

# Constellation<sup>®</sup> CS

## Data Sheet

### Capacity-Optimised Hard Drive Designed for Bulk Cloud Storage

- Affordable storage for 24x7 cloud data centre 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 3 TB capacity with 7,200 RPM performance - why compromise?
- Lower TCO with Seagate Instant Secure Erase for drive retirement or disposal
- Maximise your cloud storage with up to 114 TB per square foot.
- SATA 6 Gb/s interface optimises 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)



Specifications	3 TB <sup>1,2</sup>	2 TB <sup>1</sup>	1 TB <sup>1</sup>
Standard Models	ST3000NC002	ST2000NC001	ST1000NC001
Seagate Instant Secure Erase Options	ST3000NC000	ST2000NC000	ST1000NC000
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
<b>Performance</b>			
Spindle Speed (RPM)	7,200	7,200	7,200
Cache, Multi-segmented (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
Sustained 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 <sup>2</sup> )	12.5	12.5	12.5
Linear Random Vibration @ 10Hz to 500Hz (G <sub>rms</sub> ref)	4.9	4.9	4.9
<b>Configuration</b>			
Heads/Discs	6/3	4/2	2/1
Bytes per Sector (512-byte emulation)	4,096	4,096	4,096
<b>Reliability/Data Integrity</b>			
Load/Unload Cycles (25°C, 50% relative humidity)	300,000	300,000	300,000
Non-recoverable Read Errors per Bits Read, Max	1 per 10 <sup>14</sup>	1 per 10 <sup>14</sup>	1 per 10 <sup>14</sup>
Mean Time Between Failures (MTBF)	800,000	800,000	800,000
Power-on Hours	8,760 (24x7)	8,760 (24x7)	8,760 (24x7)
<b>Power Management</b>			
Operating Mode (typical, W)	8.0	8.0	8.0
Idling 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%
<b>Environmental</b>			
Operating Temperature (°C)	5 to 60	5 to 60	5 to 60
Non-operating Temperature (°C)	-40 to 70	-40 to 70	-40 to 70
Relative Humidity, Operating/Non-operating (%)	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
<b>Physical</b>			
Height (in/mm) <sup>3</sup>	26.1/1.028	26.1/1.028	20.0/0.787
Width (mm/in) <sup>3</sup>	101.85/4.010	101.85/4.010	101.85/4.010
Depth (mm/in) <sup>3</sup>	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
<b>Special Features</b>			
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
SMART 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

<sup>1</sup> One gigabyte, or GB, equals one billion bytes; and one terabyte, or TB, equals one trillion bytes when referring to drive capacity.

<sup>2</sup> Seagate recommends validating your configuration with your HBA/ manufacturer to ensure full 3 TB capacity capabilities.

<sup>3</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8301) found at [www.sffcommittee.org](http://www.sffcommittee.org). For connector-related dimensions, see SFF-8323.



[www.seagate.com](http://www.seagate.com)

AMERICAS Seagate Technology LLC 10200 South De Anza Boulevard, Cupertino, California 95014, United States, +1 408 658 1000  
 ASIA/PACIFIC Seagate Singapore International Headquarters Pte. Ltd. 7000 Ang Mo Kio Avenue 5, Singapore 569877, +65 6485 3888  
 EUROPE, MIDDLE EAST AND AFRICA Seagate Technology SAS 16-18 rue du Dôme, 92100 Boulogne-Billancourt, France, +33 1 41 86 10 00