KIOXIA

KIOXIA CD9P-R Series (2.5-inch)

(KCD9XPUG/KCD9DPUG)

Data Center NVMe™ Read Intensive SSD

KIOXIA CD9P-R Series is a read intensive data center NVMe™ SSD that is optimized to support a broad range of scale-out and cloud applications. Built with a PCIe® 5.0 (32 GT/s x4) interface, the CD9P-R Series SSDs deliver consistent performance up to 2,600K IOPS (random read) and 450K IOPS (random write).

CD9P-R 2.5-inch form factor SSDs deliver 1 DWPD (Drive Writes Per Day) of endurance, making them well-suited for hyperscale data center 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
- Single-port design optimized for data center class workloads
- Consistent performance and reliability for demanding 24x7 environments
- Designed for high-density storage deployments
- Power Loss Protection (PLP) and End-to-End Data Protection
- Security options: SIE, SED[1][2][3][4]

Key Applications

- Hyperscale
- IoT and big data analytics
- Online transaction processing (OLTP) (transactional and relational databases)
- Streaming media and content delivery networks
- Virtualized environments

Specifications

SIE Model Number	**KCD9XPUG61T4**	**KCD9XPUG30T7**	**KCD9XPUG15T3**	**KCD9XPUG7T68**	**KCD9XPUG3T84**	**KCD9XPUG1T92**
SED Model Number	**KCD9DPUG61T4**	**KCD9DPUG30T7**	**KCD9DPUG15T3**	**KCD9DPUG7T68**	**KCD9DPUG3T84**	**KCD9DPUG1T92**
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)					
Flash Memory Type	BiCS FLASH™ TLC					

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Specifications (Continued)

Capacity	61,440 GB	30,720 GB	15,360 GB	7,680 GB	3,840 GB	1,920 GB
Performance (Up to)						
Sustained 128 KiB Sequential Read	13,500 MB/s		14,800 MB/s		14,500 MB/s	
Sustained 128 KiB Sequential Write	7,000 MB/s					3,600 MB/s
Sustained 4 KiB Random Read	1,200K IOPS	2,600K IOPS				2,000K IOPS
Sustained 4 KiB Random Write	100K IOPS	300K IOPS	450K IOPS		320K IOPS	160K IOPS
Power Requirements						
Supply Voltage	12 V ± 10 %, 3.3 V ± 15 %					
Power Consumption (Active)	23W typ.					
Power Consumption (Ready)	5W typ.					
Reliability						
MTTF	2,500,000 hours					
Warranty	5 years					
DWPD	1					
Dimensions						
Thickness	15 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 1 GB = 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) and Self-Encrypting Drive (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] Security optional models are not available in all countries due to export and local regulations.

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