



2.5-inch U.2 NVMe SSD
3.84TB, 3.2TB, 1.92TB and 1.6TB

Features & Benefits

- PCIe Gen 3, x4 interface and NVMe™ 1.2 compliant with in-box driver support
- Industry-standard 2.5-inch U.2 small form factor for high serviceability
- Capacities up to 3.84TB¹
- Optimized for read-intensive & mixed-use workloads
- Up to 132K IOPS (70/30 random mixed workload)
- Half the power consumption compared to 25W PCIe SSD solutions
- Hot Swap/Hot Plug support with data-loss protection
- Includes Guardian Technology™ Platform for improved flash endurance and data integrity/protection
- MTBF rating of 2 million hours
- Instant Secure Erase (ISE)

Specialized for the Following Applications

- Direct-attached Storage (DAS)
- Cloud and hyperscale storage
- Virtualization
- OLAP
- File/web servers
- Media streaming & VoD

Economies of Scale Propel Cloud Storage

Cloud services are revolutionizing how companies think of data storage by transitioning from fixed-cost IT infrastructure to variable cost models. As more business services move to the cloud to reap the benefits of the "pay as you go" model, the demands on cloud service providers to scale increase exponentially. Finding ways to maximize and streamline storage by running concurrent workloads across the storage infrastructure has become essential. Furthermore, cloud storage services must offer high availability and consistent I/O performance to be delivered 24/7, 365 days a year. Ultrastar® DC SN620 NVMe™ SSDs (previously known as SanDisk® Skyhawk™ and Skyhawk Ultra) help customers meet these rigorous requirements at a viable \$/GB.

Ultrastar DC SN620 SSDs Help Increase Productivity and Lower TCO

SATA SSDs have long been used in data centers and cloud storage. But as capacity needs grow along with the necessity to access data with minimal latency, the adequacy of the interface bandwidth between the host and the drive comes under scrutiny. With no announced evolution of the SATA standard beyond SATA 3.x (6Gbps), the use of SATA SSDs in the cloud has reached performance limits. While capacity and bandwidth can be scaled by supplementing more SATA drives, they will come at the cost of increased floor space and lower PUE (Power Usage Effectiveness). The sprawling effect of SATA SSDs can be mitigated by the use of Ultrastar DC SN620 NVMe-compliant SSDs. By delivering 3x the bandwidth of enterprise SATA SSDs*, Ultrastar DC SN620 SSDs can yield server consolidation benefits as much as 3:1.

Highly Reliable Storage Innovation

Utilizing the industry standard NVMe command protocol that lowers latency and improves bandwidth, Ultrastar DC SN620 PCIe SSDs enable a cost-effective transition to next-generation storage platforms.

Available in the 2.5-inch small form factor with typical power consumption under 11W and hot-swap capability, Ultrastar DC SN620 PCIe SSDs simplify large-scale deployment in the data center. This results in efficient workload utilization, a lower thermal profile compared to 25W PCIe SSDs and improved TCO.

Ultrastar DC SN620 SSDs are powered by an innovative Guardian Technology Platform, a comprehensive suite of enterprise features comprised of FlashGuard™, DataGuard™, and EverGuard™ technologies. By leveraging Western Digital's history of providing world class enterprise storage solutions, manufacturing excellence combined with commitment to reliability leadership, Ultrastar DC SN620 SSDs enable data center customers to innovate with minimal risk.

Options to Simplify Data Security

Compliance and privacy requirements drive the need for increased data security. Ultrastar DC SN620 models with Instant Secure Erase (ISE) are not considered self-encrypting drives, but use behind-the-scenes encryption keys to expedite drive redeployment and retirement. Secure Erase (SE) models use industry-standard commands to securely erase without the use of encryption technology.

*Compared to CloudSpeed™ Gen. II SATA SSDs from the SanDisk brand

Specifications

Model	<1 DW/D	>1 DW/D
Configuration		
Capacity ¹	3.84TB / 1.92TB	3.2TB / 1.6TB
Form Factor	U.2 2.5-inch drive	
Interface	PCIe 3.0 x4 NVMe™ 1.2	
Endurance (Drive writes per day, DW/D) ²	0.5 / 0.6	1.2 / 1.7
Flash Memory Technology	15nm MLC NAND	
Performance³		
Sequential Read, (max MiB/s, 128KiB, QD32)	1,700	1,700
Sequential Write, (max MiB/s, 128KiB, QD32)	1,100	1,100
Random Read (max IOPS, 4KiB, QD32)	250,000	250,000
Random Write (max IOPS, 4KiB, QD32)	38,000	83,000
Mixed Random Read/Write (max IOPS 70%R/30%W, 4KiB, QD32)	89,000	132,000
Latency		
Average Random Read Latency, 4KiB, QD32 (µs)	128	128
Average Random Write Latency, 4KiB, QD32 (µs)	1,455 / 842	780 / 386
Reliability		
Uncorrectable Bit Error Rate (UBER)	1 in 10 ¹⁷	
Data Retention	3 months at 40° C	
MTBF ⁴	2 million hours	
Annualized Failure Rate (AFR) ⁴	0.44%	
Limited Warranty ⁵	5 years	
Electrical		
Requirement (DC +/- 10%)	12V	
Operating (W, average)	10	
Idle (W, average)	5.2	
Environmental		
Operating Temperature ⁶	0° C to 70° C	
Non-operating Temperature	-40° C to +85° C	
Physical		
Dimensions (width x depth, mm)	100.45 x 69.85	
Weight (g, max)	125	
z-height (mm)	15	

Feature	Part Number	Model Number	Capacity	Endurance
Instant Secure Erase	0TS1842	SDLC2CLR-019T-3NA1	1.92TB	0.6 DW/D
	0TS1844	SDLC2LLR-038T-3NA1	3.84TB	0.5 DW/D
	0TS1841	SDLC2CLR-016T-3NA1	1.6TB	1.7 DW/D
	0TS1843	SDLC2LLR-032T-3NA1	3.2TB	1.2 DW/D
Secure Erase	0TS1846	SDLC2CLR-019T-3BA2	1.92TB	0.6 DW/D
	0TS1848	SDLC2CLR-038T-3BA2	3.84TB	0.5 DW/D
	0TS1845	SDLC2CLR-016T-3BA2	1.6TB	1.7 DW/D
	0TS1847	SDLC2CLR-032T-3BA2	3.2TB	1.2 DW/D

¹ One gigabyte (GB) is equal to 1,000MB (one billion bytes) and one terabyte (TB) is equal to 1,000GB (one trillion bytes) when referring to solid-state capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the drive, the computer's operating system, and other factors.

² Endurance rating based on JESD-219 Workloads over 5 years

³ Performance will vary by capacity point, or with the changes in useable capacity. Consult product manual for further details. All performance measurements are in full sustained mode and are peak values. Subject to change. 1MiB= 1,048,576 bytes or 2²⁰. 1KiB= 1,024 bytes or 2¹⁰.

⁴ MTBF and AFR targets are based on a sample population and are estimated by statistical measurement and acceleration algorithms under median operating conditions. MTBF and AFR rating do not predict an individual drive's reliability and do not constitute a warranty.

⁵ The lesser of 5 years from the date of manufacture of the product or the date on which the product's relevant endurance thresholds set forth in the product specifications are reached

⁶ Internal temperature sensor reading

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