

Constellation[®] CS

Data Sheet

Capacity-Optimized Hard Drive Designed for Bulk Cloud Storage

- Affordable storage for 24x7 cloud data center replicated environments
- High vibration tolerance for reliable enterprise-class performance
- Save on power and cooling costs with the lowest 3.5-inch enterprise drive operating power.
- Advanced format logical block management for industry-leading data integrity
- Up to 3TB capacity with 7200-RPM performance. Why compromise?
- Lower TCO with Seagate Instant Secure Erase for simple drive repurposing or disposal
- Maximize your cloud storage with up to 114TB per square foot.¹
- SATA 6Gb/s interface optimizes burst performance.

Best-Fit Applications

- Cloud storage servers
- Cloud storage arrays
- Cloud backup storage
- Direct-attached external storage devices (DAS)
- Network-attached storage devices (NAS)

¹ Based on maximum use of multiple 3.5-inch HDDs in standard 42U 19-inch rack.



Specifications	3TB ^{1,2}	2TB ¹	1TB ¹
Standard Models	ST3000NC002	ST2000NC001	ST1000NC001
Seagate Instant Secure Erase Models	ST3000NC000	ST2000NC000	ST1000NC000
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Performance			
Spindle Speed (RPM)	7200	7200	7200
DDR2 Cache, Multisegmented (MB)	64	64	64
SATA Transfer Rates Supported (Gb/s)	6.0/3.0/1.5	6.0/3.0/1.5	6.0/3.0/1.5
Burst Data Transfer Rate (MB/s)	600	600	600
Seek Average, Read/Write (ms)	9.5/10.5	9.5/10.5	9.5/10.5
Max Sustained Data Rate, OD Read (MB/s)	150 to 180	150 to 180	150 to 180
Rotational Vibration Tolerance @ 20Hz to 1500Hz, w/RVFF (rad/s ²)	12.5	12.5	12.5
Linear Random Vibration @ 10Hz to 500Hz (G _{rms} ref)	4.9	4.9	4.9
Configuration			
Heads/Disks	6/3	4/2	2/1
Bytes per Sector (512-byte emulation)	4096	4096	4096
Reliability/Data Integrity			
Load/Unload Cycles (25°C, 50% relative humidity)	300,000	300,000	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E14	1 per 10E14	1 per 10E14
Mean Time Between Failures (MTBF)	800,000	800,000	800,000
Power-On Hours	8760 (24×7)	8760 (24×7)	8760 (24×7)
Power Management			
Operating Mode (typical, W)	8.0	8.0	8.0
Idle Power (W)	5.53	5.53	5.53
Standby/Sleep Mode (W)	0.77	0.77	0.77
Voltage Tolerance (including noise)	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%
Environmental			
Operating Temperature (°C)	5 to 60	5 to 60	5 to 60
Nonoperating Temperature (°C)	-40 to 70	-40 to 70	-40 to 70
Relative Humidity, Operating/Nonoperating (%)	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95
Acoustics (typical/max, bels)	2.5/2.6	2.4/2.5	2.2/2.3
Physical			
Height (mm/in) ³	26.1/1.028	26.1/1.028	20.0/0.787
Width (mm/in) ³	101.85/4.010	101.85/4.010	101.85/4.010
Depth (mm/in) ³	147.00/5.787	147.00/5.787	147.00/5.787
Weight (g/lb)	626/1.38	535/1.18	400/0.88
Carton Unit Quantity	20	20	25
Cartons per Pallet	40	40	40
Cartons per Layer	8	8	8
Special Features			
Seagate Instant Secure Erase	Optional	Optional	Optional
Flagged Write Uncorrectable (Logical Block Management)	Yes	Yes	Yes
PowerChoice™ On-Demand Power Savings	Yes	Yes	Yes
SeaTools™ Diagnostic Software	Yes	Yes	Yes
S.M.A.R.T. Drive Monitoring and Reporting	Yes	Yes	Yes
Hotplug Operation (per SATA Rev. 3.0 Specifications)	Yes	Yes	Yes
Enterprise CS Phone Support	Limited	Limited	Limited
Limited Warranty (years)	3	3	3

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 manufacturer to ensure full 3TB capacity capabilities.

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



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