

CD5 Series

(KCD51LUG/KCD5XLUG/KCD5DLUG/KCD5FLUG)

Data Center NVMe™ SSD

The CD5 Series is a read-intensive data center NVMe™ SSD that is optimized to support a broad range of scale-out and cloud applications that include Big Data/IoT, Online Transaction Processing, and Virtualization. CD5 SSDs, with a PCIe® Gen3 x4 interface, deliver consistent performance up to 550K IOPS (random read) and 50K IOPS (random write), with active power consumption of 11-13 W.

Featuring KIOXIA Corporation's 64-layer BiCS FLASH™ 3D TLC memory, CD5 SSDs deliver <1 DWPD (Drive Writes Per Day) of endurance and storage capacities up to 7.68 TB in a 2.5 inch form factor, making them suited for hyperscale data center applications.



Product image may differ from the actual product.

Key Features

- PCIe® Gen3 x4 interface with single port support
- NVMe™ Rev. 1.3a compliant
- Capacities from 960 GB to 7.68 TB
- Up to 550K random read IOPS (single port (1x4) mode)
- Low power consumption of 11-13 W active power
- 2.5 inch small form factor, 15 mm Z-Height
- Power loss protection
- End-to-end data protection
- Sanitize Instant Erase (SIE) option^[1,4]
- Self-encrypting drive (SED) option^[2,4]
- Self-encrypting drive (SED), FIPS 140-2 option^[2,3,4]

Key Applications

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

Specifications

Model Number	KCD51LUG7T68	KCD51LUG3T84	KCD51LUG1T92	KCD51LUG960G
SIE Model Number	KCD5XLUG7T68	KCD5XLUG3T84	KCD5XLUG1T92	KCD5XLUG960G
SED Model Number	KCD5DLUG7T68	KCD5DLUG3T84	KCD5DLUG1T92	KCD5DLUG960G
SED FIPS Model Number	KCD5FLUG7T68	KCD5FLUG3T84	KCD5FLUG1T92	KCD5FLUG960G
Physical				
Capacity	7,680 GB	3,840 GB	1,920 GB	960 GB
Interface	PCIe® Gen3 x4 ; NVMe™ Rev. 1.3a			
Interface Speed	32 GT/s (Gen3 x4)			
Memory Type	BiCS FLASH™ TLC			

Specifications (Continued)

Capacity	7,680 GB	3,840 GB	1,920 GB	960 GB
Performance in single port (1x4) mode (Up to)				
Sustained 128 KiB Sequential Read	3,140 MB/s			
Sustained 128 KiB Sequential Write	1,980 MB/s	1,520 MB/s	780 MB/s	880 MB/s
Sustained 4 KiB Random Read	550K IOPS	465K IOPS	270K IOPS	305K IOPS
Sustained 4 KiB Random Write	50K IOPS	40K IOPS	20K IOPS	
Power Requirements				
Supply Voltage	12 V ± 10 % 3.3 Vaux ± 15 %			
Power Consumption (Active)	13 W Typ.	12 W Typ.	11 W Typ.	
Reliability				
MTTF	2,500,000 hours			
DWPD	< 1			
Mechanical				
Height	15.0 mm + 0, -0.5 mm			
Width	69.85 ± 0.25 mm			
Length	100.45 mm Max			
Weight	130 g Max.			
Environmental				
Temperature (Operating)	0 °C to 60 °C			
Humidity (Operating)	5 % to 95 % R.H.			
Vibration (Operating)	21.27 m/s ² { 2.17 Grms } (5 to 800 Hz)			
Shock (Operating)	9,800 m/s ² { 1,000 G } (0.5 ms duration)			

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, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

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 Write 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 five years, the stated product warranty period. Actual results may vary due to system configuration, usage and other factors.

Read and write speed, based on the sustained state of SSD, may vary depending on the host device, read and write conditions, and file size.

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

[1] The Sanitize Instant Erase (SIE) option supports Crypto Erase, which is a standardized feature defined by NVM Express Inc.

[2] SED (Self-Encrypting Drive) supports TCG Opal SSC. Unsupported features are included in these series. For more details, please make inquiries through "Contact us" in each region's website, <https://business.kioxia.com/>

[3] FIPS drives are designed to comply with FIPS 140-2 Level 2, which defines security requirements for cryptographic module by NIST (National Institute of Standards and Technology). For the latest certification status of each model, please contact us above.

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

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