



## DATA SHEET



# PC SN5000S NVMe™ SSD

High performance, strong endurance,  
and uncompromising reliability with QLC.

### Highlights

- QLC WITHOUT COMPROMISE**  
 Get cost-efficient QLC with higher performance and strong reliability — without choosing between the two
- OPTIMIZE YOUR WORKFLOW**  
 Move large files and other content with reliable nCache™ 4.0 dynamic SLC technology — that enables a performance boost without sacrificing endurance, regardless of the workload
- PERFORMANCE FOR INTENSE WORKLOADS**  
 Power through intense workloads with mighty PCIe® Gen4x4 technology and up to 6,000MB/s<sup>1</sup> read speeds — thanks to NVMe™ 2.0 technology
- CRITICAL DATA IN THE RIGHT HANDS**  
 Choose the self-encrypted option to arm this drive with reliable TCG Opal 2.02 security, ensuring your critical data remains in the right hands. The upgrades of RSA-3K and SHA-384 help add an extra layer of protection, and the built-in dedicated boot partition grants more peace of mind
- GET MORE FROM YOUR DRIVE**  
 Improve your device's power efficiency during active usage by up to 20% over the previous generation<sup>3</sup>. Enjoy an exceptional experience with a product designed to support Project Athena

Stop choosing between performance and reliability for QLC with the Western Digital® PC SN5000S NVMe™ SSD. This device is equipped with Western Digital's next-generation 3D NAND, the latest in-house controller, and a fully integrated firmware solution. Boasting PCIe® Gen4x4 technology and read speeds up to 6,000MB/s<sup>1</sup>, it's the all-in-one solution for handling demanding workloads efficiently. Seamlessly transfer data with nCache™ 4.0 dynamic SLC technology and help protect your most critical data with a dedicated boot partition. Opt for the self-encrypted version built with TCG Opal 2.02 to help secure your data. This device is offered in capacities ranging from 512GB to 2TB<sup>2</sup>, in both the M.2 2280 and M.2 2230 form factors, and delivers an exceptional experience through compliance with Project Athena. Update your PC storage confidently with this cost-efficient and high-performance SSD solution.

### Features

- Fast sequential reads up to 6000MB/s<sup>1</sup>
- Western Digital 3D NAND BiCS6 QLC
- PCIe® Gen4x4 with NVMe™ 2.0<sup>4</sup>
- Fully integrated solution which includes our new in-house controller, 3D NAND, and firmware
- nCache™ 4.0 with Hybrid SLC and endurance monitoring to ensure reliability
- TCG OPAL 2.02, ATA security
- RSA-3K, SHA-384 (upgraded)
- RPMB, Boot Partition

# PC SN5000S NVMe™ SSD

High performance, strong endurance, and uncompromising reliability with QLC.

	512GB <sup>2</sup>	1024GB <sup>2</sup>	2048GB <sup>2</sup>
<b>Product specifications</b>			
Interface M.2 2280	PCIe® Gen4 16Gb/s, up to 4 Lanes		
<b>Performance</b>			
Sequential Read up to (MB/s) <sup>1</sup> (Queues=32, Threads=1)	6,000		
Sequential Write up to (MB/s) <sup>1</sup> (Queues=32, Threads=1)	4,200	5,400	5,600
Random Read 4KB IOPS up to (Queues=32, Threads=16) <sup>5</sup>	500K	750K	750K
Random Write 4KB IOPS up to (Queues=32, Threads=16) <sup>5</sup>	850K	900K	900K
Endurance <sup>6</sup> (TBW)	150	300	600
<b>Power</b>			
Average Active Power <sup>7</sup>	95mW	100mW	100mW
(Sleep) PS5 <sup>8</sup>	3.0mW		
Peak Power <sup>7</sup>	6.1W	6.5W	6.9W
<b>Reliability</b>			
MTTF <sup>9</sup>	1.75M hours		
<b>Country Code</b>			
Origin	Product of China or Product of Malaysia		
<b>Regulatory</b>			
ROHS compliant <sup>10</sup>	Yes		
<b>Environmental</b>			
Operating Temperature <sup>11</sup>	32°F to 176°F (0°C to 80°C)		
Non-Operating Temperature <sup>12</sup>	-40°F to 185°F (-40°C to +85°C)		
Operating Vibration	5 gRMS, 10 to 2,000Hz. 3 axes		
Non-Operating Vibration	4.9 gRMS, 7 to 800Hz. 3 axes		
Shock	1,500G @0.5 ms half sine		
Certifications	Windows HLK, FCC, CAN, CECC, RFE, RCM, KC, BSMI, VCCI, CB-S, UL, TUV		
Limited Warranty <sup>13</sup>	5 years		
<b>Physical Dimensions</b>			
Length	M.2 2280: 80mm ± 0.10mm, M.2 2230: 30mm ± 0.10mm		
Width	22mm ± 0.10mm		
Height	2.38mm		
Weight	M.2 2280: 5.4g ± 0.5g, M.2 2230: 2.8g ± 0.5g		
<b>Ordering Information</b>			
M.2 2280 Security Type: Non-SED	SDEPNSJ-512G	SDEPNSJ-1T00	SDEPNSJ-2T00
M.2 2280 Security Type: SED	SDEQNSJ-512G	SDEQNSJ-1T00	SDEQNSJ-2T00
M.2 2230 Security Type: Non-SED	SDEPTSJ-512G	SDEPTSJ-1T00	SDEPTSJ-2T00
M.2 2230 Security Type: SED	SDEQTSJ-512G	SDEQTSJ-1T00	SDEQTSJ-2T00

1. Based on read speed, unless otherwise stated. 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.

2. 1GB = 1 billion bytes and 1TB = 1 trillion bytes. Actual user capacity may be less depending on operating environment.

3. Comparison based on the Western Digital PC SN740 2TB model.

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

5. IOPS = input/output operations per second.

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

7. Average Power is measured using MobileMark™ 2018 on Windows 10 (version 19042) Bios version 1.51, Intel RST driver at 25°C. Peak power is the maximum instantaneous power measured while continuously processing sequential read and write commands (tested separately) for at least 1 minute, with a transfer size of 256 sectors per command (128KB), queue depth of 32 and 1 threads, with sampling interval of 10us.

8. Low Power referring to NVMe PS5 at 25°C.

9. 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.

10. This drive is in compliance with the European Union Directive 2011/65/EU and Directive (EU) 2015/863 on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

11. Operational temperature is defined as temperature reported by the drive. Note that drive temperature readings are expected to be higher than ambient temperature when the SSD is placed inside a system. The SSD box package is rated up to 60°C.

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

13. 5 years or Max Endurance (TBW) limit, whichever occurs first. See support.WesternDigital.com for regional specific warranty details.

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