



# WD Black™

## PC Hard Drives

WD Black performance storage is designed to enhance your PC experience across heavier computing tasks whether you are a digital artist, video editor, photographer, or gamer. Available with up to 128 MB of DRAM cache on higher capacity models, the WD Black drive is optimized for drive performance so you can spend more time experiencing the things you love most.



### INTERFACE

SATA 6 Gb/s

### FORM FACTOR

3.5-inch

### ROTATIONAL SPEED

7200 RPM

### CAPACITIES

500 GB to 6 TB

### MODEL NUMBERS

WD6001FZWX	WD2003FZEX
WD5001FZWX	WD1003FZEX
WD4003FZEX	WD5003AZEX
WD3003FZEX	

## Product Features

### Inspiring performance and capacity

WD Black performance storage is designed to enhance your PC experience across heavier computing tasks whether you are a digital artist, video editor, photographer, or gamer. Available with an impressive 128 MB of DRAM cache on higher capacity models, the WD Black PC drive is optimized for drive performance so you can spend more time experiencing the things you love most. Enhance your PC's performance even further when you combine a WD Black drive with an SSD for a dual drive configuration, allowing you to benefit from the additional caching of your operating system onto the SSD for increased performance. All together, the WD Black drive gives you the hard drive performance, capacity and an industry leading 5-year limited warranty for an inspiring three-in-one storage solution.

### For Creative Professionals

When it comes to storing your creativity and entire digital portfolio, look no further than WD Black performance storage for your best solution. Use the WD Black drive for storing your large multimedia files of photos, videos, games or applications and programs because with a WD Black drive, you get the best combination of speed, capacity and larger cache sizes.

### For Gamers

The WD Black drive is the perfect storage solution for your gaming machine by offering large capacities to store your game's downloadable content (DLC), larger cache sizes, and it is the perfect compliment for maximum system performance when combined with an SSD. The WD Black drive also includes StableTrac™ Technology (2 TB and larger models) for more accurate data tracking due to vibrations from additional gaming hardware. The WD Black drive also offers a 5-year limited warranty to match or beat your other gaming hardware warranties.

### Increased Reliability

The WD Black drive is equipped with StableTrac Technology (2 TB and larger models) by securing the motor shaft inside to increase reliability and help reduce impact due to system-induced vibrations from other components. By stabilizing the platters inside, the WD Black drive results in more accurate tracking in a particular sector during read and write operations, optimizing performance and reliability.

### Increased DRAM cache

The WD Black drive delivers high-speed transfer speeds and read rates of your files with impressive cache sizes of up to 128 MB of DRAM on our high capacity models. WD's Dynamic Cache Technology improves caching algorithms in real time to allocate and optimize cache between reads and writes. This movement of cache for read data helps to reduce congestion and increase overall performance.

### Efficient dual processing

When it comes to processing power, more is always better especially for loading games or large multimedia files. The WD Black drive features a dual-core processor that offers twice the processing capability as a single-core processor to maximize drive performance for faster read and write speeds.

### Industry-leading 5-year limited warranty

Compared to standard hard drives such as WD Blue™, our WD Black hard drives pass more strenuous and aggressive internal testing over a longer period of time, which is why the WD Black drive is backed by an industry-leading 5-year warranty. Our success combined with innovation, refinement, and our passion for storage, instills confidence in our consumers.

## Applications

- Power computing applications such as video and photo editing, and maxed out gaming computers.
- Desktop / Consumer RAID Environments - WD Black PC Hard Drives are tested and recommended for use in consumer-type RAID applications (RAID 0 and RAID 1).\*

\* Business Critical RAID Environments – WD Black PC Hard Drives are not recommended for and are not warranted for use in RAID environments utilizing Enterprise HBAs and/or expanders and in multi-bay chassis, as they are not designed for, nor tested in, these specific types of RAID applications. For all Business Critical RAID applications, please consider WD's Enterprise Hard Drives that are specifically designed with RAID-specific, time-limited error recovery (TLER), are tested extensively in 24x7 RAID applications, and include features like enhanced RAFF technology and thermal extended burn-in testing.



Specifications	6 TB	5 TB	4 TB	3 TB
Model number <sup>1</sup>	WD6001FZWX	WD5001FZWX	WD4003FZEX	WD3003FZEX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity <sup>2</sup>	6 TB	5 TB	4 TB	3 TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes	Yes
RoHS compliant <sup>3</sup>	Yes	Yes	Yes	Yes
<b>Performance</b>				
Data transfer rate (max)				
Buffer to host	6 Gb/s	6 Gb/s	6 Gb/s	6 Gb/s
Host to/from drive (sustained)	218 MB/s	194 MB/s	171 MB/s	168 MB/s
Cache (MB)	128	128	64	64
Rotational speed (RPM)	7200	7200	7200	7200
<b>Reliability/Data Integrity</b>				
Load/unload cycles <sup>4</sup>	300,000	300,000	300,000	300,000
Non-recoverable read errors per bits read	<1 in 10 <sup>14</sup>			
Limited warranty (years) <sup>5</sup>	5	5	5	5
<b>Power Management</b>				
Average power requirements (W)				
Read/Write	10.6	10.6	9.5	9.5
Idle	7.6	7.6	8.1	8.1
Standby/Sleep	1.6	1.6	1.3	1.3
<b>Environmental Specifications</b>				
Temperature (°C)				
Operating	5 to 55	5 to 55	5 to 55	5 to 55
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)				
Operating (2 ms, write)	30	30	30	30
Operating (2 ms, read)	65	65	65	65
Non-operating (2 ms)	300	300	300	300
Acoustics (dBA)				
Idle	31	31	29	29
Seek (average)	34	34	34	34
<b>Physical Dimensions</b>				
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.)	1.58/0.72 ± 3%	1.66/0.75 ± 3%	1.50/0.68 ± 10%	1.40/0.64 ± 10%

<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 3 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> Maximum burst rate running the Mode 5 Ultra ATA transfer mode.

<sup>5</sup> Controlled unload at ambient condition.

<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.



Specifications	2 TB	1 TB	500 GB
Model number	WD2003FZEX	WD1003FZEX	WD5003AZEX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity <sup>1</sup>	2 TB	1 TB	500 GB
Form factor	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes
RoHS compliant <sup>2</sup>	Yes	Yes	Yes
<b>Performance</b>			
Data transfer rate (max)			
Buffer to host	6 Gb/s	6 Gb/s	6 Gb/s
Host to/from drive (sustained)	164 MB/s	150 MB/s	150 MB/s
Cache (MB)	64	64	64
Rotational speed (RPM)	7200	7200	7200
<b>Reliability/Data Integrity</b>			
Load/unload cycles <sup>3</sup>	300,000	300,000	300,000
Non-recoverable read errors per bits read	<1 in 10 <sup>14</sup>	<1 in 10 <sup>14</sup>	<1 in 10 <sup>14</sup>
Limited warranty (years) <sup>4</sup>	5	5	5
<b>Power Management</b>			
Average power requirements (W)			
Read/Write	9.5	6.8	6.8
Idle	8.1	6.1	6.1
Standby/Sleep	1.3	0.8	0.8
<b>Environmental Specifications<sup>5</sup></b>			
Temperature (°C)			
Operating	5 to 55	0 to 60	0 to 60
Non-operating	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)			
Operating (2 ms, write)	30	30	30
Operating (2 ms, read)	65	65	65
Non-operating (2 ms)	300	350	350
Acoustics (dBA) <sup>6</sup>			
Idle	29	29	29
Seek (average)	34	30	30
<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%)	1.32/0.60	0.99/0.45	0.95/0.43

<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 3 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.

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<sup>4</sup> Maximum burst rate running the Mode 5 Ultra ATA transfer mode.

<sup>5</sup> Controlled unload at ambient condition.

<sup>6</sup> The term of the limited warranty may vary by region. Visit [support.wd.com/warranty](http://support.wd.com/warranty) for details.

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

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

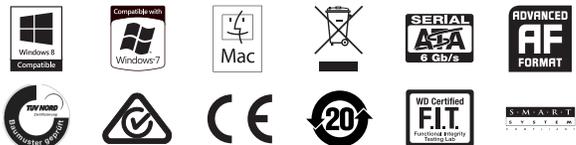
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Learn more about WD Black Desktop hard drives



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