CinemaStar™ Z5K500

2.5-Inch 7mm 5400 RPM CE Hard Disk Drives

Highlights

- Second generation, 7mm, 2.5-inch design
- Video hard drive with capacities up to 500GB[1]
- Advanced Format with 512-byte emulation
- 6Gb/s and 3Gb/s SATA interface
- 24x7 availability[5]
- Low power utilization to help reduce energy costs
- SmoothStream™ technology
- Silent-seek acoustics for quiet operation
- SMART Command Transport (SCT) for streaming optimization

Applications/Environments

- Digital Video Recorders (DVR)
- Set-top Boxes
- Portable Video Players
- DVR-enabled Televisions
- High-end Audio Systems
- Video Surveillance Systems

Expanding the Cinemastar Family

CinemaStar™ Z5K500 is the second generation 7mm, 5400 RPM, 2.5-inch consumer electronics hard drive with capacities from 250GB to 500GB. These 500GB per platter models use Advanced Format and have been customized to support digital video and surveillance applications. Advanced Format increases physical sector size from 512 bytes to 4096 (4K) bytes, thereby increasing capacities and error correction capabilities. Consult the HGST Advanced Format Technology Brief for more information on these drives. The slimmer CinemaStar Z5K500 is designed as a direct replacement for standard 9.5mm HDD and is well suited for TV integration and portable video products.

Designed for Digital Video Solutions

An exceptional blend of audio/visual (AV) features fine tunes the CinemaStar Z5K500 for video storage applications. HGST SmoothStream technology supports the ATA-7 streaming command set, and SCT provides time-limited error recovery and thermal monitoring capabilities. CinemaStar Z5K500 is offered with silent-seek acoustics for excellent sound quality. HGST continues to provide near silent operation to make the Z5K500 an ideal choice for home DVR applications and surveillance systems. The CinemaStar Z5K500 carries the HGST EcoTrac classification due to its low power consumption and eco-friendly, halogen-free production. This sixth generation 2.5-inch CinemaStar drive, with its balanced capacity, power-management and ruggedness delivers greater design flexibility for next-generation compact video systems.

Reliability Leadership

CinemaStar Z5K500 elevates hard drive reliability to new levels with an improved protection scheme for power fluctuation and enhanced TFC for improved error rates. HGST offers customers system design and integration services including, but not limited to hard drive selection, optimization, software compatibility assessment, performance profiling and problem analysis and reliability consultation. Team HGST is ready to help you deliver a successful video device. The HGST CinemaStar product line is optimized for video applications on any size system.

Features and Benefits

	Feature / Function	Benefits
Capacity	Up to 500GB storage	Up to 185 hours of high-definition video, 500 hours of standard video, 178 movies, 125,000 4-min songs or 250 video games *
Reliability	Thermal Fly-height Control (TFC)	Improved reliability
	Media maintenance	Extends recording life and capabilities
Performance	SMART Command Transport (SCT) ERC Control	Smoother streaming and improved error recovery timing for optimum A/V performance
Eco-friendly	1.4W operating power Halogen-free design	Reduces energy cost in A/V applications Smaller carbon footprint
Acoustics	Silent seek	Ultra-quiet operation for improved sound quality
interface	SATA 6Gb/s and 3Gb/s	Fast data throughput

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

500GB, 320GB and 250GB
5400 RPM l SATA 6Gb/s & 3Gb/s

HGST Quality and Service

HGST's mobile hard drives are designed to the highest quality standards and contain field-proven components. HGST provides worldwide technical support and integration services to enable global customers to bring their products to market quickly.

How to read the CinemaStar model number

HCC545050A7E380 = 500GB, SATA 3Gb/s

H	=	HGST
C	=	CinemaStar
C	=	Compact
54	=	5400 RPM
50	=	Full capacity — 500GB
50	=	Capacity this model, 50 = 500GB (32 = 320GB, 25 = 250GB)
A	=	Generation code
7	=	7mm z-height
E3	=	SATA interface E3 = 3Gb/s with 512 emulation (E6 = 6Gb/s with 512 emulation)
8	=	8MB cache
0	=	Reserved

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Specifications

Models	HCC545050A7E380 HCC545032A7E380 HCC545025A7E380	HCC545050A7E680 HCC545032A7E680 HCC545025A7E680
Configuration		
Interface	SATA 3Gb/s	SATA 6Gb/s
Capacity (GB)[1]	500 / 320 / 250	←
Sector size (bytes)[2]	512e	←
Recording zones	30	←
Aerial density (max, Gbit/sq.in.)	630	←
Performance		
Data buffer (MB)[3]	8	←
Rotational speed (RPM)	5400	←
Latency average (ms)	5.5	←
Media transfer rate (max, Mbits/s)	1004	
Interface transfer rate (MB/s)	300	600
Seek time, read (ms, typical)[4]	15	←
Reliability		
Load/Unload cycle	600,000	←
Power on hours (POH) per month	732	←
Availability[5] (hrs/day x days/wk)	24x7	←
Power		
Requirement	+5VDC (+-5%)	←
Startup (W, peak, max)	3.5	←
Operating[6] (W, IDEMA 3-stream)	1.4	←
Low power idle (W, average)	0.5	←
Physical size		
Height (max, mm)	7	←
Dimensions (width x depth, mm)	70 x 100	←
Weight (max, g)	95	←
Environmental (operating)		
Shock (half-sine wave,)	325G/2ms	←
Operating temperature[6] (top cover)	0° to 70° C	←
Environmental (non-operating)		
Shock (half-sine wave)	1000G/1 ms	←
Ambient temperature	-40° to 65° C	←
Acoustics (A-weighted sound power)		
Idle (Bels, typical)	1.9	←
Operating (Bels, typical, IDEMA 3-stream)	2.0	←

[1] One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity will vary depending on the operating environment and formatting.
[2] Advanced Format drive: 4K physical sectors with 512 byte emulation
[3] Portion of buffer used for firmware

[4] Excludes command overhead
[5] Designed for low duty cycle, non mission-critical applications in PC, nearline and consumer electronics environments, which vary application to application
[6] Assumes CE operational conditions

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DSCZ545011EN-02