

# PM5-R Series End of Sales

## (KPM51RUG/KPM5XRUG/KPM5VRUG/KPM5WRUG)

### Enterprise Read Intensive SSD

PM5-R 12.0 Gbit/s enterprise SAS SSD is optimized for read intensive applications, including web services, data warehousing, media streaming and video on demand. The Series provides high levels of performance, reliability and endurance, and is designed to minimize total cost of ownership.

Featuring KIOXIA Corporation's 64-layer BiCS FLASH™ 3D memory, this 5th generation enterprise SAS SSD PM5-R Series offers 1 DWPD (Drive Write Per Day) with capacities up to 15.36 TB.



Product image may differ from the actual product.

## Key Features

- 12.0 Gbit/s SAS interface with single/dual port and MultiLink SAS™ support
- Capacities from 480 GB to 15.36 TB
- T10 Multi-Stream Write support
- Up to 385K random read IOPS (4 KiB) in dual port mode
- 2.5 inch form factor, 15 mm Z-Height
- 1 DWPD with 100 % Random Write Workload
- Power-Loss-Protection and End-to-End Data Protection including T10 DIF
- Pin-3 Power Disable Support
- Sanitize Instant Erase (SIE) option<sup>[1, 4, 5]</sup>
- Self-Encrypting (SED) option<sup>[2, 4, 5]</sup>
- Self-Encrypting (SED), FIPS 140-2 validated option<sup>[2, 3, 4, 5]</sup>
- 5-year limited warranty

## Key Applications

- Media streaming
- Data warehousing
- Web servers
- Video on demand (VOD)

## Specifications

| Model Number          | KPM51RUG15T3                                       | KPM51RUG7T68 | KPM51RUG3T84 | KPM51RUG1T92 | KPM51RUG960G | KPM51RUG480G |
|-----------------------|--|--------------|--------------|--------------|--------------|--------------|
| SIE Model Number      | KPM5XRUG15T3                                       | KPM5XRUG7T68 | KPM5XRUG3T84 | KPM5XRUG1T92 | KPM5XRUG960G | KPM5XRUG480G |
| SED Model Number      | KPM5VRUG15T3                                       | KPM5VRUG7T68 | KPM5VRUG3T84 | KPM5VRUG1T92 | KPM5VRUG960G | KPM5VRUG480G |
| SED FIPS Model Number | KPM5WRUG15T3                                       | KPM5WRUG7T68 | KPM5WRUG3T84 | KPM5WRUG1T92 | KPM5WRUG960G | KPM5WRUG480G |
| <b>Physical</b>       |  |              |              |              |              |              |
| Capacity              | 15,360 GB  | 7,680 GB     | 3,840 GB     | 1,920 GB     | 960 GB       | 480 GB       |
| Interface             | SAS-3.0  |              |              |              |              |              |
| Interface Speed       | 12.0 Gbit/s , 6.0 Gbit/s , 3.0 Gbit/s , 1.5 Gbit/s |              |              |              |              |              |
| Memory Type           | BiCS FLASH™ TLC                                    |              |              |              |              |              |

## Specifications (Continued)

|  |  |            |           |           |            |            |
|--|--|------------|-----------|-----------|------------|------------|
| Capacity                               | 15,360 GB  | 7,680 GB   | 3,840 GB  | 1,920 GB  | 960 GB     | 480 GB     |
| <b>Performance (in dual port mode)</b> |  |            |           |           |            |            |
| Sustained 128 KiB Sequential Read      | Up to 2,100 MB/s                                       | 2,100 MB/s |           |           |            | 1,470 MB/s |
| Sustained 128 KiB Sequential Write     | Up to 2,100 MB/s                                       | 2,100 MB/s |           |           | 1,260 MB/s | 680 MB/s   |
| Sustained 4 KiB Random Read            | 300K IOPS  | 385K IOPS  | 370K IOPS | 340K IOPS | 270K IOPS  | 180K IOPS  |
| Sustained 4 KiB Random Write           | 35K IOPS   | 55K IOPS   |           |           | 45K IOPS   |            |
| <b>Power Requirements</b>              |  |            |           |           |            |            |
| Supply Voltage                         | 5 V + 10% / -7%   12 V ± 10%                           |            |           |           |            |            |
| Power Consumption (Ready)              | 5.0 W Typ.   |            |           |           |            |            |
| <b>Reliability</b>                     |  |            |           |           |            |            |
| MTTF                                   | 2,500,000 hours  |            |           |           |            |            |
| DWPD                                   | 1  |            |           |           |            |            |
| Warranty                               | 5 years  |            |           |           |            |            |
| <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 60 °C  |            |           |           |            |            |
| Humidity (Operating)                   | 5 % to 95 % R.H. (No condensation)                     |            |           |           |            |            |
| 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 Write 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 the technical committees (T10) of INCITS (the InterNational Committee for Information Technology Standards).

[3] SED option supports TCG Enterprise SSC.

[4] FIPS drives are validated as FIPS 140-2 Level 2, which defines security requirements for cryptographic module by NIST (National Institute of Standards and Technology).

[5] Optional security feature compliant drives are not available in all countries due to export and local regulations.

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