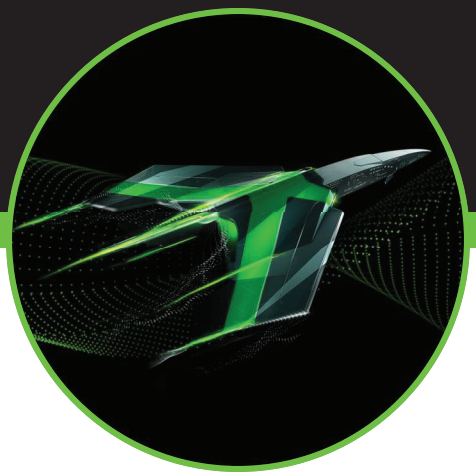
DATA SHEET

Maximize scale. Optimize TCO. Sustain the future.



Seagate's Exos hard drives deliver extraordinary storage capacity and power efficiency for AI and data-intensive applications in cutting-edge cloud and enterprise environments.



Best-Fit Applications

- High-capacity, dense RAID or erasure coded storage
- Content delivery and distribution
- Virtualized environments
- Big-data analytics
- Enterprise backup and restore—D2D, virtual tape
- Distributed file systems, including Hadoop and Ceph
- Mainstream enterprise external storage arrays
- NAS systems exceeding 16 drive bays
- Data archiving

Unmatched Capacity: Up to 32TB of storage in an industry-standard 3.5-inch form factor delivers capacity at scale while optimizing space utilization in data centers.

Breakthrough Areal Density: Exos hard drives now boast an industry-leading 3TB per platter, enabling massive storage capacity in the same footprint for maximized AI-driven data center efficiency.

Time-Tested Excellence Meets Next-Gen Innovation: The latest generation of Exos blends 90% of trusted, proven components from previous generations with cutting-edge Mozaic™ technology.

Enterprise-Class Reliability: Designed for the stringent demands of cloud service providers and enterprise data centers, Exos drives deliver durable, always-on performance essential for critical enterprise applications and backed by a 5-year limited warranty and 2.5M-hr MTBF rating.

Proven helium side-sealing weld technology: For added handling, robustness, and leak protection.

Sustainability: Built with more renewable energy and recycled materials than any previous Seagate product, the latest generation of Exos drives enable businesses to align with their sustainability initiatives while reducing environmental impact. Additionally, the PowerBalance™ feature optimizes watts per terabyte.

Compatibility and Interoperability: Maintains the same form factor, interface, and cooling as previous generations, simplifying integration into existing infrastructure and reducing upgrade complexities.

Efficient cooling: Engineered for optimal heat dissipation, ensuring reliable performance without increasing cooling requirements in your data center.

Seagate Secure™: Built-in reliable data protection enhances security, safeguarding your data against threats in enterprise environments.

Specifications	SATA 6Gb/s			
Product Name	Exos	Exos	Exos	Exos
CMR Capacity	32TB	30TB	28TB	24TB
Standard Model - Seagate Instant Secure Erase (ISE) - 512e[1]	ST32000NM004K	ST30000NM004K	ST28000NM003K	ST24000NM001K
FEATURES				
CMR	Yes	Yes	Yes	Yes
Helium Sealed-Drive Design	Yes	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes	Yes
PowerChoice™ Idle Power Technology	Yes	Yes	Yes	Yes
PowerBalance™ Power/Performance Technology	Yes	Yes	Yes	Yes
Hot-Plug Support[2]	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	512	512	512	512
Organic Solderability Preservative	Yes	Yes	Yes	Yes
RSA 3072 Firmware Verification (SD&D)	Yes	Yes	Yes	Yes
RELIABILITY and DATA INTEGRITY				
Mean Time Between Failures (MTBF, hours)	2500000hr	2500000hr	2500000hr	2500000hr
Reliability Rating @ Full 24×7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%
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 (24×7)	8760	8760	8760	8760
512e Sector Size (Bytes per Sector)	512e	512e	512e	512e
Limited Warranty (years)	5	5	5	5
PERFORMANCE				
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM
Interface Access Speed (Gb/s)	6.0, 3.0	6.0, 3.0	6.0, 3.0	6.0, 3.0
Max. Sustained Transfer Rate OD (MB/s,MiB/s)	285MB/s / 272MiB/s	275MB/s / 262MiB/s	270MB/s / 257MiB/s	240MB/s / 229MiB/s
Random Read/Write 4K QD16 WCD (IOPS)	170 / 350	170 / 350	170 / 350	170 / 350
Average Latency (ms)	4.16ms	4.16ms	4.16ms	4.16ms
Interface Ports	Single	Single	Single	Single
Rotation Vibration @ 20-1500 Hz (rad/sec)	12.5	12.5	12.5	12.5
POWER CONSUMPTION				
Idle A (W) Average	6.9W	6.9W	6.9W	6.9W
Max Operating, Random Read 4K/16Q (W)	9.5W	9.5W	9.5W	9.5W
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
ENVIRONMENTAL				
Temperature, Operating (°C) - drive reported	10°C - 60°C	10°C - 60°C	10°C - 60°C	10°C - 60°C
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27	2.27	2.27	2.27
Shock, Operating 2ms (Read/Write) (Gs)	30Gs	30Gs	30Gs	30Gs
Shock, Nonoperating 2ms (Gs)	200	200	200	200
PHYSICAL				
Height (mm/in, max)[3]	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in
Width (mm/in, max)[3]	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in
Depth (mm/in, max)[3]	147.0mm/5.787in	147.0mm/5.787in	147.0mm/5.787in	147.0mm/5.787in
Weight (gm/lb)	695g/1.532lb	695g/1.532lb	695g/1.532lb	695g/1.532lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

1 FastFormat models ship in 512e format state. When switching from 512e to 4Kn by executing the FastFormat routine, all data on the drive will be deleted. Note that data must be aligned to 4K sectors to see improved performance in 4Kn fomat

2 Supports Hotplug operation per Serial ATA Revision 3.3 specification

3 These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at https://www.snia.org/sff. For connector-related dimensions, see SFF-8323.

Specifications	SATA 6Gb/s			
Capacity	24TB	20TB	16TB	12TB
Standard Model - Seagate Instant Secure Erase (ISE) [1]	ST24000NM002H	ST20000NM002H	ST16000NM002H	ST12000NM002H
SED Model[2]	ST24000NM001H	ST20000NM001H	ST16000NM001H	ST12000NM001H
SED-FIPS[2]	—	—	—	—
FEATURES				
Helium Sealed-Drive Design	Yes	Yes	Yes	Yes
Conventional Magnetic Recording (CMR)	Yes	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes	Yes
PowerChoice™ Idle Power Technology	Yes	Yes	Yes	Yes
PowerBalance™ Power/Performance Technology	Yes	Yes	Yes	Yes
Hot-Plug Support[3]	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	512	512	512	512
RSA 3072 Firmware Verification (SD&D)	Yes	Yes	Yes	Yes
RELIABILITY/DATA INTEGRITY				
Mean Time Between Failures (MTBF, hours)	2500000 hrs	2500000 hrs	2500000 hrs	2500000 hrs
Reliability Rating @ Full 24×7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%
Nonrecoverable Read Errors per Bits Read	<1 in 10E15	<1 in 10E15	<1 in 10E15	<1 in 10E15
Power-On Hours per Year (24×7)	8760	8760	8760	8760
512e Sector Size (Bytes per Sector)	512	512	512	512
4Kn Sector Size (Bytes per Sector)	4096	4096	4096	4096
Limited Warranty (years)	5	5	5	5
PERFORMANCE				
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM
Max. Sustained Transfer Rate OD (MB/s,MiB/s)	285/272	285/272	285/272	285/272
Random Read/Write 4K QD16 WCD (IOPS)	168/550	168/550	168/550	168/550
Interface Ports	Single	Single	Single	Single
Rotation Vibration @ 20-1500 Hz (rad/sec²)	12.5	12.5	12.5	12.5
POWER				
Idle A (W) Average	6.3	6.3	6.3	6.3
Max Operating, Random Read/Write 4K/16Q (W)	8.9, 7.1	8.9, 7.1	8.9, 7.1	8.9, 7.1
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
ENVIRONMENTAL				
Temperature, Operating (°C) (Ambient / Drive Reported)	5 / 60	5 / 60	5 / 60	5 / 60
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27	2.27	2.27	2.27
Shock, Operating 2ms (Read/Write) (Gs)	40Gs	40Gs	40Gs	40Gs
Shock, Nonoperating 2ms (Gs)	200	200	200	200
PHYSICAL				
Height (mm/in, max) [4]	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in
Width (mm/in, max) [4]	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in
Depth (mm/in, max) [4]	147mm/5.787in	147mm/5.787in	147mm/5.787in	147mm/5.787in
Weight (gm/lb)	685g/1.51lb	685g/1.51lb	685g/1.51lb	685g/1.51lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

1 FastFormat models ship in 512e format state. When switching from 512e to 4Kn by executing the FastFormat routine, all data on the drive will be deleted. Note that data must be aligned to 4K sectors to see improved performance in 4Kn fomat
2 Self-Encrypting Drives (SED) and FIPS 140-3 Validated drives available through franchised authorized distributors. May require TCG-compliant host or controller support.
3 Supports Hotplug operation per Serial ATA Revision 3.5 specification
4 These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at https://www.snia.org/sff. For connector-related dimensions, see SFF-8323.

Specifications	SAS 12Gb/s			
Capacity	24TB	20TB	16TB	12TB
Standard Model - Seagate Instant Secure Erase (ISE) [1]	ST24000NM007H	ST20000NM007H	ST16000NM007H	ST12000NM007H
SED Model[2]	ST24000NM005H	ST20000NM005H	ST16000NM005H	ST12000NM005H
SED-FIPS[2]	ST24000NM006H	ST20000NM006H	ST16000NM006H	ST12000NM009H
FEATURES				
Helium Sealed-Drive Design	Yes	Yes	Yes	Yes
Conventional Magnetic Recording (CMR)	Yes	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes	Yes
PowerChoice™ Idle Power Technology	Yes	Yes	Yes	Yes
PowerBalance™ Power/Performance Technology	Yes	Yes	Yes	Yes
Hot-Plug Support[3]	Yes	Yes	Yes	Yes
Cache, Multisegmented (MB)	512	512	512	512
RSA 3072 Firmware Verification (SD&D)	Yes	Yes	Yes	Yes
RELIABILITY/DATA INTEGRITY				
Mean Time Between Failures (MTBF, hours)	2500000 hrs	2500000 hrs	2500000 hrs	2500000 hrs
Reliability Rating @ Full 24×7 Operation (AFR)	0.35%	0.35%	0.35%	0.35%
Nonrecoverable Read Errors per Bits Read	<1 in 10E15	<1 in 10E15	<1 in 10E15	<1 in 10E15
Power-On Hours per Year (24×7)	8760	8760	8760	8760
512e Sector Size (Bytes per Sector)	512, 520, 528	512, 520, 528	512, 520, 528	512, 520, 528
4Kn Sector Size (Bytes per Sector)	4096, 4160,4224	4096, 4160,4224	4096, 4160,4224	4096, 4160,4224
Limited Warranty (years)	5	5	5	5
PERFORMANCE				
Spindle Speed (RPM)	7200RPM	7200RPM	7200RPM	7200RPM
Max. Sustained Transfer Rate OD (MB/s,MiB/s)	285/272	285/272	285/272	285/272
Random Read/Write 4K QD16 WCD (IOPS)	168/550	168/550	168/550	168/550
Interface Ports	Dual	Dual	Dual	Dual
Rotation Vibration @ 20-1500 Hz (rad/sec²)	12.5	12.5	12.5	12.5
POWER				
Idle A (W) Average	6.5	6.5	6.5	6.5
Max Operating, Random Read/Write 4K/16Q (W)	9.8, 8.2	9.8, 8.2	9.8, 8.2	9.8, 8.2
Power Supply Requirements	+12V and +5V	+12V and +5V	+12V and +5V	+12V and +5V
ENVIRONMENTAL				
Temperature, Operating (°C) (Ambient / Drive Reported)	5 / 60	5 / 60	5 / 60	5 / 60
Vibration, Nonoperating: 2 to 500Hz (Grms)	2.27	2.27	2.27	2.27
Shock, Operating 2ms (Read/Write) (Gs)	40Gs	40Gs	40Gs	40Gs
Shock, Nonoperating 2ms (Gs)	200	200	200	200
PHYSICAL				
Height (mm/in, max) [4]	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in	26.1mm/1.028in
Width (mm/in, max) [4]	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in	101.85mm/4.010in
Depth (mm/in, max) [4]	147mm/5.787in	147mm/5.787in	147mm/5.787in	147mm/5.787in
Weight (gm/lb)	685g/1.51lb	685g/1.51lb	685g/1.51lb	685g/1.51lb
Carton Unit Quantity	20	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8	40 / 8

1 FastFormat models ship in 512e format state. When switching from 512e to 4Kn by executing the FastFormat routine, all data on the drive will be deleted. Note that data must be aligned to 4K sectors to see improved performance in 4Kn fomat
2 Self-Encrypting Drives (SED) and FIPS 140-3 Validated drives available through franchised authorized distributors. May require TCG-compliant host or controller support.
3 Supports Hotplug operation per Serial ATA Revision 3.5 specification
4 These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at https://www.snia.org/sff. For connector-related dimensions, see SFF-8323.

Specifications	512e/4KN (FastFormat™) SATA				
Capacity	10TB	8TB	6TB	4TB	2TB
Standard	ST10000NM017B	ST8000NM017B	ST6000NM019B	ST4000NM024B	ST2000NM017B
PowerBalance™ Model **	ST10000NM025B	ST8000NM025B	ST6000NM027B	—	—
Seagate Secure™ SED Model[1] **	ST10000NM019B	ST8000NM019B	ST6000NM021B	ST4000NM026B	ST2000NM019B
Seagate Secure SED-FIPS 140-3 Model[1] **	ST10000NM021B	ST8000NM021B	ST6000NM023B	ST4000NM028B	—
**not all models will be generally offered as standard configurations	—	—	—	—	—
Features					
Protection Information (T10 DIF)	—	—	—	—	—
Super Parity	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 (8M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity					
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 24×7 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
Performance					
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	263MB/s	255MB/s	250MB/s	250MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single	Single
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Idle Power, Average (W)	7.8	7.06	7.06	5.16	5.16
Typical Operating, Random Read (W)	11.8	11.03	11.03	9.4	9.4
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
Environmental					
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60
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
Physical					
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	720g/1.59lb	716g/1.58lb	716g/1.58lb	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

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	512e/4KN (FastFormat) SAS				
Capacity	10TB	8TB	6TB	4TB	2TB
Standard	ST10000NM018B	ST8000NM018B	ST6000NM020B	ST4000NM025B	ST2000NM018B
PowerBalance™ Model **	—	—	—	—	—
Seagate Secure™ SED Model[1] **	ST10000NM020B	ST8000NM020B	ST6000NM022B	ST4000NM027B	ST2000NM020B
Seagate Secure SED-FIPS 140-3 Model[1] **	ST10000NM022B	ST8000NM022B	ST6000NM024B	ST4000NM029B	—
**not all models will be generally offered as standard configurations	—	—	—	—	—
Features					
Protection Information (T10 DIF)	Yes	Yes	Yes	Yes	Yes
Super Parity	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 (8M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity					
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 24×7 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, 520, 528	512, 520, 528	512, 520, 528	512, 520, 528	512, 520, 528
Warranty, Limited (years)	5	5	5	5	5
Performance					
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	263MB/s	255MB/s	250MB/s	250MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual	Dual
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Idle Power, Average (W)	8.14	7.24	6.59	5.9	5.9
Typical Operating, Random Read (W)	12.26	11.34	10.8	10.3	10.3
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
Environmental					
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60
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
Physical					
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	720g/1.59lb	716g/1.58lb	650g/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

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	4Kn SATA				
Capacity	10TB	8TB	6TB	4TB	2TB
Standard	ST10000NM002B	ST8000NM002B	ST6000NM004B	ST4000NM004B	ST2000NM004B
PowerBalance™ Model **	—	—	—	—	—
Seagate Secure™ SED Model[1] **	ST10000NM006B	ST8000NM006B	ST6000NM008B	ST4000NM010B	ST2000NM010B
Seagate Secure SED-FIPS 140-3 Model[1] **	—	—	—	—	—
**not all models will be generally offered as standard configurations	—	—	—	—	—
Features					
Protection Information (T10 DIF)	—	—	—	—	—
Super Parity	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 (8M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity					
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 24×7 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)	4096	4096	4096	4096	4096
Warranty, Limited (years)	5	5	5	5	5
Performance					
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	263MB/s	255MB/s	250MB/s	250MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Single	Single	Single	Single	Single
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Idle Power, Average (W)	7.8	7.06	6.04	5.16	5.16
Typical Operating, Random Read (W)	11.8	11.03	10.32	9.4	9.4
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
Environmental					
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60
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
Physical					
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	720g/1.59lb	716g/1.58lb	650g/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

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	4Kn SAS				
Capacity	10TB	8TB	6TB	4TB	2TB
Standard	ST10000NM003B	ST8000NM003B	ST6000NM005B	ST4000NM005B	ST2000NM005B
PowerBalance™ Model **	—	—	—	—	—
Seagate Secure™ SED Model[1] **	ST10000NM007B	ST8000NM007B	ST6000NM009B	ST4000NM011B	ST2000NM011B
Seagate Secure SED-FIPS 140-3 Model[1] **	ST10000NM011B	ST8000NM011B	ST6000NM013B	ST4000NM017B	—
**not all models will be generally offered as standard configurations	—	—	—	—	—
Features					
Protection Information (T10 DIF)	Yes	Yes	Yes	Yes	Yes
Super Parity	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 (8M internal NOR flash)	Yes	Yes	Yes	Yes	Yes
Reliability/Data Integrity					
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 24×7 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)	4096, 4160, 4224	4096, 4160, 4224	4096, 4160, 4224	4096, 4160, 4224	4096, 4160, 4224
Warranty, Limited (years)	5	5	5	5	5
Performance					
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	263MB/s	255MB/s	250MB/s	250MB/s	226MB/s
Average Latency (ms)	4.16	4.16	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual	Dual	Dual
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5	12.5	12.5
Power Consumption					
Idle Power, Average (W)	8.14	7.24	6.59	5.9	5.9
Typical Operating, Random Read (W)	12.26	11.34	10.8	10.3	10.3
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
Environmental					
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60	5 ~ 60
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
Physical					
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	720g/1.59lb	716g/1.58lb	650g/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

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	512n SATA		
Capacity	6TB	4TB	2TB
Standard	ST6000NM000B	ST4000NM000B	ST2000NM000B
PowerBalance™ Model **	—	—	—
Seagate Secure™ SED Model[1] **	—	ST4000NM006B	ST2000NM006B
Seagate Secure SED-FIPS 140-3 Model[1] **	—	ST4000NM012B	—
**not all models will be generally offered as standard configurations	—	—	—
Features			
Protection Information (T10 DIF)	—	—	—
Super Parity	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256
Advanced Write Caching (8M internal NOR flash)	Yes	Yes	Yes
Reliability/Data Integrity			
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	5	5	5
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24×7 Operation (AFR)	0.44%	0.44%	0.44%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512	512	512
Warranty, Limited (years)	5	5	5
Performance			
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD	215MB/s	215MB/s	215MB/s
Average Latency (ms)	4.16	4.16	4.16
Interface Ports	Single	Single	Single
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5
Power Consumption			
Idle Power, Average (W)	7.06	6.04	5.16
Typical Operating, Random Read (W)	11.03	10.32	9.4
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
Environmental			
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300
Physical			
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	716g/1.58lb	650g/1.43lb	620g/1.37lb
Carton Unit Quantity	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	512n SAS		
Capacity	6TB	4TB	2TB
Standard	ST6000NM001B	ST4000NM001B	ST2000NM001B
PowerBalance™ Model **	—	—	—
Seagate Secure™ SED Model[1] **	—	ST4000NM007B	ST2000NM007B
Seagate Secure SED-FIPS 140-3 Model[1] **	—	ST4000NM013B	—
**not all models will be generally offered as standard configurations	—	—	—
Features			
Protection Information (T10 DIF)	Yes	Yes	Yes
Super Parity	Yes	Yes	Yes
Low Halogen	Yes	Yes	Yes
PowerChoice™ Technology	Yes	Yes	Yes
PowerBalance Technology	Yes	Yes	Yes
Cache, Multisegmented (MB)	256	256	256
Advanced Write Caching (8M internal NOR flash)	Yes	Yes	Yes
Reliability/Data Integrity			
Vibration, Nonoperating: 10Hz to 500Hz (Grms)	2.27	2.27	2.27
Mean Time Between Failures (MTBF, hours)	2,000,000	2,000,000	2,000,000
Reliability Rating @ Full 24×7 Operation (AFR)	0.44%	0.44%	0.44%
Nonrecoverable Read Errors per Bits Read	1 sector per 10E15	1 sector per 10E15	1 sector per 10E15
Power-On Hours per Year	8760	8760	8760
Sector Size (Bytes per Logical Sector)	512	512	512
Warranty, Limited (years)	5	5	5
Performance			
Spindle Speed (RPM)	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
Max. Sustained Transfer Rate OD	236MB/s	236MB/s	236MB/s
Average Latency (ms)	4.16	4.16	4.16
Interface Ports	Dual	Dual	Dual
Rotation Vibration @ 1500 Hz (rad/s²)	12.5	12.5	12.5
Power Consumption			
Idle Power, Average (W)	7.24	6.59	5.9
Typical Operating, Random Read (W)	11.34	10.8	10.3
Power Supply Requirements	+12 V and +5 V	+12 V and +5 V	+12 V and +5 V
Environmental			
Temperature, Operating (°C) Drive Reported	5 ~ 60	5 ~ 60	5 ~ 60
Shock, Operating 2ms Read/Write (Gs)	70/40Gs	70/40Gs	70/40Gs
Shock, Nonoperating, (1ms/2ms) (Gs)	150/300	150/300	150/300
Physical			
Height (in/mm, max)[2]	1.028in/26.11mm	1.028in/26.11mm	1.028in/26.11mm
Width (in/mm, max)[2]	4.010in/101.85mm	4.010in/101.85mm	4.010in/101.85mm
Depth (in/mm, max)[2]	5.787in/147.0mm	5.787in/147.0mm	5.787in/147.0mm
Weight (g/lb)	716g/1.58lb	620g/1.37lb	620g/1.37lb
Carton Unit Quantity	20	20	20
Cartons per Pallet/Cartons per Layer	40 / 8	40 / 8	40 / 8

1 Self-Encrypting Drives (SED), Instant Secure Erase (ISE) drives, and FIPS 140-3 Validated drives are not available in all models or countries. May require TCG-compliant host or controller support.

2 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.

Specifications	FastFormat™ 512 Emulation/4K Native			
Capacity	2.4TB	1.8TB	1.2TB	600GB
Standard Model	ST2400MM0129	ST1800MM0129	ST1200MM0129	ST600MM0099
Seagate Secure™ SED Model	—	—	ST1200MM0139	ST600MM0109
Seagate Secure FIPS 140-2/Common Criteria Model[1]	ST2400MM0149	ST1800MM0149	—	—
Performance				
Spindle Speed (RPM)	10000RPM	10000RPM	10000RPM	10000RPM
Average Latency (ms)	2.9	2.9	2.9	2.9
Sustained Transfer Rate (Outer to Inner Diameter, MB/s)	266 to 130	266 to 130	266 to 130	266 to 130
Cache, Multisegmented (MB)	256	256	256	256
Enhanced Caching Features				
I/O Acceleration and Response Time Optimization	Enabled	Enabled	Enabled	Enabled
Intelligent NAND Endurance Management	Yes	Yes	Yes	Yes
Enterprise Features				
Secure Download & Diagnostics (SD&D) and Instant Secure Erase Option	Yes	Yes	Yes	Yes
FastFormat (512e/4Kn AF Switching)	Yes	Yes	Yes	Yes
12Gb/s SAS	Yes	Yes	Yes	Yes
Configuration/Reliability				
Disks/Heads	4/8	3/6	2/4	1/2
External Transfer Rate (MB/s)	1200	1200	1200	1200
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E16	1 per 10E16	1 per 10E16	1 per 10E16
Annualized Failure Rate (AFR)	0.44%	0.44%	0.44%	0.44%
Limited Warranty (years)	5	5	5	5
Power Management				
Typical Op (A) +5V/+12V	0.47/0.52	0.44/0.42	0.45/0.39	0.46/0.40
Typical Operating (W)	8.6	7.2	6.9	7.1
Average Idle Power (W)	4.9	4.3	3.7	3.4
Performance Efficiency Index (Idle W/GB)	0.0020	0.0024	0.0031	0.0057
Environmental				
Ambient Temperature, Operating (C°)	5°C – 55°C	5°C – 55°C	5°C – 55°C	5°C – 55°C
Ambient Temperature, Nonoperating (C°)	-40°C – 70°C	-40°C – 70°C	-40°C – 70°C	-40°C – 70°C
Shock, Max. Operating: 11ms (Gs)	40	40	40	40
Shock, Max. Nonoperating: 2ms (Gs)	400	400	400	400
Vibration, Operating: <500Hz (Gs)	0.5	0.5	0.5	0.5
Vibration, Nonoperating: <500Hz (Gs)	3	3	3	3
Physical				
Height (in/mm, max)[2]	0.591in/15.00mm	0.591in/15.00mm	0.591in/15.00mm	0.591in/15.00mm
Width (in/mm, max)[2]	2.750in/69.85mm	2.750in/69.85mm	2.750in/69.85mm	2.750in/69.85mm
Depth (in/mm, max)[2]	3.955in/100.45mm	3.955in/100.45mm	3.955in/100.45mm	3.955in/100.45mm
Weight (g/lb)	202g/0.445lb	206g/0.455lb	191g/0.422lb	179g/0.394lb
Carton Unit Quantity	40	40	40	40
Cartons per Pallet/Cartons per Layer	60/10	60/10	60/10	60/10

1 Not all drives may be available in all countries. Seagate Secure drives meet ISO/IEC 27040 and NIST 800-88 standards and may require use of TCG-compliant host or controller support.

2 These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at www.sffcommittee.org.

Specifications	512 Native		
Capacity	1.2TB	600GB	
Standard Model	ST1200MM0009	ST600MM0009	
Seagate Secure™ SED Model	ST1200MM0039	ST600MM0039	
Seagate Secure FIPS 140-2/Common Criteria Model[1]	—	—	
Performance			
Spindle Speed (RPM)	10000RPM	10000RPM	
Average Latency (ms)	2.9	2.9	
Sustained Transfer Rate (Outer to Inner Diameter, MB/s)	250 to 130	250 to 130	
Cache, Multisegmented (MB)	128	128	
Enhanced Caching Features			
I/O Acceleration and Response Time Optimization	—	—	
Intelligent NAND Endurance Management	—	—	
Enterprise Features			
Secure Download & Diagnostics (SD&D) and Instant Secure Erase Option	Yes	Yes	
FastFormat (512e/4Kn AF Switching)	—	—	
12Gb/s SAS	Yes	Yes	
Configuration/Reliability			
Disks/Heads	2/4	1/2	
External Transfer Rate (MB/s)	1200	1200	
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E16	1 per 10E16	
Annualized Failure Rate (AFR)	0.44%	0.44%	
Limited Warranty (years)	5	5	
Power Management			
Typical Op (A) +5V/+12V	0.45/0.39	0.46/0.40	
Typical Operating (W)	6.9	7.1	
Average Idle Power (W)	3.7	3.4	
Performance Efficiency Index (Idle W/GB)	0.0031	0.0057	
Environmental			
Ambient Temperature, Operating (C°)	5°C – 55°C	5°C – 55°C	
Ambient Temperature, Nonoperating (C°)	-40°C – 70°C	-40°C – 70°C	
Shock, Max. Operating: 11ms (Gs)	40	40	
Shock, Max. Nonoperating: 2ms (Gs)	400	400	
Vibration, Operating: <500Hz (Gs)	0.5	0.5	
Vibration, Nonoperating: <500Hz (Gs)	3	3	
Physical			
Height (in/mm, max)[2]	0.591in/15.00mm	0.591in/15.00mm	
Width (in/mm, max)[2]	2.760in/70.10mm	2.760in/70.10mm	
Depth (in/mm, max)[2]	3.955in/100.45mm	3.955in/100.45mm	
Weight (g/lb)	191g/0.422lb	179g/0.394lb	
Carton Unit Quantity	40	40	
Cartons per Pallet/Cartons per Layer	60/10	60/10	

1 Not all drives may be available in all countries. Seagate Secure drives meet ISO/IEC 27040 and NIST 800-88 standards and may require use of TCG-compliant host or controller support.

2 These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at www.sffcommittee.org.

seagate.com

© 2025 Seagate Technology LLC. All rights reserved. Seagate, Seagate Technology, and the Spiral logo are registered trademarks of Seagate Technology LLC in the United States and/or other countries. Exos, the Exos logo, PowerBalance, and Seagate Secure are either trademarks or registered trademarks of Seagate Technology LLC or one of its affiliated companies in the United States and/or other countries. All other trademarks or registered trademarks are the property of their respective owners. When referring to drive capacity, one gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes. Your computer's operating system may use a different standard of measurement and report a lower capacity. In addition, some of the listed capacity is used for formatting and other functions, and thus will not be available for data storage. Actual data rates may vary depending on operating environment and other factors, such as chosen interface and disk capacity. The export or re-export of Seagate hardware or software is regulated by the U.S. Department of Commerce, Bureau of Industry and Security (for more information, visit www.bis.doc.gov), and may be controlled for export, import, and use in other countries. Seagate reserves the right to change, without notice, product offerings or specifications. DS2046.1-2512