WD Gold™

Datacenter Hard Drives

Scale it in gold.

With up to ten times the workload capacity of desktop drives, WD Gold™ hard drives employ advanced technology to deliver among the best in reliability, capacity, power efficiency and performance. Designed for a multitude of Datacenter-specific applications, WD Gold™ hard drives are perfect for high-availability server and storage arrays that demand the most robust storage device available with 24/7 premium customer support.

INTERFACE
SATA 6 Gb/s

WIDTH/HEIGHT
3.5-inch/1-inch

PERFORMANCE CLASS
7200 RPM Class

CAPACITIES
1TB to 10TB

MODEL NUMBERS
WD101KRYZ
WD8002FRYZ
WD6002FRYZ
WD4002FYYZ
WD2005FBYZ
WD1005FBYZ

Product Benefits

Full range of nearline capacities
From entry-level servers to high end enterprise storage systems, WD Gold™ hard drives offer the capacities required for the most demanding datacenter environments.

High workload capability
Delivering both performance and reliability to any datacenter environment, WD Gold™ hard drives are designed to handle workloads up to 550TB per year which is among the highest workload capability of any 3.5-inch hard drive.

High level of reliability
With up to 2.5 million hours MTBF, WD Gold™ hard drives deliver one of the highest levels of reliability and durability for yearly operation (24x7x365) within 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 our desktop hard drives.

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

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

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.

Compatibility testing
All WD Gold™ hard drives are extensively tested across a variety of popular OEM storage systems, SATA controllers, and host bus adapters, to ensure ease of integration for a plug and play solution.

Premium support
Dedicated 24x7 over the phone support is included with every WD Gold™ hard drive.

Applications

Enterprise servers, datacenter environments, enterprise storage systems, data warehousing/mining, enterprise NAS, and high end surveillance systems.

The WD Advantage

WD puts 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 long 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 Gold™

Specifications	10TB	8TB	6TB	4TB	2TB	1TB
512 emulation model number[1]	WD101KRYZ	WD8002FRYZ	WD6002FRYZ			
512 native model number[1]				WD4002FYYZ	WD2005FBYZ	WD1005FBYZ
Logical/Physical bytes per sector	512 / 4096	512 / 4096	512 / 4096	512 / 512	512 / 512	512 / 512
Formatted capacity[2]	10TB	8TB	6TB	4TB	2TB	1TB
512n/512e user sectors per drive	19,532,873,728	15,628,053,168	11,721,045,168	7,814,037,168	3,907,029,168	1,953,525,168
Interface[2]	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Native Command Queuing	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
RoHS compliant[3]	Yes	Yes	Yes	Yes	Yes	Yes
Performance						
Data transfer rate (max)[2] Buffer to host Host to/from drive (sustained)	 6 Gb/s 249 MB/s	 6 Gb/s 205 MB/s	 6 Gb/s 226 MB/s	 6 Gb/s 201 MB/s	 6 Gb/s 200 MB/s	 6 Gb/s 184 MB/s
Cache (MB)	256	128	128	128	128	128
Performance Class	7200 RPM Class	7200 RPM Class	7200 RPM Class	7200 RPM Class	7200 RPM Class	7200 RPM Class
Reliability/Data Integrity						
Load/unload cycles[4]	600,000	600,000	600,000	600,000	600,000	600,000
Non-recoverable read errors per bits read	<1 in 10^{15}	<1 in 10^{15}	<1 in 10^{15}	<1 in 10^{15}	<1 in 10^{15}	<1 in 10^{15}
MTBF (hours)	2,500,000 [5]	2,500,000 [5]	2,000,000 [5]	2,000,000 [5]	2,000,000 [6]	2,000,000 [6]
AFR (%)	0.35 [5]	0.35 [5]	0.44 [5]	0.44 [5]	0.44 [6]	0.44 [6]
Limited warranty (years)[7]	5	5	5	5	5	5
Power Management						
Average power requirements (W) Sequential read Sequential write Random read/write Idle	 7.1 6.7 6.8 5.0	 7.2 7.0 7.4 5.1	 9.3 8.9 9.1 7.1	 9.0 8.7 8.8 7.0	 7.4 7.4 8.1 5.9	 7.4 7.4 8.1 5.9
Environmental Specifications [8]						
Temperature (°C) Operating Non-operating	 5 to 60 -40 to 70	 5 to 60 -40 to 70	 5 to 60 -40 to 70	 5 to 60 -40 to 70	 5 to 60 -40 to 70	 5 to 60 -40 to 70
Shock (Gs) Operating (half-sine wave, 2 ms) Non-operating (half-sine wave)	 70G 300 (1ms)/150 (11ms)	 70G 300 (1ms)/150 (11ms)	 70G 300 (1ms)/150 (11ms)	 70G 300 (1ms)/150 (11ms)	 65G 300 (2ms)	 65G 300 (2ms)
Acoustics (dBA) [9] Idle Seek (average)	 20 36	 20 36	 29 36	 29 36	 25 28	 25 28
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
Length (in./mm, max)	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
Weight (lb/kg, ± 10%)	1.46/0.66	1.43/0.65	1.58/0.715	1.58/0.715	1.41/0.641	1.41/0.641

[1] Not all products may be available in all regions of the world.

[2] 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.

[3] 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.

[4] Controlled unload at ambient condition.

[5] Product MTBF and AFR specifications are based upon a 40°C base casting temperature and typical system workload of 219TB/year. Workload is defined as the amount of user data transferred to or from the hard drive. Product is designed for workloads up to 550TB/year.

[6] Product MTBF and AFR specifications are based upon a 40°C base casting temperature and typical system workload of 300TB/year. Workload is defined as the amount of user data transferred to or from the hard drive. Product is designed for workloads up to 550TB/year.

[7] See http://support.wd.com/warranty for regional specific warranty details.

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

[9] Sound power level.

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For service and literature:
http://support.wdc.com
www.wdc.com

800.ASK.4WDC (800.275.4932)	North America English
800.832.4778	Spanish
+86.21.2603.7560	Asia Pacific
00800.27549338	Europe (toll free where available)
+31.880062100	Europe/Middle East/Africa

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