Enterprise Capacity 2.5 HDD

Data Sheet

Design Small and Deliver BIG - 2.5-Inch Nearline Drive

- Up to 2 TB capacity in 15mm z-height, 2.5-inch form factor for space-constrained data centres
- Designed for high-density storage solutions requiring environmentally sound low power consumption and low weight for maximum storage efficiency
- Choose 12 Gb/s SAS for high data integrity, scalability and fast data access or SATA 6 Gb/s for economical nearline performance
- Third-generation, enterprise-class reliability for 24×7 environmental robustness
- Advanced sector formats (4K Native and 512 Emulation) as well as 512 Native support for legacy systems
- 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 maximises 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[1]

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



[1] 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. Instant Secure Erase (ISE) functionality meets the ISO/IEC 27040 and NIST 800-88 guidelines for complete and authoritative drive sanitization.

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Specifications	12 Gb/s SAS					
	4K Native		5xx Emulation		5xx Native	
	2 TB[1]	1 TB[1]	2 TB[1]	1 TB[1]	2 TB[1]	1 TB[1]
Standard Model Number	ST2000NX0263	ST1000NX0323	ST2000NX0273	ST1000NX0333	ST2000NX0433	ST1000NX0453
SED Model Number	ST2000NX0323[2]	ST1000NX0363[2]	ST2000NX0343[2]	ST1000NX0373[2]	—	—
SED-FIPS Model Number	ST2000NX0333[2]	—	ST2000NX0353[2]	—	—	—
Features						
PowerChoice™ On-Demand Power Option	Yes	Yes	Yes	Yes	Yes	Yes
Protection Information	Yes	Yes	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes	Yes	Yes
RAID Rebuild™	Yes	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity						
Mean Time Between Failures (MTBF, hours)	2.0 million	2.0 million	2.0 million	2.0 million	2.0 million	2.0 million
Reliability Rating @ Full 24x7 operation (AFR)	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%
Non-recoverable Read Errors per Bits Read	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}
Power-On Hours per Year	8,760	8,760	8,760	8,760	8,760	8,760
Bytes per Sector	4K	4K	512, 520, 528	512, 520, 528	512, 520, 528	512, 520, 528
Limited Warranty (years)	5	5	5	5	5	5
Performance						
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200	7,200
Cache Buffer, Multisegmented (MB)	128	128	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	12.0, 6.0, 3.0	12.0, 6.0, 3.0
Max. Sustained Transfer Rate (MB/s)	136	136	136	136	136	136
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual	Dual	Dual
RV Tolerance (rad/s^2 to 1,800 Hz)	16	16	16	16	16	16
Power Management						
Idling Power (W)	3.53	3.29	3.53	3.29	3.53	3.29
Typical Operating, Random Read (W)	6.02	5.9	6.02	5.9	6.02	5.9
PowerChoice™ Technology (Standby) (W)	1.52	1.52	1.52	1.52	1.52	1.52
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	+12 V and +5 V
Environmental						
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55	5 to 55	5 to 55
Vibration, Operating, 5 Hz to 500 Hz (Gs)	0.5	0.5	0.5	0.5	0.5	0.5
Vibration, Non-operating, 5 Hz to 500 Hz (Gs)	3.0	3.0	3.0	3.0	3.0	3.0
Shock, Operating, 2ms (Gs)	25	25	25	25	25	25
Shock, Non-operating, 2 ms (Gs)	400	400	400	400	400	400
Acoustics, typical - idling (bels)	2.8	2.8	2.8	2.8	2.8	2.8
Acoustics, typical - seek (bels)	3.2	3.2	3.2	3.2	3.2	3.2
Physical						
Height (in/mm)[3]	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00
Width (in/mm)[3]	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10
Depth (in/mm)[3]	3.955/100.45	3.955/100.45	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	0.437/0.198	0.437/0.198
Carton Unit Quantity	40	40	40	40	40	40
Cartons per Pallet	60	60	60	60	60	60
Cartons per Layer	10	10	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. Instant Secure Erase (ISE) functionality meets the ISO/IEC 27040 and NIST 800-88 guidelines for complete and authoritative drive sanitization.

[3] These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at www.sffcommittee.org. For connector-related dimensions, see SFF-8223.

12 Gb/s SAS

SATA 6 Gb/s Specifications on Next Page

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Specifications	6 Gb/s SATA					
	4K Native		512 Emulation		512 Native	
	2 TB[1]	1 TB[1]	2 TB[1]	1 TB[1]	2 TB[1]	1 TB[1]
Standard Model Number	ST2000NX0243	ST1000NX0303	ST2000NX0253	ST1000NX0313	ST2000NX0403	ST1000NX0423
SED Model Number	ST2000NX0283[2]	ST1000NX0343[2]	ST2000NX0303[2]	ST1000NX0353[2]	—	—
Features						
PowerChoice™ On-Demand Power Option	Yes	Yes	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes	Yes	Yes
RAID Rebuild™	Yes	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity						
Mean Time Between Failures (MTBF, hours)	2.0 million	2.0 million	2.0 million	2.0 million	2.0 million	2.0 million
Reliability Rating @ Full 24x7 operation (AFR)	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%
Non-recoverable Read Errors per Bits Read	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}	1 sector per 10^{15}
Power-On Hours per Year	8,760	8,760	8,760	8,760	8,760	8,760
Bytes per Sector	4K	4K	512	512	512	512
Limited Warranty (years)	5	5	5	5	5	5
Performance						
Spindle Speed (RPM)	7,200	7,200	7,200	7,200	7,200	7,200
Cache Buffer, Multisegmented (MB)	128	128	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	6.0, 3.0, 1.5	6.0, 3.0, 1.5
Max. Sustained Transfer Rate (MB/s)	136	136	136	136	136	136
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single	Single	Single
RV Tolerance (rad/s² to 1,800 Hz)	16	16	16	16	16	16
Power Management						
Idling Power (W)	3.87	3.51	3.87	3.51	3.87	3.51
Typical Operating, Random Read (W)	5.22	4.74	5.22	4.74	5.22	4.74
PowerChoice™ Technology (Standby) (W)	1.14	1.14	1.14	1.14	1.14	1.14
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	+12 V and +5 V
Environmental						
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55	5 to 55	5 to 55
Vibration, Operating, 5 Hz to 500 Hz (Gs)	0.5	0.5	0.5	0.5	0.5	0.5
Vibration, Non-operating, 5 Hz to 500 Hz (Gs)	3.0	3.0	3.0	3.0	3.0	3.0
Shock, Operating, 2ms (Gs)	25	25	25	25	25	25
Shock, Non-operating, 2 ms (Gs)	400	400	400	400	400	400
Acoustics, typical - idling (bels)	2.8	2.8	2.8	2.8	2.8	2.8
Acoustics, typical - seek (bels)	3.2	3.2	3.2	3.2	3.2	3.2
Physical						
Height (in/mm)[3]	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00
Width (in/mm)[3]	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10
Depth (in/mm)[3]	3.955/100.45	3.955/100.45	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	0.437/0.198	0.419/0.190
Carton Unit Quantity	40	40	40	40	40	40
Cartons per Pallet	60	60	60	60	60	60
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SERIAL ATA 6 Gb/s CERTIFIED

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