

Enterprise 2.5" SATA 6Gbps SSD - E1 Series

**The Best SSD Solution
for Data Centers**



For mixed workload applications

120
GB

240
GB

480
GB

960
GB

INTRODUCTION

The Integral Enterprise Class SATA 6Gbps SSD delivers all of the advantages of flash memory technology for ultimate performance and reliability. A superior solution for data centres, ideal for mixed workloads and performance hungry applications including Tier 1 storage, online transaction processing, email servers, high performance computing and cloud data warehousing.

It should not be assumed that Solid State Drives are a drop-in replacement for Hard Disk Drives when used in servers and data centre environments. The data writing behaviour of the application and the amount of data to be written on the device is vital to making the best choice for your needs. The performance, latency and bandwidth of the SSD also need to be considered.

To make the correct choice for your data centre, when selecting an Enterprise Class SSD it is critical to know the following:

1. Application (e.g. email server, file server, video-on demand, OLTP, webserver)
2. An estimate of how much data will be written to the drive per day, so you can work out the right drive capacity required.

Integral have Enterprise SSD solutions for Mixed Workloads and Read Intensive applications.

The E1 is designed for mixed workload applications.

that ensure that the data in the write cache of the SSD is protected against corruption if a power loss was to occur, enabling the SSD to complete the last write command to the NAND flash.

FEATURES

- 2.5" form factor with SATA III 6Gbps interface (backwards compatible with SATA 3Gbps and SATA 1.5Gbps)
- Designed for Datacenter mixed workload applications
- Higher performance storage
- Reduced latencies
- Sustained write IOPS
- Lower Power Consumption
- Random Read IOPS up to 90K
- **TBW** - Best sequential 10,000TB / Worst random 1730TB (480GB)
- **Drive Writes per Day** - 1.8 @ 5 years
- **Non-volatile Flash Memory for outstanding data retention** - Less likely to fail than HDD
- **Shock resistance** - No moving parts enable the product to be used in tougher conditions
- **Silent operation** - Noiseless and low heat dissipation
- Much less heat generated than conventional HDD
- **Supports S.M.A.R.T.** - Self-Monitoring, Analysis and Reporting Technology
- CE and FCC compliant
- **Warranty** - 3 years or TBW

- The Enterprise SSD features consistently low latency with a superior level of sustained write IOPS, together with high write endurance and power-loss protection. The SSD hardware is built with a number of capacitors

CAPACITIES AVAILABLE	
120GB, 240GB, 480GB, 960GB	
Form Factor	2.5 Inch (7mm)
Interface	SATA III 6Gbps (also Compatible with SATA II 3Gbps) Fully complies with ATA/ATAPI-7 Standard Support NCQ : Up to 32 depth
DIMENSIONS	
Length	100.20mm
Width	69.85mm
Height	6.80mm
Weight	56g
Packaged Weight	101g
Packaged Dimensions (mm)	L = 11.5 x W = 13.2 x H = 5.7
Sequential Performance up to ¹	120GB: Read: 530MB/s Write: 270MB/s
	240GB: Read: 530MB/s Write: 340MB/s
	480GB: Read: 530MB/s Write: 360MB/s
	960GB: Read: 490MB/s Write: 360MB/s
Random Performance (Sustained) ¹	Read 89K IOPS, Write 13K IOPS
IOPS Consistency (Random) 4KB ⁵	Read 95%, Write 90%
Latency ⁶	120GB Read: 150us, Write: 95us
	240GB Read: 150us, Write: 70us
	480GB Read: 150us, Write: 70us
ENVIRONMENTAL	
Operating Temp	0 to 70 C
Storage Temp	-55 to 95 C
Humidity	5% to 95%, non-condensing
Supply Voltage	5V
Power Consumption (Watt)	Active Read: 2W ²
	Active Write: 3W ³
	Idle: 1.1W ⁴
Shock	1500G, duration 0.5ms, Half Sine Wave
Vibration	7~800Hz, 3.08Grms, 30min/axis(X, Y, Z)
Supports SMART	Yes
MTBF	2 Million Hours
TBW	120GB: Best sequential 2,500TB / Worst random 430TB
	240GB: Best sequential 5,000TB / Worst random 860TB
	480GB: Best sequential 10,000TB / Worst random 1730TB
	960GB: Best sequential 20,000TB / Worst random 3460TB
Drive WPD	1.8 @ 5 years
Warranty	3 years or TBW
Compliance	CE, FCC

2.5 Inch (7mm)

CAPACITY	PART CODE	BARCODE (EAN)
120GB	INSSD120GS625M7XE1	5055288424203
240GB	INSSD240GS625M7XE1	5055288424210
480GB	INSSD480GS625M7XE1	5055288424227
960GB	INSSD960GS625M7XE1	5055288424234

- Performance measured using IOMeter 2006 with queue depth 32.
- Measurements are performed on whole LBA range.
- Write cache enabled.
- 1MB/sec = 1,048,576 bytes/sec was used in sequential performance

1. Actual performance may vary and depends on use conditions, host and environment
2. Active Read power measured on 4KB random read with 480GB density
3. Active Write power is measured on 128KB sequential write with 480GB density
4. Idle power is measured on 480GB density with DIPM off
5. IOPS consistency measured using FIO with queue depth 32. IOPS consistency % = (Minimum IOPS)/Average IOPS) x 100
6. Latency is measured using FIO with queue depth 1 on 4KB random read and write

