Performance leadership for data-intensive applications

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Hitachi Deskstar 180GXP hard disk drives

Highlights

- ***Three-disk design provides higher capacity with 180GB at 7200rpm performance***
- ***The 8MB buffer enables faster data processing, especially for long block transfers.***
- ***Fluid Dynamic Bearing (FDB) motors enhance idle and operating acoustic operation***
- ***Thermal monitor helps provide accurate data read/write over the full system temperature range***
- ***Differential read channel enhances data reliability***

The Hitachi Deskstar 180GXP continues the award-winning tradition of the Deskstar family. The new family of drives incorporates both new and proven technologies to boost system performance. The Deskstar 180GXP provides the capacity and performance required to handle a wide range of advanced desktop and audio/video applications.

Hitachi has standardized features in their desktop drives to supply lower acoustics, faster transfer rates and low-power utilization to make the Deskstar 180GXP drive ideal for non-PC, high-performance computing requirements.

Technology for capacity and performance

Three-disk design provides a higher capacity with 180GB at 7200rpm performance.
Specially-designed onboard processor provides faster speeds than the previous generation.
Tagged Command Queuing (TCQ) brings SCSI-like performance to ATA server applications.
Enhanced servo system provides fast, reliable head positioning.

The superior areal density combines with the faster processor and streamlined cache buffer to enable award-winning performance for both the Deskstar hard drive and your system. Enhancements to the servo system and thermal monitor help to enable accurate data storage and retrieval.

Combined together, these technologies enable popular capacity points and are designed to increase reliability.

Technology for reliability

Load/unload head ramps
Fluid Dynamic Bearing (FDB) motors
Differential read channel
Internal thermal monitor
Drive Fitness Test (DFT)
S.M.A.R.T Self Test
True-Track Servo
No-ID sector formatting

Fluid Dynamic Bearing motors provide improved acoustics over traditional ball bearing spindle motors. FDB motors will continue to be used more frequently in hard disk drive designs, particularly in applications requiring very high spindle speeds, high areal densities, and low acoustic noise.

The Hitachi Deskstar 180GXP matches the drive capacity and performance guidelines for Microsoft Windows XP- (40GB minimum and 7200rpm performance).

Hitachi Deskstar 180GXP Specifications

Product name	Deskstar 180GXP
Model names	IC35L180AVV207-1 IC35L120AVV207-0 or 1 IC35L090AVV207-0 or 1 IC35L060AVV207-0
Configuration	
Interface	ATA-6
Capacity (GB)	180/120/80/60
Sector size (bytes)	512
Recording zones	27
Data heads (physical)	6/4/3/2
Data disks	3/2/2/1
Max. areal density (Gbits/sq. inch)	45.5
Max. recording density (BPI)	632,000
Track density (TPI)	72,000
Performance	
Data buffer[4]	8 MB / 2 MB (3D-8M, 1D-2M, 2D-2M/8M)
Rotational speed (rpm)	7,200
Latency average (ms)	4.17
Media transfer rate (max. Mbits/sec)	699
Interface transfer rate (max. MB/sec)	100
Sustained data rate (MB/sec)	56 to 29
Seek time (read, typical)[3]	
Average (ms)	8.5/8.8
Track to track (ms)	1.1
Full track (ms)	15.0/15.4
Reliability	
Error rate (non-recoverable)	1 in 10E14
Start/stops (at 40° C)	40K
Acoustic	
Idle (Bels)	2.6 (1 disk) 2.8 (2 disks) 3.0 (3 disks)
Power	
Requirement	+5 VDC (+/- 5%), +12 VDC (+10%/-8%)bb
Dissipation	
Startup current (max. A)	2.0 (+12V) & 0.83A (+5V)
Idle (W)	5.0 (1 disk) 5.9 (2 disks) 7.0 (3 disks)
Height (mm)	25.4
Width (mm)	101.6
Depth (mm)	146
Weight (max. g)	640
Environmental characteristics	
Operating	
Ambient temperature	5° to 55° C
Relative humidity (non-condensing)	8% to 90%
Max. wet bulb (non-condensing)	29.4° C
Shock (half sine wave, 2ms)	55G
Vibration (random (RMS))	0.67G for horizontal 0.56G for vertical
Non-operating	
Ambient temperature	-40° to 65° C
Relative humidity (non-condensing)	5% to 95%
Max. wet bulb (non-condensing)	35° C
Shock (half sine wave, 2ms)	350G (1 or 2 disks); 300G (3 disks)
Vibration (random (RMS))	1.04G rms (XYZ)

[1] This product data does not constitute a warranty. Questions regarding Hitachi warranty terms or the methodology used to derive this data should be referred to a Hitachi representative.
[2] GB equals one billion bytes when referring to hard drive capacity; accessible capacity may be less.
[3] Includes command overhead.
[4] Upper 227 KB is used for firmware.

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