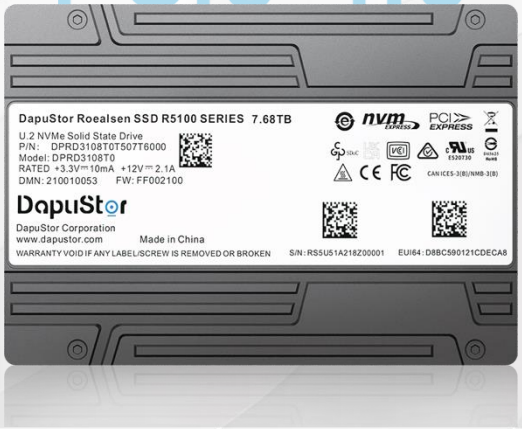
DapuStor | KIOXIA

PCIe 4.0

Roealsen5 Series

DapuStor Enterprise NVMe SSD



The DapuStor R5 Series is designed and built on DapuStor DP600 controller firmware with 3D eTLC NAND Flash. Such a unique combination creates industry-leading SSDs with high speed, superior reliability, low latency, and excellent power efficiency, bringing optimised TCO to enterprise IT and cloud facilities. The DapuStor R5 Series is an ideal solution for core data storage scenarios in different fields, such as enterprise IT, logistics, Internet, finance, intelligent manufacturing, and AI.

Advanced Features

- Flash Raid 2.0 tolerating multiple flash die failures without affecting service and performance.
- Latest NVMe 1.4a key features .
- Advanced power loss protection that protects user data against power failure in various scenarios.
- Nine levels of adjustable power consumption: more convenient operation, maintenance, and better TCO.

Superior Performance

The DapuStor R5 Series PCIe Gen4 SSD offers a 100% improvement in bandwidth and IOPS performance compared with the Haishen3 Series. In terms of latency, thanks to the new DP600 controller having carried out many optimisations on the IO path, the Roealsen5 Series has significantly improved latency and QoS under mixed read-write scenarios.

7400/6400 MB/s	1750K/640K	65/9 µs
Sequential Read/Write(MB/s)	Random Read/Write(IOPS)	Read/Write Latency(µs)

Industry Mainstream NAND Flash

The DapuStor R5 Series is equipped with 3D eTLC NAND Flash, realising an extremely high-power efficiency. It reduces NAND Retry at the system level through innovative machine learning technologies that predict the NAND workload in complex scenarios to prevent systemic failures.

KIOXIA's BiCS FLASH is a three-dimensional(3D) vertical flash memory cell structure. This structure enables it to surpass the capacity of mainstream 2D (planar) flash memory. KIOXIA's TLC 3-bit-per-cell 512Gb(64GB) BiCS FLASH, an industry first, enhances the reliability of write/erase endurance while boosting write speeds.

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Computing And Storage Converged Platform

The DapuStor DP600 controller for PCIe 4.0 SSD has a built-in APPLICATION processor and the DPU-Link heterogeneous computing interface. It delivers faster speed when running Linux, conveniently transplants applications and algorithms, and improves system efficiency for database, AI, and big data applications.

Product Specifications

PCN (Product Code Name)	R5101		R5301		R5100		R5300	
Capacity(TB)	1.92	3.84	1.6	3.2	7.68	15.36	6.4	12.8
Form Factor	U.2 15mm							
Interface	PCIe 4.0 × 4, NVMe 1.4a							
Read Bandwidth (128KB) MB/s	6200	7400	6200	7400	7400	7400	7400	7400
Write Bandwidth (128KB) MB/s	2600	5350	2600	5350	5500	6400	5500	6400
Random Read (4KB)K IOPS	1000	1750	1000	1750	1750	1750	1750	1750
Random Write (4KB) K IOPS	120	240	240	540	280	300	550	640
4K Random Latency (Typ.) R/W µs	65/9							
4K Sequential Latency (Typ.) R/W µs	8/9							
Power	Typical: ≤ 17.5 W, Idle: ≤ 6 W				Typical: ≤ 22 W, Idle: ≤ 6.5 W			
Flash Type	3D eTLC NAND Flash, 4 plane				3D eTLC NAND Flash, 2 plane			
Endurance	1 DWPD		3 DWPD		1 DWPD		3 DWPD	
MTBF	2 million hours							
UBER	1 sector per 10^17 bits read							
Warranty	5yrs							

*Differences in hardware, software, or configuration will affect actual test results.

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