Western Digital.

WD Red™ SA500 SSD

PRODUCT BRIEF

NAS SSD

Highlights

- Storage optimized for caching in NAS systems to rapidly access your most frequently used files.
- Superior endurance can handle the heavy read and write loads demanded by NAS, giving you the reliability you need in a 24/7 environment.
- Reduces latency and improves responsiveness for OLTP databases, multi-user environments, photo rendering, 4K and 8K video editing, and more.
- Available in 2.5" and M.2 form factors to fit the slots in modern NAS systems.
- Capacities from 500GB up to 4TB* (2.5" only) gives you the flexibility to customize your NAS to meet your most demanding storage needs.

Supercharge Your NAS

Boost your NAS system's performance and responsiveness with the WD Red™ SA500 NAS SATA SSD. Since your NAS system is always on, a reliable drive is essential. Unlike standard SSDs, WD Red NAS SATA SSDs are specifically designed and tested for 24/7 usage. This durability together with efficient caching of big files make these drives ideal for OLTP databases, multi-user environments, photo rendering, 4k and 8k video editing and other demanding applications. With 2.5" and M.2 form factors and capacities from 500GB up to 4TB* (2.5" only), the WD Red SA500 NAS SATA SSD lets you optimize your existing or next NAS system for superior performance and endurance.

Access Big Files Fast

WD Red™ SA500 NAS SATA SSD storage is optimized for caching in NAS systems to rapidly access your most frequently used content.

Give It Your Tough Workloads

WD Red™ SSD's superior endurance can handle the heavy read and write loads demanded by NAS, giving you the reliability you need in a 24/7 environment.

Work More Efficiently

Purpose-built for NAS with proven Western Digital® 3D NAND, the WD Red™ SSD delivers maximum SATA performance to boost your productivity and effectiveness at home or in the office.

Use it for Your Demanding Applications

The drive reduces latency and improves responsiveness for OLTP databases, multi-user environments, photo rendering, 4K and 8K video editing, and more.

Customize Your NAS System

The WD Red™ SSD comes in 2.5" and M.2 form factors so you can upgrade your existing NAS system or design a new one from scratch..

Build With Flexibility

Customize your NAS to meet your most demanding storage needs with capacities ranging from 500GB up to 4TB* (2.5" only).

WD Red™ SA500 NAS SATA SSD Product Features and Specifications

Form Factor	2.5"/7mm cased, M.2 2280
Interface[1,2]	SATA III 6 Gb/s
Size and Weight	2.5"/7mm cased: 500GB: 100.2mm x 69.85mm x 7.00mm @ 37.4g 1TB: 100.2mm x 69.85mm x 7.00mm @ 37.4g 2TB: 100.2mm x 69.85mm x 7.00mm @ 57.9g 4TB: 100.2mm x 69.85mm x 7.00mm @ 57.9g M.2 2280: 500GB: 80.00mm x 22.00mm x 2.38mm @ 7 ± 1g 1TB: 80.00mm x 22.00mm x 2.38mm @ 7 ± 1g 2TB: 80.00mm x 22.00mm x 2.38mm @ 7 ± 1g

Formatted Capacity	500GB	1TB	2TB	4TB
Performance[2,3]				
Sequential Read up to (MB/s)	560	560	560	560
Sequential Write up to (MB/s)	530	530	530	530
Random Read up to (IOPS)	95K	95K	95K	95K
Random Write up to (IOPS)	85K	85K	85K	82K
Endurance (TBW)[4]	350	600	1300	2500
Power[5]				
Average Active Power (mW)	52	60	60	60
Max. Read Operating (mW)	2,050	2,550	3,000	3,000
Max. Write Operating (mW)	3,350	3,750	3,800	3,800
Slumber (mW)	56	56	56	56
DEVSLP (mW)	5–7	5–12	5–12	5–12
Reliability				
MTTF (M hours)[6]	Up to 2M	Up to 2M	Up to 2M	Up to 2M
Uber	1E10^17	1E10^17	1E10^17	1E10^17

Environmental	
Operating Temperatures	0°C to 70°C
Non-Operating Temperatures	-55°C to 85°C
Operating Vibration	5.0 gRMS, 10–2000 Hz
Non-Operating Vibration	4.9 gRMS, 7–800 Hz
Shock	1,500 G @ 0.5 msec half sine
Certifications	500GB-2TB: FCC, UL, TUV, KC, BSMI, VCCI 4TB: FCC, UL, TUV, KC, BSMI, VCCI, Morocco
Limited Warranty[7]	5 years

[1] Backwards compatible to SATA 3 Gb/s and SATA 1.5 Gb/s.

[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] Measured using CrystalDiskMark, 1000MB LBA range, on Desktop with Intel Z77 chipset, Windows 8 with Intel iRST version 11.7.0.1013, secondary driveLenovo X240 with Intel® Core i5–4300U, 4GB RAM, Windows 8.1 update1 x64, Intel RST 12.8.10.1005. Performance may vary based on host device. 1 MB = 1,000,000 bytes. IOPS = input/output operations per second.

[4] TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

[5] Measured using the MobileMark™ 2012 benchmark with DIPM (Device Initiated Power Management) enabled.

[6] MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing.

[7] See http://support.WesternDigital.com for regional specific warranty details.

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