

KIOXIA CD8-V Series (2.5-inch)

(KCD81VUG/KCD8XVUG/KCD8DVUG)

Data Center NVMe™ Mixed Use SSD

KIOXIA CD8-V Series is a mixed use 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, the CD8-V Series SSDs deliver consistent performance up to 1,250K IOPS (random read) and 380K IOPS (random write).

Featuring KIOXIA 112-layer BiCS FLASH™ 3D TLC flash memory, the CD8-V 2.5-inch form factor SSDs deliver 3 DWPD (Drive Writes Per Day) of endurance and storage capacities up to 12.8 TB in a 2.5-inch form factor, making them well-suited for hyperscale data center applications.



Product image may represent a design model.

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 thickness
- 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	KCD81VUG12T8	KCD81VUG6T40	KCD81VUG3T20	KCD81VUG1T60	KCD81VUG800G
SIE Model Number	KCD8XVUG12T8	KCD8XVUG6T40	KCD8XVUG3T20	KCD8XVUG1T60	KCD8XVUG800G
SED Model Number	KCD8DVUG12T8	KCD8DVUG6T40	KCD8DVUG3T20	KCD8DVUG1T60	KCD8DVUG800G
Capacity	12,800 GB	6,400 GB	3,200 GB	1,600 GB	800 GB

Basic Specifications

Form Factor	2.5-inch, 15mm thickness
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	12,800 GB	6,400 GB	3,200 GB	1,600 GB	800 GB
Performance (Up to)					
Sustained 128 KiB Sequential Read	6,600 MB/s	7,100 MB/s	7,200 MB/s		
Sustained 128 KiB Sequential Write	4,500 MB/s*		3,800 MB/s	3,500 MB/s	1,800 MB/s
Sustained 4 KiB Random Read	1,050K IOPS	1,150K IOPS	1,250K IOPS		1,000K IOPS
Sustained 4 KiB Random Write	380K IOPS		340K IOPS	310K IOPS	160K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %				
Power Consumption (Active)	20 W typ.	19 W typ.	14 W typ.	13 W typ.	11 W typ.
Power Consumption (Ready)	5 W typ.				
Reliability					
MTTF	2,500,000 hours				
Warranty	5 years				
DWPD	3				
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 74 °C	0 °C to 75 °C			
Temperature (Non-operating)	-40 °C to 85 °C				
Humidity (Operating)	5 % to 95 % R.H.				
Vibration (Operating)	21.27 m/s ² { 2.17 Grms } (5 to 800 Hz)				
Shock (Operating)	9.8 km/s ² { 1,000 G } (0.5 ms)				

* Maximum sequential write performance managed for device temperature

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 = 2³⁰ = 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 2¹⁰, 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 (T10) 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.

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