

PBlaze[®] 5 520 Series NVMe[™] SSD

Constructing Green Data Center with Low-Power Dual-port SSD

Key Features

- Utilizing 96-layer 3D NAND,
- Up to 520K IOPS
- Up to 3.3GB/s throughput
- 9W Typical Power, 4W Idle Power
- Firmware Upgrade without Reset
- Variable Sector Size Management
- Support NVMe-MI
- Support Device Self-Test
- Support Dual Port and NVMe Reservation
- NVMe End-to-End Data Protection

Applications & Workloads

- Database
- Searching, Indexing, CDN
- Cloud and Hyper-scale Computing
- Deep Learning and Big Data Analytics
- High Performance Storage System
- ERP, SAP HANA
- BOSS, Banking, Taxing
- High Frequency Trading
- Online Payment

Data centers energy consumption is a serious problem for enterprises. To help enterprises improve their storage efficiency, Memblaze launches PBlaze5 520 Low Power Series NVMe[™] SSD, which adopts the industry-leading 96-layer 3D NAND, providing 2.5-inch U.2 and Half Height Half Length (HHHL) form factor. To realize flexible deployment, PBlaze5 520 series capacity range from 1.6TB to 3.84TB. PBlaze5 520 series enterprise SSD provides green storage options to fully meet the demand of cloud computing, internet, finance, telecommunications, artificial intelligence and other industries for rapid access to massive data.

9W Typical Power with Sustained Performance

PBlaze5 520 series SSD adopts 8-channel architecture and can provide up to 520K IOPS and 3.3GB/s bandwidth, typical and idle power is lower to 9W and 4W. With sustained performance and superior energy efficiency, PBlaze5 520 series provides high-speed and green access solutions for modern data centers.

NVMe-MI for Out-of-Band Management

PBlaze5 520 series supports NVMe-MI, which is designed to provide a common interface for inventory, monitoring health status, configuration, and change management, especially for the large-scale SSD deployment user scenario.

Device Self-Test

PBlaze5 520 series supports S.M.A.R.T and capacitor health check for diagnostic testing of drive functionality.

High Availability Dual-Port

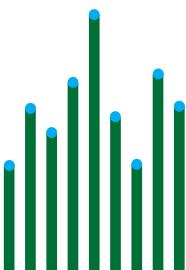
PBlaze5 520 series supports dual-port function and allows access via two ports simultaneously, which solves the single-path failure, ensures continuous data access and meets enterprise high availability requirement.

Firmware Upgrade without Reset

To satisfy continuity of enterprise critical business and reduce the complexity of large-scale SSD upgrade operations in data center, PBlaze5 520 series NVMe SSD supports feature firmware upgrade without reset, enabling complete firmware upgrade without stopping businesses or shutting down systems.

Variable Sector Size Management

The Variable Sector Size (VSS) transfers user data with metadata. PBlaze5 520 series supports 512, 520, 4096, 4104, and 4160 bytes Variable Sector Size, which means an I/Os from service application carry 8 bytes or 64 bytes of metadata simultaneously. On the premise of ensuring high consistent performance, VSS further guarantees high data reliability requirements for storage systems and distributed file systems.



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NOTES:

- [1] Performance may vary due to different system configurations and firmware version.
- [2] Measurement is performed at Steady State follow SNIA SSS-PTS-E test specification.
- [3] Average latency measured with 4KB random I/O pattern.
- [4] DWPD, Drive Writes per Day for 5 years.
- [5] For suggested airflow please refer to the Product Spec document.

PBlaze5 520 Series ^[1]	D520		C520		D526		C526	
User Capacity (TB)	1.92	3.84	1.92	3.84	1.6	3.2	1.6	3.2
Form Factor	2.5-inch U.2		HHHL AIC		2.5-inch U.2		HHHL AIC	
Interface	PCIe 3.0 x 4		PCIe 3.0 x 4		PCIe 3.0 x 4		PCIe 3.0 x 4	
128KB Sequential Read(GB/s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
128KB Sequential Write(GB/s)	1.7	1.7	1.9	1.9	1.7	1.7	1.9	1.9
Sustained Random Read (4KB) IOPS	520K	520K	520K	520K	520K	520K	520K	520K
Sustained Random Write (4KB) IOPS (Steady State) ^[2]	68K	70K	68K	70K	135K	135K	135K	135K
Latency Read/Write (μs) ^[3]	86 / 15				86 / 15			
Lifetime Endurance ^[4]	1 DWPD				3 DWPD			
Operating Temperature ^[5]	2.5-inch U.2: Ambient: 0°C to 35°C Case: 0°C to 70°C AIC: Ambient 0°C to 55°C							
Uncorrectable Bit Error Rate	< 10 ⁻¹⁷							
Mean Time Between Failures	2 million hours							
Protocol	NVMe 1.3							
NAND Flash Memory	96L 3D NAND							
Operation System	RHEL, SLES, CentOS, Ubuntu, Windows Server, VMware ESXi							
Power Consumption	4~12 W							
Basic Feature Support	Power Failure Protection, Hot Pluggable, Full Data Path Protection, S.M.A.R.T, Flexible Power Management							
Advanced Feature Support	TRIM, Namespace Management, AES 256 Data Encryption, Crypto Erase, Dual Port Variable Sector Size Management & NVMe End-to-End Data Protection, Firmware Upgrade without Reset, NVMe-MI, Device Self-Test							
Software Support	Open source management tool, CLI debug tool OS in-box driver (Easy system integration)							
Certification	China: CNAS, BSMI		America: FCC		Europe: CE, RoHS, WEEE, REACH			



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