# PCIe 4.0 SSD

## High Performance and Lower Power


## PBlaze®6 6530 Series NVMe™ SSD

Based on the Memblaze self-developed Unified Framework Platform, the PBlaze6 6530 series supports NVMe 1.4 specifications and adopts the latest enterprise level 3D TLC NAND flash memory. Compared with its predecessor, the PBlaze6 6530 series features higher endurance,and supports more enterprise functions and security features, meeting the stringent requirements of hyperscale users in internet, cloud computing, finance and telecommunications etc. filed.

### Better performance greatly accelerates applications

PBlaze6 6530 series enterprise SSD supports PCIe 4.0 x 4 interfaces and enjoys superior Read/Write bandwidth. With MemSpeed 4.0 technology, it can provide 4K Random Read performance up to 1100K IOPS, and sequential Read bandwidth reaching 6.8GB/s.

### Lower latency ensures outstanding user experience and consistency

PBlaze6 6530 series shortens command response and reduced the overall write latency to11μs by optimizing the write I/O path. Meanwhile, the read latency has also been improved,reduced to 72μs. In addition, the optimization of the scheduling mechanism ensures the QoS and consistent performance, thereby making the latency-sensitive applications running smoothly.

### Low power and flexible power configuration help meet different business demands

PBlaze6 6530 series adopts low-power hardware design, and optimizes data path and algorithms, with an energy efficiency 172% higher than that of its predecessor. The series features a 11W typical write power consumption and offers dynamic power adjustments from 6W to 14W by per 1W, so as to accommodate users' different power configuration demands.

### Ultra-long write endurance ensures long-term and stable operation of the applications

PBlaze6 6530 series enables newly-upgraded MemSpeed4.0 technology set, achieving ultra-long write endurance. As per JESD219 standard, PBlaze6 6530 write endurance can be up to 1.7 DWPD (5 years), 50% higher than that of the predecessor. PBlaze6 6536 endurance can be up to 3.5 DWPD (5 years).

### Key Features

PCIe 4.0, NVMe1.4
Sustained Random Read 1100K IOPS
128KB Sequential Read 6.8 GB/s
Latency Read/Write 72/11μs

### Reliability

AES 256 Data Encryption
Full Data Path Protection
Power Failure Protection
Variable Sector Size Management
Sanitize

### Easy-to-use

Firmware Upgrade without Reset
Telemetry
Persistent Event Log
Latency Statistics & High Latency Logging
NVMe-MI for Out-of- Band Management

### Advanced Feature Support

TCG OPAL2.0
Weighted Round Robin
8TB/s Enterprise TRIM

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**PRODUCT BRIEF**

| *PBlaze6 6530 Series* [1] | *6530* | | | *6536* | | |
|---|---|---|---|---|---|---|
| User Capacity (TB) | 1.92 | 3.84 | 7.68 | 1.6 | 3.2 | 6.4 |
| 128KB Sequential Read(GB/s) | 6.8 | 6.8 | 6.4 | 6.8 | 6.8 | 6.4 |
| 128KB Sequential Write(GB/s) | 2.7 | 4.8 | 4.8 | 2.7 | 4.8 | 4.8 |
| Sustained Random Read (4KB) IOPS | 910K | 1100K | 1100K | 910K | 1100K | 1100K |
| Sustained Random Write (4KB) IOPS (Steady State) [2] | 110K | 190K | 230K | 225K | 415K | 420K |
| Lifetime Endurance DWPD [3] | 1.5 | 1.5 | 1.7 | 3.3 | 3.3 | 3.5 |
| Latency Read/Write (µs) [4] | 72 / 11 | | | | | |
| Form Factor [5] | HHHL AIC / 2.5-inch U.2 / E1.S | | | | | |
| Interface | PCIe 4.0 x 4 | | | | | |
| Operating Temperature | 2.5-inch U.2 & E1.S : Ambient: 0°C to 35°C with suggested airflow; Case: 0°C to 70°C<br>HHHL AIC: Ambient 0°C to 55°C with suggested airflow | | | | | |
| Uncorrectable Bit Error Rate | < $10^{-17}$ | | | | | |
| Mean Time Between Failures | 2 million hours | | | | | |
| Protocol | NVMe 1.4 | | | | | |
| NAND Flash Memory | 3D TLC NAND | | | | | |
| Operation System | RHEL, SLES, CentOS, Ubuntu, Windows Server, VMware ESXi | | | | | |
| Power Consumption | <14 W | | | | | |
| Basic Feature Support | Power Failure Protection, Full Data Path Protection, S.M.A.R.T, Flexible Power Management,Hot Pluggable | | | | | |
| Advanced Feature Support | TRIM,Multi-namespace, AES 256 Data Encryption & Crypto Erase, EUI64/NGUID,Firmware Upgrade without Reset,Timestamp, Weighted Round Robin,Variable Sector Size Management & NVMe End-to-End Data Protection, Latency Statistics & High Latency Logging,Telemetry, Sanitize, Persistent Event Log, TCG OPAL2.0 | | | | | |
| Software Support | Open-source management tool, CLI debug tool<br>OS in-box driver (Easy system integration) | | | | | |

### Applications & Workloads

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

NOTES:

[1] Performance may vary due to different system configurations and firmware version.
[2] Measurement is performed at Steady State.
[3] DWPD, Drive Writes per Day for 5 years.
[4] Average latency measured with 4KB random I/O pattern.
[5] 1.6TB, 1.92 TB, 3.2TB, 3.84TB is available in the E1.S form factor.

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