

# Enterprise Performance 10K HDD

**Channel Data Sheet** 

#### The Perfect Match of High Capacity and High Performance

- High-capacity and small 2.5-inch footprint enables data centres to keep pace with data growth and optimise data centre space.
- Delivers 1.8TB of high-performance data access for write-intensive applications.
- Future-proof your storage solutions with advanced format interfaces of 512 Emulation and 4K Native.
- Seagate® TurboBoost™ accelerates I/O operations and optimises response times to complete more transactions in less time even during peak demand.
- Latest 12Gb/s SAS interface for improved scalability.
- Over 2× legacy 3.5-inch 10K-RPM HDD capacity within a lower power envelope.
- Seagate PowerChoice™ technology for T10-compliant power management enables IT organisations to tailor systems for enhanced power consumption.
- Seagate RAID Rebuild<sup>™</sup> technology option makes RAID recovery faster and safer.
- Protection Information (PI) protects against inadvertent data change.<sup>1</sup>
- Seagate Secure® FIPS 140-2 model provides government-grade security for data-at-rest and helps cut IT drive retirement costs.<sup>2</sup>

#### **Best-fit Applications**

- Mission-critical servers and external storage arrays
- Power- and space-constrained data centres
- Green IT and drive-retirement cost reduction initiatives
- Compliance or data security initiatives
- Migration from 3.5 inch drive systems to next-generation technology



<sup>&</sup>lt;sup>1</sup> Protection Information (PI) feature requires PI-compliant host or controller support.

<sup>&</sup>lt;sup>2</sup> 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.



## Enterprise Performance 10K HDD



2 17 11	512 Native	512 Emulation						
Specifications	1.2TB¹	1.8TB¹	1.2TB1	900GB1	600GB <sup>1</sup>			
Standard Model	ST1200MM0088	_	_	_	_			
TurboBoost™ Model	_	ST1800MM0128	ST1200MM0158	ST900MM0128	ST600MM0158			
Standard Seagate Secure® Model	ST1200MM0098 <sup>2</sup>	_	_	_	_			
TurboBoost Seagate Secure Model	_	ST1800MM0148 <sup>2</sup>	ST1200MM0178 <sup>2</sup>	ST900MM0148 <sup>2</sup>	ST600MM0178 <sup>2</sup>			
TurboBoost Seagate Secure FIPS 140-2 Model	_	ST1800MM0158 <sup>2</sup>	_	_	_			
Performance								
Spindle Speed (RPM)	10K	10K	10K	10K	10K			
Average Latency (ms)	2.9	2.9	2.9	2.9	2.9			
Sustained Transfer Rate (Outer to Inner Diameter, MB/s)	215 to 108	241 to 117	241 to 117	241 to 117	241 to 117			
Cache, Multi-segmented (MB)	128	128	128	128	128			
Configuration/Reliability								
Discs	3	4	3	2	2			
Heads	6	8	6	4	3			
Interface	12Gb/s SAS	12Gb/s SAS	12Gb/s SAS	12Gb/s SAS	12Gb/s SAS			
External Transfer Rate (MB/s)	1,200	1,200	1,200	1,200	1,200			
Non-recoverable Read Errors per Bits Read	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>			
Annualised Failure Rate (AFR)	0.44%	0.44%	0.44%	0.44%	0.44%			
TurboBoost Enhanced Cache Feature								
I/O Acceleration and Response Time Optimisation	_	Enabled	Enabled	Enabled	Enabled			
NAND Flash Type	_	eMLC	eMLC	eMLC	eMLC			
NAND Flash Size	_	32GB	32GB	32GB	32GB			
Intelligent NAND Endurance Management	_	Yes	Yes	Yes	Yes			
Power Management								
Typical Op (A) +5V/+12V	0.44/0.42	0.44/0.47	0.44/0.42	0.44/0.41	0.44/0.41			
Typical Operating (W)	7.25	7.8	7.25	7.12	7.15			
Power Idling (W)	4.26	4.55	4.26	3.88	3.91			
Performance Efficiency Index (Idle W/GB)	0.0036	0.0025	0.0036	0.0043	0.0065			
Environmental								
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55	5 to 55			
Temperature, Non-operating (°C)	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70			
Shock, Operating: 11ms (Gs)	40	40	40	40	40			
Shock, Non-operating, 2ms (Gs)	400	400	400	400	400			
Acoustics Idling (bels — sound power)	3.1	3.1	3.1	3.1	3.1			
Vibration, Operating: <500Hz (Gs)	0.5	0.5	0.5	0.5	0.5			
Vibration, Non-operating: <500Hz (Gs)	3	3	3	3	3			
Physical								
Height (in/mm, max)3	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00			
Width (in/mm, max) <sup>3</sup>	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10			
Depth (in/mm, max) <sup>3</sup>	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45			
Weight (lb/kg)	0.426/0.193	0.439/0.199	0.426/0.193	0.417/0.189	0.417/0.189			
Carton Unit Quantity	30	30	30	30	30			
Cartons per Pallet	50	50	50	50	50			
Cartons per Layer	10	10	10	10	10			
Warranty								
Limited Warranty (years)	5	5	5	5	5			

<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.





 $<sup>^2</sup>$  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.

<sup>&</sup>lt;sup>3</sup> 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 (SAS models).



### Enterprise Performance 10K HDD



Specifications	4K Native							
	1.8TB <sup>1</sup>	1.2TB1	900GB1	600GB <sup>1</sup>				
TurboBoost™ Model	ST1800MM0088	ST1200MM0118	ST900MM0088	ST600MM0118				
TurboBoost Seagate Secure® Model	ST1800MM0108 <sup>2</sup>	ST1200MM0138 <sup>2</sup>	ST900MM0108 <sup>2</sup>	ST600MM0138 <sup>2</sup>				
TurboBoost Seagate Secure FIPS 140-2 Model	ST1800MM0118 <sup>2</sup>	_	_	_				
Performance								
Spindle Speed (RPM)	10K	10K	10K	10K				
Average Latency (ms)	2.9	2.9	2.9	2.9				
Sustained Transfer Rate (Outer to Inner Diameter, MB/s)	241 to 117	241 to 117	241 to 117	241 to 117				
Cache, Multi-segmented (MB)	128	128	128	128				
Configuration/Reliability								
Discs	4	3	2	2				
Heads	8	6	4	3				
Interface	12Gb/s SAS	12Gb/s SAS	12Gb/s SAS	12Gb/s SAS				
External Transfer Rate (MB/s)	1,200	1,200	1,200	1,200				
Non-recoverable Read Errors per Bits Read	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>	1 per 10 <sup>16</sup>				
Annualised Failure Rate (AFR)	0.44%	0.44%	0.44%	0.44%				
TurboBoost Enhanced Cache Feature								
I/O Acceleration and Response Time Optimisation	Enabled	Enabled	Enabled	Enabled				
NAND Flash Type	eMLC	eMLC	eMLC	eMLC				
NAND Flash Size	32GB	32GB	32GB	32GB				
Intelligent NAND Endurance Management	Yes	Yes	Yes	Yes				
Power Management								
Typical Op (A) +5V/+12V	0.44/0.47	0.44/0.42	0.44/0.41	0.44/0.41				
Typical Operating (W)	7.8	7.25	7.12	7.15				
Power Idling (W)	4.55	4.26	3.88	3.91				
Performance Efficiency Index (Idle W/GB)	0.0025	0.0036	0.0043	0.0065				
Environmental								
Temperature, Operating (°C)	5 to 55	5 to 55	5 to 55	5 to 55				
Temperature, Non-operating (°C)	-40 to 70	-40 to 70	-40 to 70	-40 to 70				
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Vibration, Operating: <500Hz (Gs)	0.5	0.5	0.5	0.5				
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Physical				_				
Height (in/mm, max) <sup>3</sup>	0.591/15.00	0.591/15.00	0.591/15.00	0.591/15.00				
Width (in/mm, max) <sup>3</sup>	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10				
Depth (in/mm, max) <sup>3</sup>	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45				
Weight (lb/kg)	0.439/0.199	0.426/0.193	0.417/0.189	0.417/0.189				
Carton Unit Quantity	30	30	30	30				
Cartons per Pallet	50	50	50	50				
Cartons per Layer	10	10	10	10				
Warranty								
Limited Warranty (years)	5	5	5	5				

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