Ultrastar™ 5K3000

3.5-Inch Enterprise CoolSpin Hard Disk Drives

Highlights

- Up to 3 terabytes[1] of capacity
- 45% lower power consumption than our Ultrastar 7K3000
- 6Gb/s SATA interface
- Dual Stage Actuator (DSA) and Enhanced Rotational Vibration Safeguard (RVS) for robust performance in multi-drive environments
- 24x7 accessibility for enterprise-class, capacity-optimized applications
- 2.0M hours MTBF[2]
- 5-year warranty

Applications/Environments

- Virtual Tape Libraries (VTL)
- Disk-to-disk backup
- Data warehousing
- Cloud storage
- Massive Scale Out (MSO)

3TB and 2TB
SATA 6Gb/s

Reducing Power Consumption By 45%

The HGST Ultrastar™ 5K3000 is specifically designed for high-capacity enterprise applications where reduced power and lower temperatures are required. Our innovative CoolSpin™ technology helps the Ultrastar 5K3000 deliver a 45% reduction in read/write power consumption over the Ultrastar 7K3000 7200 RPM drive. Key to CoolSpin technology is an optimization of motor speed to provide an ideal balance of performance, power utilization and acoustics. Additionally, our Advanced Power Management offers five levels of granularity to help manage power consumption including: normal idle; unload idle; low RPM idle; standby; and sleep. The standby and sleep modes consume less than 1 watt, enabling archival applications to remain online and ready to respond, yet at eco-friendly power levels.

Increasing Capacity Density By 50%

Recent storage management innovations such as data de-duplication and thin provisioning have not been able to stem the explosive petabyte (PB) growth requirements in cloud storage and data centers. Pervasive Internet computing with remotely stored email, pictures and social media, all being accessed from light-weight tablet and notebook PCs, is changing consumer expectations. Worldwide government data retention regulations and security requirements are also driving up data center and private cloud storage needs. At the same time, floor tile space and megawatts remain at a premium while in some highly built-out metropolitan areas both are at an absolute "no-growth" state. To meet these demands, the Ultrastar 5K3000 delivers 50% more capacity in the same footprint than our prior generation Ultrastar A7K2000 product. It is now possible to achieve a colossal 1.8PB in the footprint of a standard 19-inch enterprise storage rack by stacking ten 4U, 60-bay enclosures.

Delivering Industry-Leading Quality And Reliability

Leveraging the fifth-generation HGST 5-platter mechanical design, the Ultrastar 5K3000 is rated at 2.0 million hours MTBF and backed by a limited 5-year warranty. When the highest quality and reliability are a key requirement, customer field data proves that the Ultrastar 5-platter platform delivers by reducing downtime, eliminating service calls and minimizing TCO. Engineered for the highest reliability, the Ultrastar 5K3000 is not only put through grueling design tests during development but must also pass stringent ongoing reliability testing during manufacturing. HGST remains the recognized leader in quality and reliability for enterprise-class hard drives across the entire Ultrastar family thanks to world-class quality control, combined with scientific root-cause analysis and multi-faceted corrective actions.

Enhancing Data Safety And Security

To ensure the utmost in data safety and security, the Ultrastar 5K3000 also offers models with Bulk Data Encryption (BDE). BDE encrypts all data on the drive using a private security key as it is written to the disk, then decrypts it with the key as it is retrieved, giving users an extreme level of data protection. Unlike software-based encryption solutions, the HGST BDE implementation is hardware-based, so it doesn't slow the system down. This technology also speeds up and simplifies the drive re-deployment and decommissioning process. By deleting the encryption key, the data is rendered unreadable, thereby eliminating the need for time-consuming, multi-pattern data overwrite.

Innovating for a more sustainable environment

Ultrastar 5K3000 demonstrates HGST ecological leadership with its halogen-free design and power-efficient operation. Both these features serve to qualify to qualify the drive for the HGST EcoTrac classification, which identifies products that minimize environmental impact in the areas of product design, manufacturing, operation and disposal.

CoolSpin TECHNOLOGY

Eco Trac

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HGST Quality and Service

HGST's Ultrastar 5K3000 extends the company's long-standing tradition of performance and capacity leadership. The proven drive design enables high reliability and availability to customer data. Ultrastar quality, performance and world class technical support and service provides customers with a lower total cost of ownership over previous generations.

HGST drives are backed by an array of technical support and services, which may include customer and integration assistance. HGST is dedicated to providing a complete portfolio of HDD/SSD solutions to satisfy today's monumental computing needs.

How to read the Ultrastar model number

HUA5C3030ALA640 = 3TB, SATA 6Gb/s, 64MB buffer

H = HGST
U = Ultrastar
A = ATA (S = SAS)
5C = CoolSpin
30 = Full capacity — 3TB
30 = Capacity this model, 30 = 3TB (20 = 2TB)
A = Generation code
L = 25.8mm z-height
A6 = Interface, SATA 6Gb/s
4 = 64MB buffer
0 = No encryption (1 = TCG encryption)

Information and Technical Support

www.hgst.com (Main Web site)
www.hgst.com/partners (Partner Web site)

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Toll free: 1 888 426-5214, Direct: 1 408 717-8087

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Program Support

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Specifications

Models	HUA5C3030ALA640 HUA5C3030ALA641 HUA5C3020ALA640 HUA5C3020ALA641
Configuration	
Interface	SATA 6Gb/s
Capacity (GB)[1] at 512 bytes/sector	3TB / 2TB
Form factor	3.5-inch
Sector size (bytes)	512
Max. areal density (Gbits/sq. in)	370
Performance	
Data buffer (MB)[3]	64
Rotational speed (RPM)	CoolSpin
Interface transfer rate (MB/s, max)	600
Sustained transfer rate (MB/s, typical)	124
Reliability	
Error rate (non-recoverable, bits read)	1 in 10^{15}
Load/unload cycles (at 40° C)	600,000
Availability (hrs/day x days/wk)	24x7
MTBF[2] (M hours)	2.0
Warranty (yrs.)	5
Acoustics	
Seek (Bels, typical)	2.6
idle (Bels, typical)	2.5
Power	
Requirement	+5 VDC (+/-5%), +12 VDC (+10%/-8%)
Startup current (A, max.)	1.5 (+12V), 1.2 (+5V)
Power-on drive ready time (typical, sec)	2.0
Read/write (W)	6.2
Unload idle (W)	5.8
Low RPM idle (W)	3.2
Standby/Sleep (W)	0.9
Physical size	
z-height (mm)	26.1
Dimensions (width x depth, mm)	101.6 (+/-0.25) x 147
Weight (g, max)	690
Environmental (operating)	
Ambient temperature	5° to 60° C
Shock (half-sine wave 2ms, G)	70
Vibration (G RMS, 5 to 500 Hz)	0.67 (XYZ)
Environmental (non-operating)	
Ambient temperature	-40° to 70° C
Shock (half-sine wave, G)	300
Vibration, random (G RMS 2 to 200Hz)	1.04 (XYZ)

[1] One GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to hard drive capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drive, the computer's operating system, and other factors.

[2] Intended for lower duty cycle environments in the enterprise storage hierarchy such as nearline applications. MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under median operating conditions. MTBF ratings are not intended to predict an individual drive's reliability. MTBF does not constitute a warranty.

[3] Portion of buffer capacity used for firmware

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