Industry-leading capacity, performance, and acoustics

IBM Travelstar 48GH, 30GN, and 15GN 2.5-inch hard disk drives

Highlights

The newest members of the IBM Travelstar family of hard disk drives are the first in the industry to implement Fluid Dynamic Bearing (FDB) motor technology for industry-leading idle and operating acoustic performance. In addition, these new Travelstar models support the fast Ultra DMA mode-5 interface for transfer rates of up to 100 MB/sec.

The IBM Travelstar 48GH—representing the third generation of 5400 RPM models in the industry—is the highest capacity and the highest performance mobile drive in the industry with a capacity of 48 GB and a maximum media data transfer rate of 241 Mbits/sec for unsurpassed capacity and performance.

The IBM Travelstar 30GN and 15GN hard drives provide areal densities up to 25.7 Gbits/sq. in., yielding up to 15 GB of capacity per disk, combined with an industry-leading operational shock rating of 180 G/2 ms, which makes these drives well suited for today's most demanding users.

Leading-edge technology

IBM continues its tradition of mobile storage leadership with the IBM Travelstar* 48GH, 30GN, and 15GN hard drives. The Travelstar 48GH—representing the third-generation family of 5400 RPM mobile drives—is the industry's first 48 GB notebook hard disk drive employing four disks in a 12.5 mm high design.

The innovative hard drive design combines Fluid Dynamic Bearing (FDB) motor technology, an ATA-100 interface, IBM giant magnetoresistive (GMR) head technology, Partial Response Maximum Likelihood (PRML) digital channel, a head load/unload feature, and Enhanced Adaptive Battery Life Extender* (ABLE) 3.0. This design provides the exceptional quietness, storage capacity, performance, power management, quality, and reliability required by today's notebook systems.

As a result, the new IBM Travelstar drives are well suited for demanding, high-capacity Internet, digital audio, video streaming, and real-time multimedia applications—whether users are in the office or on the road.

Performance and reliability

The IBM Travelstar 48GH, 30GN, and 15GN hard drives use established IBM technology such as TrueTrack Servo, IBM Drive Fitness Test* (DFT), Self-Monitoring Analysis and Reporting Technology (SMART), as well as a thermistor, an adaptive control device that helps maintain high performance and fast seek times at high environmental temperatures.

Advanced mobile systems

With these new drives, IBM has redefined state-of-the-art storage for mobile computing. The reduced acoustics, high speeds and capacities of IBM Travelstar drives support superior digital content creation capabilities, higher quality digital audio and video, and significantly faster processing for data-intensive multimedia and Internet applications.

By using one of the new Travelstar drives in a laptop system, you can unchain your multimedia studio from the desktop, enabling high-end multimedia creativity as mobile as your imagination.

IBM quality, support, and service

The new IBM Travelstar mobile hard drives share common components to provide users and manufacturers with superior-quality hard drives backed by a three-year warranty and IBM technical support and services.

IBM Travelstar 48GH: 12.5 mm, 5400 RPM, 48 GB ATA-5 hard drive[1]

IBM Travelstar 30GN: 9.5 mm, 4200 RPM, 30 GB ATA-5 hard drive[1]

IBM Travelstar 15GN: 9.5 mm, 4200 RPM, 15 GB ATA-5 hard drive[1]

IBM Travelstar hard disk drive characteristics

Feature	***Benefit***
First 48 GB mobile hard drive and the third-generation 5400 RPM model in the industry	IBM Travelstar 48GH has the industry-leading capacity and performance to enable mobile users to work with a new range of emerging storage-intensive applications.
Fluid Dynamic Bearing (FDB) motors on all models	IBM Travelstar 48GH, 30GN, and 15GN all feature Fluid Dynamic Bearing motor technology for industry-leading idle and operating acoustic performance.
Fast Ultra-DMA 100 2.5-inch mobile hard drives	IBM Travelstar 48GH, 30GN, and 15GN all feature industry-leading data transfer rates to help ensure ultimate performance.
High max areal density of 25.7 Gbits/sq. in. resulting in up to 15 GB of capacity per disk	IBM Travelstar 30GN and 15GN maximize areal density to enable more data storage per disk in standard, compact packages.
Industry-leading operating shock rating (180 G/2 ms) for a 2.5-inch mobile hard drive	IBM Travelstar 30GN and 15GN provide exceptional ruggedness to help withstand shock during read/write operations.

IBM family of Travelstar 48GH, 30GN, and 15GN hard disk drives at a glance

Product Name	***Travelstar 48GH***	***Travelstar 30GN***	***Travelstar 15GN***
Model Name	IC25T048ATDA05	IC25N030ATDA04 IC25N020ATDA04	IC25N015ATDA04 IC25N010ATDA04 IC25N006ATDA04
Configuration			
Interface	ATA-5	ATA-5	ATA-5
Capacity (GB)	48	30, 20	15, 10, 6
Sector Size (bytes)	512	512	512
Recording Zone	16	16	16
Data Heads	8	4, 3	2, 2, 1
Disks	4	2	1
Max. Areal Density (Gbits/sq.in.)	21.7	25.7, 23.2	25.7, 21.2, 21.2
Performance			
Data Buffer (KB)	2048[2]	2048[2]	512[3]
Rotational Speed (RPM)	5400	4200	4200
Latency (average ms)	5.5	7.1	7.1
Max. Media Transfer Rate (Mbits/sec)	241	235, 216	235, 199, 199
Max. Interface Transfer Rate (MB/sec)	100 MB/sec Ultra DMA mode-5	100 MB/sec Ultra DMA mode-5	100 MB/sec Ultra DMA mode-5
Seek Time (ms)			
Average (typical)	12	12	12
Track to Track (typical)	2.5	2.5	2.5
Full Stroke (typical)	23	23	23
Reliability			
Error Rate (Non-Recoverable)	< 1 per 1.0 E 13 bits transferred	< 1 per 1.0 E 13 bits transferred	< 1 per 1.0 E 13 bits transferred
Load/Unload Cycle	300000	300000	300000
DFT (Drive Fitness Test)	Enabled	Enabled	Enabled
Power			
Requirement	+5VDC(±5%)	+5VDC(±5%)	+5VDC(±5%)
Dissipation (typical)			
Startup (max. peak)	5.0 W	4.7 W	4.7 W
Seek (average)	2.6 W	2.3 W	2.3 W
Read (average)	2.5 W	2.1 W	2.0 W
Write (average)	2.7 W	2.2W	2.1 W
Performance Idle (average)	2.0 W	1.85 W	1.85 W
Active Idle (average)	1.3 W	.95W	0.85 W
Low Power Idle (average)	.9W	0.65 W	0.65 W
Standby (average)	0.25 W	0.25 W	0.25 W
Sleep	0.1 W	0.1 W	0.1 W
Power Consumption Efficiency (watts/GB)	0.019	0.022, 0.033	0.043, 0.065, 0.108
Physical size			
Height (mm)	12.5	9.5	9.5
Width (mm)	70	70	70
Depth (mm)	100	100	100
Weight (g)	155	99	95
Environmental Characteristics			
Operating			
Ambient Temp	5° - 55° C	5° - 55° C	5° - 55° C
Relative Humidity (noncondensing)	8 % - 90 %	8 % - 90 %	8 % - 90 %
Maximum Wet Bulb (noncondensing)	29.4° C	29.4° C	29.4° C
Shock (Half sine wave)	150 G/2 ms	180 G/2 ms	180 G/2 ms
Vibration (RMS)			
Random	0.67 G (5 - 500 Hz)	0.67 G (5 - 500 Hz)	0.67 G (5 - 500 Hz)
Swept sine	1 G 0-P (5 - 500 Hz) 1 G (300 Hz) - 0.33G (350 Hz) 0.33G (350 - 500 Hz)	1 G 0-P (5 - 500 Hz)	1 G 0-P (5 - 500 Hz)
Non-Operating			
Ambient Temp	-40° to 65° C	-40° to 65° C	-40° to 65° C
Relative Humidity (noncondensing)	5 % - 95 %	5 % - 95 %	5 % - 95 %
Maximum Wet Bulb (noncondensing)	40° C	40° C	40° C
Shock (Half sine wave)	700 G/1 ms	800 G/1 ms	800 G/1 ms
Vibration (Random(RMS))	3.01 G (5 - 500 Hz)	3.01 G (5 - 500 Hz)	3.01 G (5 - 500 Hz)
Acoustics (A-Weighted Sound Power (Bels))			
Idle (typical)	2.5	2.4	2.1
Op (typical)	3.5	3.1	2.7

For more information

Internet and e-mail:

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

IBM TECH FAX document server:

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

IBM hard drive product information:

- 1-888-IBM-5214 (United States)
- 507-253-4110

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[1] Clear cover drive models shown for illustration purposes only.

[2] Up to 173 KB out of 2048 KB used for firmware.

[3] Up to 125 KB out of 512 KB used for firmware.

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