

# 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 Corporation'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
- 6<sup>th</sup> 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 <sup>[1, 2, 3, 4, 5]</sup>
- 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       |
| <b>Physical</b>         |                      |              |              |              |              |
| 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     |
|--|--|----------------|-------------|--------------|------------|
| <b>Performance in single port (1x4) mode (Up to)</b> |  |                |             |              |            |
| 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  |            |
| <b>Power Requirements</b>                            |  |                |             |              |            |
| 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.   |                |             |              |            |
| <b>Reliability</b>                                   |  |                |             |              |            |
| MTTF   | 2,500,000 hours  |                |             |              |            |
| Warranty   | 5 years  |                |             |              |            |
| DWPD   | 1  |                |             |              |            |
| <b>Mechanical</b>                                    |  |                |             |              |            |
| Height   | 15.0 mm + 0, - 0.5 mm                                  |                |             |              |            |
| Width  | 69.85 ± 0.25 mm  |                |             |              |            |
| Length   | 100.45 mm Max  |                |             |              |            |
| Weight   | 130 g Max  |                |             |              |            |
| <b>Environmental</b>                                 |  |                |             |              |            |
| Temperature (Operating)                              | 0 °C to 70 °C  |                |             |              |            |
| Humidity (Operating)                                 | 5 % to 95 % R.H.                                       |                |             |              |            |
| Vibration (Operating)                                | 21.27 m/s <sup>2</sup> { 2.17 Grms } ( 5 to 800 Hz )   |                |             |              |            |
| Shock (Operating)                                    | 9,800 m/s <sup>2</sup> { 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 = 2<sup>30</sup> = 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<sup>10</sup>, 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 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] KIOXIA FIPS drives utilize a security module designed to comply with FIPS 140-2 Level 2 and FIPS 140-3 Level 2, which define security requirements for cryptographic module by NIST (National Institute of Standards and Technology). For the latest validation status, please make inquiries through "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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