

Z-Drive PCI Express Storage Solutions



Z-Drive R4 C Series Solid State Drives

C Series at a Glance

- Innovative storage system that melds hardware & software managed solutions with integrated proprietary technology
- Cost-effective MLC-based design with best-in-class endurance
- Advanced feature-set includes user-selectable data recovery & non-stop modes
- Available in half height and full height configurations

The Pinnacle of Storage Performance

- Delivers the performance of thousands of hard disk drives in a single server
- Eliminates I/O and bandwidth bottlenecks
 - Up to 2,800 MB/s and 500,000 IOPS (per SuperScale controller)

Proprietary Virtualized Controller Architecture (VCA) 2.0

- Multifaceted virtualization layer that interfaces with host system
- Enables TRIM, SCSI unmap, & SMART monitoring for system administrators

SuperScale Storage Accelerator Unique to OCZ

- Facilitates scalable performance in enterprise & datacenter applications
- Unique complex command queuing structure plus queue balancing algorithms
- Provides highly efficient performance aggregation while reducing the burden on host resources

Superior Reliability, Endurance, & Security Features

- · Data fail recovery ensures superior reliability
- · Intelligent block management & wear-leveling for increased endurance
- · Advanced security with 256-bit AES encryption support
- Strong error correction for enhanced data integrity

KEY DIFFERENTIATORS:

- Highest performing enterprise PCle solution on the market
- Merges the best features of pure hardware and software based approaches to data management and overcomes the inherent weaknesses of both
- Bootable as a direct-attach device
- Ultra-high endurance for enterprise applications (increases drive life by more that 5x the rated P/E cycles of the NAND)
- Only PCle drive with complete power fail protection & drive-level recovery (R Series)
- Maintains user-configurable flexibility not found in other devices
- Only virtualization layer in the industry with TRIM and SCSI unmap support

enterprise



PHYSICAL	CM84 Edition	CM88 Edition
Usable Capacities (IDEMA)	300GB, 600GB, 1.2TB	800GB, 1.6TB, 3.2TB
NAND Components	Multi-Level Cell (MLC)	Multi-Level Cell (MLC)
Interface	PCI Express Gen. 2 x8	PCI Express Gen. 2 x8
Form Factor	PCIe half height, half length compliant	PCIe full height, ¾ length compliant
Storage Controller	OCZ SuperScale	OCZ SuperScale
NAND Controller	SandForce® 2281 x 4	SandForce® 2281 x 8
Dimensions (L x W x H)	168.55 x 68.91 x 17.14 mm	242 x 98.4 x 17.14 mm
Weight	119g	262g
DEDECRMANCE		

PERFORMANCE					
Max Read	up to 2,000 MB/s	up to 2,800 MB/s			
Max Write	up to 2,000 MB/s	up to 2,800 MB/s			
Random Write Operations (4kB)	250,000 IOPS	410,000 IOPS			
Random Write Operations (8kB)	160,000 IOPS	275,000 IOPS			
Maximum IOPS	260,000 IOPS	500,000 IOPS			

ENVIRONMENTAL		
Power Consumption	Idle: 14.5 W Active: 16 W	Idle: 23 W Active: 26 W
Operating Temperature	0°C ~ 70°C	0°C ~ 70°C
Storage Temperature	-45°C ∼ 85°C	-45°C ∼ 85°C
Certifications	RoHS, CE, FCC	RoHS, CE, FCC

RELIABILITY/SECURITY	
Data Fail Recovery	Recovers data from up to one NAND flash block per NAND controller
Data Path Protection	ECC: Up to 55 bits correctable per 512-byte sector; Data path parity protection
Data Reliability	Read unrecoverable bit error rate (UBER) 10e-16
Data Encryption	128-bit & 256-bit AES-compliant
Product Health Monitoring	SMART support

COMPATIBILITY	
PCI Express	PCI Express x8 or x16 slot; Fully compliant with the PCI Express Electromechanical Specification Rev. 2.0, and PCI Express Base Specification Rev. 2.0
Operating System	Windows 7 32-bit and 64-bit; Windows Server 2008; Linux Red Hat Enterprise 6.1
Power Requirements	PCI Express 12V & 3.3V

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ADDITIONAL FEATURES				
Flash Virtualization Layer	OCZ VCA (Virtualized Controller Architecture) 2.0			
Performance Optimization	TRIM/SCSI unmap (requires OS support)			
Service & Support	3-Year Warranty; Dedicated FAE/FSE support (includes PM/engineer support through validation cycle)			

Dramatically Accelerating Enterprise Applications

The OCZ Z-Drive R4 Series represents a turning point in the evolution of PCIe attached solid state storage by merging the best feature sets of both the pure hardware and pure software based approaches to data management. Designed and manufactured for a wide range of enterprise environments including cloud computing and data centers, the Z-Drive R4 features OCZ's Virtualized Controller Architecture (VCA) 2.0, providing the utmost in performance, flexibility, durability and enhanced reliability, allowing data centers to rely on a PCIe-based SSD as their primary tier one storage solution for the first time. Additionally, the Z-Drive R4's level of concentrated performance enables system architects to design more productive infrastructures while lowering operating costs associated with hard drive technology.

VCA 2.0 supports the industry standard SCSI command set and, among a litany of other things, provides highly efficient performance aggregation due to our proprietary Complex Command Queuing Structure (CCQS), that handles balancing with OCZ's unique Queue Balancing Algorithm, that extends the NAND flash life at a block level, manages redundancy, and is the software interface with the host system.

Z-Drives integrate seamlessly with servers at the system bus and kernel level, creating a new flash memory tier and dramatically increasing throughput and application performance all while slashing capital and operating costs.

CM88 - Full Height Form Factor



CM84 – Half Height Form Factor



PRODUCT		CAPACITY		ORDERING		
NAME	FORM FACTOR	RAW	IDEMA	WRITE ENDURANCE*	PART NUMBER	UPC
Z-Drive R4 CM84	Half Height	384GB	300GB	Up to 7.5PB	ZD4CM84-HH-300G	842024027256
Z-Drive R4 CM84	Half Height	768GB	600GB	Up to 15PB	ZD4CM84-HH-600G	842024027263
Z-Drive R4 CM84	Half Height	1536GB	1200GB	Up to 30PB	ZD4CM84-HH-1.2T	842024027270
Z-Drive R4 CM88	Full Height	960GB	800GB	Up to 20PB	ZD4CM88-FH-800G	842024027348
Z-Drive R4 CM88	Full Height	1920GB	1600GB	Up to 40PB	ZD4CM88-FH-1.6T	842024027355
Z-Drive R4 CM88	Full Height	3840GB	3200GB	Up to 80PB	ZD4CM88-FH-3.2T	842024027362

^{*} JEDEC Specification

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