



# 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  
4TB to 8TB

MODEL NUMBERS  
WD8002FRYZ  
WD6002FRYZ  
WD4002FYYZ

## 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.

### Extended thermal 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 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.



| Specifications                                  | 8TB                    | 6TB                    | 4TB                    |
|---|------------------------|------------------------|------------------------|
| 512 emulation model number <sup>1</sup>         | WD8002FRYZ             | WD6002FRYZ             |                        |
| 512 native model number <sup>1</sup>            |                        |                        | WD4002FYYZ             |
| Logical/Physical bytes per sector               | 512 / 4096             | 512 / 4096             | 512 / 512              |
| Formatted capacity <sup>2</sup>                 | 8TB                    | 6TB                    | 4TB                    |
| 512n/512e user sectors per drive                | 15,628,053,168         | 11,721,045,168         | 7,814,037,168          |
| Interface <sup>2</sup>                          | SATA 6 Gb/s            | SATA 6 Gb/s            | SATA 6 Gb/s            |
| Native Command Queuing                          | Yes                    | Yes                    | Yes                    |
| Form Factor                                     | 3.5-inch               | 3.5-inch               | 3.5-inch               |
| RoHS compliant <sup>3</sup>                     | Yes                    | Yes                    | Yes                    |
| <b>Performance</b>                              |                        |                        |                        |
| Data transfer rate (max) <sup>2</sup>           |                        |                        |                        |
| Buffer to host                                  | 6 Gb/s                 | 6 Gb/s                 | 6 Gb/s                 |
| Host to/from drive (sustained)                  | 205 MB/s               | 226 MB/s               | 201 MB/s               |
| Cache (MB)                                      | 128                    | 128                    | 128                    |
| Performance Class                               | 7200 RPM Class         | 7200 RPM Class         | 7200 RPM Class         |
| <b>Reliability/Data Integrity</b>               |                        |                        |                        |
| Load/unload cycles <sup>4</sup>                 | 600,000                | 600,000                | 600,000                |
| Non-recoverable read errors per bits read       | <1 in 10 <sup>15</sup> | <1 in 10 <sup>15</sup> | <1 in 10 <sup>15</sup> |
| MTBF (hours) <sup>5</sup>                       | 2,500,000              | 2,000,000              | 2,000,000              |
| AFR (%) <sup>5</sup>                            | 0.35                   | 0.44                   | 0.44                   |
| Limited warranty (years) <sup>6</sup>           | 5                      | 5                      | 5                      |
| <b>Power Management</b>                         |                        |                        |                        |
| Average power requirements (W)                  |                        |                        |                        |
| Sequential read                                 | 7.2                    | 9.3                    | 9.0                    |
| Sequential write                                | 7.0                    | 8.9                    | 8.7                    |
| Random read/write                               | 7.4                    | 9.1                    | 8.8                    |
| Idle  | 5.1                    | 7.1                    | 7.0                    |
| <b>Environmental Specifications<sup>7</sup></b> |                        |                        |                        |
| Temperature (°C)                                |                        |                        |                        |
| Operating                                       | 5 to 60                | 5 to 60                | 5 to 60                |
| Non-operating                                   | -40 to 70              | -40 to 70              | -40 to 70              |
| Shock (Gs)                                      |                        |                        |                        |
| Operating (half-sine wave, 2 ms)                | 70G                    | 70G                    | 70G                    |
| Non-operating (half-sine wave)                  | 300 (1ms)/150 (11ms)   | 300 (1ms)/150 (11ms)   | 300 (1ms)/150 (11ms)   |
| Acoustics (dBA) <sup>8</sup>                    |                        |                        |                        |
| Idle  | 20                     | 29                     | 29                     |
| Seek (average)                                  | 36                     | 36                     | 36                     |
| <b>Physical Dimensions</b>                      |                        |                        |                        |
| 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%)                           | 1.43/0.65              | 1.58/0.715             | 1.58/0.715             |

<sup>1</sup> Not all products may be available in all regions of the world.

<sup>2</sup> 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](http://www.sata-io.org) for details.

<sup>3</sup> 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.

<sup>4</sup> Controlled unload at ambient condition.

<sup>5</sup> Product MTBF and AFR specifications are based upon a 40°C base casing 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.

<sup>6</sup> See <http://support.wd.com/warranty> for regional specific warranty details.

<sup>7</sup> No non-recoverable errors during operating tests or after non-operating tests.

<sup>8</sup> Sound power level.

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For service and literature:  
<http://support.wd.com>  
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