Drive Comparison: Ultrastar and Deskstar

3.5-INCH HARD DISK DRIVES

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Selecting the appropriate drive for your storage application needs

Highlights

> Up to 2TB[1] capacity
> 7200 RPM performance
> Up to 18% idle power savings over previous generation product
> Halogen-free design for eco-friendly footprint
> Built on award-winning proven design

Ultrastar A7K2000 Applications

> Data warehousing & mining
> Disk-to-disk backup & archiving
> Rack mounted RAID arrays
> Network Attached Storage (NAS)
> Cloud storage
> Massive scale out (MSO)

Deskstar 7K2000 & 7K1000.C Applications

> Consumer and commercial computers
> External storage
> PC gaming
> Video editing arrays

Up to 2TB | 7200 RPM | SATA 3Gb/s

Introduction

Hitachi Global Storage Technologies (Hitachi GST) provides a full line of 3.5" 7200 RPM drives targeted at specific market segment needs. By listening carefully to and meeting the requirements of our customers, we offer hard disk drives that appropriately match performance, endurance and costs to the target environment. This product brief compares the Hitachi Ultrastar™ A7K2000 to the Deskstar™ 7K2000 and 7K1000.C offerings.

The Ultrastar A7K2000

The Ultrastar A7K2000 product line is targeted at 24x7, enterprise-class nearline[2] server and storage applications. Ultrastar products are specifically designed, manufactured and tested to meet the demanding environments found in global data centers and enterprises. This includes remote office and branch offices (ROBO), small and medium businesses (SMB), as well as departmental installations.

The Ultrastar A7K2000 is available in three capacity points: 2TB, 1TB and 500GB. All are rated at 1.2 million hours MTBF[3] and carry a five-year factory warranty. These drives receive additional manufacturing testing at extended temperature ranges to ensure a target of less than one non-recoverable bit error per 10^{15} bits read. They utilize enterprise-specific firmware to minimize the performance impact of rotational vibration interference (RVI) found in rack-mounted servers and multi-drive storage arrays. The Ultrastar A7K2000 family is designed for a low dollar per GB ratio with higher reliability, while minimizing power consumption.

The Deskstar 7K2000 and 7K1000.C

The Deskstar product line is targeted at consumer and commercial desktop computers including home-office and gaming applications.

Between the Deskstar 7K2000 and 7K1000.C, there are eight capacity points ranging from 160GB to 2TB. Deskstar products carry a three-year factory warranty and meet design goals of less than one non-recoverable bit error per 10^{14} bits read. The Deskstar line is optimized for per-unit price at a wide variety of specific capacity and watt combinations that help PC manufacturers meet or exceed ENERGY STAR™ 5.0 specifications.

Hitachi GST is Your Global Storage Partner

As a leading global provider of digital storage technologies, Hitachi GST provides a full complement of products for a variety of target applications. Please visit us at www.hitachigst.com/products for additional product information and detailed specifications.

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Product Comparison

	Deskstar 7K2000	Ultrastar A7K2000	Ultrastar Difference
MTBF (hrs)	Not Rated	1.2M[3]	Designed, built and tested for the enterprise environment
Duty Cycle	Low duty cycle	24x7 Nearline[2]	Designed for 24x7 availability
Power-on Hours Profile (hrs/yr)	3,996	8,760	For “always on” environments
Testing	Standard	Enhanced	Extended manufacturing stress test to ensure quality and reliability
Error rate (non-recoverable, bits read)	1 in 10^{14}	1 in 10^{15}	10x error rate improvement
Rotational Vibration	Not Rated	12.5 rad/s^2 with less than 20% degradation	Maintains high performance in multi-drive systems
Cache[4]	8 to 32MB	32MB	Large cache on all capacity points improves performance
Warranty (yrs)	3	5	Our most comprehensive warranty with an additional 2 years

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 may be less.
2 Intended for nearline environments in the enterprise storage hierarchy with a maximum 50% active read/write duty cycle. Note that customer environments may vary from application to application
3 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.
4 Portion of buffer capacity used for firmware.

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