

Data Sheet

# Pulsar.2™

MLC-Enabled, Enterprise SSD—  
From the Enterprise Storage Leader

## Key Advantages

- Best-in-class MLC endurance (up to 10 full drive writes per day)
- Price-performance and reliability benefits
- Ensures data integrity during unexpected power loss, and Protection Information (PI)<sup>1</sup> (SAS only) protects against inadvertent data change
- Provides the same feature set to look, feel and act like an enterprise hard drive—reducing system complexity and operating costs
- 6Gb/s SAS and SATA 6Gb/s support for interface scalability and reliability
- World-class service, support and fulfillment
- Optional Self-Encrypting Drive model (800GB SAS only) helps protect data upon drive retirement, repurposing or loss.<sup>2</sup>

## Best-Fit Applications

- Tier 0, performance-hungry enterprise applications—virtualization, OLTP, data warehousing and cloud computing
- Blade servers, general servers and direct-attached storage
- Enterprise architectures using auto-tiering

<sup>1</sup> May require PI-compliant host or controller support.

<sup>2</sup> Self-Encrypting Drive model not available in all countries. May require TCG-compliant host or controller support.



## MLC-Enabled, Enterprise SSD— From the Enterprise Storage Leader

Data center managers must provide faster data storage and access without incurring data corruption or loss. They must also achieve this while juggling tight IT budgets and managing highly complex system environments. The Seagate® Pulsar.2™ SSD is an enterprise-class, MLC-enabled, high-capacity (up to 800GB) solid state drive that delivers the price-performance and reliability benefits needed by Tier 0 performance-hungry enterprise applications. And it does so while ensuring consistently fast performance and low response times.

### Enterprise-Class Endurance and Data Integrity

Performance is important, but endurance and data integrity are critical. The Pulsar.2 SSD can routinely complete ten full drive writes per day, for a total bytes written score (TBW) of 15 petabytes (for an 800GB drive over the life of the device). The Pulsar.2 drive has been designed for the enterprise environment with the intelligence to automatically detect and correct a multitude of data errors that can occur during normal drive operation to deliver the highest levels of enterprise-class data integrity. Additional endurance features include:

- **Advanced media-management technology and Protection Information (PI is SAS only)** to help protect against unexpected data change or loss
- **Background media scanning** to help protect against read disturb data errors
- **Power-loss data protection** to help ensure data is not lost or inadvertently changed during unexpected power loss
- **Wear-leveling algorithms** to ensure that every block on the NAND is written to an equal number of times and as evenly as possible to maximize the life of the device
- **Garbage collection techniques** to identify the next best block on the NAND flash to erase and rewrite before the space is actually needed

Specifications <sup>2</sup>	800GB <sup>1</sup>	400GB <sup>1</sup>	200GB <sup>1</sup>	100GB <sup>1</sup>
Model Number	ST800FM0002 <sup>5</sup> ST800FM0012 <sup>3,5</sup> ST800FM0032 <sup>5,7</sup> ST800FM0042 <sup>6,7</sup>	ST400FM0002 <sup>5</sup> ST400FM0012 <sup>6</sup> ST400FM0042 <sup>5,7</sup> ST400FM0052 <sup>6,7</sup>	ST200FM0002 <sup>5</sup> ST200FM0012 <sup>6</sup> ST200FM0042 <sup>5,7</sup> ST200FM0052 <sup>6,7</sup>	ST100FM0002 <sup>5</sup> ST100FM0012 <sup>6</sup> ST100FM0052 <sup>5,7</sup> ST100FM0062 <sup>6,7</sup>
Interface Options	6Gb/s SAS	6Gb/s SAS SATA 6Gb/s	6Gb/s SAS SATA 6Gb/s	6Gb/s SAS SATA 6Gb/s
NAND Flash Type	MLC	MLC	MLC	MLC
Product Application Class	Enterprise	Enterprise	Enterprise	Enterprise
Storage Type	SSD	SSD	SSD	SSD
<b>Performance</b>				
Sustained Data Transfer Rate (MB/s)	370	370	370	370
I/O Data Transfer Rate, Max (MB/s)	600	600	600	600
Sequential Read/Write Command Rate (MB/s) Peak, 128KB	370/200	370/200	370/200	370/200
Random Read/Write Command Rate (IOPS) Peak, 4KB	48,000/15,000 <sup>5</sup>	48,000/15,000 <sup>6</sup> 40,000/15,000 <sup>6</sup>	48,000/15,000 <sup>5</sup> 40,000/15,000 <sup>6</sup>	48,000/12,000 <sup>5</sup> 40,000/12,000 <sup>6</sup>
<b>Configuration/Reliability</b>				
Unrecoverable Read Errors per Bits Read	1 LBA per 10E16	1 LBA per 10E16	1 LBA per 10E16	1 LBA per 10E16
Annualized Failure Rate (AFR)	0.44%	0.44%	0.44%	0.44%
<b>Power Management</b>				
+12V/+5V Max Start Current (A)	0.49/0.79	0.35/0.50	0.31/0.51	0.32/0.48
Average Idle Power (W)	4.38	3.49	3.47	3.59
Average Operating Power (W)	5.93	4.75	4.68	4.66
<b>Environmental</b>				
Case Temperature (C°)				
Operating	0 to 60	0 to 60	0 to 60	0 to 60
Nonoperating	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Temperature Change per Hour, Operating, Max	20	20	20	20
Temperature Change per Hour, Nonoperating, Max	20	20	20	20
Shock, 0.5ms (Gs)				
Operating, Max	1000	1000	1000	1000
Nonoperating, Max	1000	1000	1000	1000
Relative Humidity, Noncondensing (%)				
Operating	5 to 95	5 to 95	5 to 95	5 to 95
Nonoperating	5 to 95	5 to 95	5 to 95	5 to 95
Vibration, 20Hz to 2000Hz (Grms)				
Operating	11.08	11.08	11.08	11.08
Nonoperating	11.08	11.08	11.08	11.08
<b>Physical</b>				
Height (mm/in) <sup>4</sup>	0.591/15.00	0.276/7.00	0.276/7.00	0.276/7.00
Width (mm/in) <sup>4</sup>	2.760/70.10	2.760/70.10	2.760/70.10	2.760/70.10
Length (mm/in) <sup>4</sup>	3.955/100.45	3.955/100.45	3.955/100.45	3.955/100.45
Carton Unit Quantity	20	20	20	20
Cartons per Pallet	45	45	45	45
Cartons per Layer	9	9	9	9
<b>Warranty</b>				
Limited Warranty (years) <sup>7</sup>	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> Data provided is based on format at 512 bytes.

<sup>3</sup> Self-Encrypting Drive model not available in all countries. May require TCG-compliant host or controller support.

<sup>4</sup> These base deck dimensions conform to the Small Form Factor Standard (SFF-8201) found at [www.sffcommittee.org](http://www.sffcommittee.org).

For connector-related dimensions, see SFF-8223.

<sup>5</sup> SAS model

<sup>6</sup> SATA model

<sup>7</sup> Warranty terms will vary based on type of warranty chosen: "Managed Life" or "Usage Based."

Consult your Seagate sales representative for warranty terms and conditions.

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



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