

High capacity and performance for demanding server environments



IBM Ultrastar 73LZX hard disk drive

Highlights

Rotational speeds of 10,000 RPM and average seek times as low as 4.9 ms help boost performance.

Capacities including 73, 36, 18, and 9 GB provide outstanding configuration flexibility.

A new suspension feature and Drive Fitness Test combine with load/unload technology and glass substrate disks to enhance reliability and robustness, and prolong drive lifetime.

Advanced drive technology

The fifth generation of the award-winning IBM Ultrastar* 10,000 RPM disk drive family, IBM Ultrastar 73LZX drives offer proven quality and superior performance. These drives feature more powerful processors and read/write channels, a new feed-forward servo control that improves seek and settle time, and better suspension dynamics that enable greater servo bandwidth, faster speeds, and improved mechanical stability.

To achieve maximum I/O performance, the drives combine fast seek times, large 4 MB multisegmented buffers, a sophisticated command queuing system, hardware automation, and industry-leading sustained data rates. They also employ fifth-generation giant magnetoresistive (GMR) head technology to double areal density (up to 13.1 Gbits/sq. in.) and performance. In addition, highly efficient No-ID* sector formatting enables more data to be stored per disk.

Reliability leadership

Drive Fitness Test enables drive self-testing and analysis—helping to prevent returned drives. To help ensure data protection, IBM Ultrastar drives include IBM-exclusive reporting tools, such as Predictive Failure Analysis* (to signal potential drive problems) and Drive-TIP* (to monitor drives and avoid malfunctions).

Load/unload technology and glass substrate disks also increase reliability by providing a more robust solution at high rotational speeds.

Outstanding environmental

IBM Ultrastar drives provide extremely quiet operation. In addition, tri-laminate drive covers reduce both idle and seek acoustics while an improved spindle motor driver enables smoother commutation. Moreover, a new electronic design enables 20 percent lower power requirements than previous IBM 10,000 RPM drives to help reduce costs.

Support for advanced applications and interfaces

IBM Ultrastar drives provide high data throughput for data-intensive applications and offer a choice of 1 and 2 Gbit Fibre Channel and Ultra160 SCSI (backward-compatible) interfaces.



IBM Ultrastar 73LZX 3.5-inch 73.4 GB high-performance disk drive

IBM Ultrastar 73LZX 3.5-inch 73.4, 36.7, 18.3, and 9.1 GB disk drives

| | | | |
|--------------------------------------|------------------------------------|---|---|
| Configuration | Interface | Ultra 160 SCSI | FC-AL-2 |
| | Formatted capacity (512 bytes) | 73.4/36.7/18.3/9.1 | |
| | Sector size (in bytes) | 512-528 (variable, 2-byte inc.) | 512-528 (8-byte inc.) |
| | Recording zones | 17 | |
| | Data heads | 12/6/3/2 | |
| | Disks | 6/3/2/1 | |
| | Areal density (maximum) | 13,110 Mbits/sq. in. | |
| | Recording density (maximum) | 480,000 BPI | |
| | Track density | 27,312 TPI | |
| Performance | Data buffer | 4096 KB ¹ | |
| | Rotational speed | 10,000 RPM | |
| | Latency (average) | 3.00 ms | |
| | Media transfer rate | 373-690 Mbits/sec | |
| | Interface transfer rate | 160 MB/sec | 200/400 MB/sec |
| | Sustained data rate | 29.2-570 MB/sec | |
| | Seek time | | |
| | Average | 4.9 ms | |
| | Track to track | 0.5 ms | |
| Reliability | Full track | 10.5 ms | |
| | Error rate (nonrecoverable) | 1 in 10E 14 bits read | |
| | Start/stop cycles | 50,000 cycles | |
| Power | Requirement | +5VDC (+-5%), +12VDC (+-5%) | |
| | Dissipation (typical) | | |
| | Startup (maximum peak) | 0.9 A (5V), 2.4 A (12 V) | 1.3 A (5V), 2.4 A (12 V) |
| | Idle | 9.5/7.4/6.7/5.6 W | 11.5/9.4/8.7/8.7 W |
| | Power consumption efficiency index | 0.00013, 0.00021 0.00037, 0.00062 W/MB | 0.00016, 0.00026, 0.00048, 0.00096 W/MB |
| Dimensions | Height | 25.4 (+-0.4) mm | |
| | Width | 101.6 (+-0.4) mm | |
| | Depth | 146.0 (+-0.6) mm | |
| | Weight (maximum) | 800 g | |
| Acoustics | Idle | 3.7/3.4/3.4/3.4 Bel | |
| | Operating | 4.5/4.5/4.5/4.5 Bel | |
| Environmental characteristics | | Operating | Nonoperating |
| | | Ambient temperature | 5° to 55° C -40° to 65° C |
| | | Relative humidity (noncondensing) | 8% to 90% 5% to 95% |
| | | Maximum wet bulb (noncondensing) | 29.4° C 35.0° C |
| | | Shock (half sine wave) | 10 G (11 ms) / 45 G (2 ms) 75 G (11 ms) / 225 G (2 ms) 73 G; 300 G (2 ms) 36, 18, 9 GB |
| | | Random vibration (RMS) | 0.67 G (horiz.) / 0.56 G (vert.) 1.04 G |
| Models | | Ultra 160 SCSI | FC-AL-2 |
| | | IC35L009UWD210, IC35L009UCD210, | IC35L009F2D210, |
| | | IC35L018UWD210, IC35L018UCD210, | IC35L018F2D210, |
| | | IC35L036UWD210, IC35L036UCD210, | IC35L036F2D210, |
| | | IC35L073UWD210, IC35L073UCD210 | IC35L073XF2D210 |

¹Upper 512 KB used for firmware.

For more information

Internet and e-mail:

- www.ibm.com/harddrive
- drive@us.ibm.com

IBM TECHFAX document server:

- 408-256-5418 (requires touch-tone phone)
- International callers must call from a fax machine

IBM hard disk drive product information:

- 1 888 IBM-5214 (United States)
- 507-286-5825 (outside of the United States)

Product description data represents design objectives and is provided for comparative purposes; actual results may vary depending on a variety of

factors. Product claims are true as of the date of the first printing. This product data does not constitute a warranty. Questions regarding IBM warranty terms or the methodology used to derive this data should be referred to an IBM representative. Data subject to change without notice.

© Copyright IBM Corporation 2000
Produced in the United States
10-00
All Rights Reserved

* IBM, Drive-TIP, No-ID, Predictive Failure Analysis, and Ultrastar are registered trademarks or trademarks of International Business Machines Corporation. Other product names are trademarks or registered trademarks of their respective companies.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make them available in all countries in which IBM operates.



ibm.com/harddrive

IBM Storage Technology Division
5600 Cottle Road
San Jose, CA 95193

TECHFAX # 7111