



# WD Black™ PCIe

## NVMe SSD (Solid State Drive)

With sequential read speeds up to 2050 MB/s, the WD Black PCIe Gen3 x4 NVMe-based SSD unleashes a new level of performance for PC users with PCIe NVMe compatible motherboards and systems. With extensive compatibility testing, a 5-year limited warranty, and downloadable SSD software, you get reliable, high-performance storage for years to come.



INTERFACE <sup>1</sup>	FORM FACTOR	CAPACITIES
PCIe Gen3 x4	M.2 2280	256GB & 512GB

## Product Features

### Unleashed performance for a new level of computing

Featuring sequential read speeds up to 2050 MB/s, WD Black PCIe SSD delivers speeds more than three times faster than a SATA SSD for your high-end computing needs. Boot your system fast, launch games quickly, and multitask with ease with a WD Black PCIe SSD.

### Thermal and power management

Equipped with comprehensive thermal throttling & power management algorithms, WD Black PCIe SSDs are designed to help prevent overheating, preserve your data, and maintain consistent high performance in a power efficient manner.

### Leading-edge reliability

With 1.75M hours MTTf (Mean Time To Failure), a WD Black PCIe SSD can help store data for years to come. WD Black PCIe solid state drives also use several leading error-correction technologies to help prevent data loss and provide lasting reliability.

### M.2 design ideal for desktops and small form-factor PCs

With a thin, single-sided M.2 2280 design, the WD Black PCIe SSD is perfect for Tower desktop chassis as well as small form-factor, high-performance PCs.

### 5-year limited warranty and WD F.I.T. Lab certified

Tested in the WD F.I.T. Lab for compatibility, WD Black PCIe SSDs are certified to work with a wide range of high-performance PC configurations and motherboards. And with a 5-year limited warranty, you get reliable storage for the long haul.

### Downloadable WD SSD Dashboard and Acronis software

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 backup your operating system, applications, settings and all of your data.

## Applications

WD Black PCIe 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-type connector.

## The WD Advantage

WD puts our products through extensive Functional Integrity Testing (FIT) prior to any product launch. This testing ensures our products consistently meet the highest quality and reliability standards of the WD brand.

WD 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 WD Support site for additional details.



# WD Black™ PCIe SSD

Specifications	256GB	512GB
<b>Model Numbers<sup>2</sup></b>		
WD Black PCIe SSD M.2 2280	WDS256G1XoC	WDS512G1XoC
<b>Interface<sup>1, 3</sup></b>		
WD Black PCIe SSD M.2 2280	PCIe Gen3 8 Gb/s, up to 4 lanes	PCIe Gen3 8 Gb/s, up to 4 lanes
<b>Performance<sup>4</sup> [4KB QD32]</b>		
PCMark	180 K	180 K
Sequential Read MB/s (Q=32, T=1) <sup>5</sup>	2,050	2,050
Sequential Write MB/s (Q=32, T=1)	700	800
Random Read 4 KB IOPS (Q=32, T=4)	170 K	170 K
Random Write 4 KB IOPS (Q=32, T=4)	130 K	134 K
Endurance (TBW) <sup>6</sup>	80	160
<b>Power<sup>7</sup></b>		
Avg. Active Power (mW) <sup>4</sup>	135	135
Supply Voltage	3.3 V ± 5%	3.3 V ± 5%
Peak Power	2.5 A (10 us)	2.5 A (10 us)
Low Power Mode PS3 (mW)	50	50
Low Power Mode PS4 (mW)	5.5	5.5
<b>Reliability</b>		
MTTF <sup>8</sup>	1.75M hours	1.75M hours
<b>Environmental</b>		
Operating Temperatures <sup>9</sup>	32 °F to 158 °F (0 °C to 70 °C)	32 °F to 158 °F (0 °C to 70 °C)
Non-operating Temperatures <sup>10</sup>	-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
Non-operating Vibration	4.9 gRMS, 7–800 Hz, 3 axes	4.9 gRMS, 7–800 Hz, 3 axes
Operating/Non-Operating Shock	1,500 G @ 0.5 ms half sine	1,500 G @ 0.5 ms half sine
Certifications	FCC, UL, TUV, KC, BSMI, VCCI	FCC, UL, TUV, KC, BSMI, VCCI
Limited Warranty <sup>11</sup>	5 years	5 years
<b>Physical Dimensions</b>		
Size: M.2 2280	22 ± 0.15 mm x 80 ± 0.15 mm x 2.23 mm	22 ± 0.15 mm x 80 ± 0.15 mm x 2.38 mm
Weight: M.2 2280	7.2 ± 0.5 g	7.2 ± 0.5 g

Specifications subject to change without notice.

<sup>1</sup> Backward compatible to Gen2 and Gen1.

<sup>2</sup> Not all products may be available in all regions of the world.

<sup>3</sup> 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](http://www.sata-io.org) for details.

<sup>4</sup> Performance is based on the CrystalDiskMark benchmark using a 1000MB LBA range on ASUS Z170 desktop with Intel® i7-6700K 4.0GHz, 8GB 2133MHz DDR4. Windows 10 Pro 64-bit using Microsoft StorNVMe driver, secondary drive.

<sup>5</sup> Q=Queue, T=Thread.

<sup>6</sup> TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

<sup>7</sup> Measured using the MobileMark™ 2014 benchmark with ASPM (Active State Power Management) enabled.

<sup>8</sup> MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing.

<sup>9</sup> Operational temperature is measured by an on board temperature sensor.

<sup>10</sup> Non-operational storage temperature does not guarantee data retention.

<sup>11</sup> See <http://support.wdc.com> for regional specific warranty details.

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**For service and literature:**  
<http://support.wdc.com>  
[www.wdc.com](http://www.wdc.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



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

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