Optimus Ultra™ SAS SSDs

Outstanding performance for a wide variety of write-intensive application workloads.

Features

- 25 DWPD****(random workload)
- 5 Year Warranty****
- Data Integrity – BER 10^{18}
- FlashGuard – Enhances Flash Endurance
- DataGuard – Ensures Data Integrity
- EverGuard – Reliable 24x7 operation

Write-Intensive Application Workloads

- Data Warehousing
- Enterprise Resource Planning (ERP)
- Customer Relationship Management (CRM)
- On-line Transaction Processing (OLTP)

OEMs and IT managers no longer have to compromise on performance, endurance and reliability to obtain affordability. Optimus Ultra™ SSDs from SanDisk® offer all four in a single package through a combination of unique and innovative IP, and the use of enterprise Multi-Level Cell (eMLC) flash. SanDisk's newest generation of 19nm eMLC SSDs feature a native SAS 6Gb/s interface, outstanding performance metrics, and a comprehensive set of high-end features making them ideal to integrate with existing infrastructure for write-intensive applications with an I/O pattern designed predominately for workloads such as, Data Warehousing, Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and On-line Transaction Processing (OLTP), where performance and high-availability are required.

Available in capacities of 150GB - 1.2TB*, Optimus Ultra SSDs provide random read/write performance up to 95K/40K IOPS and sequential read/write data transfer rates of up to 550/540 MB/s**. Optimus Ultra SSDs provide dual port support with 1GB/s Read/800 MB/s Write in active/active operation for sequential read/write performance. Optimus Ultra SSDs provide 25 random Drive Writes Per Day (DWPD)****. Optimus Ultra SSDs have a 5 year warranty****.

Guardian Technology™ Platform

Optimus Ultra SAS SSDs are powered by SanDisk's proprietary Guardian Technology Platform, a comprehensive suite of enterprise features comprised of FlashGuard™, DataGuard™ and EverGuard™ technologies.

FlashGuard Technology combines Aggregated Flash Management, which treats all flash elements as a single system, and Advanced Signal Processing, which dynamically adjusts flash parameters throughout the life of the SSD, to reliably extract significantly more life from commercial-grade MLC flash, making it suitable for write-intensive application workloads.

DataGuard Technology features full data path protection, safeguarding user data from corruption along all data paths in the SSD.

EverGuard Technology protects against loss of user data in the event of unexpected power interruptions using a 3rd generation backup power circuit design and high-reliability discrete capacitors. Optimus Ultra SAS SSDs are designed for I/O intensive, mission-critical, 24/7 applications.

SanDisk®
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Optimus Ultra™ 2.5" SAS SSDs

Performance	
Interface	SAS 6 Gb/s
Interface Ports	Dual
Sequential Read/Write (MB/s)**	150GB: Up to 550/380 MB/s[1] per port/ 300GB - 1.2TB: Up to 550/540 MB/s[1] / 1GB/s Read/800 MB/s Write in Active/Active operation
Random Read/Write (IOPS)	Up to 95K/40K[2]
Capacity	
19nm eMLC User Capacities*	150GB, 300GB, 600GB, and 1.2TB
Reliability	
Sector Sizes	512, 520, 528 byte
Data Reliability (BER)	1 unrecoverable error in 10^{18} bits read*****
MTBF***	2.5 Million Hours
Data Fail Recovery	F.R.A.M.E. (Flexible Redundant Array of Memory Elements)
Power Fail Recovery	EverGuard Technology: Backup Power Circuitry
Data Path Protection	DataGuard Technology
Warranty****	The lesser of 5 years or maximum endurance used
Endurance	
DWPD (Random Workload)****	25 DWPD
Power	
Vcc	5V, - 5%/+10%
Active (Typ)	7W
Environmental	
Shock	1000 g half-sine, 0.5 msec, 3 shocks along each axis, X, Y, Z, in each direction
Vibration	2.17 g rms, 7-800 Hz
Operating Temperature	0° C to 70° C (internal)
Storage Temperature	-40° C to 90° C
Humidity	5% to 95%, non-condensing, relative humidity
Altitude	5486.4 m [18,000 ft]
Mechanical	
Length	100.20 mm
Width	69.85 mm
Height	9.5 mm/15 mm[3]

(1) Based on a 128KB transfer rate, using Oakgate SVF exerciser
(2) Based on 4KB transfer rate using Oakgate SVG exerciser
(3) Height applies to the Optimus Ultra 1.2TB

Optimus Ultra™ 2.5" SAS SSDs - Ordering Information

Part Number	Capacity
SDLKOEGW-150G-5Cxx	150GB
SDLKODGW-300G-5Cxx	300GB
SDLKOCGW-600G-5Cxx	600GB
SDLLOCGW-012T-5Cxx	1.2TB

xx - Pack Out Option:
Generic/Sample: A1
10 Pack: 02
Bulk Pack: 03

Specifications subject to change without notice.
*1 GB = 1,000,000,000 bytes. Actual user capacity less.
**Up to stated speed. Based on internal testing; performance may vary depending upon drive capacity, host device, OS and application.
   1 megabyte (MB) = 1 million bytes.
***MTBF - Mean Time Between Failures based on parts stress analysis.
****Warranty/DWPD - 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.
*****recoverable error in 10^{18}

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At SanDisk, we're expanding the possibilities of data storage. For more than 25 years, SanDisk's ideas have helped transform the industry, delivering next generation storage solutions for consumers and businesses around the globe.