Western Digital.

WD Red™ Plus

PRODUCT BRIEF NAS HARD DRIVES

Product Highlights

- Available in capacities ranging from 1–14TB with support for up to 8 bays
- Supports up to 180 TB/yr workload rate
- NASware™ firmware for compatibility
- Small or medium business NAS systems in a 24×7 environment
- 3-year limited warranty

Desktop Drives vs. WD Red™ Plus

Do right by your NAS and choose the drive purpose-built for NAS with an array of features to help preserve your data and maintain optimum performance. Take the following into consideration when choosing a hard drive for your NAS:

- Compatibility: Unlike desktop drives, these drives are specifically tested for compatibility with NAS systems for optimum performance.
- Reliability: The always-on environment of a NAS or RAID is a hot one, and desktop drives aren't typically designed and tested under those conditions like WD Red™ Plus drives are.
- Error Recovery Controls: WD Red Plus NAS hard drives are specifically designed with RAID error recovery control to help reduce failures within the NAS system.
- Noise and Vibration Protection: Designed to operate solo, desktop drives typically offer little or no protection from the noise and vibration present in a multi-drive system. WD Red Plus drives are designed to thrive in multi-bay NAS system environments.

Tackle Intensity with WD Red™ Plus

Packed with power to handle the small- to medium-sized business NAS environments and increased workloads for SOHO customers, WD Red™ Plus is ideal for archiving and sharing, as well as RAID array rebuilding on systems using ZFS and other file systems. Built and tested for up to 8-bay NAS systems, these drives give you the flexibility, versatility, and confidence in storing and sharing your precious home and work files.

For Small or Medium Businesses

Stream, backup, share, and organize your digital content with a NAS and WD Red Plus drives designed to effortlessly share content with the devices at your home or business. NASware™ 3.0 technology increases your drives' compatibility with your existing network and devices. For larger businesses with up to 24 bays, count on WD Red Pro drives to deliver exceptional performance.

Exclusive NASware 3.0

Not just any drive will do. Get up to 112TB of capacity in your 8-bay NAS system and with Western Digital's exclusive NASware 3.0 technology, you can optimize each and every drive. Built into every WD Red™ Plus hard drive, NASware 3.0's advanced technology improves storage performance by increasing compatibility, integration, upgradeability, and reliability.

Built for Optimum NAS Compatibility

WD Red Plus drives with NASware technology takes the guesswork out of selecting a drive. Optimized for NAS systems, our unique algorithm balances performance and reliability in NAS and RAID environments. Simply put, a WD Red Plus drive is one of the most compatible drives available for NAS enclosures. But don't take our word for it. WD Red Plus drives are a reflection of extensive NAS partner technology engagement and compatibility-testing.

WD Red Pro for Big Business

If you're looking for heavy duty performance for NAS, WD Red Pro drives deliver exceptional performance for the medium to large business customer with extreme demands. For NAS environments with 9 to 24 bays, WD Red Pro drives deliver uncompromising performance and unwavering assurance backed by a 5-year limited warranty.

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.

24×7 Environment

Since your NAS system is always on, a reliable drive is essential. With an MTBF of up to 1 million hours, the WD Red Plus drive is engineered to tackle 24×7 environments.

Premium Support and a 3-year Limited Warranty

Confidently upgrade your NAS performance with the assurance of a 3-year limited warranty, coupled with world-class support services included with every WD Red Plus drive.

WD Red™ Plus

Specifications

	14TB	14TB	12TB	12TB	10TB	10TB	8TB	8TB	6TB
Model Number[1]	WD140EFGX	WD140EFFX	WD120EFBX	WD120EFAX	WD101EFBX	WD101EFAX	WD80EFBX	WD80EFAX	WD60EFZX
Recording Technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR	CMR	CMR
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[2]	14TB	14TB	12TB	12TB	10TB	10TB	8TB	8TB	6TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Native command queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RoHS compliant[3]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Performance									
Interface Transfer Rate[2] up to	210 MB/s	210 MB/s	196 MB/s	196 MB/s	215 MB/s	215 MB/s	210 MB/s	198 MB/s	185 MB/s
Cache (MiB)[2]	512 MiB	512 MiB	256 MiB	256 MiB	256 MiB	256 MiB	256 MiB	256 MiB	128 MiB
RPM	7200	7200[9]	7200	7200[9]	7200	7200[9]	7200	7200[9]	5640
Reliability/Data Integrity									
Load/unload cycles[4]	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Non-recoverable errors per bits read	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<1 in 10^{14}	<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	1,000,000	1,000,000	1,000,000	1,000,000
Workload Rate (TB/year)[6]	180	180	180	180	180	180	180	180	180
Limited warranty (years)[7]	3	3	3	3	3	3	3	3	3
Power Management[8]									
12VDC ±5% (A, peak)	1.85	1.85	1.84	1.84	1.75	1.75	1.85	1.85	1.75
5VDC ±5% (A, peak)									
Average power requirements (W)									
Read/Write	6.5	6.5	6.3	6.3	8.4	8.4	8.8	8.8	6.2
Idle	3.0	3.0	2.9	2.9	4.6	4.6	5.3	5.3	4.1
Standby and Sleep	0.8	0.8	0.6	0.6	0.5	0.5	0.8	0.8	0.4
Environmental Specifications									
Temperature (°C)									
Operating	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)									
Operating, (2 ms, read/write)	30	30	30	30	30	30	30	30	70
Operating, (2 ms, read)	65	65	65	65	65	65	65	65	70
Non-operating (2 ms)	300	300	300	300	250	250	300	300	250
Acoustics (dBA)									
Idle	20	20	20	20	34	34	27	27	25
Seek (average)	29	29	29	29	38	38	29	29	30
Physical Dimensions									
Height (in./mm, max)	1.028 / 26.1	1.028/26.1	1.028 / 26.1	1.028/26.1	1.028 / 26.1	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	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	4/101.6	4 / 101.6	4/101.6	4 / 101.6
Weight (lb/kg , ± 10%)	1.52 / 0.69	1.52/0.69	1.46 / 0.66	1.46/0.66	1.65 / 0.75	1.65/0.75	1.58 / 0.715	1.58/0.715	1.65 / 0.75

WD Red™ Plus

PRODUCT BRIEF **NAS HARD DRIVES**

Specifications

	6TB	4TB	4TB	3TB	3TB	2TB	2TB	1TB	1TB
Model Number[1]	WD60EFRX	WD40EFZX	WD40EFRX	WD30EFZX	WD30EFRX	WD20EFZX	WD20EFRX	WD10EFRX	WD10JFCX
Recording Technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR	CMR	CMR
Interface	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s	SATA 6 Gb/s
Formatted capacity[2]	6TB	4TB	4TB	3TB	3TB	2TB	2TB	1TB	1TB
Form factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	2.5-inch
Native command queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced Format (AF)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RoHS compliant[3]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Performance									
Interface Transfer Rate[2] up to	175 MB/s	175 MB/s	150 MB/s	175 MB/s	147 MB/s	175 MB/s	147 MB/s	150 MB/s	144 MB/s
Cache (MiB)[2]	64 MiB	128 MiB	64 MiB	128 MiB	64 MiB	128 MiB	64 MiB	64 MiB	16 MiB
RPM	5700	5400	5400	5400	5400	5400	5400	5400	5400
Reliability/Data Integrity									
Load/unload cycles[4]	600,000	600,000	600,000	600,000	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}	<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	1,000,000	1,000,000	1,000,000	1,000,000
Workload Rate (TB/year)[6]	180	180	180	180	180	180	180	180	180
Limited warranty (years)[7]	3	3	3	3	3	3	3	3	3
Power Management[8]									
12VDC ±5% (A, peak)	1.75	1.75	1.75	1.75	1.73	1.75	1.73	1.20	1.00
5VDC ±5% (A, peak)									
Average power requirements (W)									
Read/Write	5.3	4.8	4.5	4.8	4.1	4.8	4.1	3.3	1.4
Idle	3.4	3.1	3.3	3.1	2.7	3.1	2.7	2.3	0.6
Standby and Sleep	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2
Environmental Specifications									
Temperature (°C)									
Operating	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 65	0 to 60	0 to 60
Non-operating	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Shock (Gs)									
Operating, (2 ms, read/write)	30	70	30	70	30	70	30	30	400
Operating, (2 ms, read)	65	70	65	70	65	70	65	65	
Non-operating (2 ms)	250	300	250	300	250	300	250	250	1000
Acoustics (dBA)									
Idle	25	23	25	23	23	23	23	21	24
Seek (average)	28	27	28	27	24	27	24	22	25
Physical Dimensions									
Height (in./mm, max)	1.028/26.1	1.028 / 26.1	1.028/26.1	1.028 / 26.1	1.028/26.1	1.028 / 26.1	1.028/26.1	1.028/26.1	0.374/9.50
Length (in./mm, max)	5.787/147	5.787 / 147	5.787/147	5.787 / 147	5.787/147	5.787 / 147	5.787/147	5.787/147	3.94/100.2
Width (in./mm, ± .01 in.)	4/101.6	4 / 101.6	4/101.6	4 / 101.6	4/101.6	4 / 101.6	4/101.6	4/101.6	2.75/69.85
Weight (lb/kg , ± 10%)	1.65/0.75	1.26 / 0.57	1.50/0.68	1.26 / 0.57	1.40/0.64	1.26 / 0.57	0.99/0.45	0.99/0.45	0.25/0.115

Specifications subject to change without notice.

[1] Not all products may be available in all regions of the world

[2] As used for storage capacity, 1GB = 1 billion bytes and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment. Memory capacity for buffer or cache is indicated in mebibytes (MiB) and one MiB is equal to 1,048,576 bytes. As used for transfer rate or interface, 1 MB/s = 1 million bytes 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. Performance may vary depending upon host device, usage conditions, drive capacity, and other factors.

[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] MTBF specifications are based upon internal testing using a 40°C base casting temperature. MTBF is based on a sample population and is estimated by statistical measurements and acceleration algorithms. MTBF does not predict an individual drive's reliability and does not constitute a warranty.

[6] 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.

[7] See support.wdc.com/warranty for regionally specific warranty details.

[8] Power measurements at room-ambient temperature.

[9] Actual spindle motor rotational speed for this model is 7200 RPM; although ID Device may report 5400 to reflect previous Performance Class designation.

Western Digital.

5601 Great Oaks Parkway
San Jose, CA 95119, USA
www.westerndigital.com

2579–810354-A02 JANUARY 2021