



DATA SHEET

Trusted. Efficient. Versatile.

## Exos 7E8



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



### Best-Fit Applications

- Hyperscale applications/cloud data centres
- Massive scale-out data centres
- 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
- Centralised surveillance

### Enterprise Drive for Bulk Data Applications

Exos 7E8 hard drives support up to 8 TB per drive,<sup>1</sup> offering bulk data storage for data centre 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 catalyse the datasphere, enabling data centre 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 550 TB 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 Centre Applications

Meet your storage workload requirements in the most efficient and cost-effective data centre footprint on the market today. The Exos 7E8 delivers easy integration into bulk storage systems with 12 Gb/s SAS and SATA 6 Gb/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 unauthorised 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				
	6 TB	4 TB	3 TB	2 TB	1 TB
Capacity	6 TB	4 TB	3 TB	2 TB	1 TB
Base Model	ST6000NM002A	ST4000NM000A	ST3000NM000A	ST2000NM000A	ST1000NM000A
PowerBalance™ Model	—	—	—	—	—
Seagate Secure™ Model <sup>1</sup>	—	ST4000NM006A	—	—	ST1000NM002A
Seagate Secure SED-FIPS Model <sup>1,2</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, Multi-segmented (MB)	256	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>					
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	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	8,760	8,760	8,760	8,760	8,760
Bytes per Sector	512	512	512	512	512
Warranty, Limited (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200
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 @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Idle Average (W)	7.1 W	5.38 W	5.38 W	4.48 W	4.48 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300	150/300
<b>Physical</b>					
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	649 g/1.43 lb	649 g/1.43 lb	620 g/1.37 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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				
	6 TB	4 TB	3 TB	2 TB	1 TB
Capacity	6 TB	4 TB	3 TB	2 TB	1 TB
Base Model	ST6000NM003A	ST4000NM003A	ST3000NM001A	ST2000NM003A	ST1000NM001A
PowerBalance™ Model	—	—	—	—	—
Seagate Secure™ Model <sup>1</sup>	—	ST4000NM007A	ST3000NM003A	ST2000NM007A	—
Seagate Secure SED-FIPS Model <sup>1,2</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, Multi-segmented (MB)	256	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>					
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	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	8,760	8,760	8,760	8,760	8,760
Bytes per Sector	512	512	512	512	512
Warranty, Limited (years)	5	5	5	5	5
<b>Performance</b>					
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200
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 @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5	12.5
<b>Power Consumption</b>					
Idle Average (W)	7.97 W	5.94 W	5.94 W	4.86 W	4.86 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300	150/300
<b>Physical</b>					
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	649 g/1.43 lb	649 g/1.43 lb	620 g/1.37 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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			
	8 TB	6 TB	4 TB	2 TB
Capacity	8 TB	6 TB	4 TB	2 TB
Base Model	ST8000NM000A	ST6000NM021A	ST4000NM002A	ST2000NM001A
PowerBalance™ Model	ST8000NM016A	ST6000NM037A	—	—
Seagate Secure™ Model <sup>1</sup>	ST8000NM004A	—	ST4000NM010A	—
Seagate Secure SED-FIPS Model <sup>1,2</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, Multi-segmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8,760	8,760	8,760	8,760
Bytes per Sector	512	512	512	512
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7,200	7,200	7,200	7,200
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	226MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
Rotational Vibration @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idling Average (W)	7.64 W	6.2 W	5.4 W	4.42 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300
<b>Physical</b>				
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	693 g/1.53 lb	649 g/1.43 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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			
	8 TB	6 TB	4 TB	2 TB
Capacity	8 TB	6 TB	4 TB	2 TB
Base Model	ST8000NM001A	ST6000NM029A	ST4000NM005A	ST2000NM004A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ Model <sup>1</sup>	ST8000NM006A	—	ST4000NM011A	—
Seagate Secure SED-FIPS Model <sup>1,2</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, Multi-segmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8,760	8,760	8,760	8,760
Bytes per 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)	7,200	7,200	7,200	7,200
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	226MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual
Rotational Vibration @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idling Average (W)	7.97 W	6.84 W	5.79 W	5.06 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300
<b>Physical</b>				
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	693 g/1.53 lb	649 g/1.43 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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			
	8 TB	6 TB	4 TB	2 TB
Capacity	8 TB	6 TB	4 TB	2 TB
Base Model	ST8000NM002A	ST6000NM022A	ST4000NM001A	ST2000NM002A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ Model <sup>1</sup>	—	—	—	—
Seagate Secure SED-FIPS Model <sup>1,2</sup>	ST8000NM009A	ST6000NM026A	—	—
<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, Multi-segmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8,760	8,760	8,760	8,760
Bytes per Sector	4,096	4,096	4,096	4,096
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7,200	7,200	7,200	7,200
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	226MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
Rotational Vibration @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Average (W)	7.64 W	6.2 W	5.4 W	4.42 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300
<b>Physical</b>				
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	693 g/1.53 lb	649 g/1.43 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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			
	8 TB	6 TB	4 TB	2 TB
Capacity	8 TB	6 TB	4 TB	2 TB
Base Model	ST8000NM003A	ST6000NM030A	ST4000NM004A	ST2000NM005A
PowerBalance™ Model	—	—	—	—
Seagate Secure™ Model <sup>1</sup>	—	—	—	—
Seagate Secure SED-FIPS Model <sup>1,2</sup>	ST8000NM011A	ST6000NM034A	—	—
<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, Multi-segmented (MB)	256	256	256	256
Advanced Write Caching (2M internal NOR flash)	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Vibration, Non-operating: 10 Hz to 500 Hz (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%
Non-recoverable Read Errors per Bits Read, Max	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8,760	8,760	8,760	8,760
Bytes per Sector	4,096, 4,160, 4,224	4,096, 4,160, 4,224	4,096, 4,160, 4,224	4,096, 4,160, 4,224
Warranty, Limited (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7,200	7,200	7,200	7,200
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	226MB/s	226MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual
Rotational Vibration @ 1,500 Hz (rad/s <sup>2</sup> )	12.5	12.5	12.5	12.5
<b>Power Consumption</b>				
Idle Average (W)	7.97 W	6.84 W	5.79 W	5.06 W
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 2 ms Read/Write (Gs)	70/40 Gs	70/40 Gs	70/40 Gs	70/40 Gs
Shock, Non-operating, (1 ms/2 ms) (Gs)	150/300	150/300	150/300	150/300
<b>Physical</b>				
Height (in/mm, max) <sup>3</sup>	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm	1.028 in/26.1 mm
Width (in/mm, max) <sup>3</sup>	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm	4.01 in/101.85 mm
Depth (in/mm, max) <sup>3</sup>	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm	5.787 in/147 mm
Weight (lb/g)	716 g/1.58 lb	693 g/1.53 lb	649 g/1.43 lb	620 g/1.37 lb
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) 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> FIPS 140-2 Level 2 Certification in process.

<sup>3</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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