KIOXIA

KIOXIA CM7-R Series (2.5-inch)

(KCMY1RUG/KCMYXRUG/KCMYDRUG/KCMYFRUG)

Enterprise NVMe™ Read Intensive SSD

KIOXIA CM7-R Series is a read intensive SSD that is optimized to support a broad range of enterprise applications and associated workloads, including business intelligence, online transaction processing, and software defined storage and virtualization. Built on PCIe® 5.0 and NVMe™ 2.0 technology, the CM7 Series SSDs deliver excellent performance up to 2,700K IOPS (random read) and 310K IOPS (random write).

Featuring KIOXIA 112-layer BiCS FLASH™ 3D TLC flash memory, the CM7-R Series of enterprise NVMe™ SSDs deliver 1 DWPD (Drive Writes Per Day) of endurance and support storage capacities up to 30.72 TB, making them ideally suited for read intensive enterprise 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 112-layer BiCS FLASH™ 3D TLC
- SFF-TA-1001 conformant (U.3)
- Dual-port design for high availability applications
- High performance with lower power consumption
- Power loss protection (PLP) and end-to-end data protection
- Suited for 24x7 enterprise workloads
- Security options: SIE, SED, FIPS SED [1, 2, 3, 4, 5]

Key Applications

- Software defined storage and virtualization
- Data warehousing
- Online transaction processing (OLTP) (transactional and relational databases)
- Business intelligence
- Artificial intelligence and machine learning

Specifications

Base Model Number	KCMY1RUG30T7	KCMY1RUG15T3	KCMY1RUG7T68	KCMY1RUG3T84	KCMY1RUG1T92
SIE Model Number	KCMYXRUG30T7	KCMYXRUG15T3	KCMYXRUG7T68	KCMYXRUG3T84	KCMYXRUG1T92
SED Model Number	KCMYDRUG30T7	KCMYDRUG15T3	KCMYDRUG7T68	KCMYDRUG3T84	KCMYDRUG1T92
FIPS SED Model Number	KCMYFRUG30T7	KCMYFRUG15T3	KCMYFRUG7T68	KCMYFRUG3T84	KCMYFRUG1T92
Capacity	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Basic Specifications					
Form Factor	2.5-inch, 15 mm thickness				
Interface	PCIe® 5.0, NVMe™ 2.0				
Maximum Interface Speed	128 GT/s (PCIe® Gen5 single x4, dual x2)				
Flash Memory Type	BiCS FLASH™ TLC				

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Specifications (Continued)

Capacity	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Performance in single port (1x4) mode (Up to)					
Sustained 128 KiB Sequential Read	10,000 MB/s	14,000 MB/s			
Sustained 128 KiB Sequential Write	4,900 MB/s	7,000 MB/s	6,750 MB/s		3,500 MB/s
Sustained 4 KiB Random Read	1,600K IOPS	2,400K IOPS	2,450K IOPS	2,700K IOPS	2,000K IOPS
Sustained 4 KiB Random Write	150K IOPS	300K IOPS		310K IOPS	155K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %				
Power Consumption (Active)	25 W typ.				22 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	15.0 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/s^2 { 2.17 Grms } (5 to 800 Hz)				
Shock (Operating)	9.8 km/s^2 { 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 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, 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), Self-Encrypting Drive (SED) and FIPS (Federal Information Processing Standards) 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] FIPS SED optional model utilizes a security module designed to comply with FIPS 140-3, which defines 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://www.kioxia.com/.

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

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