



ENTERPRISE B-SERIES

BA50 High-Quality SATA Boot Drive for Legacy Systems and System Upgrades

BA50 is a high-performance storage device that serves as a server or workstation boot drive. It was designed specifically for this purpose, offering faster boot times, improved system responsiveness, and overall enhanced performance compared to traditional hard disk drives (HDDs).



Product Features

Reliability

The BA50 SSD leverages Phison's 4th generation LDPC ECC engine which can correct up to 160 bits for each 2048 byte block through the hard decoder, and up to 400 bits for each 2048 byte block using the soft decoder. This ensures customers' data is protected throughout the life of the SSD.

Power Loss Protection

The BA50 printed circuit board has extra capacitors (pFail) installed to continue to provide power to the SSD in the event of a sudden power loss. The pFail capacitors provide the SSD with the remaining power to write any cached data to the NAND storage to prevent data loss.

SATA Compatibility

The BA50 SSD is plug wise compatible with SATA backplanes, making it easy to install in existing backplanes as new storage, or to replace HDDs with a performance upgrade.

End-to-End Data Path Protection

From the entry through PHY to the access of NAND flash memory, data packages go through a series of encryption/decryption using various coding schemes, including but not limited to AES, CRC, and SEDEC, to gain a multi-layered protection over the course of delivery.

Solutions - BA50P

M.2 2280				
	Capacity ⁽¹⁾	240GB	480GB	960GB
Performance ^(2,3)	Sequential Read	530 MB/s	530 MB/s	530 MB/s
	Sequential Write	290 MB/s	480 MB/s	500 MB/s
	4K Random Read	60K IOPS	90K IOPS	98K IOPS
	4K Random Write	10K IOPS	15K IOPS	30K IOPS
Power Consumption ⁽⁴⁾	Max	2.3 W	2.8 W	2.8 W
	Idle	1.2 W	1.3 W	1.3 W
Latency	4K Random Read	120 us	120 us	120 us
	4K Random Write	80 us	50 us	30 us

2.5"				
	Capacity ⁽¹⁾	240GB	480GB	960GB
Performance ^(2,3)	Sequential Read	530 MB/s	530 MB/s	530 MB/s
	Sequential Write	290 MB/s	480 MB/s	500 MB/s
	4K Random Read	60K IOPS	90K IOPS	98K IOPS
	4K Random Write	10K IOPS	15K IOPS	30K IOPS
Power Consumption ⁽⁴⁾	Max	2.2	2.7	2.7
	Idle	1.1	1.1	1.2
Latency	4K Random Read	120	120	120
	4K Random Write	80	50	30

Features	
Interface	SATA III
NAND Flash	3D TLC
DWPD ⁽⁵⁾	1
UBER	1 in 10 ¹⁷
Operating Temperature	0°C - 70°C
Non-Operating Temperature	-40°C - 85°C

Key Features	
•	LDPC
•	Power Loss Data Protection
•	End-to-End Data Protection

(1) 1 GB = 1,000,000,000 bytes.

(2) Sequential Performance is based on FIO on Linux, 128K, with QD=32, 1 worker, and test drive set as secondary.

(3) Random Performance is based on FIO on Linux, 4K data size, QD=32, 1 worker, 4K aligned.

(4) Power consumption is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).

(5) The results of DWPD are obtained in compliance with JESD219A Standards.



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