# Ultrastar™ A7K2000

## 3.5-Inch Enterprise 7200 RPM Hard Disk Drives

## Highlights

- Up to 2 terabytes[1] of capacity
- Enhanced Rotational Vibration Safeguard (RVS) for robust performance in multi-drive environments
- 24x7 enterprise-class duty cycle
- Targeted 1.2 million hours MTBF[2]
- 5-year warranty
- 3Gb/s SATA for configuration flexibility

## Applications/Environments

- Cloud storage
- Massive Scale Out (MSO)
- Data warehousing & mining
- Disk-to-disk backup & archiving
- RAID arrays
- Network Attached Storage (NAS)

## Doubling The Capacity Density

As data center professionals across the globe work to meet growing enterprise needs, they face the dilemma of storing more data in the same footprint while also reducing power and HVAC consumption. The new Ultrastar™ A7K2000 provides twice the data storage capacity of the prior generation Ultrastar A7K1000 drive, and does so using fewer watts. It is now possible to achieve a colossal 1.2 petabytes (PB) in the footprint of a standard 19-inch enterprise storage rack by deploying the 2TB A7K2000 in a stack of ten 4U, 60-bay enclosures.

## Combining 7200 Rpm Performance And Granular Power Control

Operating at 7200 RPM, the HGST Ultrastar A7K2000 offers better overall performance than slower-RPM, capacity-oriented drives at impressively low power-consumption rates. When compared to the previous generation Ultrastar A7K1000, the A7K2000 offers up to a 155% improvement in sustained data transfer rate, and a 120% improvement in watts-per-GB. With five Advanced Power Management modes, a 36% reduction in watts during low-RPM idle mode, and using less than 1W during standby/sleep mode, the Ultrastar A7K2000 can help data centers achieve lower AC power and HVAC requirements, freeing up precious headroom for growing enterprise needs.

## Enhancing Data Safety And Security

To ensure the utmost in data safety and security, the Ultrastar A7K2000 is also available with a bulk data encryption (BDE) option. When enabled, the HGST BDE implementation encrypts all data on the drive using a private security key as it is written to the disk, and 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.

## Delivering Industry-Leading Reliability

With a robust fourth-generation mechanical design, Ultrastar A7K2000 is specifically built and tested for the enterprise. The Ultrastar SATA drive family features HGST-patented Rotational Vibration Safeguard (RVS) sensor technology, which optimizes drive reliability in multi-drive RAID arrays and rack-mounted systems. Backed by a five-year warranty, the Ultrastar platform has earned HGST a reputation among server and storage vendors as a global partner dedicated to delivering the highest quality and reliability in the industry.

## Innovation for a more sustainable environment

The Ultrastar A7K2000 demonstrates HGST ecological leadership with its halogen-free design and power-efficient operation. Both these features serve 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.

2TB, 1TB and 500GB
7200 RPM l SATA 3Gb/s

EcoTrac

HGST
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## HGST Quality and Service

HGST's Ultrastar A7K2000 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

HUA722020ALA330 = 2TB, SATA 3Gb/s, 32MB buffer

| | | |
|---|---|---|
| H | = | HGST |
| U | = | Ultrastar |
| A | = | Series prefix |
| 72 | = | 7200 RPM |
| 20 | = | Full capacity — 2TB |
| 20 | = | Capacity this model, 20 = 2TB (10 = 1TB, 50 = 500GB) |
| A | = | Generation code |
| L | = | 26.1mm z-height |
| A3 | = | Interface, SATA 6Gb/s |
| 3 | = | 32MB buffer |
| 0 | = | No BDE (1 = BDE) |

### Information and Technical Support

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

### North America

support_usa@hgst.com
Toll free: 1 888 426-5214, Direct: 1 408 717-8087

### Asia Pacific

support_ap@hgst.com / 65 6840 9595

### EMEA and UK

support_uk@hgst.com / 44 20 7133 0032

### Germany

support_uk@hgst.com / 49 6929 993601

### Program Support

Partners First Program. channelpartners@hgst.com

## Specifications

| | | Standard models | BDE models |
|---|---|---|---|
| **Models** | | HUA722020ALA330 | HUA722050CLA330 |
| | | HUA722010CLA330 | HUA722010CLA331 |
| | | HUA722050CLA330 | HUA722050CLA331 |
| **Configuration** | | | |
| Interface | | SATA 3Gb/s | |
| Capacity (GB)[2] at 512 bytes/sector | | 2TB / 1TB / 500GB | |
| Sector size (bytes) | | 512 | |
| Max. areal density (Gbits/sq. in) | 2TB | 285 | |
| | >2TB | 352 | |
| **Performance** | | | |
| Data buffer (MB)[3] | | 32 | |
| Rotational speed (RPM) | | 7200 | |
| Interface transfer rate (MB/s, max) | | 300 | |
| Sustained transfer rate (MB/s, typical) | | 134 | |
| Seek time (read, ms, typical)[4] | 2TB | 8.2 | |
| | >2TB | 8.5 | |
| **Reliability** | | | |
| Error rate (non-recoverable, bits read) | | 1 in $10^{15}$ | |
| Load/unload cycles (at 40° C) | | 300,000 | |
| Availability[2] (hrs/day x days/wk) | | 24x7 | |
| MTBF[2] (M hours) | | 1,200,000 | |
| Warranty (yrs.) | | 5 | |
| **Acoustics** | | | |
| Idle (Bels, typical) | 2TB | 2.9 | |
| | >2TB | 2,4 | |
| **Power** | | | |
| Requirement | | +5 VDC (+/-5%), +12 VDC (+10%/-8%) | |
| Startup current (A, max.) | | 2.0 (+12V), 1.2 (+5V) | |
| Read/write (W) | 2TB | 11.1 | |
| | >2TB | 8.4 | |
| Unload idle (W) | 2TB | 5.6 | |
| | >2TB | 3.9 | |
| Power consump. efficiency index (W/GB) | | 0.0028 / 0.0039 / 0.0078 | |
| **Physical size** | | | |
| z-height (mm) | | 26.1 | |
| Dimensions (width x depth, mm) | | 101.6 (+/-0.25) x 147 | |
| Weight (g, max) | 2TB | 740 | |
| | >2TB | 680 | |
| **Environmental (operating)** | | | |
| Ambient temperature | | 5° to 60° C | |
| Shock (half-sine wave, 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, 1ms, G) | 2TB | 300 | |
| | >2TB | 350 | |

[1] One MB is equal to on million bytes, 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

[4] Excludes command overhead

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