



**2.5-inch U.2 NVMe SSD**  
**7.68TB, 3.84TB, 1.92TB and 960GB**  
**6.40TB, 3.20TB, 1.60TB and 800GB**

## Features & Benefits

- PCIe Gen 3.1, x4 interface and NVMe™ 1.3 compliant with in-box driver support
- Industry-standard 2.5-inch U.2 small form factor for high serviceability in a slim 7mm package
- Capacities up to 7.68TB<sup>1</sup>
- Optimized for read-intensive & mixed-use workloads
- Up to 273K IOPS (70/30 random mixed workload)
- 65% less power consumption compared to 25W PCIe SSD solutions
- Hot Swap/Hot Plug support with data-loss protection
- NVMe MI 1.0 Management Interface Support
- MTBF rating of 2 million hours
- Instant Secure Erase (ISE) with AES-256 encryption

## Specialized for the Following Applications

- Cloud and hyperscale storage
- Software Defined Storage
- File, Block and Object Storage applications
- Direct-attached Storage (DAS)
- Hyper-converged Infrastructure
- NoSQL databases
- Content Delivery Network (CDN)
- Virtualization
- OLAP
- File/web servers
- Media streaming & VoD

## Economies of Scale Propel Cloud Storage

Next generation cloud data centers are now deploying NVMe SSD storage as a core component, replacing the slower legacy SATA interface. The Ultrastar DC SN630 NVMe SSD is built on Western Digital's in-house controller and firmware technology and utilizes our own 64-layer BiCS3 3D NAND, which allows Western Digital to tightly control all design aspects and consistently deliver low latency and high performance. This essential NVMe offering provides twice the maximum capacity per slot and more capacity choices than our prior generation, up to 7.68TB.

Cloud services are revolutionizing how companies think about 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 SN630 NVMe™ SSDs help customers meet these rigorous requirements at a viable \$/GB.

## Ultrastar DC SN630 SSDs 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. The SATA (6Gb/s) interface constrains performance of most SSDs and introduces latency compared to NVMe SSDs. Utilizing higher capacity points with fast, low latency NVMe allows data center architects to reduce the number of servers deployed while still handling more users and providing more services per server. Server reduction, in turn, reduces the number of "per-core" software licensing fees required resulting in even lower TCO.

## Highly Reliable Storage Innovation

Utilizing the industry standard NVMe command protocol that lowers latency and improves bandwidth, Ultrastar DC SN630 SSDs enable a cost-effective transition to next-generation storage platforms.

Available in the 2.5-inch U.2 small form factor with a slim 7mm profile, typical power consumption under 10.75W, and hot-swap capability, Ultrastar DC SN630 NVMe 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 SN630 SSDs protect your data by providing data protection, proprietary wear levelling algorithms, and power loss protection required in a demanding enterprise environment. By leveraging Western Digital's history of providing world class enterprise storage solutions, manufacturing excellence, and commitment to reliability leadership, Ultrastar DC SN630 SSDs enable data center customers to innovate with minimal risk, backed with a 5-year limited warranty.

## Options to Simplify Data Security

Compliance and privacy requirements drive the need for increased data security. Ultrastar DC SN630 models with Instant Secure Erase (ISE) provide peace of mind by using behind-the-scenes encryption keys to expedite drive redeployment and retirement.

Secure Firmware downloads with RSA authentication ensure that the drive runs authentic Western Digital firmware only.

## Specifications

Model	VRI/RI			
<b>Configuration</b>				
Capacity <sup>1</sup>	960GB/800GB	1,920GB/1,600GB	3,840GB/3,200GB	7,680GB/6,400GB
Form Factor	U.2 2.5-inch drive			
Interface	PCIe Gen 3.1 x4 (Compliant to NVMe™ 1.3)			
Endurance (Drive writes per day, DW/D) <sup>2</sup>	0.8/2			
Flash Memory Technology	WDC BiCS3 3D TLC NAND			
<b>Performance<sup>3</sup> (Specified at 10.75W Average)</b>				
Sequential Read, (max MiB/s, 128KiB BS, QD128)	2,690/2,690	2,660/2,670	2,510/2,500	2,520/2,540
Sequential Write, (max MiB/s, 128KiB BS, QD128)	930/960	1,230/1,240	1,180/1,200	1,240/1,240
Random Read (max IOPS, 4KiB BS, QD128)	278,760/281,790	358,220/356,870	332,420/332,510	360,280/306,520
Random Write (max IOPS, 4KiB BS, QD128)	43,580/86,740	53,850/86,870	55,000/88,140	54,220/88,210
Random Mix R70/W30 (max IOPS, 4KiB BS, QD128)	107,350/188,480	170,390/253,390	163,350/238,500	170,250/273,960
<b>Latency Distribution (Specified at 10.75W Average)</b>				
Random Read Latency (4KiB BS, QD1, 99.99%) (μs)	179/179	190/188	243/239	243/239
<b>Reliability</b>				
Uncorrectable Bit Error Rate (UBER)	1 in 10 <sup>17</sup>			
EOL Data Retention	-5° C to 40° C for a maximum period of 90 days			
MTBF	2 million hours			
Annualized Failure Rate (AFR) <sup>4</sup>	0.44%			
Limited Warranty <sup>5</sup>	5 years			
<b>Electrical</b>				
Requirement (DC +/- 10%)	12V			
Operating Power States (W, typical)	10.75 & 8.75			
Idle (W, average)	5.80	5.80	5.90	6.10
<b>Environmental</b>				
Operating Temperature <sup>6</sup>	0° C to 78° C			
Average Temperature <sup>7</sup>	-40° C to 70° C for 1 year			
<b>Physical Measurements</b>				
Width (mm)	69.85 +/-0.25			
Length (mm, max)	100.45			
Weight (g, max)	95			
z-height (mm)	7.00 +0.2/-0.5 (including labels)			

Part Number	Model Number	Capacity	Endurance	PBW (Peta Bytes Written)
0TS1617	WUS3BA196C7P3E3	960GB	0.8 DW/D	1.40
0TS1618	WUS3BA119C7P3E3	1,920GB	0.8 DW/D	2.80
0TS1619	WUS3BA138C7P3E3	3,840GB	0.8 DW/D	5.61
0TS1620	WUS3BA176C7P3E3	7,680GB	0.8 DW/D	11.21
0TS1637	WUS3CA180C7P3E3	800GB	2 DW/D	2.92
0TS1638	WUS3CA116C7P3E3	1,600GB	2 DW/D	5.84
0TS1639	WUS3CA132C7P3E3	3,200GB	2 DW/D	11.68
0TS1640	WUS3CA164C7P3E3	6,400GB	2 DW/D	23.36

<sup>1</sup> 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.

<sup>2</sup> Endurance rating based on 100% 4KiB Random Write workload.

<sup>3</sup> 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 2<sup>20</sup>. 1KiB= 1,024 bytes or 2<sup>10</sup>. Source: Actuals\_vs\_measured.xlsx. Data reflects actual measured... round to 10ths.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> Composite temperature reading.

<sup>7</sup> Values are based on ambient temperature. Avoid non-operational exposure to temperatures in excess of 40° C for periods exceeding three months. The three-month End-of-Life (EOL) data retention specification requires storage temperatures to not exceed 40° C.

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