

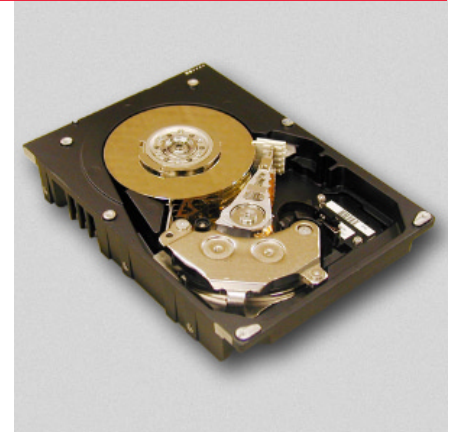
High-performance. Capacity. Technology.

HITACHI
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Hitachi Ultrastar 15K73 hard disk drives

Highlights

- ▶ **Rotational speeds of 15,000 RPMs and an average seek time as low as 3.9ms to help boost performance**
- ▶ **Capacities of 73 GB or 36 GB provide configuration flexibility**
- ▶ **Incorporates technologies such as Fluid Dynamic Bearing motors, (FDB), to help increase the reliability and robustness of the drive**
- ▶ **First server-class 15,000 RPM drive to incorporate anti-ferromagnetically coupled technology, (AFC), also known as “pixie-dust”. AFC enables higher areal densities by improving thermal-stability, which maintains data-integrity**



Advanced drive technology

The Hitachi Ultrastar 15K73 is the 3rd generation of 15,000 RPM enterprise-class hard drives from Hitachi. Leveraging award-winning technologies that have generated proven quality and high-performance, the Ultrastar 15K73 incorporates Fluid Dynamic Bearing motors (FDB) to contribute to increased capacity by enabling high-track density through a more precise position of the head. AFC Media, also known as “pixie dust”, is an industry-first in 15,000 RPM enterprise-class hard drives, enabling higher areal densities by improving thermal stability, which in turn, maintains data integrity.

Designed for both high-performance and high-reliability, the Ultrastar 15K73 was developed with powerful processors and read-write channels, advanced servo

controls to improve seek and settle times, and overall improved mechanical stability to excel in today’s demanding data-processing environments.

Reliability features

Research and development teams throughout Hitachi Global Storage Technologies have a combined 80 years of award-winning hard drive development experience and technology that satisfy increasingly complex computing requirements. The Ultrastar 15K73 builds on this tradition.

In order to ensure data-protection, the Ultrastar 15K73 incorporates advanced reporting tools such as Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) to signal potential drive problems.

Reliability is enhanced with load/unload technology and glass-substrate disks which provide a robust solution and high rotations speeds.

Support for advanced applications and interfaces

The Ultrastar 15K73 provides high-data-throughput for data-intensive applications with the Ultra 320 SCSI (backward compatible) interface. Also available in a 2Gbits/s Fibre Channel interface to allow for flexible, high-bandwidth data transfers.

Hitachi Ultrastar 15K73 specifications

Product name	Ultrastar 15K73	Ultrastar 15K73
Model numbers	HUS157373ELF200* HUS157373EL3600** HUS157373EL3800***	HUS157336ELF200* HUS157336EL3600** HUS157336EL3800***

*FC_AL, ** 68 pin interface, *** 80 pin interface

Configuration

Capacity (GB) ¹	73.9	36.9
Data heads (physical)	10	5
Data disks	5	3
Max. areal density (Gbits/sq. inch)	31	31
Max. recording density (BPI)	609,500	609,500
Track density (TPI)	51,200	51,200
Read method	ME ² PRML	ME ² PRML

Performance

Rotational speed (rpm)	15,037	15,037
Latency average (ms)	1.99	1.99
Data transfer rate (max. Mbits/sec)	960	960
Sustained transfer (max. MB/sec)	79	79
Start time (sec)	25	25
Seek time (read, typical) ²		
Average (ms)	3.9/4.2 (write)	3.9/4.2 (write)
Track to track (ms)	0.4/0.5	0.4/0.5
Full track (ms)	7.2/8.0	7.2/8.0

Data transfer rate (controller)		
SCSI, wide SCA (max. MB/sec)	Ultra (Fast-20) / 40 Ultra2 (Fast-40) / 80 Ultra160 (Fast-80) / 160 Ultra320 / 320	Ultra (Fast-20) / 40 Ultra2 (Fast-40) / 80 Ultra160 (Fast-80) / 160 Ultra320 / 320
FC-AL-2 (max. MB/sec)	200	200
Buffer size (MB)	8	8

Reliability

Error rate (recoverable)	10 in 10 ¹² bits read	10 in 10 ¹² bits read
Error rate (non-recoverable)	1 in 10 ¹⁴ bits read	1 in 10 ¹⁴ bits read

Acoustic

Idle - Typical (Bel)	3.7	3.6
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Power

Dissipation - Idle (W)		
SCSI	12	10
FC-AL-2	14	12

Dimensions

Height (mm)	25.4 (+-0.4)	25.4 (+-0.4)
Width (mm)	101.6 (+-0.4)	101.6 (+-0.4)
Depth (mm)	146 (+-0.6)	146 (+-0.6)
Weight (max. kg)	0.75	0.75

Environmental characteristics

Operating		
Ambient temperature	5° to 55° C	
Relative humidity (non-condensing)	5% to 90%	
Max. wet bulb (non-condensing)	29° C	
Atmosphere	Non-corrosive gas, non-saline atmosphere, non-organic-metal compound	
Shock (half-sine wave)	147 m/s ² (15G) maximum [11 ms]	
Non-operating		
Ambient temperature	-40° to 70° C	
Relative humidity (non-condensing)	5% to 90%	
Shock (half-sine wave)	735 m/s ² (75G) maximum [11 ms] 2450 m/s ² (250G) maximum [2 ms]	735 m/s ² (75G) maximum [11 ms] 2450 m/s ² (250G) maximum [2 ms]

¹ GB equals one billion bytes when referring to hard drive capacity; accessible capacity may be less.

² Excludes command overhead.

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