KIOXIA

KIOXIA CM9-R Series (E3.S)

(KCM9XRJE/KCM9DRJE/KCM9FRJE)

Enterprise NVMe™ Read Intensive SSD

KIOXIA CM9-R Series is a read intensive SSD that is optimized to support a broad range of enterprise applications and associated workloads. Built on PCIe® 5.0 and NVMe™ 2.0 technology, the CM9 Series SSDs deliver excellent performance up to 3,400K IOPS (random read) and 540K IOPS (random write).

CM9-R E3.S form factor SSDs deliver 1 DWPD (Drive Writes Per Day) of endurance, making them ideally suited for read intensive enterprise applications, featuring KIOXIA BiCS FLASH™ 3D TLC flash memory generation 5 (for 1.92 TB and 3.84 TB models) and generation 8 (for 7.68 TB, 15.36 TB and 30.72 TB models).

Product image may represent a design model.

Key Features

- PCIe® 5.0, NVMe™ 2.0 specification compliant
- Open Compute Project Datacenter NVMe™ SSD specification v2.5 support (not all requirements)
- Form factor: E3.S, 7.5 mm thickness
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ 3D TLC flash memory generation 5 and generation 8
- Dual-port design optimized 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

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

Specifications

SIE Model Number	KCM9XRJE30T7	KCM9XRJE15T3	KCM9XRJE7T68	KCM9XRJE3T84	KCM9XRJE1T92
SED Model Number	KCM9DRJE30T7	KCM9DRJE15T3	KCM9DRJE7T68	KCM9DRJE3T84	KCM9DRJE1T92
FIPS SED Model Number	KCM9FRJE30T7	KCM9FRJE15T3	KCM9FRJE7T68	KCM9FRJE3T84	KCM9FRJE1T92
Capacity	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Basic Specifications					
Form Factor	E3.S				
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				

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	13,500 MB/s	14,800 MB/s		14,500 MB/s	
Sustained 128 KiB Sequential Write	9,750 MB/s	11,000 MB/s	10,000 MB/s	7,000 MB/s	3,600 MB/s
Sustained 4 KiB Random Read	2,750K IOPS	3,400K IOPS		2,900K IOPS	2,050K IOPS
Sustained 4 KiB Random Write	270K IOPS	540K IOPS	500K IOPS	360K IOPS	170K IOPS
Power Requirements					
Supply Voltage	12 V ± 10 %, 3.3 V ± 15%				
Power Consumption (Active)	25W typ.				
Power Consumption (Ready)	5W typ.				
Reliability					
MTTF	2,500,000 hours				
Warranty	5 years				
DWPD	1				
Dimensions					
Thickness	7.5 mm +0.2 / -0.5 mm				
Width	76 mm ± 0.25 mm				
Length	112.75 mm ± 0.4 mm				
Weight	110 g Max				
Environmental					
Temperature (Operating)	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)				

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 1TB = 2^40 bytes = 1,099,511,627,776 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 under the specified workload 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 Cryptographic Erase, which is a standardized feature defined by the technical committees (SCSI) 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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