

BL130 Mini SSD

The BIWIN BL130 Mini SSD delivers high-performance storage in an ultra-compact form factor, purpose-built for edge AI, next-generation devices, and mobile computing applications. Featuring a PCIe 4.0 x2 interface and NVMe 1.4 protocol, it achieves sequential read speeds of up to 3,700 MB/s and write speeds of up to 3,400 MB/s, with random performance of up to 850K/800K IOPS (read/write). Available in capacities from 512 GB to 2 TB with endurance of up to 2,000 TBW, the BL130 Mini SSD is built to handle demanding, high-bandwidth workloads such as AI training, high-resolution video processing, and large-file transfers.

Built with an advanced Hybrid BGA (FC + WB) packaging architecture, the BL130 Mini SSD integrates the controller and NAND flash into a tiny 15.00 × 17.00 × 1.40 mm footprint - approximately half the size of a coin. This compact design makes it an ideal storage solution for edge AI devices including robots, ultrathin laptops, mobile workstations, handheld gaming devices, industrial devices, and mini PCs. Its embedded socket design provides a SIM card-like plug-and-play experience, allowing users to quickly replace or upgrade storage as needed. Beyond its innovative compact size and exceptional performance, the BL130 Mini SSD is built for outstanding durability. It features IP68-rated dust and water resistance and can withstand drops of up to 3 meters for dependable operation across a wide range of demanding environments. Through hardware and firmware co-design and its highly integrated package design, the BL130 maintains stable performance under vibration, shock, and other harsh operating conditions while providing comprehensive protection for critical data.

Supporting a wide operating temperature range from -25°C to 85°C, the BL130 Mini SSD stands up to demanding environments. Compatible with a broad range of computing platforms, the BL130 Mini SSD enables seamless data access, sharing, and collaboration with similarly equipped systems and devices.



Key Features

Ultra-Compact Design. Greater Design Freedom

Built with advanced Hybrid BGA (FC+WB) packaging technology, the BIWIN BL130 Mini SSD measures just 15.00 × 17.00 × 1.40 mm, approximately half the size of a coin. Its ultra-compact footprint frees up valuable internal space, giving system designers greater flexibility to create thinner, lighter, and more innovative devices and products. The embedded socket also enables SIM card-like plug-and-play storage expansion, allowing users to upgrade or replace storage quickly and effortlessly.

Leveraging its compact architectural design, the BIWIN BL130 Mini SSD offers a range of capacities, from 512 GB up to 2 TB, giving device designers flexibility in both storage availability and BOM costs.

Engineered for Reliability. Built to Protect

Designed for exceptional durability, the BIWIN BL130 Mini SSD features IP68-rated dust and water resistance and is built to withstand drops of up to 3 meters. Through a combination of durable hardware design, robust firmware optimization, and an integrated package architecture, the BIWIN BL130 Mini SSD delivers reliable operation and preserves data integrity even under extreme environments. It can withstand vibration, humidity, and other demanding conditions, providing comprehensive protection for your critical data.

With a TBW rating of up to 2,000, and a MTBF of 1.5 million hours, the BIWIN BL130 Mini SSD is built to deliver consistent, reliable operation over extended periods, without compromise.

Powerful Performance for Professional Workloads

Powered by a PCIe 4.0 x2 interface and the NVMe 1.4 protocol, the BIWIN BL130 Mini SSD delivers sequential read speeds of up to 3,700 MB/s, sequential write speeds of up to 3,400 MB/s, and random performance of up to 850K/800K IOPS (read/write). Whether handling AI training, 4K video editing, or large-scale application workloads, it provides the high-speed responsiveness and sustained performance needed for demanding computing tasks, minimizing latency and ensuring a smooth user experience.

Technologies

Dynamic SLC Cache

Global Wear Leveling

TRIM Command

Garbage Collection

Intelligent Thermal Throttling

Intelligent Power Management

HMB

S.M.A.R.T.

Applications



Humanoid Robots



Quadruped Robots



Ultrathin Laptops



Handheld Gaming Console



Mobile Workstations



Mini PCs



AI Training



Next-Generation Devices

Specifications

Model Name	Mini SSD
Interface	PCIe Gen 4x2, NVMe 1.4
Flash Type	3D TLC
DRAM Cache	DRAM-less
Capacity	512 GB / 1 TB / 2 TB
Sequential Read (Up to)	3,700 MB/s
Sequential Write (Up to)	3,400 MB/s
4K Random Read (Up to)	850K IOPS
4K Random Write (Up to)	800K IOPS
Read Power Consumption (Max.)	3.5 W
Write Power Consumption (Max.)	3.5 W
Idle Power Consumption (Max.)	50 mW
PS4 Power Consumption	5 mW
Dimensions	15.00 x 17.00 x 1.40 mm
Operating Temperature	-25°C to +85°C
Storage Temperature	-40°C to +85°C
MTBF	1,500,000 hours
Certifications	RoHS
TBW (Up to)	500 TBW / 1,000 TBW / 2,000 TBW
Warranty	3-Year Limited

Order Information

Capacity	Part Number
512 GB	BL130512G-BGX
1 TB	BL13001TB-BGX
2 TB	BL13002TB-BGX

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.biwin technology.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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