

# Enterprise Capacity 2.5 HDD

## Data Sheet

### Design Small and Deliver BIG—2.5-Inch Nearline Drive

- Up to 2TB capacity in 15mm z-height, 2.5-inch form factor for space-constrained data centers
- Designed for high-density storage solutions requiring environmentally sound low power consumption and low weight for maximum storage efficiency
- Choose 12Gb/s SAS for high data integrity, scalability and fast data access or SATA 6Gb/s for economical nearline performance.
- Third-generation, enterprise-class reliability for 24x7 environmental robustness
- Highest efficiency with over 50% improvement in watts/TB, and 18% sequential performance improvement compared to the previous generation
- Improved rotational vibration tolerance and head micro-actuation maximizes system availability and performance.
- Lowest enterprise operating power and enhanced PowerChoice™ options for additional power savings during idle periods
- Protect data where it lives—on the drive—by choosing from government-grade SED FIPS 140-2 option or SED models with Seagate Instant Secure Erase technology for easy and cost-effective drive disposal.<sup>1,2</sup>

### Best-Fit Applications

- Storage-hungry business applications
- Storage area networks (SAN) and network attached storage (NAS)
- Maximum-capacity entry-level servers and blade servers
- Rich media content storage
- Enterprise backup and restore—D2D, virtual tape
- Cloud computing



<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 in review

# Enterprise Capacity 2.5 HDD



Specifications	12Gb/s SAS			
	4K Native		5xx Emulation	
	2TB <sup>1</sup>	1TB <sup>1</sup>	2TB <sup>1</sup>	1TB <sup>1</sup>
Standard Model Number	ST2000NX0263	ST1000NX0323	ST2000NX0273	ST1000NX0333
SED Model Number	ST2000NX0323 <sup>2</sup>	ST1000NX0363 <sup>2</sup>	ST2000NX0343 <sup>2</sup>	ST1000NX0373 <sup>2</sup>
SED-FIPS Model Number	ST2000NX0333 <sup>2,3</sup>	—	ST2000NX0353 <sup>2,3</sup>	—
<b>Features</b>				
PowerChoice™ on-demand power option	Yes	Yes	Yes	Yes
Protection Information	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
RAID Rebuild™	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Mean Time Between Failures (MTBF, hours)	1.4 million	1.4 million	1.4 million	1.4 million
Reliability Rating @ Full 24x7 operation (AFR)	0.63%	0.63%	0.63%	0.63%
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
Bytes per Sector	4K	4K	512, 520, 528	512, 520, 528
Limited Warranty (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Cache Buffer, Multisegmented (MB)	128	128	128	128
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 (MB/s)	136	136	136	136
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual
RV Tolerance (rad/s <sup>2</sup> to 1800Hz)	16	16	16	16
<b>Power Management</b>				
Idle Power (W)	3.53	3.29	3.53	3.29
Typical Operating, Random Read (W)	6.02	5.9	6.02	5.9
PowerChoice™ Technology (Standby) (W)	1.52	1.52	1.52	1.52
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
<b>Environmental</b>				
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55
Vibration, Operating, 5Hz to 500Hz (Gs)	0.5	0.5	0.5	0.5
Vibration, Nonoperating, 5Hz to 500Hz (Gs)	3.0	3.0	3.0	3.0
Shock, Operating, 2ms (Gs)	25	25	25	25
Shock, Nonoperating, 2ms (Gs)	400	400	400	400
Acoustics, Typical Idle (bels)	2.8	2.8	2.8	2.8
Acoustics, Typical Seek (bels)	3.2	3.2	3.2	3.2
<b>Physical</b>				
Height (in/mm) <sup>4</sup>	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00
Width (in/mm) <sup>4</sup>	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10
Depth (in/mm) <sup>4</sup>	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45
Weight (lb/kg)	0.437/0.198	0.419/0.190	0.437/0.198	0.419/0.190
Carton Unit Quantity	30	30	30	30
Cartons per Pallet	50	50	50	50
Cartons per Layer	10	10	10	10

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 Drives (SED) and FIPS 140-2 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

3 FIPS in review

4 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.



# Enterprise Capacity 2.5 HDD



Specifications	SATA 6Gb/s			
	4K Native		512 Emulation	
	2TB <sup>1</sup>	1TB <sup>1</sup>	2TB <sup>1</sup>	1TB <sup>1</sup>
Standard Model Number	ST2000NX0243	ST1000NX0303	ST2000NX0253	ST1000NX0313
SED Model Number	ST2000NX0283 <sup>2</sup>	ST1000NX0343 <sup>2</sup>	ST2000NX0303 <sup>2</sup>	ST1000NX0353 <sup>2</sup>
<b>Features</b>				
PowerChoice™ on-demand power option	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
RAID Rebuild™	Yes	Yes	Yes	Yes
<b>Reliability/Data Integrity</b>				
Mean Time Between Failures (MTBF, hours)	1.4 million	1.4 million	1.4 million	1.4 million
Reliability Rating @ Full 24x7 operation (AFR)	0.63%	0.63%	0.63%	0.63%
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
Bytes per Sector	4K	4K	512	512
Limited Warranty (years)	5	5	5	5
<b>Performance</b>				
Spindle Speed (RPM)	7200	7200	7200	7200
Cache Buffer, Multisegmented (MB)	128	128	128	128
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 (MB/s)	136	136	136	136
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
RV Tolerance (rad/s <sup>2</sup> to 1800Hz)	16	16	16	16
<b>Power Management</b>				
Idle Power (W)	3.87	3.51	3.87	3.51
Typical Operating, Random Read (W)	5.22	4.74	5.22	4.74
PowerChoice™ Technology (Standby) (W)	1.14	1.14	1.14	1.14
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
<b>Environmental</b>				
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55
Vibration, Operating, 5Hz to 500Hz (Gs)	0.5	0.5	0.5	0.5
Vibration, Nonoperating, 5Hz to 500Hz (Gs)	3.0	3.0	3.0	3.0
Shock, Operating, 2ms (Gs)	25	25	25	25
Shock, Nonoperating, 2ms (Gs)	400	400	400	400
Acoustics, Typical Idle (bels)	2.8	2.8	2.8	2.8
Acoustics, Typical Seek (bels)	3.2	3.2	3.2	3.2
<b>Physical</b>				
Height (in/mm) <sup>3</sup>	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00
Width (in/mm) <sup>3</sup>	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10
Depth (in/mm) <sup>3</sup>	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45
Weight (lb/kg)	0.437/0.198	0.419/0.190	0.437/0.198	0.419/0.190
Carton Unit Quantity	30	30	30	30
Cartons per Pallet	50	50	50	50
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Seagate Technology LLC 10200 South De Anza Boulevard, Cupertino, California 95014, United States, 408-658-1000  
Seagate Singapore International Headquarters Pte. Ltd. 7000 Ang Mo Kio Avenue 5, Singapore 569877, 65-6485-3888  
Seagate Technology SAS 16-18, rue du Dôme, 92100 Boulogne-Billancourt, France, 33 1-4186 10 00

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