

M.2 PCIe Gen 4 x4 NVMe 2230 Opal SED

TAA COMPLIANT

TCG OPAL 2.0

EXTENDED TEMP 0-85C

DIGISTOR is a high-performance commercial NVMe SSD delivering up to 5200 MB/s sequential read and 4775 MB/s sequential write over PCIe Gen 4 x4. Designed for security-sensitive commercial applications, it combines TCG Opal (AES-256) with 3D NAND flash in the compact M.2 2230 form factor.

Top Features

- PCIe Gen 4 x4 / NVMe Protocol 1.4 compliant
 - TCG Opal 2.0
 - Secure Erase & Crypto Erase support
 - Physical Presence SID (PSID) revert
 - S.M.A.R.T. attribute monitoring
 - Performance optimized LDPC ECC engine
- SLC caching for accelerated burst performance
 - Global wear leveling for extended lifespan
 - StaticDataRefresh data integrity technology
 - NVMe Deallocate & HMB support
 - Intelligent garbage collection
 - RoHS-compliant 3D NAND flash

Available Models

Part Number	Capacity	Form Factor	Interface	Encryption	TBW
DIG-P4M21G37-00256	256 GB	M.2 2230	PCIe Gen 4 x4 NVMe	TCG Opal 2.0	125 TB
DIG-P4M21G37-00512	512 GB	M.2 2230	PCIe Gen 4 x4 NVMe	TCG Opal 2.0	250 TB
DIG-P4M21G37-01000	1 TB	M.2 2230	PCIe Gen 4 x4 NVMe	TCG Opal 2.0	500 TB
DIG-P4M21G37-02000	2 TB	M.2 2230	PCIe Gen 4 x4 NVMe	TCG Opal 2.0	1000 TB

Performance Summary

Capacity	Seq. Read	Seq. Write	Rand. Read	Rand. Write	Flash
256 GB	4680 MB/s	1350 MB/s	100K IOPS	275K IOPS	3D NAND
512 GB	4725 MB/s	2525 MB/s	195K IOPS	289K IOPS	3D NAND
1 TB	5200 MB/s	4370 MB/s	195K IOPS	289K IOPS	3D NAND
2 TB	4985 MB/s	4775 MB/s	336K IOPS	288K IOPS	3D NAND

Note: Sequential performance measured at 128KiB block size. Random performance measured at 4KiB block size. Access time <0.1ms across all capacities. Actual performance may vary based on host configuration, OS, and workload conditions.

Reliability & Environmental

Parameter	Rating
MTBF	1,500,000 hours
UBER	< 1 sector per 1015 bits read
Op. Temp.	0°C to 85°C (Extended Temp)
Storage Temp.	-40°C to 85°C
Op. Humidity	5–95% relative humidity
Shock (non-op)	1500 G / 0.5 ms
Vibration (non-op)	2–500 Hz, 3.1 G
Max Power (Active)	4.75 W
Idle Power	0.3 W (LPM enabled)
Op. Voltage	+3.3 VDC (±5%)
Dimensions (Single)	22.0 × 30.0 × 2.72 mm (256/512 GB)
Dimensions (Double)	22.0 × 30.0 × 3.56 mm (1 TB/2 TB)
DWPD	0.302 (3-year rating, all capacities)

Compliance

- TAA Compliant
- TCG Opal 2.0
- RoHS compliant
- CE, FCC, RCM

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Security Capabilities

- TCG Opal 2.0 — hardware-based encryption activation
- Secure Erase — overwrites all storage blocks with 0x00, restoring factory defaults
- Crypto Erase — resets cryptographic key to instantly invalidate all encrypted data
- Physical Presence SID (PSID) revert — 32-character string printed on label to revert OPAL-activated drive to manufacturing settings
- PSID revert support for locked or inaccessible drives
- Factory default restore via controller block erase

Flash Management Technology

LDPC ECC

Performance-optimized Low Density Parity Check engine corrects read errors to ensure data integrity.

Global Wear Leveling

Evens program/erase counts across all NAND blocks to maximize drive lifespan.

SLC Caching

Accelerates burst write performance by temporarily storing data in fast SLC cache mode.

StaticDataRefresh

Periodically refreshes static data to prevent charge loss and ensure long-term data integrity.

Typical Applications

- Commercial computing — high-throughput workloads requiring PCIe Gen 4 performance
- Security-sensitive deployments — environments mandating TCG Opal 2.0
- Embedded & edge systems — space-constrained M.2 2230 installations
- Extended-temperature environments — 0°C to 85°C operating temperature range
- Mobile workstations — compact SSDs in ultra-thin or small-form-factor devices
- Government & defense-adjacent — applications requiring cryptographic erase and PSID revert