

SP416 Enterprise SSD

The BIWIN SP416 is an enterprise-grade PCIe SSD that delivers consistent performance and reliability for large-scale deployments. Built on the PCIe 4.0 x4 interface and housed in a 2.5-inch U.2 form factor, the SP416 fully conforms to the NVMe 1.4 standard. Designed for mixed read/write workloads with an endurance rating of 3 DWPD, it is offered in multiple capacities to meet the needs of diverse applications. With an advanced controller architecture, the SP416 delivers high performance while maintaining reduced power consumption. The solution is well-suited for mixed workloads in large-scale data centers, cloud platforms, computer servers, and AI environments. The SP416 employs an advanced controller architecture that enables ultra-low, consistent read and write latency, delivering leading KIOPS-per-Watt performance. To address the requirements of modern IT infrastructure, the SP416 incorporates enterprise-class capabilities such as AES-256 hardware encryption, sanitize, internal RAID, secure boot, and TCG Opal 2.0.



Key Features

Energy Efficiency

The BIWIN SP416 leverages a RISC-V-based controller with hardware enhancements and firmware tuning to minimize power consumption while sustaining high throughput. This results in excellent performance per watt compared with similar enterprise SSDs and enables greener, more efficient data-center operations.

Capacity Flexibility at 3 DWPD

Available in 1.6 TB, 3.2 TB, and 6.4 TB capacity options, the SP416 delivers a significant 3 Drive Writes Per Day (DWPD) endurance, providing multiple choices to meet diverse workload requirements in enterprise environments.

Robust Data Protection

The SP416 integrates multiple layers of data protection, including end-to-end data path protection, power-loss protection, and data scrubbing. Internal RAID support further enhances resilience by enabling recovery from single-die failures, to secure data integrity as well as service continuity.

Proven Reliability

The SP416 is specified with a Mean Time Between Failures (MTBF) of 2.5 million hours and an Uncorrectable Bit Error Rate (UBER) of less than 10^{-17} . Supported by a five-year limited warranty, it meets the stringent reliability requirements of mission-critical enterprise workloads.

Technologies

OCP 1.0a

TCG Opal 2.0

NVMe-MI

Multiple Namespaces

Latency Monitoring

Internal RAID

Power Loss Protection

Intelligent Thermal Throttling

Intelligent Low-Power Management

S.M.A.R.T.

Secure Boot

TRIM Command

Telemetry Log

Firmware Backup

Applications



Data Center



Cloud Computing



AI Server



General-Purpose Server

Specifications

Model Name	SP416
Interface	PCIe Gen4x4, NVMe 1.4
Form Factor	U.2 2.5"
Flash Type	eTLC
DRAM Cache	DRAM-based
DWPD (Drive Writes Per Day)	3
Capacity	1.6 TB / 3.2 TB / 6.4 TB
Sequential Read (Up to)	7050 MB/s
Sequential Write (Up to)	4200 MB/s
Random Read 4K (Up to)	1350K IOPS
Random Write 4K (Up to)	390K IOPS
Read Power Consumption (Max.)	12.5 W
Write Power Consumption (Max.)	14.5 W
Idle Power Consumption (Max.)	3.5 W
Dimensions	100.20 x 69.85 x 15.00 mm
Operating Temperature	0°C to + 70°C
Storage Temperature	-40°C to + 85°C
MTBF	>2,500,000 hours
Certifications	CE, FCC, RoHS, REACH, WEEE, HF, China RoHS
Warranty	5-Year Limited

Order Information

Capacity	Part Number	Power Loss Protection
1.6 TB	CE9U2H6F410-1T6	Firmware-Based, Hardware-Based
3.2 TB	CE9U2H6F410-3T2	Firmware-Based, Hardware-Based
6.4 TB	CE9U2H6F410-6T4	Firmware-Based, Hardware-Based

1. Tested by BIWIN labs. Actual performance may vary due to systems, devices, or environment.
2. Maintenance and future updates are required throughout the product lifecycle. Specifications are subject to change without notice.
3. The pictures are for illustration only. Actual products may vary due to product enhancements or changes.
4. Not all products are sold in all regions of the world.
5. As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on the operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabyte per second (GB/s) = one billion bytes per second.
6. MTBF = Mean Time Between Failures based on internal testing using the Telcordia stress testing standard.
7. Please visit www.biwintech.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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