

Ultrastar™ C10K900

2.5-INCH ENTERPRISE 10K RPM HARD DISK DRIVES

HITACHI
Inspire the Next

Industry-leading power efficiency and performance

Highlights

- > Built on field-proven, reliable design
- > Industry-best performance in a 10K RPM 2.5-inch form factor
- > 18% faster sequential and up to 17% better random performance than competition
- > Uses 28% less power during operation than competition
- > 900GB¹ capacity continues to support the 3.5- to 2.5-inch form factor transition
- > High-performance 6Gb/s SAS for reliable data throughput
- > Large 64MB cache buffer manages data efficiently
- > Halogen-reduced design and industry-best power utilization for most eco-friendly 10K SFF hard drive

Applications/Environments

- > Space and/or power constrained environments
- > Enterprise-class servers and networked storage arrays
- > Blade and 1U/2U rack-mounted servers
- > Databases and Online Transaction Processing (OLTP)
- > High performance computing and other 24x7 applications
- > Cloud computing



900, 600, 450 and 300GB | 10,000 RPM
2.5-inch SFF | SAS 6Gb/s



Features and Benefits

	Feature / Function	Benefits
Return on Investment	Advanced power management	Cool enterprise SAS with lower power requirements
	900GB, 600GB, 450GB and 300GB	More capacity for less space and configuration flexibility
Performance	Dual Stage Actuator	Enhances seek performance
	SAS 6Gb/s dual port	Fastest interface for enhanced reliability
	10K RPM	Low latency for faster access to data
	64MB cache buffer	Manages data efficiently
	Rotational Vibration Safeguard (RVS)	Maintains drive performance in high rotational vibration environments and multi-drive systems
	Workload detector technology	Maximizes performance in RAID environments
Reliability	IDRC technology	Improves signal processing for more robust data integrity
	RRO fields	Improves handling of repeatable run out to lower risk of data squeeze and write inhibit rate
	End-to-end data protection (ANSI) without capacity loss	Enhances error detection for optimal data integrity
	Patented Head load/unload ramp	Minimizes handling damage during integration

Leadership performance

Ultrastar™ C10K900 is a 2.5-inch 10,000 RPM hard drive that leads the industry with 18% faster sequential and up to 17% random performance than the nearest competitor. The high-performance SAS 6Gb/s interface delivers data reliability, availability and scalability and is the only small form factor SAS drive in the industry to pack a 64MB cache buffer for optimized read/write response time.

Best-in-class power performance

Power management innovations designed into the Ultrastar C10K900 enable industry-leading power efficiency, up to 28% better than competing drives, and translate into reduced power requirements and lower cooling costs. Hitachi Advanced Power Management technology, with multi-state idle modes, maintains compatibility with the INCITS T10 Technical Committee standards direction and can be pre-programmed or manually initiated in the system. Ultrastar C10K900 continues the Hitachi tradition of environmental leadership with its halogen-reduced components and focus on low power consumption, and carries the Hitachi EcoTrac classification.

Driving the small form factor transition

Ultrastar C10K900 delivers capacity parity with 3.5-inch 10K drives, providing a massive 900GB of storage space and enabling lower total cost of ownership for many Enterprise environments, especially networked storage arrays. When faced with space and power limitations, the Ultrastar C10K900 is an efficient solution for online transaction processing, intensive data analysis and multi-user applications. Some models of the C10K900 also offer Bulk Data Encryption for hard-drive-level data security. These self-encrypting models are designed to the Trusted Computing Group's Enterprise A Security Subsystem Class encryption specification and allow customers to reduce costs associated with drive retirement and extend drive life by enabling swift and secure repurposing of drives.

Specifications

Model(s)	HUC109090CSS600, HUC109090CSS601 HUC109060CSS600, HUC109060CSS601 HUC109045CSS600, HUC109045CSS601 HUC109030CSS600, HUC109030CSS601
Configuration	
Interface	SAS 6Gb/s
Capacity (GB) ¹ at 512 Bytes/sector	900 / 600 / 450 / 300
Recording zones	40
Data heads (physical)	6 / 4 / 3 / 2
Data Disks	3 / 2 / 2 / 1
Max. areal density (Gbits/sq. in.)	494
Performance	
Data buffer (MB) ²	64
Rotational speed (RPM)	10K
Latency average (ms)	<3.0
Media transfer rate (Mbits/sec, max)	2105
Interface transfer rate (MB/sec, max) ³	600
Sustained transfer rate (MB/sec, typ.) ³	198 to 117
Seek time (read/write, ms, typical) ⁴	3.8 / 4.2
Reliability	
Error rate (non-recoverable, bits read)	1 in 10 ¹⁶
MTBF ⁵ (M hours)	2.0
Availability (hrs/day x days/wk)	24x7
Acoustics	
Idle (Bels, typical)	2.9
Power	
Requirement	+5 VDC (+/-5%), +12 VDC (+/-5%)
Operating, (W, typical)	5.8
Load power idle (W)	3.0
Power consumption efficiency at idle (W/GB)	0.0043 / 0.0058 / 0.0078 / 0.0107
Physical size	
z-height (mm)	14.8
Dimensions (width x depth, mm)	70.1 x 100.6
Weight (g, max)	204
Environmental (operating)	
Ambient temperature	5° to 55° C
Shock (half-sine wave)	60G (2ms)
Vibration (G RMS, 5 to 500 Hz)	0.4, all axes
Environmental (non-operating)	
Ambient temperature	-40° to 70° C
Shock (half-sine wave)	>300G (2ms)
Vibration (G RMS, 5 to 500 Hz)	1.5, all axes

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 Portion of buffer capacity used for drive firmware

³ MB is equal to MillionBytes

⁴ Excludes command overhead

⁵ MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under median operating conditions. MTBF ratings are not intended to predict an individual drive's reliability. MTBF does not constitute a warranty.

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Hitachi quality and service

The Ultrastar C10K900 extends the long-standing Hitachi tradition of performance and reliability leadership. A balanced combination of new and proven technologies helps ensure high reliability and availability of customer data.

Hitachi drives are backed by an array of technical support and services, which may include customer and integration assistance. Hitachi is dedicated to providing a complete portfolio of hard disk drive solutions to satisfy today's monumental computing needs.

How to read the Ultrastar model number

HUC109090CSS600 = 900GB, SAS 6Gb/s

H = Hitachi

U = Ultrastar

C = Compact (vs S for Standard)

10 = 10,000 RPM

90 = Full capacity — 900GB

90 = Capacity this model, 90 = 900GB

(60 = 600GB, 45 = 450GB, 30 = 300GB)

C = Generation code

S = 14.8mm z-height

S6 = Interface, SAS 6Gb/s

0 = Reserved

0 = No encryption (1 = TCG encryption)

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

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