



8TB | 7200 RPM | 12Gb/s SAS or 6Gb/s SATA

## Highlights

- Excellent random and sequential performance
- 8TB capacity point supports traditional IT systems
- Sustained transfer rate up to 255MB/s
- Choice of 12Gb/s SAS or 6Gb/s SATA
- Advanced Format 4Kn and 512e models
- Self-Encrypting Drive options
- 5-year limited warranty

## Applications & Workloads

- Distributed file systems, like Apache Hadoop®, to support Big Data analytics
- Direct & Network Attached Storage (DAS & NAS)
- RAID arrays

## Economics and Access Speed: Key Requirements for Low Capacity HDDs in the Data Center

As the industry evolves to develop purpose-built solutions for growing data storage requirements, IT managers continue to rely on lower capacity drives that are economical to acquire, yet deliver quick and reliable data access for traditional data center applications. Designed to handle workloads up to 550TB per year, Ultrastar® DC HC320\* is an 8TB<sup>1</sup> HDD that helps address economic and access requirements of many traditional IT workloads. Low capacity drives also help address architecture limitations. Part of our mid-capacity DC HC300 series, the Ultrastar DC HC320 is designed for traditional storage and server applications as well as distributed and scalable computing, including block and file storage architectures, providing fast 7,200 RPM performance and lower acquisition cost to help ease budget constraints. Ultrastar DC HC320 is offered with either 6Gb/s SATA or 12Gb/s SAS interface in a choice of 512e or 4Kn formats.

## Technology Innovation Delivers Efficiency and Performance for Traditional IT Systems

Ultrastar DC HC320 is based on a proven 5-disk air platform design that uses conventional magnetic recording (CMR) technology in a 3.5-inch large form factor. Compared to the prior generation, Ultrastar 7K6000, the DC HC320 delivers 33% more capacity, up to 12% performance boost and uses slightly larger-diameter media. It features a second-generation, dual-stage micro actuator to enhance head positioning accuracy for better drive performance. Write performance gains are also supported by Western Digital's media cache architecture, a disk-based caching technology that provides a large cache area on the disk, which also improves reliability and data integrity during unexpected power loss. Finally, the addition of flash-based non-volatile cache (NVC) on both SATA and SAS models helps improve write performance. The Ultrastar DC HC320 also includes a Rebuild Assist feature, which helps dramatically reduce RAID rebuild times and maintain system performance during the rebuild process. Learn more in our Rebuild Assist technical brief.

## Data Security with Trusted Quality, Reliability

Compliance and privacy requirements drive the need for increased data security. Ultrastar DC HC320 helps protect data from unauthorized use by offering security and encryption options. Both SAS and SATA models offer hardware-based encryption options, which includes both Sanitize Crypto Scramble / Erase functionality and TCG encryption (Trusted Computing Group, Enterprise SSC). Additionally, SAS SED is also offered as a FIPS 140-2 Level 2 certified model. The Ultrastar DC HC320 extends Western Digital's long-standing tradition of reliability leadership with a 2M-hour MTBF<sup>2</sup> rating and a 5-year limited warranty.

## Features & Benefits

	Feature / Function	Benefits
<b>Capacity</b>	<ul style="list-style-type: none"> <li>• 8TB</li> <li>• Advanced Format</li> </ul>	<ul style="list-style-type: none"> <li>• Lower capacity point for traditional IT workloads and applications</li> <li>• Enables higher capacity and reliability</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>• Non-volatile cache (NVC)</li> <li>• Up to 255MB/s transfer rate</li> </ul>	<ul style="list-style-type: none"> <li>• Improved write performance and write splice protection</li> <li>• Up to 12% faster than Ultrastar 7K6000</li> </ul>
<b>Reliability</b>	<ul style="list-style-type: none"> <li>• Dual-stage Micro Actuator</li> <li>• 2M hours MTBF and 0.44% AFR</li> <li>• 5-year limited warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Better head positioning and rotational vibration robustness</li> <li>• One of the highest reliability ratings for air-filled Capacity Enterprise HDDs</li> </ul>

\*Previously known as Ultrastar 7K8

## Specifications

Configuration	SATA Models	SAS Models
Model #	HUS728T8TALE6L4 HUS728T8TALE6L1	HUS728T8TAL5204 HUS728T8TAL5201 HUS728T8TAL5205
Interface	SATA 6Gb/s	SAS 12Gb/s
Capacity <sup>1</sup>	8TB	←
Form Factor	3.5-inch	←
Sector size (bytes) <sup>3</sup>	4Kn: 4096 512e: 512	4Kn: 4096, 4104, 4160, 4224 512e: 512, 520, 528
Max. areal density (Gbits/sq. in., max)	834	←
<b>Performance</b>		
Data buffer (MB) <sup>4</sup>	256	←
Rotational speed (RPM)	7200	←
Latency average (ms)	4.16	←
Interface transfer rate (MB/s, max)	600	1200
Sustained transfer rate <sup>5</sup> (MiB/sec, typ.) (MB/sec, typ.)	Up to 243 Up to 255	←
Seek time (read/write, ms, typ.) <sup>6</sup>	8.0 / 8.6	←

<sup>1</sup> One megabyte (MB) is equal to one million bytes, 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 storage capacity. Accessible capacity will vary from the stated capacity due to formatting, system software, and other factors.

<sup>2</sup> MTBF and AFR specifications are based on a sample population and are estimated by statistical measurements and acceleration algorithms under typical operating conditions for this drive model. MTBF and AFR ratings do not predict an individual drive's reliability and do not constitute a warranty.

<sup>3</sup> Advanced Format drive: 4K (4096-byte) physical sec

<sup>4</sup> Portion of buffer capacity used for drive firmware

<sup>5</sup> Projected performance. Actual performance may vary. 1MiB = 1,048,576 bytes (2<sup>20</sup>), 1MB = 1,000,000 bytes (10<sup>6</sup>)

<sup>6</sup> Excludes command overhead

<sup>7</sup> SATA models: 8K Queue Depth = 1 @ 40 IOPS, SAS models: 4K Queue Depth = 4 @ Max IOPS

<sup>8</sup> Idle specification is based on use of Idle\_A

<sup>9</sup> 512e models can be converted to 4Kn format and vice versa.

	SATA Models	SAS Models
<b>Reliability</b>		
Error Rate (non-recoverable bits read)	1 in 10 <sup>15</sup>	←
Load/Unload cycles (at 40°C)	600,000	←
MTBF <sup>2</sup>	2M hours	←
Annual failure rate (AFR) <sup>2</sup>	0.44%	←
Availability (hrs/day x days/wk)	24x7	←
Limited Warranty (yrs)	5	←

<b>Acoustics</b>		
Idle/Operating (Bels, typical)	2.9 / 3.6	←

<b>Power</b>		
Requirement	+5V, +12V	←
Operating (W, typical) <sup>7</sup>	8.8	12.8
Idle (W) <sup>8</sup>	7.4	8.4

<b>Physical</b>		
z-height (mm, max)	26.1	←
Dimensions (width x depth, mm)	101.6 (+/-0.25) x 147	←
Weight (g, max)	715	←

<b>Environmental (operating)</b>		
Ambient Temperature	5°C to 60°C	←
Shock (half-sine wave, 2 ms, G)	70	←
Vibration (G RMS, 5 to 500 Hz)	0.67 (XYZ)	←

<b>Environmental (non-operating)</b>		
Ambient Temperature	-40°C to 70°C	←
Shock (half-sine wave, 2 ms, G)	300	←
Vibration (G RMS, 2 to 200 Hz)	1.04 (XYZ)	←

### How to Read Model Number

#### HUS728T8TALE6L4 – 8TB SATA 6Gb/s 512e with Legacy Pin 3 config

H = Western Digital

U = Ultrastar

S = Standard

72 = 7200 RPM

8T = Max capacity in series (8TB)

8T = Capacity of this model (8TB)

A = Generation code

L = 26.1mm z-height

E6<sup>9</sup> = Interface (512e SATA 6Gb/s)  
(52<sup>9</sup> = 512e SAS 12Gb/s)

y = Power Disable Pin 3 status

(0 = Power Disable Pin 3 support

L = Legacy Pin 3 config – No

Power Disable Support)

z = Data Security Mode

1 = SED\*: Self Encrypting Drive.

TCG-Enterprise and Sanitize

Crypto Scramble / Erase.

4 = Base (SE)\*: No Encryption.

Sanitize/Overwrite only.

5 = SED-FIPS: SED w/ certification

(SAS only).

\* ATA Security Feature Set comes standard on SATA

## Western Digital

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