WD Red™
NAS Storage

Storage for 1 to 8 bay NAS solutions

WD Red is designed specifically for NAS systems that have 1 to 8 drive bays in both 3.5-inch and 2.5-inch form factors. The drives are designed and extensively tested for compatibility in the unique 24×7 operating environment and for the demanding system requirements of home and small office NAS.



INTERFACE

SATA 6 Gb/s

FORM FACTORS

3.5-inch
2.5-inch

PERFORMANCE CLASS

5400 RPM Class

CAPACITIES

3.5-inch: 1TB to 10TB
2.5-inch: 750GB and 1TB

MODEL NUMBERS

3.5-inch

WD100EFAX
WD80EFZX
WD60EFRX
WD40EFRX
WD30EFRX
WD20EFRX
WD10EFRX

2.5-inch

WD10JFCX
WD7500BFCX

Product Features

Fill your NAS with WD Red, then fill it with awesome.
There's an industry-leading WD Red drive for every compatible NAS system to help fulfill your data storage needs. With drives up to 10TB, WD Red offers a wide array of solutions for customers looking to build the biggest, best-performing NAS storage solution. Built for single-bay to 8-bay NAS systems, WD Red packs the power to store your precious data in one powerhouse unit. With WD Red, you're ready for what's next.

Exclusive NASware™ 3.0
Not just any drive will do. In single-bay to 8-bay NAS systems, WD Red raises the bar. Get as much as 80TB capacity, and with WD's exclusive NASware 3.0, you can optimize every single one of them. Built into every WD Red hard drive, NASware 3.0's advanced technology improves your system's storage performance by increasing compatibility, integration, upgradeability, and reliability.

Built for optimum NAS compatibility
Our exclusive advanced firmware Desktop drives aren't purpose-built for NAS. But WD Red drives with NASware are. Our exclusive technology takes the guesswork out of selecting a drive. WD Red is for small NAS systems, and our unique algorithm balances performance and reliability in NAS and RAID environments. Simply put, WD Red is the most compatible drive available for NAS enclosures. But don't take our word for it. WD Red is a reflection of the most extensive NAS partner compatibility-testing list that is available on the market.*

*Compatibility list as of March 2016

Desktop drives vs. WD Red
In a Network Attached Storage device, a desktop hard drive is not designed for NAS environments. Do right by your NAS and choose the drive with an array of features to preserve your data and maintain optimum performance. Take the following into consideration when choosing a hard drive for your NAS:

• Compatibility: Without being tested for compatibility with your NAS system, optimum performance is not guaranteed.

• Reliability: The always-on environment of a NAS or RAID is a hot one. And desktop drives aren't typically designed and tested in those conditions. WD Red is.

• Error recovery Controls: WD Red NAS hard drives are specifically designed with RAID error recovery control to help reduce failures within the NAS system. Desktop drives are typically not designed for RAID environments where this can be an issue.

• Noise and Vibration Protection: Designed to operate solo, desktop drives offer little or no protection from the noise and vibration faced in a multi-drive system. WD Red drives are designed for multi-bay NAS systems.

WD Red for Home
Stream, backup, share and organize your digital content at home with a NAS and WD Red drives designed to effortlessly share content to the devices in your home. Red NASware increases your drives' compatibility with your devices, TV, stereo and more. Live in a connected world.

WD Red for Small Business
Businesses thrive on productivity and efficiency – two of the guiding principles built into the design of WD Red. It's the hard drive of choice for 1 to 8 bay systems. NASware 3.0 allows for seamless integration with your existing network so WD Red can share and backup files at the speed of your business. And for larger businesses with up to 16 bays, count on WD Red Pro.

WD Red Pro for Big Business
If you're looking for maximum performance in a heavy use NAS, WD Red Pro delivers the same exceptional performance for the business customer. For NAS environments with 8 to 16 bays, WD Red Pro is designed to handle an increase in workload and comes with a 5-year limited warranty.

Applications

WD Red NAS hard drives are recommended for use in home and small office 1–8 bay NAS systems. For systems that use more than 8 bays, please consider WD Red Pro hard drives.*

* 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.

Specifications	10TB	8TB	6TB	4TB	3TB
Model number[1]	WD100EFAX	WD80EFZX	WD60EFRX	WD40EFRX	WD30EFRX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[2]	10TB	8TB	6TB	4TB	3TB
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
Native command queuing	Yes	Yes	Yes	Yes	Yes
RoHS compliant[3]	Yes	Yes	Yes	Yes	Yes
Performance					
Interface transfer rate (max) Interface speed Internal transfer rate	 6 Gb/s 210 MB/s	 6 Gb/s 178 MB/s	 6 Gb/s 175 MB/s	 6 Gb/s 150 MB/s	 6 Gb/s 147 MB/s
Cache (MB)	256	128	64	64	64
Performance Class	5400 RPM Class	5400 RPM Class	5400 RPM Class	5400 RPM Class	5400 RPM Class
Reliability/Data Integrity					
Load/unload cycles[4]	600,000	600,000	600,000	600,000	600,000
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}
MTBF (hours)[5]	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Workload Rate (TB/year)[10]	180	180	180	180	180
Limited warranty (years)[6]	3	3	3	3	3
Power Management					
12VDC ±10% (A, peak)	1.79	1.79	1.75	1.75	1.73
5VDC ±10% (A, peak)			-	-	-
Average power requirements (W) Read/Write Idle Standby/Sleep	 6.2 2.8 0.5	 6.4 5.2 0.7	 5.3 3.4 0.4	 4.5 3.3 0.4	 4.1 2.7 0.4
Environmental Specifications[7]					
Temperature (°C) Operating[8] Non-operating	 0 to 65 -40 to 70	 0 to 65 -40 to 70	 0 to 65 -40 to 70	 0 to 65 -40 to 70	 0 to 65 -40 to 70
Shock (Gs) Operating (2 ms, read/write) Operating (2 ms, read) Non-operating (2 ms)	 30 65 250	 30 65 250	 30 65 250	 30 65 250	 30 65 250
Acoustics (dBA)[9] Idle Seek (average)	 20 29	 20 29	 25 28	 25 28	 23 24
Physical Dimensions					
Height (in./mm)	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1	1.028/26.1
Length (in./mm)	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%)	1.43/0.65	1.43/0.65	1.65/0.75	1.50/0.68	1.40/0.64

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 Based on a typical NAS product environment under normal operating conditions.

6 The term of the limited warranty may vary by region. Visit http://support.wd.com/warranty for details.

7 No non-recoverable errors during operating tests or after non-operating tests.

8 On the base casting.

9 Sound power level.

10 Workload Rate is defined as the amount of user data transferred to or from the hard drive. Workload Rate is annualized (TB transferred X (8760 / recorded power-on hours)). Workload Rate will vary depending on your hardware and software components and configurations.

WD Red™

Specifications	2TB	1TB	1TB	750GB
Model number[1]	WD20EFRX	WD10EFRX	WD10JFCX	WD7500BFCX
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[2]	2TB	1TB	1TB	750GB
Form factor	3.5-inch	3.5-inch	2.5-inch	2.5-inch
Advanced Format (AF)	Yes	Yes	Yes	Yes
Native command queuing	Yes	Yes	Yes	Yes
RoHS compliant[3]	Yes	Yes	Yes	Yes
Performance				
Data transfer rate (max) Interface speed Internal transfer rate	 6 Gb/s 147 MB/s	 6 Gb/s 150 MB/s	 6 Gb/s 144 MB/s	 6 Gb/s 144 MB/s
Cache (MB)	64	64	16	16
Performance Class	5400 RPM Class	5400 RPM Class	5400 RPM Class	5400 RPM Class
Reliability/Data Integrity				
Load/unload cycles[4]	600,000	600,000	600,000	600,000
Non-recoverable read errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}
MTBF (hours)[5]	1,000,000	1,000,000	1,000,000	1,000,000
Workload Rate (TB/year)[10]	180	180	180	180
Limited warranty (years)[6]	3	3	3	3
Power Management				
12VDC ±10% (A, peak)	1.73	1.20	-	-
5VDC ±10% (A, peak)	-	-	1.00	1.00
Average power requirements (W) Read/Write Idle Standby/Sleep	 4.1 2.7 0.4	 3.3 2.3 0.4	 1.4 0.6 0.2	 1.4 0.6 0.2
Environmental Specifications[7]				
Temperature (°C) Operating[8] Non-operating	 0 to 65 -40 to 70	 0 to 65 -40 to 70	 0 to 65 -40 to 65	 0 to 65 -40 to 65
Shock (Gs) Operating (2 ms, read/write) Operating (2 ms, read) Non-operating (2 ms)	 30 65 250	 30 65 350	 400 - 1000	 400 - 1000
Acoustics (dBA)[9] Idle Seek (average)	 23 24	 21 22	 24 25	 24 25
Physical Dimensions				
Height (in./mm)	1.028/26.1	1.028/26.1	0.374/9.5	0.374/9.5
Length (in./mm)	5.787/147	5.787/147	3.94/100.2	3.94/100.2
Width (in./mm, ± .01 in.)	4/101.6	4/101.6	2.75/69.85	2.75/69.85
Weight (lb./kg, ± 10%)	1.32/0.60	0.99/0.45	0.25/0.115	0.25/0.115

[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] Based on a typical NAS product environment under normal operating conditions.

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

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

[8] On the base casting.

[9] Sound power level.

[10] Workload Rate is defined as the amount of user data transferred to or from the hard drive. Workload Rate is annualized (TB transferred X (8760 / recorded power-on hours)). Workload Rate will vary depending on your hardware and software components and configurations.

Western Digital
3355 Michelson Drive, Suite 100
Irvine, California 92612
U.S.A.

Learn more about WD Red hard drives

For service and literature:

http://support.wd.com
www.wd.com

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

WD Red premium support

855.55.WDRED (855.559.3733)	North America
+800.55593733	Europe/Middle East/Africa/ Asia Pacific

CAN ICES-3 (B) / NMB-3 (B)

Western Digital, WD, the WD Logo, FIT Lab, NASware, and WD Red are registered trademarks or trademarks of Western Digital Corporation or its affiliates in the U.S. and/or other countries. Other marks may be mentioned herein that belong to other companies. Product specifications subject to change without notice. Pictures shown may vary from actual products.

© 2017 Western Digital Technologies or its affiliates. All rights reserved.

2879-800002-A06 May 2017