



## 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.

### 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.

### 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.

### 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 <sup>(1)</sup>	240GB	480GB	960GB
Performance <sup>(2,3)</sup> (Est.)	Sequential Read	400 MB/s	530 MB/s	530 MB/s
	Sequential Write	70 MB/s	450 MB/s	500 MB/s
	4K Random Read	90K IOPS	90K IOPS	90K IOPS
	4K Random Write	8K IOPS	10K IOPS	20K IOPS
Power Consumption <sup>(4)</sup> (Est.)	Max	2.3 W	2.5 W	3.0 W
	Idle	1.1 W	1.1 W	1.1 W
Latency (Est.)	4K Random Read	120 us	120 us	115 us
	4K Random Write	110 us	80 us	40 us
2.5"				
	Capacity <sup>(1)</sup>	240GB	480GB	960GB
Performance <sup>(2,3)</sup> (Est.)	Sequential Read	400 MB/s	530 MB/s	530 MB/s
	Sequential Write	70 MB/s	450 MB/s	500 MB/s
	4K Random Read	90K IOPS	90K IOPS	90K IOPS
	4K Random Write	8K IOPS	10K IOPS	20K IOPS
Power Consumption <sup>(4)</sup>	Max	TBD	TBD	TBD
	Idle	TBD	TBD	TBD
Latency	4K Random Read	TBD	TBD	TBD
	4K Random Write	TBD	TBD	TBD
Features				
	Interface	SATA III		
	NAND Flash	3D TLC		
	DWPD <sup>(5)</sup>	1		
	UBER	1 in 10 <sup>17</sup>		
	Operating Temperature	0°C - 70°C		
	Non-Operating Temperature	-40°C - 85°C		
	Key Features	<ul style="list-style-type: none"> <li>• LDPC</li> <li>• Power Loss Data Protection</li> <li>• End-to-End Data Protection</li> </ul>		

(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.



THE DATA WITHIN THIS SPECIFICATION IS SUBJECT TO CHANGE BY PHISON WITHOUT NOTICE. PERFORMANCE NUMBERS MAY VARY BASED ON SYSTEM CONFIGURATION AND TESTING CONDITIONS.

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