



28TB
7200 RPM | 6 Gb/s SATA | 12 Gb/s SAS

Highlights

- Delivers ultra-dense capacity of 28TB¹
- Increases storage density without increasing footprint
- Field-proven CMR technology delivers predictable performance for diverse data environments.
- Rated for 550TB/year workloads and annual AFR as low as 0.35%⁵
- Available in SATA or SAS interface

Target Audience

- Hyperscale Cloud Providers
- Enterprise Data Centers
- AI & HPC Environments
- CSP & OEM Integrators

Ideal For

- AI Pipeline Data Sets
- AI Checkpoint & Log Files
- Warm Data Storage
- Data Lakes
- Content Libraries

Ultrastar® DC HC5090

Ultrastar DC HC5090 accelerates AI data center scale with massive capacity in a proven, power-efficient design. Delivering 28TBs in the existing footprint, this drive maintains a steady power profile while boosting TB per watt—so you can store more data, drive higher efficiency, and scale without adding power or space. Delivers trusted, field-proven reliability with CMR technology—enabling fast qualification and seamless deployment for mixed workloads.

Ultra-Dense Storage for the AI Era and Beyond

AI workloads generate massive amounts of unstructured data. Ultrastar DC HC5090 with proven CMR technology, helps ensure that you can scale, manage, and extract data insights efficiently, from cloud to edge.

Drive Data Center Efficiency at Scale

Boost data center efficiency with improved watts per terabyte and enhanced rack-level density, enabling you to store more data using less power and physical space. By reducing energy consumption and cooling requirements while maximizing storage output per rack, Ultrastar DC HC5090 helps lower operational costs and supports more sustainable, environmentally responsible infrastructure at scale.

Tiered Storage for the AI Pipeline

Designed for high-throughput, sequential and mixed workloads, Ultrastar DC HC5090 is built to handle the demands of modern AI and analytics environments. It enables fast, efficient data ingest, staging, and retrieval across large-scale datasets. By delivering consistent, predictable performance for streaming and bulk data operations, it helps eliminate bottlenecks in data pipelines, accelerating time to insight while maintaining TCO efficiency for tiered storage.

Reliability You Can Trust

Our customers choose Ultrastar for peace of mind—because WD delivers resilience engineered for real-world complexity. Trusted to perform at scale. Proven to deliver. Ultrastar is engineered for seamless reliability from qualification to production. Ultrastar delivers reliability you can count on, with annual AFR as low as 0.35%⁵ backed by a 5-year limited warranty⁸.

Ultrastar Puts Customer Needs First

Customer success drives the Ultrastar roadmap. WD collaborates with customers to solve real-world data storage challenges—ensuring our innovation and long-term roadmap are anchored in their business outcomes, not just technical features. We simplify adoption and reduce risk through early engagement and strategic alignment—becoming a trusted partner in our customers' journey.

Innovation That Matters

From ePMR and HelioSeal[®] to OptiNAND[™] and ArmorCache[™], Western Digital innovations push the limits of HDD technology. Purpose-built for customer requirements, these advancements enable greater capacity, superior data integrity, and dependable performance—powering next-generation AI data centers.

Ultrastar® DC HC5090 Data Sheet

Specifications

	28TB SATA Model	28TB SAS Model
Model Number	WUH723228BLxxyz	WUH723228BLxxyz
Recording Technology	CMR	CMR
Interface	SATA 6 Gb/s	SAS 12 Gb/s
Formatted capacity ¹	28TB	28TB
Drive Technology	Helium	Helium
Format: Sector size (bytes) ²	4Kn: 4096	4Kn: 4096
Areal density (Gbits/sq. in.)	1285	1285
Performance		
Data buffer ³ (MB)	512	512
Rotational speed (RPM)	7200	7200
Latency average (ms)	4.16	4.16
Interface transfer rate (MB/s, max)	600	1200
Sustained transfer rate ⁴ (MB/s, max) / (MiB/s, max)	308 / 294	308 / 294
Reliability/Data Integrity		
Error rate (non-recoverable, bits read)	1 in 10 ¹⁵	1 in 10 ¹⁵
Load/Unload cycles (at 40°C)	600,000	600,000
Availability (hrs/day x days/wk)	24x7	24x7
Annualized Failure Rate ⁵	0.35%	0.35%
Limited warranty ⁸	5 years	5 years
Power		
	+5 VDC, +12VDC	+5 VDC, +12VDC
Random Read 4KB QD=8 @MAX IOPS (W)	9.2	9.5
Idle ⁶ (W)	5.5	5.8
Power efficiency at idle (W/TB)	As low as 0.20	As low as 0.21
Physical Dimensions		
z-height (max) in / mm	1.03 / 26.1	1.03 / 26.1
Length (max) in / mm	5.78 / 146.7	5.78 / 146.7
Width ± .01 in. / mm	4.0 / 101.6	4.0 / 101.6
Weight (max) lb / kg	1.47 / .67	1.47 / .67
Environmental		
Temperature (°C) ⁷ Operating / Non-Operating	5° to 60° / -40° to 70°	5° to 60° / -40° to 70°
Shock (half-sine wave 2 ms, G) Operating / Non-Op	40 / 200	40 / 200
Vibration (G RMS 5 to 500 Hz) Operating / (2 to 200 Hz) Non-Op	0.7 / 1.04 (X Y Z)	0.7 / 1.04 (X Y Z)
Acoustics (Bels, Typical) Idle / Operating	2.5 / 3.2	2.5 / 3.2
Country of Assembly		
	Thailand	Thailand

¹ One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes). Actual user capacity may be less due to operating environment.

² Advanced Format drive: 4K (4096-byte) physical sectors.

³ Portion of buffer capacity used for drive firmware.

⁴ Based on internal testing; performance may vary depending on host environment, drive capacity, logical block address (LBA), and other factors. The location of the max rate is at approximately 10% into the capacity of the HDD. 1MiB = 1,048,576 bytes (2²⁰), 1MB = 1,000,000 bytes (10⁶).

⁵ Projected values. Final AFR specifications will be based on a sample population and are estimated

by statistical measurements and acceleration algorithms under typical operating conditions, typical workload and 40°C device-reported temperature. Derating AFR will occur above these parameters, up to 550TB/year and 60°C (device reported temperature). AFR ratings do not predict an individual drive's reliability and do not constitute a warranty.

⁶ Idle specification is based on use of Idle_A.

⁷ 5°C ambient temperature, 60°C device reported temperature.

⁸ See <https://www.westerndigital.com/support> for regionally specific warranty details.

How to Read the Ultrastar Model Number

WUH723228BLxxyz

W = Western Digital

U = Ultrastar CMR Technology

H = Helium (vs. S for Standard)

72 = 7200 RPM

32 = Maximum Capacity

28 = Capacity this model

28 = 28TB

B = Generation code

L = 26.1 z-height (mm)

xx = Interface

E6 = 512e SATA 6 Gb/s

52 = 512e SAS 12Gb/s

y = Power Disable Pin 3 status
0 = Power Disable Pin 3 support
L = Legacy Pin 3 config
no Power Disable

z = Data Security Mode
0 = Instant Secure Erase (ISE)
1 = SED*: Self Encrypting Drive
TCG-Enterprise and Sanitize Crypto Scramble Erase
4 = Base (SE)*: No Encryption. Sanitize Overwrite only.
5 = SED-FIPS*: Self Encrypting Drive TCG Enterprise FIPS

*ATA Security Feature Set comes standard



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