KIOXIA

KIOXIA CD8P-R Series (2.5-inch)

(KCD81PUG/KCD8XPUG/KCD8DPUG)

Data Center NVMe™ Read Intensive SSD

KIOXIA CD8P-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® 5.0 (32 GT/s x4) interface, the CD8P-R Series SSDs deliver consistent performance up to 2,000K IOPS (random read) and 200K IOPS (random write), and realize 60 % to 80 % increase in sequential read performance when compared to previous generation PCIe® 4.0 SSDs (KIOXIA CD8-R Series).

Featuring KIOXIA BiCS FLASH™ generation 5 TLC flash memory, CD8P-R 2.5-inch form factor SSDs deliver 1 DWPD (Drive Writes Per Day) of endurance and storage capacities up to 30.72 TB, making them well-suited for hyperscale data center applications.

Product image may represent a design model.

Key Features

- PCIe® 5.0, NVMe™ 2.0 specification compliant
- Open Compute Project Datacenter NVMe™ SSD specification v2.0 support (not all requirements)
- Form factor: 2.5-inch, 15 mm thickness
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ generation 5 TLC flash memory
- 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	KCD81PUG30T7	KCD81PUG15T3	KCD81PUG7T68	KCD81PUG3T84	KCD81PUG1T92
SIE Model Number	KCD8XPUG30T7	KCD8XPUG15T3	KCD8XPUG7T68	KCD8XPUG3T84	KCD8XPUG1T92
SED Model Number	KCD8DPUG30T7	KCD8DPUG15T3	KCD8DPUG7T68	KCD8DPUG3T84	KCD8DPUG1T92
Capacity	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Basic Specifications					
Form Factor	2.5-inch, 15mm thickness				
Interface	PCIe® 5.0, NVMe™ 2.0				
Maximum Interface Speed	128 GT/s (PCIe® Gen5 x4)				
Flash Memory Type	BiCS FLASH™ TLC				

Specifications (Continued)

Capacity	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Performance (Up to)					
Sustained 128 KiB Sequential Read	10,000 MB/s	12,000 MB/s			
Sustained 128 KiB Sequential Write	4,900 MB/s	5,500 MB/s			3,500 MB/s
Sustained 4 KiB Random Read	1,600K IOPS	2,000K IOPS		1,900K IOPS	1,600K IOPS
Sustained 4 KiB Random Write	150K IOPS	200K IOPS			150K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %				
Power Consumption (Active)	24 W typ.	23 W typ.	21 W typ.	20 W typ.	18 W typ.
Power Consumption (Ready)	5.5 W typ.	5 W typ.			
Reliability					
MTTF	2,500,000 hours				
Warranty	5 years				
DWPD	1				
Dimensions					
Thickness	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)	0 °C to 72 °C	0 °C to 73 °C		0 °C to 76 °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 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 1 GB = 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).

Temperature (operating): Specified by the composite temperature reported by SMART.

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

[2] SIE optional model supports Crypto Erase, which is a standardized feature defined by the technical committees (SCSI) of INCITS (the InterNational Committee for Information Technology Standards).

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

[4] Security optional models are not available in all countries due to export and local regulations.

All information provided here is subject to change without prior notice.