Rate OD	249MB/s	245MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Power, Average (W)	7.97	6.84	5.79	5.06
Typical Operating, Random Read (W)	13.18	12.3	11.12	10.14
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>				
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300
<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
Width (in/mm, max) <sup>2</sup>	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
Weight (g/lb)	716g/1.58lb	693g/1.53lb	649g/1.43lb	620g/1.37lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

<sup>1</sup> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.



Specifications	4Kn SATA			
Capacity	8TB	6TB	4TB	2TB
Base Model	ST8000NM002A	ST6000NM022A	ST4000NM001A	ST2000NM002A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ SED Model <sup>1</sup>	—	—	—	—
Seagate Secure SED-FIPS Model <sup>1</sup>	—	—	—	—
<b>Features</b>				
Protection Information (T10 DIF)	—	—	—	—
Humidity Sensor	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%
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	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	4096	4096	4096	4096
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Interface Access Speed (Gb/s)	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate OD	249MB/s	245MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Power, Average (W)	7.64	6.2	5.4	4.42
Typical Operating, Random Read (W)	12.81	11.67	10.89	9.83
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>				
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300
<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
Width (in/mm, max) <sup>2</sup>	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
Weight (g/lb)	716g/1.58lb	693g/1.53lb	649g/1.43lb	620g/1.37lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

<sup>1</sup> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.



Specifications	4Kn SAS			
	8TB	6TB	4TB	2TB
Capacity	8TB	6TB	4TB	2TB
Base Model	ST8000NM003A	ST6000NM030A	ST4000NM004A	ST2000NM005A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ SED Model <sup>1</sup>	—	—	—	—
Seagate Secure SED-FIPS Model <sup>1</sup>	—	—	—	—
<b>Features</b>				
Protection Information (T10 DIF)	Yes	Yes	Yes	Yes
Humidity Sensor	Yes	Yes	Yes	Yes
SuperParity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24x7 Operation (AFR)	0.44%	0.44%	0.44%	0.44%
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	8760	8760	8760	8760
Sector Size (Bytes per Logical Sector)	4096, 4160, 4224	4096, 4160, 4224	4096, 4160, 4224	4096, 4160, 4224
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Interface Access Speed (Gb/s)	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0	12.0, 6.0, 3.0
Max. Sustained Transfer Rate OD	249MB/s	245MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual
Rotational Vibration @ 1500Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Power, Average (W)	7.97	6.84	5.79	5.06
Typical Operating, Random Read (W)	13.18	12.30	11.12	10.14
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
<b>Environmental</b>				
Temperature, Operating (°C)	5°C – 60°C	5°C – 60°C	5°C – 60°C	5°C – 60°C
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300	150/300
<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
Width (in/mm, max) <sup>2</sup>	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
Weight (g/lb)	716g/1.58lb	693g/1.53lb	649g/1.43lb	620g/1.37lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

<sup>1</sup> Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

<sup>2</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8223.

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