For Industrial

HAGIWARA Solutions

Most suitable for long term stable operation

PCIe NVMe Performance

HAGIWARA Solutions PCIe NVMe high performance SSD, with improved characteristics of data retention capability and optimal device management.

Large Capacity
M.2 : 240GB~3840GB
U.2 : 960GB~7680GB

Wide Operating Temps
-40°C to 85°C

Analysis Support

Life Prediction

Custom Support

Data Management

Error correction function (LDPC)

Correct data can be read by narrowing down the inconsistent points even if data cannot be corrected by hardware error correction.

Internal RAID

Internal RAID corrects the data if LDPC cannot execute error correction.

End to End data protection

Address and other information is stored with the data to protect the data.

Power Management

Thermal Throttling

When internal temperature exceeds the threshold, the device automatically controls its performance to reduce further temperature rise.

Speed Comparison

SATA

	Read [MB/s]	Write [MB/s]
Seq Q32T1	513.3	531.2
4KiB Q8T8	347.5	321.1
4KiB Q32T1	257.8	239.1
4KiB Q1T1	20.57	48.07

NVMe

	Read [MB/s]	Write [MB/s]
Seq Q32T1	3053.7	1773.2
4KiB Q8T8	1030.3	930.0
4KiB Q32T1	693.2	596.4
4KiB Q1T1	29.69	156.4

Crystal Disk Mark6.0.2

NVMe's sequential read is about 6 times faster and sequential write is about 3 times faster than SATA SSD.

F Series(3D NAND)		U.2 NVMe	M.2 NVMe
Flash Memory		TLC	TLC
Capacity		960GB to 3,840GB	240GB to 3,840GB
Interface		PCIe Gen 3 × 4	PCIe Gen 3 × 4
Operating Voltage		12V±5%	3.3V±5%
Operating Temperature	Normal Temperature Model	0℃ to 70℃	0℃ to 70℃
	Wide Temperature Model	-40℃ to 85℃	-40℃ to 85℃
Storage Temperature		-40℃ to 85℃	-40℃ to 85℃
Operating Humidity		To 85% (Non condensing)	To 85% (Non condensing)
Storage Humidity		To 95% (Non condensing)	To 95% (Non condensing)
External Dimensions		69.85 × 100.5 × 7.0	22.0 × 80.0 × 3.6
DRAM Cache		●	●
Maximum Transfer Rate	Sequential Read (MB/s)	2,850	2,850
	Sequential Write (MB/s)	1,700	1,500
	Random Read (IOPS)	99,000	99,000
	Random Write (IOPS)	87,000	88,000
TBW *1	240GB	-	90
	480GB	-	390
	960GB	800	800
	1,920GB	1,750	1,750
	3,840GB	4,850	4,850
Power Consumption (mA) Notes;typical	Operating current (Read)	885	2,715
	Operating current (Write)	930	3,145
	L0 current	310	825
	L1.0 current	180	395
Warranty Period (year)		2	2

FX Series(3D NAND)		U.2 NVMe
Flash Memory		TLC
Capacity		7,680GB
Interface		PCIe Gen 3 × 4
Operating Voltage		12V±5%
Operating Temperature	Normal Temperature Model	0℃ to 70℃
	Wide Temperature Model	-40℃ to 85℃
Storage Temperature		-40℃ to 85℃
Operating Humidity		To 85% (Non condensing)
Storage Humidity		To 95% (Non condensing)
External Dimensions		69.85 × 100.5 × 7.0
DRAM Cache		●
Maximum Transfer Rate	Sequential Read (MB/s)	2,800
	Sequential Write (MB/s)	1,400
	Random Read (IOPS)	99,000
	Random Write (IOPS)	86,000
TBW *1	7,680GB	9,300
Power Consumption (mA) Notes;typical	Operating current (Read)	870
	Operating current (Write)	885
	L0 current	290
	L1.0 current	165
Warranty Period (year)		2

*1 Total Byte Written (TBW) is calculated based on "JEDEC 219 Client (Solid-State drive Requirements and Endurance Test Method)" as a write load condition (workload).

HAGIWARA Solutions

For more information, please contact us by e-mail. Send email to: hsolsupport@hagisol.co.jp

Contact one of our branches Monday to Friday (excepting public holidays, summer vacation, the end of year and New Year period, and special closing days)

Visit our web-site for the latest information on our services. https://www.hagisol.com

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