

Data Sheet

Momentus[®]

The world's most feature-rich 2.5-inch drive for laptops and external enclosures

**Up to 750 GB • 7,200 RPM and 5,400 RPM •
8 MB and 16 MB cache • SATA 3 Gb/s with NCQ •
G-Force Protection™ and Self-Encrypting Drives •
FIPS 140-2 certification***

Key Advantages

- The power to transform the ordinary into the extraordinary with innovative options and features
- 7,200 RPM spindle speed delivers a constant high-performance boost
- 5,400 RPM spindle speed enables affordable, low-power and high-capacity drives for external enclosures
- Self-encrypting drives mitigate data breaches, comply with data protection regulations and preserve brand recognition
- Self-encrypting drives with FIPS 140-2 certification* have been approved by the US and Canadian governments
- G-Force Protection™ technology can help keep your data recoverable after a fall, even if your laptop doesn't survive
- Seagate SmartAlign™ technology provides a transition to 4K sectors without the need for software utilities

Best-fit Applications

- Mainstream and high-performance laptops
- External storage solutions/boxes
- Industrial applications requiring a small form factor



*See FIPS 140-2 Level 2 Certificate at <http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401vend.htm>.





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	Momentus 5400 Drives						Momentus 7200 Drives				
Feature Options	750 GB ¹	640 GB ¹	500 GB ¹	320 GB ¹	250 GB ¹	160 GB ¹	750 GB ¹	500 GB ¹	320 GB ¹	250 GB ¹	160 GB ¹
Standard Models	ST9750423AS	ST9640320AS	ST9500325AS	ST9320325AS	ST9250315AS	ST9160314AS	ST9750420AS	ST9500420AS	ST9320423AS	ST9250410AS	ST9160412AS
Free-Fall Sensor Models			ST9500325ASG ²					ST9500420ASG ²		ST9250410ASG ²	
FDE Models			ST9500327AS		ST9250317AS			ST9500421AS		ST9250411AS	
FDE FIPS 140-2 Models								ST9500422AS		ST9250412AS	
Interface	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ	SATA 3 Gb/s NCQ
Cache (MB)	16	8	8	8	8	8	16	16	16	16	16
Configuration											
Bytes per Sector	4,096 ³	512	512	512	512	512	4,096 ³	512	512	512	512
Reliability/Data Integrity											
Head-rest Method	QuietStep™ Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load
Load/Unload Cycles	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000	>600,000
Non-recoverable Read Errors per Bits Read	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴	1 per 10 ¹⁴
Annualised Failure Rate (AFR)	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.50%	0.50%	0.50%	0.50%	0.50%
Power Management											
Power (W)											
Seek, Typical	1.4	1.3	1.54	1.54	1.54	1.54	1.5	1.554	1.554	1.554	1.554
Idling, Typical	0.5	0.68	0.81	0.81	0.81	0.81	0.7	0.67	0.67	0.67	0.67
Environmental											
Temperature (°C)											
Operating	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60	0 to 60
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)											
Operating: 2 ms	350	350	350	350	350	350	350	350	350	350	350
Non-operating: 1 ms	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Acoustics (bels — sound power)											
Idling, Typical	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3
Seek, Typical	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5
Physical											
Height (in/mm)	0.370/9.5	0.374/9.5	0.374/9.5	0.374/9.5	0.374/9.5	0.374/9.5	0.370/9.5	0.370/9.5	0.370/9.5	0.370/9.5	0.370/9.5
Width (in/mm)	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85	2.75/69.85
Depth (in/mm)	3.957/100.35	3.957/100.5	3.957/100.5	3.957/100.5	3.957/100.5	3.957/100.5	3.951/100.35	3.951/100.35	3.951/100.35	3.951/100.35	3.951/100.35
Weight (lb/g)	0.254/115	0.218/98.8	0.218/98.8	0.218/98.8	0.218/98.8	0.218/98.8	0.254/115	0.238/110	0.238/110	0.227/105	0.227/105

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

² Drive with G-Force Protection™ feature.

³ Advanced Sector Format (4K) drive with SmartAlign™ technology resolves misalignment conditions.

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