

# Laptop SSHD Laptop Thin SSHD Ultra Mobile SSHD

## Data Sheet

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

- Boots and performs like an SSD<sup>1</sup>
- Capacities 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 maximize data protection and minimize 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. 5400-RPM/7200-RPM 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/Organization</b>			
Heads/Disks	4/2	2/1	2/1
Bytes per Sector	4096	4096	4096
Power Supply Requirements	+5V	+5V	+5V
<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
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E15	1 per 10E15	1 per 10E15
Predicted Annualized 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, Idle, Typical (W)	0.9	0.9	0.6
<b>Environmental</b>			
Temperature, Operating (°C)	0 to 60	0 to 60	0 to 60
Temperature, Nonoperating (°C)	–40 to 70	–40 to 70	–40 to 70
Shock, Operating: 2ms (Gs)	350	350	400
Shock, Nonoperating: 1ms (Gs)	1000	1000	1000
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

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

2 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.

3 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>

4 Supports hotplug operation per Serial ATA Revision 2.6 specification.

5 Extended warranty products available. Consult your distributor for details.

6 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.

7 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.

8 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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ASIA/PACIFIC  
EUROPE, MIDDLE EAST AND AFRICA

Seagate Technology LLC 10200 South De Anza Boulevard, Cupertino, California 95014, United States, 408-658-1000  
Seagate Singapore International Headquarters Pte. Ltd. 7000 Ang Mo Kio Avenue 5, Singapore 569877, 65-6485-3888  
Seagate Technology SAS 16-18, rue du Dôme, 92100 Boulogne-Billancourt, France, 33 1-4186 10 00

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