WD RE

SAS Hard Drives

WD RE hard drives are engineered to offer data-hungry SAS storage systems the massive capacity they need without compromising top-of-the-line performance. Advanced reliability and data integrity features allow for 24x7 operation in tightly packed vibration prone multi-drive systems. This uncompromising combination of high-capacity, peak performance and best-in-class reliability make WD RE drives ideal for business critical applications.

INTERFACE
SAS 6 Gb/s

WIDTH/HEIGHT
3.5-inch/1-inch

ROTATIONAL SPEED
7200 RPM

CAPACITIES
1 TB to 4 TB

MODEL NUMBERS
WD4001FYYG
WD3001FYYG
WD2001FYYG
WD1001FYYG

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

Product Benefits

Industry's highest capacity nearline drive
WD RE SAS hard drives are available in capacities ranging from 1 TB to 4 TB to suit even the most demanding storage needs.

Highest performance for business-critical applications
WD RE delivers 6 Gb/s transfer rates, sustained sequential data rates of up to 182 MB/s and high random I/O rates.

Designed for quality and reliability
With a field-tested 1.4 million hour MTBF, this high performance drive delivers the highest level of reliability for 24x7 operation in up to 100% duty cycle applications.

Dual port, full duplex connectivity
Offers higher reliability, performance and data availability by eliminating single points of failure, designed for leading business-critical Enterprise topologies.

Environmentally conscious
In addition to being RoHS compliant, WD RE is built with halogen-reduced components.

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.

Dual stage 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.

Vibration Protection
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.

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

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

Ultra compatible
An ultra-fast 6 Gb/s SAS interface enables easy integration into SAS storage subsystems while delivering twice the interface speed of traditional 3 Gb/s SAS nearline hard drives.

5-year limited warranty

Applications

High-capacity data center storage, storage area networks (SAN), network attached storage (NAS), direct attach storage (DAS), networked surveillance systems and cloud storage.

WD RE

Specifications[1]	4 TB	3 TB	2 TB	1 TB
Model number	WD4001FYYG	WD3001FYYG	WD2001FYYG	WD1001FYYG
Interface	SAS 6 Gb/s	SAS 6 Gb/s	SAS 6 Gb/s	SAS 6 Gb/s
Formatted capacity	4 TB	3 TB	2 TB	1 TB
User sectors per drive	7,814,037,168	5,860,533,168	3,907,029,168	1,953,525,168
SCSI command queuing	Yes	Yes	Yes	Yes
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch
RoHS compliant[2]	Yes	Yes	Yes	Yes
Performance				
Data transfer rate (max) Buffer to host Host to/from drive (sustained)	 6 Gb/s 182 MB/s	 6 Gb/s 175 MB/s	 6 Gb/s 170 MB/s	 6 Gb/s 170 MB/s
Cache (MB)	32	32	32	32
Rotational speed (RPM)	7200	7200	7200	7200
Average drive ready time (sec. from spinup command)	20	20	20	20
Reliability/Data Integrity				
Load/unload cycles[3]	600,000	600,000	600,000	600,000
Non-recoverable read errors per bits read	<10 in 10^{16}	<10 in 10^{16}	<10 in 10^{16}	<10 in 10^{16}
MTBF (hours)[4]	1,400,000	1,400,000	1,400,000	1,400,000
Limited warranty (years)[5]	5	5	5	5
Power Management				
Average power requirements (W) Sequential read Sequential write Random read/write Idle	 11.2 10.9 11.5 9.2	 11.2 10.9 11.5 9.2	 8.7 7.5 9 6.9	 8.7 7.5 9 6.9
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	 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	 30 65 300
Average acoustics (dBA)[7] Idle mode Performance seek mode	 31 34	 31 34	 31 34	 31 34
Physical Dimensions				
Height (in./mm, max)	1.028/26.1	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	5.787/147
Width (in./mm, ± .01 in.)	4/101.6	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	1.66/0.75

[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 SAS 6 Gb/s transfer rate calculated according to the SAS specification published by the INCITS T10 organization as of the date of this specification sheet. Visit www.t10.org for details.

[2] WD hard drive products manufactured and sold worldwide after June 1, 2006, 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] 100% workload at 50°C on base casting.

[5] The term of the limited warranty may vary by region. Visit http://support.wdc.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:
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