



Product Highlights

- PCIe® Gen 5.0, NVMe™ 2.0d
- Sequential read/write speeds up to 14,900/14,100 MB/s² (2,048GB and 4,096GB¹ models)
- Random read/write speeds up to 2.3/2.4M IOPS² (2,048GB and 4,096GB¹ models)
- 512GB, 1,024GB, 2,048GB, and 4,096GB¹
- M.2 2280
- SANDISK® TLC 3D NAND
- SANDISK® nCache™ 4.0 Technology
- Up to 2,400 TBW⁴ Endurance (4,096GB¹ model)
- Optional TCG Opal v.2.02

(→) SANDISK® PC SN8050S NVMe™ SSD Power, Performance, Efficiency: Redefined

The SANDISK® PC SN8050S NVMe™ SSD with PCIe® Gen 5.0 and next generation SANDISK® TLC 3D NAND technology delivers leading-edge performance of up to 14,900/14,100 MB/s² sequential read/write speeds and up to 2.3/2.4M IOPS² random read/write speeds (2,048GB and 4,096GB¹ models) for demanding workloads including 8K video, fast loading of AI models, AI or business analytics, and scientific applications involving large datasets. With increased power efficiency providing 80% better MBps/Watt than the prior generation,¹² the SANDISK® PC SN8050S NVMe™ SSD can be integrated into mobile workstations, desktops and laptops. The SANDISK® PC SN8050S NVMe™ SSD is available in capacities of 512GB to up to 4,096GB.¹ Optional TCG Opal v.2.02 data-at-rest encryption enhances data security.

A leading-edge PCIe® Gen 5.0 performance drive

Harness the speed of PCIe® Gen 5.0 with up to 14,900/14,100 MB/s² sequential read/write speeds and up to 2.3/2.4M IOPS² random read/write speeds (2,048GB and 4,096GB¹ models) for demanding workloads including 8K video, fast loading of AI models, demanding AI or business analytics, and scientific applications involving large datasets.

Exceptional power efficiency

With increased power efficiency providing 80% better MBps/Watt than prior generation,¹² the SANDISK® PC SN8050S NVMe™ SSD can be integrated into mobile workstations, desktops and laptops.

Massive storage for massive workloads

With capacities of 512GB to up to 4,096GB,¹ store application with massive datasets, large AI LLMs (large language models), or 8K video libraries without worry.

Engineered for your workflow

Equipped with the next generation SANDISK® TLC 3D NAND delivering speed and reliability with up to 2,400 TBW⁴ (4,096GB¹ model), the SANDISK® PC SN8050S NVMe™ SSD is engineered for write-intensive workloads like video editing, ensuring long-lasting performance and reliability.

Data-at-rest encryption

Industry standard TCG Opal v.2.02 encrypts data-at-rest to help with enhanced security and compliance.

Multitask with multiple apps

With the latest NVMe™ 2.0d and SANDISK® nCache™ 4.0 technologies, seamlessly multitask between projects and fast burst writes for large file copies.

Specifications

| | 512GB ¹ | 1,024GB ¹ | 2,048GB ¹ | 4,096GB ¹ |
|---|--|----------------------|----------------------|----------------------|
| Product Specifications | | | | |
| Interface | PCIe® Gen 5.0 x4, NVMe™ 2.0d | | | |
| Form Factor | M.2 2280-S3-M | | | |
| NAND Type | SANDISK® TLC 3D NAND | | | |
| DRAM | Yes | | | |
| Performance² | | | | |
| Sequential Read, 1MiB (MB/s), up to | 14,100 | 14,100 | 14,900 | 14,900 |
| Sequential Write, 1MiB (MB/s), up to | 10,600 | 13,200 | 14,100 | 14,100 |
| Random Read, 4KiB (IOPS), up to | 1,200K | 2,100K | 2,300K | 2,300K |
| Random Write, 4KiB (IOPS), up to | 2,300K | 2,400K | 2,400K | 2,400K |
| Power⁵ | | | | |
| Peak Power (W) | 9.4 | 9.7 | 8.9 | 10.5 |
| Average Read (W) | 9.1 | 9.2 | 6.5 | 7.4 |
| Average Write (W) | 7.5 | 9.2 | 7.2 | 9.0 |
| Idle (Sleep, D3Hot) (mW) | 3 | | | |
| Reliability | | | | |
| Endurance (TBW) ⁴ | 300 | 600 | 1,200 | 2,400 |
| MTTF ⁶ (hours) | 1.75 M | | | |
| Limited Warranty ¹⁰ | 5 years | | | |
| Security | | | | |
| Non-SED | TCG Pyrite 2.01 and ATA Security passthrough over NVMe™ | | | |
| SED | TCG Opal 2.02 and ATA Security passthrough over NVMe™ | | | |
| Regulatory | | | | |
| RoHS Compliant ⁷ | Yes | | | |
| Certifications | FCC, UL, CE, CB-Scheme and Canada (ICES-003 (B)) TÜV, KCC, BSMI, VCCI, RCM, UKCA and Morocco | | | |
| Environmental | | | | |
| Operating Temperature ⁸ | 32°F to 185°F (0°C to 85°C) | | | |
| Non-Operating Temperature ⁹ | -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 | | | |
| Physical Dimensions¹¹ | | | | |
| Length | 80mm | | | |
| Width | 22mm | | | |
| Height | 2.38mm | | | |
| Weight | 7.1g | | | |

Ordering Information

| Form Factor | Security | 512GB ¹ | 1,024GB ¹ | 2,048GB ¹ | 4,096GB ¹ |
|-------------|----------|--------------------|----------------------|----------------------|----------------------|
| M.2 2280 | Non-SED | SDFPNJK-512G | SDFPNJK-1T00 | SDFPNJL-2T00 | SDFPNJL-4T00 |
| M.2 2280 | SED | SDFQNJL-512G | SDFQNJL-1T00 | SDFQNJL-2T00 | SDFQNJL-4T00 |

¹ 1GB = 1 billion bytes. Actual user capacity may be less depending on operating environment.
² Based on read speed, unless otherwise stated. 1 MB/s = 1 million bytes per second. IOPS = input/output operations per second. Based on internal testing; performance may vary depending upon host device, usage conditions, drive capacity, and other factors.
³ Backward compatible with PCIe® Gen5 x2, Gen4 x4, Gen4 x2, Gen3 x4, Gen3 x2, Gen3 x1, Gen2 x4, Gen2 x2, and Gen2 x1
⁴ TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.
⁵ Average Read/Write Active Power is measured using a sustained sequential read and write operation (measured separately) and represents a moving average over a 1 second period. Peak power is the maximum instantaneous power measured while continuously processing sequential read and write commands (tested separately) and represents a maximum instantaneous power over a 10us period. Power may vary depending on test setup, configuration and firmware version.
⁶ 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.
⁷ 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.
⁸ 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.
⁹ Non-operational storage temperature does not guarantee data retention.
¹⁰ 5 years or Max Endurance (TBW) limit, whichever occurs first. See sandisk.com/support for regional specific warranty details.
¹¹ Physical product dimensions for length and width may vary by ± 0.10mm and product weight may vary by ± 10%.
¹² Compared with the PC SN8000S SSD 2,048GB model.