



## Product Highlights

- Available in capacities ranging from 1–14TB<sup>1</sup> with support for NAS system with up to 8 bays
- Supports up to 180TB/year workload rate<sup>2</sup>
- NASware™ firmware for compatibility
- Built for small or medium business NAS systems in a 24/7 environment
- 3-year limited warranty<sup>3</sup>

## 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 environments of NAS and RAID can reach intense temperatures. WD Red Plus drives are designed and tested to perform under those extreme conditions.
- **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.

## WD Red® Plus

### Tackle Intensity with WD Red Plus

Packed with power to handle NAS environments in home offices up to medium-sized businesses, WD Red Plus is ideal for helping protect, archive, and share valuable data in NAS systems with up to 8 bays. WD Red Plus NAS drives give you the flexibility, versatility, and confidence you need for your important home and work files.

### For Small or Medium Businesses

WD Red Plus drives deliver the speed and capacity business customers require to store, protect, and share increasing amounts of data with a growing number of NAS users. For NAS systems with up to 8 bays, WD Red Plus drives deliver uncompromising performance and unwavering assurance backed by a 3-year limited warranty<sup>3</sup>.

### For Home Office and Power Users

Whether you're a power user looking to store high-resolution videos or running a home office with thousands of electronic documents, WD Red Plus drives are designed to help you effortlessly organize, protect, and share your digital content.

### Exclusive NASware™ 3.0 Technology

Built into every WD Red Plus hard drive is Western Digital's exclusive NASware 3.0 technology. NASware 3.0 is advanced technology that improves your NAS system by increasing compatibility, integration, upgradeability, and reliability. WD Red Plus drives with NASware technology take the guesswork out of selecting a drive for your NAS system.

### Built for Optimum NAS Compatibility

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.

### 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.

### Thrives in 24/7 Environments

Since your NAS system is always on, a reliable drive is essential. With an MTBF of up to 1 million hours<sup>4</sup>, the WD Red Plus drive is engineered to tackle 24/7 environments.

### Premium Support and a 3-year Limited Warranty<sup>3</sup>

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.

## Specifications

|                                           | 14TB <sup>1</sup>      | 14TB <sup>1</sup>      | 12TB <sup>1</sup>      | 12TB <sup>1</sup>      | 10TB <sup>1</sup>      | 10TB <sup>1</sup>      |
|-------------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Model Number<sup>5</sup></b>           | WD140EFGX              | WD140EFFX              | WD120EFBX              | WD120EFAX              | WD101EFBX              | WD101EFAX              |
| Recording technology                      | CMR                    | CMR                    | CMR                    | CMR                    | CMR                    | CMR                    |
| Interface                                 | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             |
| Formatted capacity <sup>1</sup>           | 14TB                   | 14TB                   | 12TB                   | 12TB                   | 10TB                   | 10TB                   |
| Form factor                               | 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                    |
| Advanced Format (AF)                      | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| RoHS compliant <sup>6</sup>               | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| <b>Performance</b>                        |                        |                        |                        |                        |                        |                        |
| Internal transfer rate <sup>7</sup> up to | 210MB/s                | 210MB/s                | 196MB/s                | 196MB/s                | 215MB/s                | 215MB/s                |
| Cache (MB) <sup>1</sup>                   | 512MB                  | 512MB                  | 256MB                  | 256MB                  | 256MB                  | 256MB                  |
| RPM                                       | 7200                   | 7200 <sup>8</sup>      | 7200                   | 7200 <sup>8</sup>      | 7200                   | 7200 <sup>8</sup>      |
| <b>Reliability/Data Integrity</b>         |                        |                        |                        |                        |                        |                        |
| Load/unload cycles <sup>9</sup>           | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                |
| Non-recoverable errors per bits read      | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> |
| MTBF (hours) <sup>4</sup>                 | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              |
| Workload rate (TB/year) <sup>2</sup>      | 180                    | 180                    | 180                    | 180                    | 180                    | 180                    |
| Limited warranty (years) <sup>3</sup>     | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      |
| <b>Power Management<sup>10</sup></b>      |                        |                        |                        |                        |                        |                        |
| 12VDC ±5% (A, peak)                       | 1.85                   | 1.85                   | 1.84                   | 1.84                   | 1.75                   | 1.75                   |
| 5VDC ±5% (A, peak)                        |                        |                        |                        |                        |                        |                        |
| Average power requirements (W)            |                        |                        |                        |                        |                        |                        |
| Read/write                                | 6.5                    | 6.5                    | 6.3                    | 6.3                    | 8.4                    | 8.4                    |
| Idle                                      | 3.0                    | 3.0                    | 2.9                    | 2.9                    | 4.6                    | 4.6                    |
| Standby and sleep                         | 0.8                    | 0.8                    | 0.6                    | 0.6                    | 0.5                    | 0.5                    |
| <b>Environmental Specifications</b>       |                        |                        |                        |                        |                        |                        |
| Temperature (°C)                          |                        |                        |                        |                        |                        |                        |
| Operating                                 | 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              |
| Shock (Gs)                                |                        |                        |                        |                        |                        |                        |
| Operating, (2 ms, write)                  | 30                     | 30                     | 30                     | 30                     | 30                     | 30                     |
| Operating, (2 ms, read)                   | 65                     | 65                     | 65                     | 65                     | 65                     | 65                     |
| Non-operating (2 ms)                      | 300                    | 300                    | 300                    | 300                    | 250                    | 250                    |
| Acoustics (dBA)                           |                        |                        |                        |                        |                        |                        |
| Idle                                      | 20                     | 20                     | 20                     | 20                     | 34                     | 34                     |
| Seek (average)                            | 29                     | 29                     | 29                     | 29                     | 38                     | 38                     |
| <b>Physical Dimensions</b>                |                        |                        |                        |                        |                        |                        |
| 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             |
| Length (in./mm, max)                      | 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                |
| Weight (lb/kg, ± 3%)                      | 1.52/0.69              | 1.52/0.69              | 1.46/0.66              | 1.46/0.66              | 1.65/0.75              | 1.65/0.75              |

## Specifications subject to change without notice.

<sup>1</sup> 1MB = 1 million bytes, 1GB = 1 billion bytes, and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment.

<sup>2</sup> 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.

<sup>3</sup> See support.wdc.com/warranty for regionally specific warranty details.

<sup>4</sup> MTBF specifications are based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions: workload of 90TB/year and drive temperature of 40°C. Derating of MTBF will occur above these parameters, up to 65°C drive temperature. MTBF does not predict an individual drive's reliability and does not constitute a warranty. Not all products may be available in all regions of the world.

<sup>5</sup> Not all products may be available in all regions of the world.

<sup>6</sup> This hard drive product meets or exceeds Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU and Directive (EU) 2015/863.

<sup>7</sup> Up to stated speed. As used for transfer rate, 1 MB/s = 1 million bytes per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity, and other factors.

<sup>8</sup> Actual spindle motor rotational speed for this model is 7200 RPM; although ID Device may report 5400 to reflect previous Performance Class designation. Controlled unload at ambient condition.

<sup>9</sup> Controlled unload at ambient condition.

<sup>10</sup> Power measurements at room/ambient temperature.

## Specifications

|                                 | 8TB <sup>1</sup> | 8TB <sup>1</sup> | 8TB <sup>1</sup> | 8TB <sup>1</sup> | 6TB <sup>1</sup> | 6TB <sup>1</sup> |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Model Number<sup>5</sup></b> | WD80EFBX         | WD80EFAX         | WD80EFZX         | WD80EFZZ         | WD60EFPX         | WD60EFZX         |
| Recording technology            | CMR              | CMR              | CMR              | CMR              | CMR              | CMR              |
| Interface                       | SATA 6Gb/s       | SATA 6Gb/s       | SATA 6Gb/s       | SATA 6Gb/s       | SATA 6Gb/s       | SATA 6Gb/s       |
| Formatted capacity <sup>1</sup> | 8TB              | 8TB              | 8TB              | 8TB              | 6TB              | 6TB              |
| Form factor                     | 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              |
| Advanced Format (AF)            | Yes              | Yes              | Yes              | Yes              | Yes              | Yes              |
| RoHS compliant <sup>6</sup>     | Yes              | Yes              | Yes              | Yes              | Yes              | Yes              |

## Performance

|                                           |         |                   |         |         |         |         |
|-------------------------------------------|---------|-------------------|---------|---------|---------|---------|
| Internal transfer rate <sup>7</sup> up to | 210MB/s | 210MB/s           | 185MB/s | 185MB/s | 180MB/s | 185MB/s |
| Cache (MB) <sup>1</sup>                   | 256MB   | 256MB             | 128MB   | 128MB   | 256MB   | 128MB   |
| RPM                                       | 7200    | 7200 <sup>8</sup> | 5640    | 5640    | 5400    | 5640    |

## Reliability/Data Integrity

|                                       |                        |                        |                        |                        |                        |                        |
|---------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Load/unload cycles <sup>9</sup>       | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                |
| Non-recoverable errors per bits read  | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> |
| MTBF (hours) <sup>4</sup>             | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              | 1,000,000              |
| Workload rate (TB/year) <sup>2</sup>  | 180                    | 180                    | 180                    | 180                    | 180                    | 180                    |
| Limited warranty (years) <sup>3</sup> | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      |

Power Management<sup>10</sup>

|                                |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|
| 12VDC ±5% (A, peak)            | 1.85 | 1.85 | 1.75 | 1.75 | 1.75 | 1.75 |
| 5VDC ±5% (A, peak)             |      |      |      |      |      |      |
| Average power requirements (W) |      |      |      |      |      |      |
| Read/write                     | 8.8  | 8.8  | 6.2  | 6.2  | 4.7  | 6.2  |
| Idle                           | 5.3  | 5.3  | 4.1  | 4.1  | 3.1  | 4.1  |
| Standby and sleep              | 0.8  | 0.8  | 0.4  | 0.4  | 0.3  | 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   |
| Non-operating            | -40 to 70 | -40 to 70 | -40 to 70 | -40 to 70 | -40 to 70 | -40 to 70 |
| Shock (Gs)               |           |           |           |           |           |           |
| Operating, (2 ms, write) | 30        | 30        | 70        | 70        | 70        | 70        |
| Operating, (2 ms, read)  | 65        | 65        | 70        | 70        | 70        | 70        |
| Non-operating (2 ms)     | 300       | 300       | 250       | 250       | 250       | 250       |
| Acoustics (dBA)          |           |           |           |           |           |           |
| Idle                     | 27        | 27        | 25        | 25        | 23        | 25        |
| Seek (average)           | 29        | 29        | 30        | 30        | 27        | 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 |
| Length (in./mm, max)      | 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    |
| Weight (lb/kg, ± 3%)      | 1.58 /0.715 | 1.58/0.715 | 1.65/0.75  | 1.65/0.75  | 1.65/0.75  | 1.65/0.75  |

## Specifications subject to change without notice.

<sup>1</sup> 1MB = 1 million bytes, 1GB = 1 billion bytes, and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment.

<sup>2</sup> 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.

<sup>3</sup> See support.wdc.com/warranty for regionally specific warranty details.

<sup>4</sup> MTBF specifications are based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions: workload of 90TB/year and drive temperature of 40°C. Derating of MTBF will occur above these parameters, up to 65°C drive temperature. MTBF does not predict an individual drive's reliability and does not constitute a warranty. Not all products may be available in all regions of the world.

<sup>5</sup> Not all products may be available in all regions of the world.

<sup>6</sup> This hard drive product meets or exceeds Restriction of Hazardous Substances (RoHS) compliance requirements as mandated by the RoHS Directive 2011/65/EU and Directive (EU) 2015/863.

<sup>7</sup> Up to stated speed. As used for transfer rate, 1 MB/s = 1 million bytes per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity, and other factors.

<sup>8</sup> Actual spindle motor rotational speed for this model is 7200 RPM; although ID Device may report 5400 to reflect previous Performance Class designation. Controlled unload at ambient condition.

<sup>9</sup> Controlled unload at ambient condition.

<sup>10</sup> Power measurements at room/ambient temperature.

## Specifications

|                                           | 4TB <sup>1</sup>       | 4TB <sup>1</sup>       | 3TB <sup>1</sup>       | 3TB <sup>1</sup>       | 2TB <sup>1</sup>       | 1TB <sup>1</sup>       | 1TB <sup>1</sup>       |
|-------------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b>Model Number<sup>5</sup></b>           | WD40EFPX               | WD40EFZX               | WD30EFPX               | WD30EFZX               | WD20EFZX               | WD10EFRX               | WD10JFCX               |
| Recording technology                      | CMR                    | CMR                    | CMR                    | CMR                    | CMR                    | CMR                    | CMR                    |
| Interface                                 | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             | SATA 6Gb/s             |
| Formatted capacity <sup>1</sup>           | 4TB                    | 4TB                    | 3TB                    | 3TB                    | 2TB                    | 1TB                    | 1TB                    |
| Form factor                               | 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                    |
| Advanced Format (AF)                      | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| RoHS compliant <sup>6</sup>               | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| <b>Performance</b>                        |                        |                        |                        |                        |                        |                        |                        |
| Internal transfer rate <sup>7</sup> up to | 180MB/s                | 175MB/s                | 180MB/s                | 175MB/s                | 175MB/s                | 150MB/s                | 144MB/s                |
| Cache (MB) <sup>1</sup>                   | 256MB                  | 128MB                  | 256MB                  | 128MB                  | 128MB                  | 64MB                   | 16MB                   |
| RPM                                       | 5400                   | 5400                   | 5400                   | 5400                   | 5400                   | 5400                   | 5400                   |
| <b>Reliability/Data Integrity</b>         |                        |                        |                        |                        |                        |                        |                        |
| Load/unload cycles <sup>9</sup>           | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                | 600,000                |
| 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> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> | <1 in 10 <sup>14</sup> |
| MTBF (hours) <sup>4</sup>                 | 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) <sup>2</sup>      | 180                    | 180                    | 180                    | 180                    | 180                    | 180                    | 180                    |
| Limited warranty (years) <sup>3</sup>     | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      |
| <b>Power Management<sup>10</sup></b>      |                        |                        |                        |                        |                        |                        |                        |
| 12VDC ±5% (A, peak)                       | 1.75                   | 1.75                   | 1.75                   | 1.75                   | 1.75                   | 1.20                   |                        |
| 5VDC ±5% (A, peak)                        |                        |                        |                        |                        |                        |                        | 1.00                   |
| Average power requirements (W)            |                        |                        |                        |                        |                        |                        |                        |
| Read/write                                | 4.7                    | 4.8                    | 4.7                    | 4.8                    | 4.8                    | 3.3                    | 1.4                    |
| Idle                                      | 3.1                    | 3.1                    | 3.1                    | 3.1                    | 3.1                    | 2.3                    | 0.6                    |
| Standby and sleep                         | 0.3                    | 0.4                    | 0.3                    | 0.4                    | 0.4                    | 0.4                    | 0.2                    |
| <b>Environmental Specifications</b>       |                        |                        |                        |                        |                        |                        |                        |
| Temperature (°C)                          |                        |                        |                        |                        |                        |                        |                        |
| Operating                                 | 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              |
| Shock (Gs)                                |                        |                        |                        |                        |                        |                        |                        |
| Operating, (2 ms, read/write)             | 70                     | 70                     | 70                     | 70                     | 70                     | 30                     | 400                    |
| Operating, (2 ms, read)                   | 70                     | 70                     | 70                     | 70                     | 70                     | 65                     |                        |
| Non-operating (2 ms)                      | 250                    | 300                    | 250                    | 300                    | 300                    | 250                    | 1000                   |
| Acoustics (dBA)                           |                        |                        |                        |                        |                        |                        |                        |
| Idle                                      | 23                     | 23                     | 23                     | 23                     | 23                     | 21                     | 24                     |
| Seek (average)                            | 27                     | 27                     | 27                     | 27                     | 27                     | 22                     | 25                     |
| <b>Physical Dimensions</b>                |                        |                        |                        |                        |                        |                        |                        |
| 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             | 0.374/9.5              |
| Length (in./mm, max)                      | 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                | 2.75/69.85             |
| Weight (lb/kg, ± 10%)                     | 1.26/0.57              | 1.26/0.57              | 1.26/0.57              | 1.26/0.57              | 1.26/0.57              | 0.99/0.45              | 0.25/0.115             |

Specifications subject to change without notice. For footnote references please see the previous page.