



# WD Ae™

## Datcenter Archive HDD

**The cost-effective, energy-efficient HDD cold storage solution.**

The WD Ae hard drive delivers cost-effective, high capacity disk-layer storage for cold data archive systems. These drives are built with features that address the unique requirements of cold data archiving, including an energy-efficient design, long life cycle TCO, and competitive dollars per gigabyte.



### INTERFACE

SATA 6 Gb/s

### FORM FACTOR

3.5-inch

### ROTATIONAL SPEED

5760 RPM

### CAPACITY

6.0 TB

### MODEL NUMBER

WD6001F4PZ

## Product Benefits

### Energy efficient

Reduced media spin lowers power consumption and optimizes the drive's read/write ratio for the rigid requirements of cold storage systems.

### Proven cold storage reliability

With 700 PBs of cold storage deployed in datacenters already,\* WD's 4th generation WD Ae drive utilizes innovative technology to reduce power consumption and lower operating temperature, which results in a more reliable and affordable solution for cold storage data archives.

### Cost-effective capacity storage

Moving cold data to value-optimized archive media delivers significant TCO savings by freeing up expensive performance-critical storage system capacity.

\* Data reflects archive drive shipments as of August 2014.

### Cold data power management

Competitive power management, reduced heat output, and next-generation technologies such as IntelliSeek™ combine to deliver a balance of performance and power perfect for cold data archive storage architectures.

### Quick to ready

Access time to cold data is quickly becoming a critical feature of an on-line archive system and end users can't wait hours or days for this data to become available. The spin-down capability of the WD Ae drive provides much faster access times than conventional archive tape with data access times of less than 20 seconds for on-demand data requests.

### 3D Active Balance™ Plus

Our enhanced dual-plane balance control technology significantly improves the overall drive performance and reliability. Hard drives that are not properly balanced may cause excessive vibration and noise in a multi-drive system, reduce the hard drive life span, and degrade the performance over time.

### 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 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.

### 24x7 dedicated customer support

Every WD Ae hard drive comes with our world-class professional support services including a dedicated 24x7 support line (available in English, other regional support hours vary) and a 3-year limited warranty.

## Applications

The WD Ae hard drive is best suited for cold storage, backup and data archiving where data is stored on disk but rarely if almost never read again yet may be critical at some future point, prime examples being legal data or photo backups.



Specifications <sup>1</sup>	WD6001F4PZ
Formatted capacity <sup>2</sup>	6.0 TB
User sectors per drive	11,721,045,168
Interface	SATA 6 Gb/s
Form factor	3.5-inch
Physical bytes per sector	4096
Host bytes per sector	512
RoHS compliant <sup>3</sup>	Yes
<b>Performance</b>	
Data transfer rate (max) <sup>2</sup>	6 Gb/s
Buffer to host	>150 MB/s
Host to/from drive (sustained)	
Cache (MB)	64
Rotational speed (RPM)	5760
<b>Reliability/Data Integrity</b>	
Load/unload cycles <sup>4</sup>	300,000
Non-recoverable read errors per bits read	<1 in 10 <sup>14</sup>
MTBF (hours) <sup>5</sup>	500,000
Limited warranty (years) <sup>6</sup>	3
<b>Power Management</b>	
Average power requirements (W)	
Sequential read	6.4
Sequential write	6.5
Random read/write	4.9
Idle	4.8
<b>Environmental Specifications</b>	
Temperature (°C)	
Operating	10 to 55
Non-operating	-40 to 70
Shock (Gs)	
Operating (2 ms, read/write)	30
Operating (2 ms, read)	65
Non-operating (2 ms)	300
Acoustics (dBA) <sup>8</sup>	
Idle	25
Seek (average)	28
<b>Physical Dimensions</b>	
Height (in./mm, max)	1.028/26.1
Length (in./mm, max)	5.787/147
Width (in./mm, ± .01 in.)	4/101.6
Weight (lb/kg, ± 3%)	1.58/0.72

<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 casting and a system workload of 60 TB/year (workload is defined as the amount of user data transferred to or from the hard drive).

<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:**

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