KIOXIA

CD6-R Series

(KCD61LUL/KCD6XLUL/KCD6DLUL/KCD6FLUL)
Data Center NVMe™ Read-intensive SSD

The CD6-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 on PCIe® 4.0 and NVMe™ 1.4 technology, the CD6-R Series SSDs deliver consistent performance up to 1M IOPS (random read) and 85 KIOPS (random write), with active power consumption of 13-19 W.

Featuring KIOXIA's 96-layer BiCS FLASH™ 3D TLC memory, CD6-R 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
- Form factor: 2.5-inch, 15 mm Z-height
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ 96-layer 3D TLC memory
- SFF-TA-1001 conformant (U.3), works with Tri-mode controllers and backplanes
- Single-port design, optimized for data center class workloads
- 6th generation, two-die failure recovery and double parity protection
- Consistent performance and reliability for demanding 24x7 environments
- Designed for high-density storage deployments
- Power loss protection (PLP) and end-to-end data correction
- Data security options: SIE, SED, FIPS 140-2 [1, 2, 3, 4, 5]
- Six power mode settings

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

Model Number	KCD61LUL15T3	KCD61LUL7T68	KCD61LUL3T84	KCD61LUL1T92	KCD61LUL960G
SIE Model Number	KCD6XLUL15T3	KCD6XLUL7T68	KCD6XLUL3T84	KCD6XLUL1T92	KCD6XLUL960G
SED Model Number	KCD6DLUL15T3	KCD6DLUL7T68	KCD6DLUL3T84	KCD6DLUL1T92	KCD6DLUL960G
SED FIPS Model Number	KCD6FLUL15T3	KCD6FLUL7T68	KCD6FLUL3T84	KCD6FLUL1T92	KCD6FLUL960G
Capacity	15,360 GB	7,680 GB	3,840 GB	1,920 GB	960 GB
Physical					
Interface Specification	PCIe® 4.0, NVMe™ 1.4				
Interface Speed	64 GT/s (Gen4 x4)				
Memory Type	BiCS FLASH™ TLC				

Specifications (Continued)

Capacity	15,360 GB	7,680 GB	3,840 GB	1,920 GB	960 GB
Performance in single port (1x4) mode (Up to)					
Sustained 128 KiB Sequential Read	5,500 MB/s	6,200 MB/s		5,800 MB/s	
Sustained 128 KiB Sequential Write	4,000 MB/s		2,350 MB/s	1,150 MB/s	1,300 MB/s
Sustained 4 KiB Random Read	750,000 IOPS	1,000,000 IOPS		700,000 IOPS	
Sustained 4 KiB Random Write	30,000 IOPS	85,000 IOPS	60,000 IOPS	30,000 IOPS	
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 Vaux ± 15 %				
Power Consumption (Active)	19 W Typ.		15 W Typ.	13 W Typ.	
Power Consumption (Ready)	5.0 W Typ.				
Reliability					
MTTF	2,500,000 hours				
Warranty	5 years				
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 70 °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 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, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

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 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 the specified lifetime. Actual results may vary due to system configuration, usage and other factors.

Read and write speeds 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)

[1] The Sanitize Instant Erase (SIE), Self-Encrypting Drive (SED), FIPS (Federal Information Processing Standards) 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://business.kioxia.com/

[4] FIPS drives are designed to comply with FIPS 140-2 Level 2, which define security requirements for cryptographic module by NIST (National Institute of Standards and Technology). For the latest validation status of each model, please contact us in each region’s website, https://business.kioxia.com/

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

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