

Samsung PM1643a 12G SAS SSD

Unrivaled capacity and
accessibility

Product Brief



Highlights

Samsung PM1643a delivers:

- **High-Performance**

With Read/Write performance more than 4x that capable with SATA, the PM1643a 12G SAS SSD provides a massive upgrade to the data transfer capabilities of your storage array, no forklift necessary.

- **High-Capacity**

The PM1643a supports a range of capacities, from 960GB to an industry leading 30.72TB.

- **High-Availability**

PM1643a supports dual-port functionality, enabling two access paths to the storage array controller. The PM1643a delivers the reliability, availability and serviceability (RAS) that is required for enterprise storage designs.

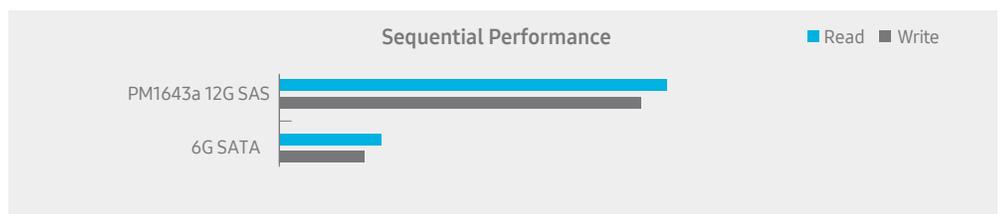
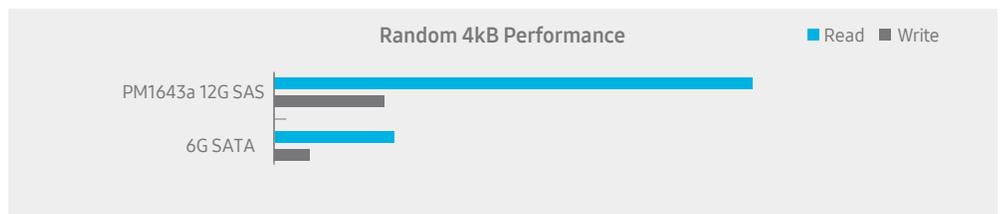
MASSIVE CAPACITY MEETS ENTERPRISE PERFORMANCE

Take control of your data efficiency with the capacity, performance, and accessibility of the PM1643a 12G SAS SSD

Enterprise environments have unique requirements to ensure that they operate optimally 24/7, 365 days a year. Maintaining low latency and stability while addressing varying workloads is essential. Most crucial of all is protection from data corruption or loss due to unexpected power outages. Considering each of these factors, IT and data center managers are tasked with finding high performing and dependable memory solutions.

Samsung is offering enterprises superb solid-state drives (SSDs) that deliver outstanding performance in multi-thread applications, such as compute and virtualization, relational databases, and storage. These SSDs are also extraordinarily reliable for continuous operation regardless of unanticipated power loss. Using proven expertise and a wealth of experience in cutting-edge SSD technology, Samsung memory solutions help data centers operate continuously at the highest performance levels. Samsung has the added advantage of being the sole manufacturer of all of its SSD components, ensuring end-to-end integration, remarkable quality assurance and the utmost compatibility.

Samsung PM1643a Performance vs 6G SATA



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Uncompromising Quality and Performance

To satisfy an enterprise environment's exceptionally high-demands, an SSD must perform over long periods of time at maximum performance levels for the variety of workloads accessing the device simultaneously. In addition, the SSD must provide the performance consistency to satisfy grueling Quality of Service (QoS) requirements. The PM1643a SSD offers industry leading metrics to support these requirements.

Optimize performance for read-intensive enterprise applications

The Samsung PM1643a SAS SSD is optimized to excel in enterprise storage scenarios. Providing exceptional random read performance, this SSD is particularly suited to accelerate read-intensive workloads in the enterprise environment.

Maximize your cost/performance efficiency

Satisfy your mission critical requirements while staying on-budget. With performance metrics greater than 4x those seen in SATA SSD's, the PM1643a offers a cost per 1K IOPS which is only 25% that of an equivalent capacity SATA drive.

Revitalize your Enterprise systems

As the performance demands on your storage network continue to grow, migrating your storage away from the limitations of outdated SATA interfaces in favor of the advantages of 12G SAS is the easiest way to add longevity to aging arrays.

Enterprise-grade power loss protection

During normal power-off periods, the host server allocates time to preserve data integrity by transmitting a standby command to each device. In the event of an unexpected power loss, though, the cached data in a storage device's internal buffers (DRAM) can be lost. This can occur with unexpected power outages, or when users unplug devices from the system. However, the Samsung PM1643a SSD has been designed to prevent data loss resulting from unexpected power shutdowns with its power-loss protection architecture. Upon detection of a failure, the SSD immediately uses the stored energy from tantalum capacitors to provide enough time to transfer the cached data in DRAM to the flash memory, ensuring no loss of data.

Samsung PM1643a specifications

Form factor	2.5"
Capacity	960GB, 1.92 TB, 3.84 TB, 7.68TB, 15.36TB, 30.72TB
Host interface	SAS 12 Gbps
Spec Compliance	Compliant with SCSI Specification (SAS-3 / SPL-3 / SBC-4 / SPC-5 / SAM-5)
NAND flash memory	Samsung V-NAND
Power consumption (Active/Idle)	12.5W/5.5W
Uncorrectable Bit Error Rate (UBER)	1 sector per 10 ¹⁷ bits read
Mean Time Between Failure (MTBF)	2,000,000 hours
Endurance	1 DWPD for 5 years
Sequential read	Up to 2,100 MB/s
Sequential write	Up to 2,000 MB/s
Random read	Up to 450,000 IOPS
Random write	Up to 90,000 IOPS
Physical Dimensions	70 x 100 x 15 mm
Encryption Supported	TCG Enterprise
Bytes per Sector	512 / 520 / 4096 / 4160