

# Laptop SSHD Laptop Thin SSHD Ultra Mobile SSHD

## Data Sheet

### SSD-like Speed. Large HDD Capacity. An Affordable Price.

- Boots up and performs like an SSD<sup>1</sup>
- Capacities of up to 1TB
- All-in-one design for simplicity and ease of installation
- Installs and works just like a traditional hard drive in any laptop, PC, Mac or game console, and with any OS and application
- SATA 6Gb/s with NCQ for interface speed
- Self-Encrypting Drive (SED) versions available to maximise data protection and minimise the risk of confidential information breaches
- Backed by a 3-year limited warranty<sup>2</sup>

### Best-Fit Applications

- Thin, thinner and thinnest z-heights
- 9.5mm for all-in-one PCs and older laptops
- 7mm for thin and light laptops and high-performance gaming systems
- 5mm for tablets and ultrabooks

<sup>1</sup> Performance may vary depending on user's hardware configuration and operating system.

Testing performed on a Seagate® Laptop SSHD 1TB, Seagate Laptop Thin SSHD 500GB and Seagate Ultra Mobile SSHD 500GB.

<sup>2</sup> Extended warranty products available. Consult your distributor for details.



Laptop SSHD  
Laptop Thin SSHD  
Ultra Mobile SSHD



Specifications	9.5mm	7mm	5mm
Model Name	Laptop SSHD	Laptop Thin SSHD	Ultra Mobile SSHD
Capacity	1TB <sup>1</sup>	500GB <sup>1</sup>	500GB <sup>1</sup>
Standard Model	ST1000LM014	ST500LM000	ST500LX012
Standard Zero Gravity Sensor (ZGS) Model	—	—	ST500LX014
Self-Encrypting Drive (SED) Model <sup>2</sup>	ST1000LM015	ST500LM001	ST500LX016
SED-FIPS 140-2 Model <sup>3</sup>	ST1000LM028	ST500LM020	ST500LX013
Interface <sup>4</sup>	SATA 6.0/3.0/1.5Gb/s NCQ	SATA 6.0/3.0/1.5Gb/s NCQ	SATA 6.0/3.0/1.5Gb/s NCQ
<b>Performance</b>			
Flash Memory Type	NAND	NAND	NAND
Versus 2.5-in. 5,400RPM/7,200RPM HDD			
Windows 7 Boot Time <sup>6</sup>	35% Faster/25% Faster	35% Faster/25% Faster	35% Faster/25% Faster
Applications Load Test <sup>7</sup>	450% Faster/300% Faster	450% Faster/300% Faster	450% Faster/300% Faster
Game Load Test <sup>8</sup>	140% Faster/50% Faster	140% Faster/50% Faster	140% Faster/50% Faster
<b>Configuration/Organisation</b>			
Heads/Discs	4/2	2/1	2/1
Bytes per Sector	4,096	4,096	4,096
Power Supply Requirements	+5 V	+5 V	+5 V
<b>Reliability/Data Integrity</b>			
Head-Rest Method	QuietStep™ Ramp Load	QuietStep Ramp Load	QuietStep Ramp Load
Load/Unload Cycles	600,000	600,000	600,000
Non-recoverable Read Errors per Bits Read, Max	1 per 10 <sup>15</sup>	1 per 10 <sup>15</sup>	1 per 10 <sup>15</sup>
Annualised Failure Rate (AFR)	0.48%	0.48%	0.48%
Limited Warranty (years) <sup>5</sup>	3	3	3
<b>Power Management</b>			
Power, Seek, Typical (W)	2.7	2.5	2.5
Power, Idling, Typical (W)	0.9	0.9	0.6
<b>Environmental</b>			
Temperature, Operating (°C)	0 to 60	0 to 60	0 to 60
Temperature, Non-operating (°C)	-40 to 70	-40 to 70	-40 to 70
Shock, Operating: 2ms (Gs)	350	350	400
Shock, Non-operating: 1ms (Gs)	1,000	1,000	1,000
Acoustics, Idle, Typical (bels—sound power)	2.2	2.0	2.0
Acoustics, Seek, Typical (bels—sound power)	2.7	2.2	2.2
<b>Physical</b>			
Height (mm/in, max), Standard and SED Models	9.5/0.374	7.0/0.276	5.0/0.197
Height (mm/in, max), FIPS Model	9.5/0.374	7.0/0.276	5.2/0.205
Width (mm/in, max)	69.85/2.75	69.85/2.75	69.85/2.75
Depth (mm/in, max)	100.35/3.95	100.35/3.95	100.35/3.95
Weight (g/lb)	115/0.254	95/0.209	93/0.205
Carton Unit Quantity	50	50	50
Cartons per Pallet	60	60	60
Cartons per Layer	10	10	10

<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> Self-Encrypting Drives (SED) and FIPS 140-2 Validated drives are not available in all models or countries; may require TCG-compliant host or controller support.

<sup>3</sup> Some SED FIPS 140-2 models in review. See FIPS 140-2 Level 2 Certificate at: <http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2011.htm#1635>.

<sup>4</sup> Supports hotplug operation per Serial ATA Revision 2.6 specification.

<sup>5</sup> Extended warranty products available. Consult your distributor for details.

<sup>6</sup> Testing conducted by Seagate using Intel Core i5-based with Intel QM77 chipset laptop and configured with 8GB RAM. Tested using Microsoft utility. Results have been rounded for display purposes. HDD performance may vary by brand and model.

<sup>7</sup> Testing conducted by Seagate. Tested using PCMark 7 system storage starting applications test. Results have been rounded for display purposes. HDD performance may vary by brand and model.

<sup>8</sup> Testing conducted by Seagate. Tested using PCMark 7 system storage gaming test. Results have been rounded for display purposes. HDD performance may vary by brand and model.

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