KIOXIA

KIOXIA CM9-R Series (2.5-inch)

(KCM9XRUL/KCM9DRUL/KCM9FRUL)

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 2.5-inch form factor SSDs delivery 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, 30.72 TB and 61.44 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: 2.5-inch, 15 mm thickness
- Proprietary KIOXIA architecture: controller, firmware and BiCS FLASH™ 3D TLC flash memory generation 5 and generation 8
- SFF-TA-1001 conformant (U.3)
- 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 (for U.2 hosts)

SIE Model Number	KCM9XRUL61T4	KCM9XRUL30T7	KCM9XRUL15T3	KCM9XRUL7T68	KCM9XRUL3T84	KCM9XRUL1T92
SED Model Number	KCM9DRUL61T4	KCM9DRUL30T7	KCM9DRUL15T3	KCM9DRUL7T68	KCM9DRUL3T84	KCM9DRUL1T92
FIPS SED Model Number	KCM9FRUL61T4	KCM9FRUL30T7	KCM9FRUL15T3	KCM9FRUL7T68	KCM9FRUL3T84	KCM9FRUL1T92
Capacity	61,440 GB	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					

Specifications (Continued)

Capacity	61,440 GB	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	10,000 MB/s	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	1,200K IOPS	2,750K IOPS	3,400K IOPS		2,900K IOPS	2,050K IOPS
Sustained 4 KiB Random Write	100K IOPS	300K 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	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 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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