

*Powerful solutions and innovations in
desktop storage for the workplace and home*



IBM Deskstar family of 3.5-inch disk drives

2nd Quarter 1999

Highlights

The IBM Deskstar* family provides industry-leading capacity and performance. The IBM Deskstar 25GP leads in capacity with 25.0 GB at 5400 RPM.

The IBM Deskstar 22GXP leads the industry in both capacity and performance with 22.0 GB at 7200 RPM.

Average read seek times as low as 9.0 ms, fast sustained data rates up to 17.9 MB/sec, and a 2 MB cache on the highest capacity IBM Deskstar drives provide superior performance.

These IBM Deskstar drives offer IBM giant magnetoresistive (GMR) head technology, which enables areal densities up to 3.74 Gbits/sq. inch and disk capacities up to 5.1 GB.

The IBM Deskstar 22GXP and 25GP use the newest ATA interface technology, Ultra-ATA/66. This interface is backward compatible with Ultra-ATA and supports transfer rates up to 66.7 MB/sec.

Drive Fitness Test* (DFT), an innovative IBM technology, helps reduce end-user disruption and expensive disk drive replacement.

Leading drive technology

The award-winning family of IBM Deskstar hard disk drives is ideal for high-performance personal computer and personal workstation environments. The high-performance IBM Deskstar 25GP and IBM Deskstar 22GXP families provide especially high capacity to handle today's data-intensive desktop applications—such as audio/video capture and editing, animation, computer-aided design and manufacturing (CAD/CAM), and graphics.

The combination of the technologies below helps boost end-user productivity through rapid access to information and speed of applications. These include:

- IBM giant magnetoresistive (GMR) advanced head technology increases areal density

- S.M.A.R.T.3 improves reliability by providing background reassignment of defective sectors
- Circuit integration reduces power requirements and increases reliability
- No-ID* sector formatting increases capacity by helping to eliminate the overhead caused by duplicate storage of data sector ID fields
- An Ultra-ATA/66 interface provides superior data performance
- The IBM Partial Response Maximum Likelihood (PRML) digital data channel increases media-to-buffer and buffer transfer rates
- All IBM Deskstar hard drives are backed by a three-year warranty.



*IBM Deskstar GP family—5400 RPM,
3.5-inch low-profile Ultra-ATA drives with
capacities up to 25.0 GB*



*IBM Deskstar GXP family—7200 RPM,
Ultra-ATA drives with capacities up
to 22.0 GB*

IBM Deskstar family specifications, 2nd Quarter 1999

Product family name	Deskstar 16GP	Deskstar 14GXP
Capacity and interface		
Capacity (512 bytes)	6.4, 8.4, 10.1, 13.5, 16.8	10.1, 14.4
Interface	Ultra-ATA	Ultra-ATA
Performance		
Data buffer	512 KB	512 KB
Rotational speed (RPM)	5400	7200
Latency (average ms)	5.56	4.17
Media transfer rate (Mbits/sec)	163.7 maximum	175.6 maximum
Interface transfer rate (MB/sec)	up to 33.3	up to 33.3
Sustained data transfer rate		
Maximum to minimum (MB/sec)	12 to 6	13 to 8
Seek time (typical)		
Average (ms)	9.5	9.5
Track to track (ms)	2.2	2.2
Full track (ms)	15.5	15.5
Configuration		
Sector size (bytes)	512	512
Recording zones	8	8
User cylinders	13,085	13,085
Data heads	4/5/6/8/10 GMR	7/10 GMR
Disks	2/3/3/4/5	4/5
Areal density (max. GB/sq. inch)	2.687	2.44
Recording density (max. KBPI)	196.1	178.1
Track density (TPI)	13,700	13,700
Reliability		
Warranty (years)	3	3
Error rates (non-recoverable bits read)	≤ 1 per 1.0 E 13	≤ 1 per 1.0 E 13
Contact start stop cycles	40,000	40,000
Power		
Requirements	+5 VDC (±5%), +12 VDC (±10%-8%)	+5 VDC (±5%), +12 VDC (±10%-8%)
Dissipation (typical)		
Start-up current (max. amps)	0.7 (5V), 1.2 (12V)	0.7 (5V), 1.2 (12V)
Idle (avg.) watts	3.4 (up to 10 GB) 4.9 (> 10 GB)	6.9
Environmental (operating/nonoperating)		
Ambient temperature	5° to 55° C/-40° to 65° C	5° to 55° C/-40° to 65° C
Relative humidity (non-condensing)	8% to 90%/5% to 95%	8% to 90%/5% to 95%
Maximum wet bulb (non-condensing)	29.4° C/35.0° C	29.4° C/35.0° C
Shock (half sine wave)	10 G/11 ms / 175 G/2 ms	10 G/11 ms / 175 G/2 ms
Vibration (random [RMS])	0.67 G (5 to 500 Hz)/ 1.04 G (2 to 200 Hz)	0.67 G (5 to 500 Hz)/ 1.04 G (2 to 200 Hz)
Physical size		
Height	25.4 mm/1 in	25.4 mm/1 in
Width	101.6 mm/4 in	101.6 mm/4 in
Depth	146 mm/5.75 in	146 mm/5.75 in
Weight (max)	630 g/22.22 oz	630 g/22.22 oz
Available software		
	Ontrack	Ontrack
Ordering information		
Model/Part number(s)	DTTA-350640/00K4415, 25L2582 DTTA-350840/00K4101, 25L2583 DTTA-351010/00K4091, 25L2584 DTTA-351350/25L2621 DTTA-351680/00K4073	DTTA-371010/03L5261 DTTA-371440/00K4071

IBM Deskstar family specifications, 2nd Quarter 1999

Product family name	Deskstar 25GP	Deskstar 22GXP
Capacity and interface		
Capacity (512 bytes)	101, 15.2, 20.3, 25.0	9.1, 13.5, 18.0, 22.0
Interface	Ultra-ATA/66	Ultra-ATA/66
Performance		
Data buffer	512 KB, 2 MB ¹	512 KB, 2 MB ¹
Rotational speed (RPM)	5400	7200
Latency (average ms)	5.56	4.17
Media transfer rate (Mbits/sec)	195.6 maximum	223.4 maximum
Interface transfer rate (MB/sec)	up to 66.7	up to 66.7
Sustained data transfer rate		
Maximum to minimum (MB/sec)	15.5 to 8.7	17.9 to 10.7
Seek time (typical)		
Average (ms)	9.0	9.0
Track to track (ms)	2.2	2.2
Full track (ms)	15.5	15.5
Configuration		
Sector size (bytes)	512	512
Recording zones	12	12
User cylinders	15,302	15,012
Data heads	4/6/8/10 GMR	4/6/8/10 GMR
Disks	2/3/4/5	2/3/4/5
Areal density (max. GB/sq. inch)	3.74	3.43
Recording density (max. KBPI)	233.8	218.6
Track density (TPI)	16,000	15,700
Reliability		
Warranty (years)	3	3
Error rates (non-recoverable bits read)	≤ 1 per 1.0 E 13	≤ 1 per 1.0 E 13
Contact start stop cycles	40,000	40,000
Power		
Requirements	+5 VDC (±5%), +12 VDC (±10%-8%)	+5 VDC (±5%), +12 VDC (±10%-8%)
Dissipation (typical)		
Start-up current (max. amps)	0.7 (5V), 2.0 (12V)	0.7 (5V), 2.0 (12V)
Idle (avg.) watts	3.4 (up to 15 GB) 4.9 (>20 GB)	6.9
Environmental (operating/nonoperating)		
Ambient temperature	5° to 55° C/-40° to 65° C	5° to 55° C/-40° to 65° C
Relative humidity (FIX)	8% to 90%/5% to 95%	8% to 90%/5% to 95%
Maximum wet bulb (FIX)	29.4° C/35.0° C	29.4° C/35.0° C
Shock (half sine wave)	10 G/11 ms / 175 G/2 ms	10 G/11 ms / 175 G/2 ms
Vibration (random [RMS])	0.67 G (5 to 500 Hz)/ 1.04 G (2 to 200 Hz)	0.67 G (5 to 500 Hz)/ 1.04 G (2 to 200 Hz)
Physical size		
Height	25.4 mm/1 in	25.4 mm/1 in
Width	101.6 mm/4 in	101.6 mm/4 in
Depth	146 mm/5.75 in	146 mm/5.75 in
Weight (max)	630 g/22.22 oz	630 g/22.22 oz
Available software		
	Ontrack	Ontrack
Ordering information		
Model/Part number(s)	DJNA-351010/TBA DJNA-351520/TBA DJNA-352030/25L2650 DJNA-352500/25L26525L2723	DJNA-370910/TBA DJNA-371350/TBA DJNA-371800/25L2659 DJNA-372200/25L266125L2726

¹ 2 MB cache offered on top two capacities

For more information

Internet and e-mail:

- www.ibm.com/harddrive
- drive@us.ibm.com
- reseller@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)
- 507-253-4110 (outside of the United States)



www.ibm.com/harddrive

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PC World, Hong Kong
World Class Award
Deskstar Family
March 1999



Windows News
Editor's Choice Award
Deskstar 14GXP
February 1999



PC Pro
Speed Award
Deskstar 25GP
January 1999

PCFUN

PC Fun
Editor's Choice Award
Deskstar 14GXP
January 1999



PC Magazine
Best System Design-
Technology
GMR Technology
January 1999



PC Magazine Online
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Maximum PC
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