WD Se

Datacenter Capacity HDD

Optimal Storage for NAS and Scale-Out Architectures

WD's Se hard drives provide an ideal solution for scale-out datacenters, delivering a cost-effective combination of performance, reliability, and workload capability while maintaining the hardiness of a true enterprise-class design. All WD datacenter storage devices are designed from the ground up to deliver optimal performance and maximum data integrity while running 24x7x365 in demanding multi-slot environments.

INTERFACE	WIDTH/HEIGHT	ROTATIONAL SPEED	CAPACITIES
SATA 6 Gb/s	3.5-inch/1-inch	7200 RPM	2 TB to 4 TB

MODEL NUMBERS

WD4000F9YZ
WD3000F9YZ
WD2000F9YZ

Note: Not all products may be available in all regions of the world.

Product Benefits

A pedigree in enterprise
WD, one of the storage industry's pioneers and long-time leaders, has a rich history of manufacturing reliable enterprise storage at an affordable cost. Built on a time-tested, multi-generation platform, with over 28 million terabytes of enterprise-class storage shipped*, WD understands reliable high-quality products are the backbone of your datacenter investment.

Designed for quality and reliability
All drives undergo at least 5 million hours of functional testing, and over 20 million hours of additional testing under actual workloads in actual server and storage systems.

*Quantity shipped reflected as of March 2013.

Dual processor
Twice the processing power to maximize performance.

RAFF™ rotational vibration cancellation technology
Enhanced RAFF technology includes sophisticated electronics to monitor the drive and correct both linear and rotational vibration in real time. The result is a significant performance improvement in high vibration environments over the previous generation of drives.

Dual actuator technology
A head positioning system with two actuators that improves positional accuracy over the data track(s). The primary actuator provides coarse displacement using conventional electromagnetic actuator principles. The secondary actuator uses piezoelectric motion to fine tune the head positioning to a higher degree of accuracy.

StableTrac™
The motor shaft is secured at both ends to reduce system-induced vibration and stabilize platters for accurate tracking during read and write operations.

Multi-axis shock sensor
Automatically detects the subtlest shock events and compensates to protect the data.

RAID-specific, time-limited error recovery (TLER)
Prevents drive fallout caused by the extended hard drive error-recovery processes common to desktop drives.

NoTouch™ ramp load technology
The recording head never touches the disk media ensuring significantly less wear to the recording head and media as well as better drive protection in transit.

Thermal extended burn-in test
Each drive is put through extended burn-in testing with thermal cycling to ensure reliable operation.

Dynamic fly height technology
Each read-write head's fly height is adjusted in real time for optimum reliability.

Applications

Ideal for bulk cloud storage, replicated environments, content delivery networks (CDNs), large-scale network attached storage (NAS), backup and archiving.

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Specifications	4 TB	3 TB	2 TB
Model number	WD4000F9YZ	WD3000F9YZ	WD2000F9YZ
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[1]	4 TB	3 TB	2 TB
User sectors per drive	7,814,037,168	5,860,533,168	3,907,029,168
Native command queuing	Yes	Yes	Yes
Form factor	3.5-inch	3.5-inch	3.5-inch
RoHS compliant[2]	Yes	Yes	Yes
Performance			
Data transfer rate (max) Buffer to host Host to/from drive (sustained)	 6 Gb/s 171 MB/s	 6 Gb/s 168 MB/s	 6 Gb/s 164 MB/s
Cache (MB)	64	64	64
Rotational speed (RPM)	7200	7200	7200
Reliability/Data Integrity			
Load/unload cycles[3]	300,000	300,000	300,000
Non-recoverable read errors per bits read	<10 in 10^{15}	<10 in 10^{15}	<10 in 10^{15}
MTBF (hours)[4]	800,000	800,000	800,000
AFR (%)[4]	1.10	1.10	1.10
Limited warranty (years)[5]	5	5	5
Power Management			
Average power requirements (W) Sequential read Sequential write Random read/write Idle	 9.5 9.1 9.5 8.1	 9.5 9.1 9.5 8.1	 9.5 9.1 9.5 8.1
Environmental Specifications[6]			
Temperature (°C) Operating Non-operating	 5 to 55 -40 to 70	 5 to 55 -40 to 70	 5 to 55 -40 to 70
Shock (Gs) Operating (2 ms, read/write) Operating (2 ms, read) Non-operating (2 ms)	 30 65 300	 30 65 300	 30 65 300
Acoustics (dBA)[7] Idle Seek (average)	 31 34	 31 34	 31 34
Physical Dimensions			
Height (in./mm, max)	1.028/26.1	1.028/26.1	1.028/26.1
Length (in./mm, max)	5.787/147	5.787/147	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	4/101.6
Weight (lb./kg, ± 10%)	1.66/0.75	1.66/0.75	1.66/0.75

[1] As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second. Effective maximum SATA 6 Gb/s transfer rate calculated according to the Serial ATA specification published by the SATA-IO organization as of the date of this specification sheet. Visit www.sata-io.org for details.

[2] WD hard drive products manufactured and sold worldwide after June 8, 2011, meet or exceed Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU.

[3] Controlled unload at ambient condition.

[4] Product MTBF and AFR specifications are based upon a 40°C base casting and system workloads of up to 180 TB/year (workload is defined as the amount of user data transferred to or from the hard drive).

[5] The term of the limited warranty may vary by region. Visit http://support.wd.com/warranty for details.

[6] No non-recoverable errors during operating tests or after non-operating tests.

[7] Sound power level.

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For service and literature:

http://support.wd.com
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