

Data Center DC450R Enterprise Solid-State Drive (SSD)

kingston.com/ssd

Read-centric SSD with exceptional I/O and latency predictability

Kingston's Data Center 450R (DC450R)

is a high performance 6Gbps SATA SSD with 3D TLC NAND, designed for Read Centric application workloads. This streamlined SSD delivers on performance while providing exceptional I/O and latency predictability, a requirement now amongst Data Center Class SSDs. Built to Kingston's strict QoS requirements, the DC450R is designed to ensure performance consistency over a wide range of read intensive and read caching workloads.

Enterprise Data Center SSD

Delivering your business demands for 24/7 uptime and reliability. Kingston's DC450R presents a specifically focused feature set that enable data centers to select the most cost effective SSD for their workload(s). Businesses require results as they deliver on products, solutions and service level agreements (SLA's). Kingston's DC450R is designed to deliver on these expectations.

Read-centric SSD

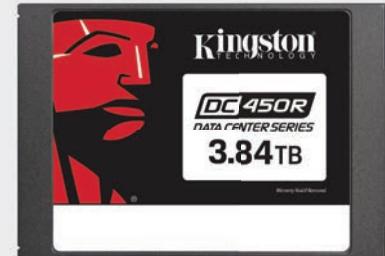
A strategically optimized SSD designed with a streamlined focused feature set for read-centric applications. This enables data centers to select an SSD tailored for workloads without overspending on more expensive write intensive SSDs. It delivers I/O speeds and response times (latency) to ensure high levels of performance in the working application and downstream at the user interface.

Applications

It is ideal for Content Delivery Networks (CDN), edge computing applications and a wide array of software-defined storage architectures. DC450R enables system builders and cloud providers a high performance, low cost SSD standard they can count on. Capacities¹ from 480GB, 960GB, 1.92TB, 3.84TB.

- Content Delivery Networks (CDN)
- Edge Computing
- Cloud Service Providers
- High-speed databases
- SQL server reporting services (SSRS)

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- › Read-centric design for performance in high read applications
 - › Predictable random I/O performance and latencies
 - › Configurable over-provisioning
 - › Streamlined performance to strategically optimize business needs



Features/specs on reverse >>



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FEATURES/ BENEFITS

- > **Read-Centric Applications** — Performance consistency in Edge Computing and CDN applications.
- > **Reduce application latencies** — Database and web-based applications leverage predictable I/O and latency performance.
- > **Data Integrity Protection** — ECC protection with advanced read/disturb management safeguards against data corruption for end-to-end data protection.
- > **Strategically Optimized** — Focused feature set enables data centers to select the most cost effective SSD for their workload(s).

SPECIFICATIONS

- > **Form Factor** 2.5"
- > **Interface** SATA Rev. 3.0 (6Gb/s) – with backwards compatibility to SATA Rev. 2.0 (3Gb/s)
- > **Capacities**¹ 480GB, 960GB, 1.92TB, 3.84TB
- > **NAND** 3D TLC
- > **Self-Encrypting Drive (SED)** AES 256-bit Encryption
- > **Sequential Read/Write**
480GB – 560MBs/510MBs 960GB – 560MBs/530MBs
1.92TB – 560MBs/530MBs 3.84TB – 560MBs/525MBs
- > **Steady-State 4k Read/Write**
480GB – 99,000/17,000 IOPS 960GB – 98,000/26,000 IOPS
1.92TB – 99,000/28,000 IOPS 3.84TB – 99,000/26,000 IOPS
- > **Quality of Service (Latency)**^{2,3,4} - TYP Read/Write: <500 µs / <2 ms
- > **Hot-Plug Capable**
- > **Static and Dynamic Wear Leveling**
- > **Power Loss Protection (Power Caps)** No
- > **Enterprise SMART tools** Reliability tracking, usage statistics, SSD life remaining, wear leveling, temperature
- > **Endurance DC450R**
480GB — 285TB (0.3 DWPD/5yrs)⁵ 960GB — 582TB (0.3 DWPD/5yrs)⁵
1.92TB — 1301TB (0.3 DWPD/5yrs)⁵ 3.84TB — 2823TB (0.4 DWPD/5yrs)⁵
- > **Power Consumption**
480GB: Idle: 1.05W Average Read: 1.25W Average Write: 3.03W
 Max Read: 1.25W Max Write: 4W
960GB: Idle: 1.15W Average Read: 1.3W Average Write: 3.18W
 Max Read: 1.3W Max Write: 4.25W
1.92TB: Idle: 1.22W Average Read: 1.42W Average Write: 3.44W
 Max Read: 1.42W Max Write: 4.5W
3.84TB: Idle: 1.3W Average Read: 1.48W Average Write: 3.93W
 Max Read: 1.48W Max Write: 5.5W
- > **Storage temperature** -40°C ~ 85°C
- > **Operating temperature** 0°C ~ 70°C
- > **Dimensions** 69.9mm x 100mm x 7mm
- > **Weight** 92.34g
- > **Vibration operating** 2.17G Peak (7–800Hz)
- > **Vibration non-operating** 20G Peak (10–2000Hz)
- > **MTBF** 2 million hours
- > **Warranty/support**⁶ Limited 5-year warranty with free technical support



PART NUMBERS

SEDC450R/480G
SEDC450R/960G
SEDC450R/1920G
SEDC450R/3840G

The cryptographic functionalities, mentioned in the present section, are implemented in the firmware of the product. The cryptographic functions of the firmware can only be changed during the manufacturing process and cannot be changed by a regular user. The product is designed for installation by the user by following the step-by-step instruction from the installation user guide, supplied with the product, and, thereby, can be used without further substantial support of the supplier.

1. Some of the listed capacity on a Flash storage device is used for formatting and other functions and thus is not available for data storage. As such, the actual available capacity for data storage is less than what is listed on the products. For more information, go to kingston.com/flashguide.
2. Workload based on FIO, Random 4KB QD=1 workload, measured as the time taken for 99.9 percentile of commands to finish the round-trip from host to drive and to host.
3. Measurement taken once the workload has reached steady state but including all background activities required for normal operation and data reliability.
4. Based on 960GB capacity.
5. Drives Writes Per Day (DWPD) derived from the JEDEC Enterprise Workload (JESD219A).
6. Limited warranty based on 5 years or SSD "Life Remaining" which can be found using the Kingston SSD Manager (kingston.com/SSDManager). A new, unused product will show a wear indicator value of one hundred (100), whereas a product that has reached its endurance limit of program erase cycles will show a wear indicator value of one (1). See kingston.com/wa for details.



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TECHNOLOGY