



Ultrastar® Data102 Storage Platform

The Next Generation Platform for Software-Defined Storage

Designed for High Density and Flexibility

The Ultrastar Data102 is a key element of next-generation disaggregated storage and software-defined storage (SDS) systems, delivering high density and the flexibility to balance performance with cost. The Ultrastar Data102 provides up to 2.65PB¹ of raw storage² in a compact and efficient form factor. Western Digital HelioSeal[®] drives ensure cool running, quiet operation, and high reliability.

Features

- Up to 102 Ultrastar HDDs (SAS or SATA)
- Up to 2.65PB¹ of raw storage² in 4U
- Up to 4 units may be daisy-chained for a total raw capacity of 10.6PB
- Patented IsoVibe technology ensures maximum performance even in heavy workloads
- Improved cooling from innovative ArcticFlow technology
- Choose dual-port SAS for high availability or single-port SATA for low cost
- Up to 12 x 12Gb/s SAS-3 host connections
- Enterprise-grade redundant and hot-swappable PSUs, IO Modules, and fans
- Rack-mounted top cover for quick and easy service

Building on 50+ Years of Storage Design Experience

Conventional dense disk shelves frequently suffer from performance degradation due to induced vibration from adjacent drives. Traditional platforms also have cooling challenges as the cooling air passes over successive rows of drives, losing effectiveness as it gets heated up along the airflow path. Developing storage devices and platforms side-by-side, we address these challenges through Silicon to Systems Design, a set of technologies developed based on a holistic view of devices, platform, and their interactions. The first two of these innovative technologies are IsoVibe™ and ArcticFlow™. IsoVibe reduces vibration-induced performance degradation, while ArcticFlow overcomes the cooling issues by introducing cool air into the middle of the platform. Both these technologies contribute to long-term reliability, enabling our five-year limited warranty on the entire platform.

Designed for the Enterprise and the Cloud

This platform addresses the demanding storage needs of large enterprise customers, storage OEMs, cloud service providers and resellers/integrators that require dense, shared HDD storage. The Ultrastar Data102 provides the flexibility to specify the HDD combinations to balance capacity, performance and cost.





IsoVibe

IsoVibe Patented Vibration Isolation Technology

Precise cuts in the baseboard provide a suspension for the drives in the chassis, isolating them from transmitted vibration. The result is that consistent performance is maintained, even when all the drives are working hard.



ArcticFlow

Innovative ArcticFlow Thermal Zone Cooling Technology

By introducing cool air into the center of the chassis, drives operate at lower and more consistent temperatures than conventional systems. This results in lower fan speeds, reduced vibration, lower power consumption, quieter operation and ultimately higher reliability.



Resource Manager

Western Digital Resource Manager

A GUI-based tool that enables real-time monitoring and management of the platform and provides a consolidated dashboard displaying the most critical information. Other views allow platform configuration, health monitoring and maintenance.

Specifications

Max. Drives	102 x 3.5in drive bays
Drive Interface	12Gb/s SAS 6Gb/s SATA
Available Drive Capacities	HDD up to 22TB CMR or 26TB SMR
Host Interface	Dual redundant I/O Modules (IOM), 6 Mini-SAS HD ports per IOM
Weight	Product without drives: 31.8kg / 70lbs Product with 102 HDDs: 118.8kg / 262lbs
LED Indicators	Front/Rear: Power, ID, Fault Drive: Activity, Fault
Physical Dimensions	Height: 175mm / 6.89in Width: 447mm / 17.61in Depth: 1047mm / 41.25in Depth in Rack: Max of 1197mm / 47.13in w/dual CMA—includes 2 SAS cables
Management	SCSI Enclosure Services Redfish (out of band, via RJ45)
Power	Dual 1600W or 1800W, 80+ Platinum 200-240V AC input, auto ranging, 50-60Hz
Cooling	4 main enclosure fans, front-to-rear system cooling with zero-loss backflow prevention 1 IO module fan Dual PSUs with built-in fans
Environmental	Operating Temperature: 5°C to 35°C Non-op Temperature: -40 to 70°C Humidity: 5 to 85% relative humidity Operating Altitude: -300m to 3048m / -984 ft to 10,000 ft Sound Power: < 7.2Bels @ 23±2°C
Serviceability	Cable-free hot-swappable IOM, power supply, fans and drives

¹ One terabyte (TB) is equal to one trillion bytes and one petabyte (PB) is equal to 1,000 TB. Actual user capacity may be less due to operating environment.

² Ultrastar Data102 total raw capacity of 2.24PB using 22TB CMR HDDs and 2.65PB using 26TB SMR HDDs.