Enterprise Capacity 3.5 HDD

Data Sheet

Seagate®

Capacity-Optimised Enterprise Hard Drive for Bulk-Data Applications

- Highest-capacity large form factor enterprise drive - 50% more capacity over last generation with up to 6TB - for demanding data growth[1]
- Fastest high-capacity HDD with best-in-class random and sequential read/write performance
- Eighth-generation drive technology for reliable access to bulk storage of unstructured data
- Both 12Gb/s SAS and SATA 6Gb/s interfaces for easy integration into replicated and RAID storage systems
- Enhanced error correction, super parity and end-to-end SAS-based data integrity for accurate data storage
- Industry-leading rotational vibration tolerance ensures consistent performance
- Improved power and cooling efficiencies with low power consumption and on-demand PowerChoice™ technology based on T10/T13 power management standards
- Engineered for 24×7 workloads of 550TB/yr - 10× that of desktop drives
- Robust performance with dual processors, ramp load technology, top-cover-attached motor and humidity sensor for optimum performance in all chassis
- Seagate PowerBalance models available for those requiring a lower power consumption with balanced performance
- Self-Encrypting Drive (AES-256) with FIPS 140-2 validation and Seagate Instant Secure Erase cuts IT drive retirement costs while protecting data at rest securely[2,3]

Best-fit Applications

- Hyperscale applications
- High-capacity RAID storage
- Mainstream enterprise external storage arrays (SAN, NAS, DAS)
- Cloud data centres - replicated bulk data storage
- Enterprise backup and restore - D2D, virtual tape
- Centralised surveillance

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[1] Seagate recommends validating your configuration with your HBA/RAID controller manufacturer to ensure full capacity capabilities.

[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 140-2 in review. See FIPS 140- Level 2 Certificate at http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2011.htm#1635.

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Specifications	SATA 6Gb/s			
	6TB[1,2]	5TB[1,2]	4TB[1,2]	2TB[1]
Standard Model Number (4K Native)	ST6000NM0004	—	ST4000NM0004	ST2000NM0004
Standard Model Number (512 Emulation)	ST6000NM0024	ST5000NM0084	ST4000NM0024	ST2000NM0024
SED Model Number (4K Native)	ST6000NM0064[3]	—	ST4000NM0064[3]	ST2000NM0064[3]
SED Model Number (512 Emulation)	ST6000NM0044[3]	—	ST4000NM0044[3]	ST2000NM0044[3]
SED-FIPS Model Number (4K Native)	ST6000NM0094[3,4]	—	—	—
SED-FIPS Model Number (512 Emulation)	ST6000NM0084[3,4]	—	—	—
PowerBalance Model Number (512 Emulation)	ST6000NM0124	ST5000NM0124	ST4000NM0124	—
Features				
Humidity Sensor	Yes	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes	Yes
Hot-Plug Support[6]	Yes	Yes	Yes	Yes
Cache, Multi-segmented (MB)	128	128	128	128
Reliability/Data Integrity				
Mean Time Between Failures (MTBF, hours)	2.0M	2.0M	2.0M	2.0M
Reliability Rating at Full 24x7 Operation (AFR)	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}
Power-On Hours per Year	8,760 (24x7)	8,760 (24x7)	8,760 (24x7)	8,760 (24x7)
Limited Warranty (years)	5	5	5	5
Performance				
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 (MB/s)	up to 226	up to 226	up to 226	up to 226
Average Latency (ms)	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single
Rotational Vibration @ 1,500Hz(rad/s²)	12.5	12.5	12.5	12.5
Power Consumption				
Idle Power, Average (W)	8.0	8.0	5.23	3.71
Typical Operating, Random Read (W)	10.62	10.62	9.50	7.92
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
Environmental				
Temperature, Operating (°C)	5 to 60	5 to 60	5 to 60	5 to 60
Vibration, Non-operating: 10Hz to 500Hz (Grms)	5.0	5.0	5.0	5.0
Shock, Operating, 2ms (Read/Write) (Gs)	70/40	70/40	70/40	70/40
Shock, Non-operating, 1ms and 2ms (Gs)	250	300	300	300
Physical				
Height (in/mm, max)[6]	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1
Width (in/mm, max)[6]	4.010/101.85	4.010/101.85	4.010/101.85	4.010/101.85
Depth (in/mm, max)[6]	5.878/147.0	5.878/147.0	5.878/147.0	5.878/147.0
Weight (lb/g)	1.720/780	1.720/780	1.400/635	1.344/605
Carton Unit Quantity	20	20	20	20
Cartons per Pallet	40	40	40	40
Cartons per Layer	8	8	8	8

[1] One gigabyte, or GB equals one billion bytes; and one terabyte or TB, equals one trillion bytes when referring to drive capacity.

[2] Seagate recommends validating your configuration with your HBA/RAID controller manufacturer to ensure full capacity capabilities.

[3] 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.

[4] FIPS 140-2 in review. See FIPS 140-2 Level 2 Certificate at: http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2011.htm#1635.

[5] 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.

[6] Supports Hotplug operation per Serial ATA Revision 2.6 specification.

SERIAL ATA

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Specifications	12Gb/s SAS		
	6TB[1, 2]	4TB[1,2]	2TB[1]
Standard Model Number (4K Native)	ST6000NM0014	ST4000NM0014	ST2000NM0014
Standard Model Number (512 Emulation)	ST6000NM0034	ST4000NM0034	ST2000NM0034
SED Model Number (4K Native)	ST6000NM0074[3]	ST4000NM0074[3]	ST2000NM0074[3]
SED Model Number (512 Emulation)	ST6000NM0054[3]	ST4000NM0054[3]	ST2000NM0054[3]
SED-FIPS Model Number (4K Native)	ST6000NM0114[3,4]	—	—
SED-FIPS Model Number (512 Emulation)	ST6000NM0104[3,4]	—	—
PowerBalance Model Number (512 Emulation)	ST6000NM0134	ST4000NM0134	—
Features			
Protection Information (T10 DIF)	Yes	Yes	Yes
Humidity Sensor	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes
PowerChoice Technology	Yes	Yes	Yes
Cache, Multi-segmented (MB)	128	128	128
Reliability/Data Integrity			
Mean Time Between Failures (MTBF, hours)	2.0M	2.0M	2.0M
Reliability Rating at Full 24x7 Operation (AFR)	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}
Power-On Hours per Year	8,760 (24x7)	8,760 (24x7)	8,760 (24x7)
Limited Warranty (years)	5	5	5
Performance			
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD (MB/s)	up to 226	up to 226	up to 226
Average Latency (ms)	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual
Rotational Vibration @ 1,500Hz(rad/s²)	12.5	12.5	12.5
Power Consumption			
Idle Power, Average (W)	8.43	6.64	4.67
Typical Operating, Random Read (W)	12.13	10.43	9.17
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V
Environmental			
Temperature, Operating (°C)	5 to 60	5 to 60	5 to 60
Vibration, Non-operating: 10Hz to 500Hz (Grms)	4.9	4.9	4.9
Shock, Operating, 2ms (Read/Write) (Gs)	70/40	70/40	70/40
Shock, Non-operating, 1ms and 2ms (Gs)	250	300	300
Physical			
Height (in/mm, max)[5]	1.028/26.1	1.028/26.1	1.028/26.1
Width (in/mm, max)[5]	4.010/101.85	4.010/101.85	4.010/101.85
Depth (in/mm, max)[5]	5.878/147.0	5.878/147.0	5.878/147.0
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Carton Unit Quantity	20	20	20
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12Gb/s SAS

www.seagate.com