

# CinemaStar™ 5K320

3.5-INCH CE HARD DISK DRIVES

**HITACHI**  
Inspire the Next

Cool, quiet, power-efficient storage for digital video applications

## Highlights

- > Up to 320GB<sup>1</sup> capacity
- > CoolSpin™ technology
- > 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>2</sup>

## Applications

- > HD Digital Video Recorders
- > DVD/HDD recorders
- > DVR-enabled televisions
- > Media center PCs
- > Video surveillance



320 and 250GB | SATA 3Gb/s



## Features and Benefits

	Feature / Function	Benefits
<b>Capacity</b>	Up to 320GB of storage	* Up to 80 hours of high-definition video, 320 hours of standard video, 115 movies, 80,000 4-min songs or 40 video games
	<b>Power</b>	Advanced Power Management
<b>Acoustics</b>	HiVERT™ technology	Best-of-breed power consumption
	CoolSpin™ technology	Motor speed optimized for low power and acoustics
	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 5K320 hard drive provides up to 320GB 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 5K320 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.

## Customized features support on-demand digital video solutions

An exceptional blend of audio/visual (AV) features fine tunes the CinemaStar 5K320 for digital video storage needs. Hitachi SmoothStream technology is enabled to support the ATA-7 streaming command set, and SCT provides time-limited error recovery and thermal monitoring capabilities. Because IT-type 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. This feature enables the system to effectively deliver critical system data and time-sensitive video content from a single drive. Other features that make this drive ideal for streaming video applications include Read Continuous mode to help manage error recovery for video streams, and Media Maintenance enhancements to help prevent track wear-out from around-the-clock operation.

## Specifications

<b>Model(s)</b>	HCS5C3232SLA380 HCS5C3225SLA380
<b>Configuration</b>	
Interface	Serial ATA 3Gb/s
Capacity (GB) <sup>1</sup>	320 / 250
Max. areal density (Gbits/sq. in)	240
<b>Performance</b>	
Data buffer (MB) <sup>3</sup>	8
Media transfer rate (Mbits/sec, max.)	1065
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
Targeted MTBF <sup>2</sup> (hours)	1,200,000
Availability <sup>4</sup> (hrs/day x days/wk)	24x7
<b>Power</b>	
Requirement	+5 VDC (+/-5%) +12 VDC (+/-10%)
Startup current (A, max.)	0.5 (+5V) & 2.0 (+12V)
Performance idle (W, avg.)	3.1
<b>Physical size</b>	
z-height (mm, max.)	26.1
Dimensions (width x depth, mm, typical)	101.6 x 147
Weight (g, max.)	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>	
Idle (Bels, typical)	2.3
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> 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>3</sup> Portion of buffer capacity used for drive firmware

<sup>4</sup> Designed for low duty cycle, non mission-critical applications requiring up to 20 percent read/write activity per power-on-hour in digital video and consumer electronics applications. Note that customer environments may vary from application to application.

<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 seventh-generation Advanced Power Management, make the CinemaStar 5K320 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's 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

HCS5C3232SLA380 = 320GB/8MB buffer

H = Hitachi

C = CinemaStar

S = Series prefix

5C = CoolSpin technology

32 = Full capacity — 320GB

32 = Capacity this model, 25 = 250GB

S = Generation code

L = 26.1mm z-height

A3 = SATA 3Gb/s

8 = 8MB buffer

0 = Reserved

## Information and Technical Support

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

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## Program Support

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