

SanDisk® X400 SSD (Solid State Drive)

THE WORLD'S FIRST 1TB, SINGLE-SIDED SSD



The SanDisk® X400 SSD is SanDisk's upper-tier SATA client SSD, driving mainstream adoption in computing platforms for both corporate customers and end-consumers. It is designed with SanDisk's nCache™ 2.0 technology to provide greater reliability and high-grade endurance for longevity and is backed by a five-year warranty⁵.

Additionally, X400 can be successfully used in entry-level enterprise servers, typically for read-intensive and boot/logging applications. TCG OPAL 2.0 support means interoperability with leading industry security ISVs applications.

For products built around high capacities and thin form factors

From ultrathin consumer notebooks to corporate platforms, the X400 SSDs range of form factors and capacities deliver a variety of design and integration options for manufacturers and systems builders. With a 1.5mm single-sided form factor (M.2 2280 module), X400 SSD's performance and capacities make it ideal for ultrathin designs. Additionally, the X400 SSD is available in 2.5" 7mm-height as a true drop in replacement for mechanical HDDs. Both form factors are available in 128GB, 256GB, 512GB and 1TB¹ capacities.

Responsiveness, reliability, and low power for the way consumers work

Built using SanDisk's 2nd generation TLC flash node, the X400 SSD offers quick responsiveness, high reliability and low power for a seamless and productive user experience.

nCache™ 2.0 technology means better performance for professionals and enthusiasts

The X400 features nCache™ 2.0 technology, which boosts performance for fast burst and high sustained sequential write speeds. Its multi-tiered caching architecture uses a combination of SLC and TLC blocks to maximize read/write operations and improve responsiveness and longevity, making it the ideal storage solution for multi-tasking and heavy workloads such as photo and video editing, as well as office productivity applications.

SATA SAS PCIe

X400 KEY FEATURES

UP TO 1TB IN A SINGLE-SIDED M.2 2280 AND 2.5" 7MM FORM FACTORS

NCACHE 2.0 MAXIMIZES READ/WRITE OPERATIONS AND IMPROVES RESPONSIVENESS

GREATER RELIABILITY WITH DATAGUARD™ CLIENT AND THE NEW LDPC ERROR CORRECTION MECHANISM

5-YEAR WARRANTY

AVAILABLE IN 128GB, 256GB, 512GB, AND 1TB CAPACITIES IN BOTH 2.5" 7MM AND M.2 2280 FORM FACTOR

BETTER SLUMBER MODE FOR GREATER LOW POWER EFFICIENCY

TCG OPAL 2.0 SUPPORT

Ultra-durable systems with high-grade endurance

DataGuard™ Client technology and LDPC error correction mean that the X400 SSD delivers high reliability and endurance up to 320 terabytes written (TBW)². A dedicated on-the-fly hardware core performs progressive error correction to minimize the impact on latency and performance, while maintaining low power usage. The X400 SSD product family includes a 5-year warranty.

TCG Opal 2.0 Support

TCG Opal 2.0 support means interoperability with 3rd party leading security Independent Software Vendors (ISVs). The X400 SSD includes Self-Encrypted Drive (SED) capabilities to protect data at rest through hardware-based 256-bit AES encryption. Corporate IT customers have peace of mind knowing their business-critical data is protected, secured and encrypted, while providing performance and reliability to its employees.

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Specifications subject to change without notice.
¹ 1TB=1,000,000,000 bytes. Actual user storage less.
² TBW (terabytes written) values calculated using JEDEC client workload (JESD219) and vary by product capacity.
³ Performance is based on the CrystalDiskMark benchmark using a 1000MB LBA range on Gigabyte GA-Z77X-UD5H desktop with Intel Z77 chipset, Intel i7-3770 3.4GHz, 8M, Ivy Bridge, Windows 8 64-bit SPI using IntelIRST version 11.7.0.1013, secondary drive, C-state off. Performance may vary based on host device. 1 MB = 1,000,000 bytes. IOPS = input/output operations per second.
⁴ MTTF = Mean Time To Failure based on internal testing using Telcordia stress part testing.
⁵ 5-year warranty in regions not recognizing "limited". See www.sandisk.com/wug for more details.
⁶ Measured using the MobileMark™ 2012 benchmark with DIPM (Device Initiated Power Management) enabled.

SanDisk®

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SanDisk® X400 SSD Product Features and Specifications

Specifications are preliminary and subject to change

Device	SanDisk X400 SSD			
Form Factor	7mm 2.5-inch, M.2 (2280)			
Interface	SATA III (6 Gb/s) backward compatible to SATA II and I			
Size & Weight	2.5":	7.00mm x 69.85mm x 100.5mm @37.4g, 59.7g(1TB)		
	M.2 2280:	1.5mm x 22.00mm x 80.0mm @ 7 ± 1g		
Performance [4KB QD32]³	128GB	256GB	512GB	1TB
Seq. Read up to (MB/s)	540	540	540	545
Seq. Write up to (MB/s)	340	520	520	520
Rand Read up to (IOPS)	93.5k	93.5k	93.5k	95k
Rand Write up to (IOPS)	60k	60k	75k	75k
Endurance (TBW)²	72	80	160	320
Power⁶	128GB	256GB	512GB	1TB
Avg. Active Power (mW)³	70	70	70	70
Max Read Operating (mW)	2,050	2,350	2,850	2,850
Max Write Operating (mW)	3,350	3,400	4,000	4,400
Slumber (mW)	42-45	42-45	42-46	45-52
DEVSPL (mW)	4.9-6.0	4.9-6.0	6.0-7.7	6.0-9.7
Reliability				
MTTF⁴	Up to 1.75M hours			
Environmental				
Operating Temperatures	0°C to 70°C			
Non-operating Temperatures	-55°C to 85°C			
Operating Vibration	5.0 gRMS, 10 - 2000 Hz			
Non-operating Vibration	4.9 gRMS, 7 - 800 Hz			
Shock	1,500 G @0.5 msec half sine			
Certifications	FCC, UL, TUV, KC, BSMI, VCCI			
Warranty⁵	5 years			

Model Name	SKU
SanDisk X400 SSD M.2 2280 128GB	SD8SN8U-128G
SanDisk X400 SSD M.2 2280 256GB	SD8SN8U-256G
SanDisk X400 SSD M.2 2280 512GB	SD8SN8U-512G
SanDisk X400 SSD M.2 2280 1TB	SD8SN8U-1T00
SanDisk X400 SSD SATA 2.5" 7mm 128G	SD8SB8U-128G
SanDisk X400 SSD SATA 2.5" 7mm 256GB	SD8SB8U-256G
SanDisk X400 SSD SATA 2.5" 7mm 512GB	SD8SB8U-512G
SanDisk X400 SSD SATA 2.5" 7mm 1TB	SD8SB8U-1T00
SanDisk X400 SSD M.2 2280 128GB	SD8SN8U-128G-1122
SanDisk X400 SSD M.2 2280 256GB	SD8SN8U-256G-1122
SanDisk X400 SSD M.2 2280 512GB	SD8SN8U-512G-1122
SanDisk X400 SSD M.2 2280 1TB	SD8SN8U-1T00-1122
SanDisk X400 SSD SATA 2.5" 7mm 128GB	SD8SB8U-128G-1122
SanDisk X400 SSD SATA 2.5" 7mm 256GB	SD8SB8U-256G-1122
SanDisk X400 SSD SATA 2.5" 7mm 512GB	SD8SB8U-512G-1122
SanDisk X400 SSD SATA 2.5" 7mm 1TB	SD8SB8U-1T00-1122
SanDisk X400 SSD SATA 2.5" 7mm 128GB SED	SD8TB8U-128G-1122
SanDisk X400 SSD SATA 2.5" 7mm 256GB SED	SD8TB8U-256G-1122
SanDisk X400 SSD SATA 2.5" 7mm 512GB SED	SD8TB8U-512G-1122
SanDisk X400 SSD SATA 2.5" 7mm 1TB SED	SD8TB8U-1T00-1122

1122 = single packaging