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.

1 and 2 Gbits/sec Fibre Channel and Ultra160 and Ultra320 SCSI provide the fastest interface technologies.

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 13.2 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 environmentals

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, Ultra320 SCSI, 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	Ultra160 SCSI	Ultra320 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)	13,200 Mbits/sq. in.		
	Recording density (maximum)	482,000 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	376-697 Mbits/sec		
	Interface transfer rate	160 MB/sec	320 MB/sec packetized	200/400 MB/sec
	Sustained data rate	29.8-58.0 MB/sec		
	Seek time Average Track to track Full track	 4.9 ms 0.5 ms 10.5 ms		
Reliability	Error rate (nonrecoverable)	1 in 10E14 bits read		
	Start/stop cycles	50,000 cycles		
Power				
	Requirement	+5 VDC (+-5%), +12 VDC (+-5%)		
	Dissipation (typical) Startup (maximum peak) Idle	 0.9 A (5V), 2.4 A (12 V) 9.5/7.4/6.7/6.7 W		 1.3 A (5V), 2.4 A (12 V) 11.5/9.4/8.7/8.7 W
	Power consumption efficiency index	0.00013, 0.00021 0.00037, 0.00074 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)	
	Random vibration (RMS)	0.67 G (horiz.) / 0.56 G (vert.)	1.04 G	
Models		Ultra160 SCSI	Ultra320 SCSI	FC-AL-2
		IC35L009UWD210, IC35L009UCD210,	IC35L009XWD210, IC35L009XCD210,	IC35L009F2D210,
		IC35L018UWD210, IC35L018UCD210,	IC35L018XWD210, IC35L018XCD210,	IC35L018F2D210,
		IC35L036UWD210, IC35L036UCD210,	IC35L036XWD210, IC35L036XCD210,	IC35L036F2D210,
		IC35L073UWD210, IC35L073UCD210	IC35L073XWD210, IC35L073XCD210	IC35L073XF2D210

[1] Upper 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)

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