

# CinemaStar™ 5K1000

3.5-INCH CE HARD DISK DRIVES

**HITACHI**  
Inspire the Next

Cool, quiet, energy-efficient digital video storage

## Highlights

- > Up to 1TB<sup>1</sup> capacity
- > CoolSpin™ technology
- > 24x7 availability<sup>2</sup>
- > Silent-seek acoustics
- > SMART Command Transport (SCT) for optimized video streaming
- > Best-in-class power utilization and heat emission
- > Patented load/unload ramp for enhanced reliability
- > Targeted 1.2 million hours MTBF<sup>3</sup>

## Applications

- > HD Digital Video Recorders (DVR)
- > DVD/HDD recorders
- > DVR-enabled televisions
- > Home security video centers
- > Media centers



1TB, 750, 500, 320, 250 and 160GB  
SATA 3Gb/s

## Features and Benefits

	Feature / Function	Benefits
<b>Capacity</b>	Up to 1TB of storage	* Up to 250 hours of high-definition video, 1000 hours of standard video, 350 movies, 250,000 4-min songs or 500 video games
<b>Power</b>	Advanced Power Management	Reduces power during idle periods
	HiVERT™ technology	Best-of-breed power efficiency
	CoolSpin™ motor design	Requires low peak power enabling more cost-effective and cooler power supplies
<b>Acoustics</b>	Silent seek	Ultra quiet operation
<b>Reliability</b>	Thermal Fly-height Control (TFC)	Better soft error rate for improved reliability and performance
	Head load/unload	Protects disk during non-operation
	Internal thermal sensor	Improves data integrity
	Media Maintenance	Prevents track wear-out
<b>Performance</b>	SMART Command Transport (SCT)	Adaptive error correction for optimum video delivery
	SmoothStream™ technology	Optimized video streaming
	CE features set	Improved handling of high-quality video streams

\*Actual storage may vary depending on the compression rate applied. Capacities represented may not be combined.

## A different spin for digital video

The CinemaStar™ 5K1000 hard drive provides a generous 1TB capacity and features innovative CoolSpin technology to deliver a new level of power efficiency and quiet operation for digital video applications. Key to CoolSpin technology is an optimization of motor speed to provide an ideal balance of performance, power utilization and acoustics. With customized features, capacity and cool operation, the 3.5-inch CinemaStar 5K1000 enables a new generation of digital video recorders and set-top boxes that store more hours of video, run more quietly and use less power.

## Designed to support on-demand digital video solutions

An exceptional blend of audio/visual (AV) features fine tunes the CinemaStar 5K1000 for digital video storage needs. Hitachi SmoothStream technology supports the ATA-7 streaming command set, and SCT provides time-limited error recovery and thermal monitoring capabilities. Because IT data and video streams have different throughput demands, AV-Zoning allows the definition of various error recovery procedures for predefined ranges of data blocks, or zones. To enable the system to effectively deliver critical data and time-sensitive video content from a single drive. Other features that tailor this drive for streaming video applications include Read Continuous mode, which helps manage error recovery for video streams, and Media Maintenance enhancements, to help prevent track wear-out from around-the-clock operation.

## Innovation for a more sustainable environment

The CinemaStar 5K1000 demonstrates Hitachi's ecological leadership with its halogen-free design and power-efficient operation. Both these features helped qualify the drive for the Hitachi EcoTrac classification, which identifies products that minimize environmental impact in the areas of product design, manufacturing, operation and disposal.



## Specifications (Preliminary)

<b>Model(s)</b>	HCS5C1010CLA382 HCS5C1075CLA382 HCS5C1050CLA382 HCS5C1032CLA382 HCS5C1025CLA382 HCS5C1016CLA382
<b>Configuration</b>	
Interface	SATA 3Gb/s
Capacity (GB) <sup>1</sup>	1TB / 750 / 500 / 320 / 250 / 160
Max. areal density (Gbits/sq. in)	352
<b>Performance</b>	
Data buffer (MB) <sup>4</sup>	8
Media transfer rate (Mbits/sec, max.)	1265
Interface transfer rate (MB/sec, max.)	300
<b>Reliability</b>	
Error rate (non-recoverable, bits read)	1 in 10 <sup>14</sup>
Load/unload cycles	300,000
Availability <sup>2</sup> (hrs/day x days/wk)	24x7
Targeted MTBF <sup>3</sup> (hours)	1,200,000
<b>Power</b>	
Requirement	+5 VDC (+/-5%) +12 VDC (+/-10%)
Startup (max. A)	1.1 (+5V) & 1.7 (+12V)
Performance idle (W, avg.)	1TB / 750GB 3.3 500GB / 320GB / 250GB / 160GB 2.9
<b>Physical size</b>	
z-height (mm, max.)	26.1
Dimensions (width x depth, mm, typical)	101.6 x 147
Weight (g, max.)	1TB / 750GB 680 500GB / 320GB / 250GB / 160GB 400
<b>Environmental (operating)</b>	
Device temperature <sup>5</sup>	0° to 70° C
Relative humidity (non-condensing)	8% to 90%
Shock (half-sine wave (G 2ms))	70
Vibration, random (G RMS)	0.67 (XY)
<b>Environmental (non-operating)</b>	
Ambient temperature	-40° to 70° C
Relative humidity (non-condensing)	5% to 95%
Shock (half-sine wave (G 2ms))	350
Vibration, random (G RMS)	1.04 (XYZ)
<b>Acoustics (A-weighted sound power)</b>	
Operating (Bels, typical)	2.4

<sup>1</sup> One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity may be less.

<sup>2</sup> Based on typical AV multi-stream recording environments accumulating up to 2000 hours of HD content per month or equivalent workload.

<sup>3</sup> This MTBF target is based on a sample population in typical CE/surveillance product environment and is estimated by statistical measurements and acceleration algorithms under normal operating conditions. MTBF ratings do not predict reliability of an individual drive.

<sup>4</sup> Portion of buffer capacity used for drive firmware

<sup>5</sup> Temperature tested at top cover surface

## Power efficient for cooler operation and longer life

CoolSpin and HiVERT technologies combine to create this new class of CE drive that delivers best-of-breed power utilization and thermal emissions. HiVERT technology, pioneered on Hitachi 2.5-inch drives, helps efficiently manage power consumption. These innovations, together with sixth-generation Advanced Power Management, make the CinemaStar 5K1000 the ideal choice for digital video recorders that run cooler, require less power and last longer.

## Hitachi quality and service

All Hitachi hard drives are designed to the highest quality standards with field-proven components. They are backed by Hitachi worldwide technical support and integration services, enabling customers around the globe to bring their products to market quickly.

## How to read the CinemaStar model number

HCS5C1010CLA382 = 1TB/8MB buffer

H = Hitachi

C = CinemaStar

S = Standard

5C = CoolSpin technology

10 = Full capacity – 1TB

10 = Capacity this model, 10 = 1TB  
(75 = 750GB, 50 = 500GB, 32 = 320GB,  
25 = 250GB, 16 = 160GB)

C = Generation code

L = 26.1mm z-height

A3 = SATA 3Gb/s

8 = 8MB buffer

2 = Reserved

## Information and Technical Support

[www.hitachigst.com](http://www.hitachigst.com) (Main Web site)

[www.hitachigst.com/partners](http://www.hitachigst.com/partners) (Partner Web site)

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## Program Support

Partners First™ Program

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The EcoTrac symbol identifies Hitachi hard drives that deliver on the principles of lower operating costs, safer product disposal and a more sustainable environment.

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