



Highlights

- Sequential Read/Write speeds up to 3,400/2,800 MB/s (500GB & 1TB Model)
- Up to 600TBW (1TB Model) and 1.75M hours MTTF
- Low power efficiency
- 5-year limited warranty

INTERFACE

PCIe Gen3 x4

CAPACITIES

250GB to 1000GB

FORM FACTOR

M.2 2280-S3-M

MODEL NUMBERS

WDS250G2X0C
WDS500G2X0C
WDS100T2X0C

APPLICATIONS

WD Black NVMe SSDs are available in an M.2 2280 form factor, perfect for building high-end gaming systems or high-performance tower desktops and laptops with support for an M-key connector.

THE WESTERN DIGITAL ADVANTAGE

Western Digital 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 Western Digital brand.

Western Digital also has a detailed Knowledge Base with more than 1,000 helpful articles as well as software and utilities. Our customer support lines have long 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 Western Digital Support site for additional details.

Introducing the WD Black™ NVMe™ SSD: the driving force behind everything you do. Featuring sequential read/write speeds up to 3,400/2,800 MB/s (for 1000GB model), and the innovative Western Digital NVMe SSD storage architecture, it's where blazing speed, top-tier performance, and Western Digital™ 3D NAND technology combine. With up to 600TBW¹ and 1.75M hours MTTF, the WD Black NVMe SSD is the virtually invincible SSD you can rely on.

The Fast Way Forward

No compromises. Nothing holding you back. The WD Black NVMe SSD features sequential read and write speeds up to 3,400/2,800 MB/s¹ for gaming, video editing, virtual reality, and beyond.

Demand More. Consume Less.

Go ahead—do it all. The WD Black NVMe SSD is driven to keep up with even the most demanding workloads. Innovative power management and thermal throttling consistently help prevent overheating to deliver smooth, fast performance.

Built for Greatness

Eliminate boundaries with Western Digital's new vertically integrated SSD platform. This innovative storage architecture features Western Digital 3D NAND, and is optimized resulting in low latency, power efficiency, and compatibility with the growing range of applications benefitting from NVMe.

Fulfill Your Potential

Create without limits. The WD Black NVMe SSD is certified by WD F.I.T. Lab for compatibility with a wide range of high-performance PC configurations—and comes with a 5-year limited warranty.

Under Your Command

Monitor your drive's available capacity, operating temperatures, SMART attributes and more with the WD SSD Dashboard. Acronis® True Image™ WD Edition software, available as a free download, can clone drives and back up your operating system, applications, settings, and all of your data.

Specifications²

	1000GB	500GB	250GB
Model Number³	WDS100T2X0C	WDS500G2X0C	WDS250G2X0C
Interface^{2,4}			
WD Black NVMe SSD M.2 2280	PCIe Gen3 8 Gb/s, up to 4 lanes	PCIe Gen3 8 Gb/s, up to 4 lanes	PCIe Gen3 8 Gb/s, up to 4 lanes
Performance^{2,5}			
Sequential Read MB/s up to (Q=32, T=1) ⁶	3,400	3,400	3,000
Sequential Write MB/s up to (Q=32, T=1)	2,800	2,500	1,600
Random Read 4KB IOPS up to (Q=32, T=8)	500,000	410,000	220,000
Random Write 4KB IOPS up to (Q=32, T=8)	400,000	330,000	170,000
Endurance (TBW) ⁷	600	300	200
Power⁸			
Average Active Power (mW) ⁹	140	110	110
Low Power (PS3)	100mW	70mW	70mW
Peak Power (10us)	2.8A	2.8A	2.8A
Slumber (PS4) Low Power	2.5mW	2.5mW	2.5mW
Reliability			
MTTF ¹⁰	1.75M hours	1.75M hours	1.75M hours
Environmental			
Operating Temperatures ¹¹	32 °F to 158 °F (0 °C to 70 °C)	32 °F to 158 °F (0 °C to 70 °C)	32 °F to 158 °F (0 °C to 70 °C)
Non-operating Temperatures ¹²	-67 °F to 185 °F (-55 °C to 85 °C)	-67 °F to 185 °F (-55 °C to 85 °C)	-67 °F to 185 °F (-55 °C to 85 °C)
Operating Vibration	5.0 gRMS, 10–2000 Hz, 3 axes	5.0 gRMS, 10–2000 Hz, 3 axes	5.0 gRMS, 10–2000 Hz, 3 axes
Non-operating Vibration	4.9 gRMS, 7–800 Hz, 3 axes	4.9 gRMS, 7–800 Hz, 3 axes	4.9 gRMS, 7–800 Hz, 3 axes
Shock	1,500 G @ 0.5 ms half sine	1,500 G @ 0.5 ms half sine	1,500 G @ 0.5 ms half sine
Certifications	FCC, UL, TUV, KCC, BSMI, VCCI, C-Tick	FCC, UL, TUV, KCC, BSMI, VCCI, C-Tick	FCC, UL, TUV, KCC, BSMI, VCCI, C-Tick
Limited Warranty ¹³	5 years	5 years	5 years
Physical Dimensions			
Length	80 ± 0.15mm	80 ± 0.15mm	80 ± 0.15mm
Width	22 ± 0.15mm	22 ± 0.15mm	22 ± 0.15mm
Height	2.38mm	2.38mm	2.38mm
Weight	7.5 ± 1g	7.5 ± 1g	7.5 ± 1g

Specifications subject to change without notice.

¹ For 1000GB capacity.

² As used for storage capacity, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. 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. Performance will vary depending on your hardware and software components and configurations.

³ Not all products may be available in all regions of the world.

⁴ Backward compatible with PCIe Gen3 x2, PCIe Gen3 x1, PCIe Gen2 x4, PCIe Gen2 x2, and PCIe Gen2 x1.

⁵ Test Conditions: Performance is based on the CrystalDiskMark 5.2.2 benchmark using a 1000MB LBA range ASUS Z170A desktop with Intel® i7-6700K 4.0GHz, 8GB 2133MHz DDR4. Windows 10 Pro 64-bit using Microsoft StorNVMe driver, secondary drive. Performance may vary based on host device. 1 MB = 1,000,000 bytes. IOPS = input/output operations per second.

⁶ Q=Queue, T=Thread.

⁷ TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

⁸ Power measurements at 25°C.

⁹ Measured using MobileMark™ 2014 on HP EliteBook X360 1030 G2 with i7-7600U, 8GB RAM. Windows 10 Pro 64-bit RS3 using Microsoft StorNVMe driver, Primary drive.

¹⁰ MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing (Telcordia SR-332, GB, 25°C). MTTF is based on a sample population and is estimated by statistical measurements and acceleration algorithms. MTTF does not predict an individual drive's reliability and does not constitute a warranty.

¹¹ Operational temperature as reported by device (composite temperature).

¹² Non-operational storage temperature does not guarantee data retention.

¹³ 5 years or Max Endurance (TBW) limit, which ever comes first. See support.wdc.com for regional specific warranty details.

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