KIOXIA CD8-R Series

(KCD81RUG/KCD8XRUG/KCD8DRUG)
Data Center NVMe™ Read-intensive SSD

The CD8-R Series is a read-intensive data center NVMe™ SSD that is optimized to support a broad range of scale-out and cloud applications, including big data/IoT, online transaction processing, and virtualization. Built with a PCIe® 4.0 (16 GT/s x4) interface, CD8-R Series SSDs deliver consistent performance up to 1,250K IOPS (random read) and 200K IOPS (random write).

Featuring KIOXIA 112-layer BiCS FLASH™ 3D TLC flash memory, CD8-R 2.5-inch form factor SSDs deliver 1 DWPD (Drive Writes Per Day) of endurance and storage capacities up to 15.36 TB in a 2.5-inch form factor, making them well-suited for hyperscale data center applications.

Product image may differ from the actual product.

Key Features

- PCIe® 4.0, NVMe™ 1.4 specification compliant
- Open Compute Project Datacenter NVMe™ SSD specification v2.0 support (not all requirements)
- Form factor: 2.5-inch, 15mm height
- Proprietary KIOXIA architecture: controller, firmware and 112-layer BiCS FLASH™ 3D TLC
- Single-port design, optimized for data center class workloads
- Consistent performance and reliability for demanding 24x7 environments
- Designed for high-density storage deployments
- Power loss protection (PLP) and end-to-end data correction
- Security options: SIE, SED[1][2][3][4]

Key Applications

- Hyperscale
- IoT and big data analytics
- Online transaction processing (OLTP) (transactional and relational databases)
- Virtualized environments
- Streaming media and content delivery networks

Specifications

Base Model Number	KCD81RUG960G	KCD81RUG1T92	KCD81RUG3T84	KCD81RUG7T68	KCD81RUG15T3
SIE Model Number	KCD8XRUG960G	KCD8XRUG1T92	KCD8XRUG3T84	KCD8XRUG7T68	KCD8XRUG15T3
SED Model Number	KCD8DRUG960G	KCD8DRUG1T92	KCD8DRUG3T84	KCD8DRUG7T68	KCD8DRUG15T3
Capacity	960 GB	1,920 GB	3,840 GB	7,680 GB	15,360 GB
Basic Specifications					
Form Factor	2.5-inch, 15mm height				
Interface	PCIe® 4.0, NVMe™ 1.4				
Maximum Interface Speed	64 GT/s (PCIe® Gen4 x4)				
Flash Memory Type	BiCS FLASH™ TLC				

Specifications (Continued)

Capacity	960 GB	1,920 GB	3,840 GB	7,680 GB	15,360 GB
Performance in single port (x4) mode (Up to)					
Sustained 128 KiB Sequential Read	7,200 MB/s			7,100 MB/s	6,600 MB/s
Sustained 128 KiB Sequential Write	1,800 MB/s	3,500 MB/s	3,800 MB/s	6,000 MB/s	
Sustained 4 KiB Random Read	1,000K IOPS	1,250K IOPS		1,150K IOPS	1,050K IOPS
Sustained 4 KiB Random Write	80K IOPS	150K IOPS	195K IOPS	200K IOPS	195K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %				
Power Consumption (Active)	11 W typ.	13 W typ.	14 W typ.	19 W typ.	20 W typ.
Power Consumption (Ready)	5 W typ.				
Reliability					
MTTF	2,500,000 hours				
Warranty	5 years				
DWPD	1				
Dimensions					
Height	15 mm +0 / -0.5 mm				
Width	69.85 mm ± 0.25 mm				
Length	100.45 mm Max				
Weight	130 g Max				
Environmental					
Temperature (Operating) Tsmart	0 °C to 75 °C				0 °C to 74 °C
Temperature (Non-operating)	-40 °C to 85 °C				
Humidity (Operating)	5 % to 95 % R.H.				
Vibration (Operating)	21.27 m/s² { 2.17 Grms } (5 Hz to 800 Hz)				
Shock (Operating)	9.8 km/s² { 1,000 G } (0.5 ms)				

Definition of capacity: KIOXIA Corporation defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^30 = 1,073,741,824 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

GT/s: Giga Transfers per second.

A kibibyte (KiB) means 2^10, or 1,024 bytes.

MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.

DWPD: Drive Writes Per Day. One full drive write per day means the drive can be written and re-written to full capacity once a day every day for the specified lifetime. Actual results may vary due to system configuration, usage and other factors.

Read and write speed may vary depending on various factors such as host devices, software (drivers, OS etc.), and read/write conditions.

IOPS: Input Output Per Second (or the number of I/O operations per second).

Tsmart: Composite temperature reported by SMART

[1] The Sanitize Instant Erase (SIE), Self-Encrypting Drive (SED) optional models are available.

[2] SIE option supports Crypto Erase, which is a standardized feature defined by NVM Express Inc.

[3] SED supports TCG Opal and Ruby SSCs. It has a few unsupported TCG Opal features. For more details, please make inquiries through "Contact us" in each region's website, https://www.kioxia.com/

[4] Optional security feature compliant drives are not available in all countries due to export and local regulations.

All information provided in this catalog is subject to change without any prior notice. For the latest and detail specification, please send an inquiry through "Contact us" in each region's website, https://www.kioxia.com/

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