



# Western Digital® PC SN520 NVMe™ SSD

## Thin Is In

### Innovative Solutions

With future-ready, scalable NVMe architecture, the Western Digital PC SN520 NVMe SSD offers both manufacturers and end-users the solution to innovate and expand their computing effectiveness. The Western Digital PC SN520 NVMe SSD not only triples the read speed over SATA SSDs, but further optimizes the low power consumption level to a low 2.5mW.

This NVMe SSD enables greater design flexibility for ultra-thin notebook or tablet designs that require a cost effective, reliable storage device with a small form factor and capacity points up to 512GB.

### Versatile Options for Mobility

The Western Digital PC SN520 NVMe SSD, supporting PCIe Gen3 x2, is designed for a multitude of applications that require both high performance and low power.

Equipped with a fully integrated solution which includes an in-house controller, 64-layer 3D NAND, firmware, and extensive testing, Western Digital provides longevity of supply in a robust and reliable design.

Designed with Western Digital's in-house tiered-caching NVMe architecture, the Western Digital PC SN520 NVMe SSD delivers high performance with sequential read and write speeds up to 1,700MB/s and 1,400MB/s respectively and high endurance up to 300 TBW, all of which is available in a variety of small form factors: M.2 2230, M.2 2242, M.2 2280.

### Summary

Western Digital PC SN520 NVMe SSD, in variety of small, single-sided form factors, enables customers to build ultra-thin, ultra-small boards and systems that address the ever-changing computing platforms, without sacrificing performance and power consumption.

### WESTERN DIGITAL PC SN520 NVMe SSD KEY BENEFITS & FEATURES

**READ SPEEDS UP TO 1,700MB/S AND LOW POWER CONSUMPTION LEVERAGES BOTH THE PCIe GEN3 x2 INTERFACE, AS WELL AS SOPHISTICATED NVMe POWER MANAGEMENT**

**128GB-512GB CAPACITIES AVAILABLE IN THREE SMALL FORM FACTORS: M.2 2230, M.2 2242, M.2 2280**

**ENDURANCE OF UP TO 300 TBW**

**5 YEAR LIMITED WARRANTY**

# Western Digital PC SN520 NVMe SSD

Specifications are subject to change

<b>Form Factors</b>	M.2 2230, M.2 2242, M.2 2280		
<b>Interface</b>	PCIe Gen3 x2 NVMe v1.3		
<b>Formatted Capacities<sup>1</sup></b>	128GB, 256GB, 512GB		
<b>Performance<sup>2</sup></b>	<b>128GB</b>	<b>256GB</b>	<b>512GB</b>
Sequential Read up to (MB/s)	1,500	1,700	1,700
Sequential Write up to (MB/s)	800	1,300	1,400
Random Read up to (IOPS)	95K	220K	270K
Random Write up to (IOPS)	90K	175K	280K
Endurance <sup>3</sup> (TBW)	100	200	300
<b>Power</b>	<b>128GB</b>	<b>256GB</b>	<b>512GB</b>
Peak Power (10µs) (A)	1.2	1.4	1.8
Avg. Active Power <sup>4,5</sup> (mW)	75	75	75
Low Power (PS3) <sup>5</sup> (mW)	25	25	25
Sleep (PS4) <sup>5</sup> (mW)	2.5	2.5	2.5
Supply Voltage (V / ±5%)	3.3	3.3	3.3
<b>Reliability</b>	Up to 1.752M hours		
MTTF <sup>6</sup>	Up to 1.752M hours		
<b>Environmental</b>			
Operating Temperature <sup>7</sup>	32°F to 158°F (0°C to 70°C)		
Non-operating Temperature <sup>8</sup>	-67°F to 185°F (-55°C to 85°C)		
Operating Vibration	5 gRMS, 10–2000 Hz, 3 axes		
Non-operating Vibration	4.9 gRMS, 7–800 Hz, 3 axes		
Shock	1,500G @0.5 ms half sine		
Certifications	FCC, UL, TUV, KCC, BSMI, VCCI, C-Tick		
Limited Warranty <sup>9</sup>	5 years		
<b>Physical Dimensions</b>			
Width	22mm ±0.15mm		
Length	2230: 30mm ±0.15mm; 2242: 42mm ±0.15mm; 2280: 80mm ±0.15mm		
Thickness (max)	2.38mm		
Weight	2230: 3.5g ±1g; 2242: 4.0g ±1g; 2280: 6.5g ±1g		
<b>SKU</b>	<b>Form Factor</b>	<b>Capacity</b>	
SDAPTUW-128G	M.2 2230 S3-B-M	128GB	
SDAPTUW-256G	M.2 2230 S3-B-M	256GB	
SDAPTUW-512G	M.2 2230 S3-B-M	512GB	
SDAPMUW-128G	M.2 2242 S3-B-M	128GB	
SDAPMUW-256G	M.2 2242 S3-B-M	256GB	
SDAPMUW-512G	M.2 2242 S3-B-M	512GB	
SDAPNUW-128G	M.2 2280 S3-B-M	128GB	
SDAPNUW-256G	M.2 2280 S3-B-M	256GB	
SDAPNUW-512G	M.2 2280 S3-B-M	512GB	

## Western Digital

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<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.

<sup>4</sup> 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.

<sup>5</sup> Power measurements at 25°C.

<sup>6</sup> MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing. 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. (Telcordia SR-332, GB, 40°C)

<sup>7</sup> Operational temperature as reported by device (composite temperature.)

<sup>8</sup> Non-operational storage temperature does not guarantee data retention.

<sup>9</sup> 5 years or Max Endurance (TBW) limit, whichever occurs first. 5 year warranty in regions not recognizing "limited." See <http://support.wdc.com> for more details.

Product specifications subject to change without notice. Not all products are available in all regions of the world.