WD BLACK™

Desktop Hard Drives

WD Black hard drives are designed for enthusiasts and creative professionals looking for leading-edge performance. These 3.5-inch desktop drives are perfect for high-performance applications like photo and video editing, gaming and power PCs.

INTERFACE	WIDTH/HEIGHT	ROTATIONAL SPEED	CAPACITIES
SATA 6 Gb/s	3.5-inch/1-inch	7200 RPM	500 GB to 4 TB

MODEL NUMBERS

WD4001FAEX	WD1002FAEX
WD3001FAEX	WD5003AZEX
WD2002FAEX	

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

Product Features

Maximum performance
Sophisticated performance enhancing features deliver the speed you need for demanding applications like photo and video editing and Internet gaming.

No compromises
High performance, high capacity, high reliability, and cutting-edge technology make up WD Black, the ideal drive for those who demand only the best.

Industry-leading warranty
WD Black carries the highest available warranty protection on the market, a 5-year limited warranty.

Dual processor
Twice the processing power to maximize performance.

Dynamic cache
WD's dynamic caching algorithm improves performance in real time by optimizing cache allocation between reads and writes. For example, if there's an overwhelming percentage of read traffic as opposed to write traffic, the drive automatically allocates more cache for read data, which reduces congestion and improves overall drive performance.

Rock-solid mechanical architecture
Enhanced reliability features help protect the drive and the data stored on it.

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.

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 which enables consistently higher performance. (4 TB, 3 TB and 2 TB models only)

Tested for compatibility
We perform tests on hundreds of systems and a multitude of platforms in our FIT Lab™ to give our customers confidence that our drives will work in their systems.

Applications

- Power computing applications such as video and photo editing, and maxed out gaming computers.
- WD Black hard drives are tested and recommended for use in PCs and high-performance workstations. Desktop drives are not recommended for use in RAID environments. Please consider using WD Red™ hard drives for home and small office 1-5 bay NAS systems and WD enterprise hard drives for rackmount and NAS systems with more than 5 bays.*

  * WD hard drives are designed and tested for use in specific applications and environments. This ensures that your hard drive is compatible with and functions properly in your application. Our hard drives are warranted against defects in materials and workmanship in the system for which they were designed. Use in systems other than for what the hard drive was designed could result in compatibility problems that affect proper function, unrelated to material and/or workmanship defects. For best results, be sure to select the appropriate product for your application by consulting our product spec sheets on our website at www.wd.com or by calling our customer support line where we would be happy to help you through the selection process.

The WD Advantage

WD puts our products through extensive Functional Integrity Testing (F.I.T.) prior to any product launch. This testing ensures our products consistently meet the highest quality and reliability standards of the WD brand. WD also has a detailed Knowledge Base with more than 1,000 helpful articles as well as helpful software and 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.

Specifications	4 TB	3 TB	2 TB	1 TB	500 GB
Model number	WD4001FAEX	WD3001FAEX	WD2002FAEX	WD1002FAEX	WD5003AZEX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[1]	4,000,787 MB	3,000,592 MB	2,000,398 MB	1,000,204 MB	500,107 MB
User sectors per drive	7,814,037,168	5,860,533,168	3,907,029,168	1,953,525,169	976,773,168
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes
RoHS compliant[2]	Yes	Yes	Yes	Yes	Yes
Performance					
Data transfer rate (max) Buffer to host Host to/from drive (sustained)	6 Gb/s 154 MB/s	6 Gb/s 154 MB/s	6 Gb/s 138 MB/s	6 Gb/s 126 MB/s	6 Gb/s 150 MB/s
Cache (MB)	64	64	64	64	64
Rotational speed (RPM)	7200	7200	7200	7200	7200
Reliability/Data Integrity					
Load/unload cycles[3]	300,000	300,000	300,000	300,000	300,000
Non-recoverable read errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}
Limited warranty (years)[4]	5	5	5	5	5
Power Management					
Average power requirements (W) Read/Write Idle Standby/Sleep	10.4 8.1 1.2	10.4 8.1 1.2	10.7 8.2 1.3	6.8 6.1 0.7	6.8 6.1 0.8
Environmental Specifications[5]					
Temperature (°C) Operating Non-operating	0 to 60 -40 to 70	0 to 60 -40 to 70	0 to 60 -40 to 70	0 to 60 -40 to 70	0 to 60 -40 to 70
Shock (Gs) Operating (2 ms, write) Operating (2 ms, read) Non-operating (2 ms)	30 65 300	30 65 300	30 65 300	30 65 300	30 65 350
Acoustics (dBA)[6] Idle Seek (average)	29 34	29 34	29 34	28 33	29 30
Physical Dimensions					
Height (in./mm, max)	1.028/25.4	1.028/25.4	1.028/25.4	1.028/25.4	1.028/25.4
Length (in./mm, max)	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
Weight (lb./kg, ± 10%)	1.72/0.78	1.72/0.78	1.66/0.75	1.52/0.69	0.97/0.44

[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 1, 2006, 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] The term of the limited warranty may vary by region. Visit http://support.wd.com/warranty for details.

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

[6] Sound power level.

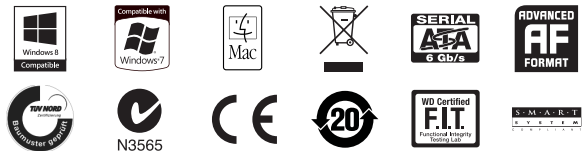**WD Black is part of WD's complete lineup of internal hard drives.**

WD BLUE™ Everyday Storage

WD GREEN™ Cool & Quiet Storage

WD BLACK™ Performance Storage

WD RED™ NAS Storage

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

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North America

Spanish
Asia Pacific
Europe
(toll free where available)
Europe/Middle East/Africa

Learn more about WD Black Desktop hard drives

Windows 8 Compatible
Compatible with Windows 7
Mac
SERIAL ATA 6 Gb/s
ADVANCED AF FORMAT

N3565
CE
20
WD Certified F.I.T. Functional Integrity Testing Lab
S·M·A·R·T SYSTEM

Canada ICES-003 Class B / NMB-003 Classe B

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