WD Re™

Datacenter Capacity HDD

Durable capacity storage for high-availability deployments

WD Re datacenter hard drives offer up to 4 TB capacities and are available with SAS or SATA interface. With the highest error tolerance and MTBF of any capacity-optimized drive, WD Re delivers the durability and 24x7x365 reliability required in tightly packed vibration prone multi-drive systems. The combination of high-capacity, peak performance and robust design make WD Re drives ideal for heavy workload environments, cloud storage, RAID arrays, external storage arrays, data warehousing and mining applications.

HDD Re Durability

INTERFACE	WIDTH/HEIGHT	ROTATIONAL SPEED	CAPACITIES
SATA 6 Gb/s	3.5-inch/1-inch	7200 RPM	250 GB to 4 TB

MODEL NUMBERS

WD4000FYYZ	WD1003FBYZ
WD3000FYYZ	WD5003ABYZ
WD2000FYYZ	WD2503ABYZ
WD200MFYYZ	

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

Product Benefits

Industry's highest capacity nearline drive
Massive capacities up to 4 TB suit even the most demanding datacenter or cloud storage needs.

Designed for heavy application workloads
Designed to handle up to 550 TB per year in any heavy application datacenter with the highest workload capabilities of any WD 3.5 hard drive. Up to 6 Gb/s transfer rates and sustained sequential data rates of up to 182 MB/s, deliver performance and reliability to any datacenter environment.

Designed for quality and reliability
With up to 1.4 million hour MTBF, this high performance drive delivers durability and the highest level of reliability for 24x7x365 operation in the most demanding storage environments.

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.

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. (2 TB and above)

Environmentally responsible
In addition to being RoHS compliant, these drives are built with halogen reduced components.

Self Encrypting Drive (SED) option
Optional secure model for encrypting drives – Utilizing an AES 256 bit encryption engine for Crypto erase capability, WD supports both industry standard commands of the Sanitize Feature Set and also the Security Feature Set which utilizes the Secure Erase Unit (SEU) enhanced mode bit.*

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. (2 TB and above)

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

* SED drives may require TCG-compliant host or controller support. SED drives may not be available in all countries.

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.

Dual processor
Twice the processing power to maximize performance.

Applications

High-performance computing, high-reliability cloud storage, RAID arrays, high-availability external storage arrays, data warehousing and mining.

The WD Advantage

WD puts our datacenter products through extensive Functional Integrity Testing (F.I.T) prior to any product launch. This testing ensures our products consistently meet the high quality and reliability standards of the WD brand. Following a FIT test the Enterprise System Group (ESG) testing validates interoperability with HBAs, operating systems and drivers to ensure an even greater level of quality, reliability and peace of mind.

WD also has a detailed Knowledge Base with helpful articles and software utilities. Our customer support lines have longer operational hours to ensure you get the help you need when you need it. Our toll-free customer support lines are here to help or you can access our WD Support site for additional details.

WD Re

Specifications	4 TB	3 TB	2 TB	2 TB	1 TB	500 GB	250 GB
Model number	WD4000FYYZ	WD3000FYYZ	WD200MFYYZ	WD2000FYYZ	WD1003FBYZ	WD5003ABYZ	WD2503ABYZ
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[1]	4 TB	3 TB	2 TB	2 TB	1 TB	500 GB	251 GB
User sectors per drive	7,814,037,168	5,860,533,168	3,907,029,168	3,907,029,168	1,953,525,168	976,773,168	490,350,672
Native command queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
RoHS compliant[2]	Yes	Yes	Yes	Yes	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	6 Gb/s 164 MB/s	6 Gb/s 128 MB/s	6 Gb/s 128 MB/s	6 Gb/s 128 MB/s
Cache (MB)	64	64	64	64	64	64	64
Rotational speed (RPM)	7200	7200	7200	7200	7200	7200	7200
Reliability/Data Integrity							
Load/unload cycles[3]	600,000	600,000	600,000	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}	<10 in 10^{16}	<10 in 10^{16}	<10 in 10^{16}
MTBF (hours)[4]	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
AFR (%)[4]	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Limited warranty (years)[5]	5	5	5	5	5	5	5
Power Management							
Average power requirements (W) Sequential read Sequential write Random read/write Idle	10.2 9.7 10.9 8.6	10.2 9.7 10.9 8.6	10.2 9.7 10.9 8.6	8.1 7.7 9 6.4	8.2 8.3 8.6 5.9	6.5 6.4 6.3 4.4	6.5 6.4 6.3 4.4
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	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	30 65 300	30 65 350	30 65 350
Acoustics (dBA)[7] Idle Seek (average)	31 34	31 34	31 34	31 34	28 33	27 30	27 30
Physical Dimensions							
Height (in./mm, max)	1.028/26.1	1.028/26.1	1.028/26.1	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	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	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	1.55/0.70	1.49/0.68	0.99/0.45	0.99/0.45

[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 550 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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