

# Ultrastar™ C10K600

## 2.5-Inch SFF Enterprise 10K RPM Hard Disk Drives

### Highlights

- Industry-best performance in a 10K RPM 2.5-inch form factor
- 18% faster sequential and up to 15% better random performance than competition
- Uses 22% less power during operation than competition
- 600GB<sup>1</sup> capacity enables 3.5- to 2.5-inch form factor transition
- High-performance 6Gb/s SAS for reliable data throughput
- Halogen-reduced design and industry-best power utilization for most eco-friendly 10K SFF hard drive

### Applications/Environments

- Enterprise-class servers
- Networked storage arrays
- Space and/or power constrained environments
- Databases and Online Transaction Processing (OLTP)
- Blade and 1U/2U rack-mounted servers
- Cloud computing

### Leadership Performance

Ultrastar™ C10K600 is a 2.5-inch 10,000 RPM hard drive that leads the pack with 18% faster sequential and up to 15% random performance than other drives in its class. The high-performance SAS 6Gb/s interface delivers data reliability, availability and scalability and is the first small form factor SAS drive in the industry to pack a 64MB cache buffer to optimize the read/write response time.

### Best-in-Class Power Performance

Power management innovations designed into the Ultrastar C10K600 enable industry-leading power efficiency and translate into reduced power requirements and lower cooling costs. HGST Advanced Power Management technology, with multi-state idle modes, maintains compatibility with T10 direction and can be pre-programmed or manually initiated in the system. Compared to 3.5-inch enterprise drives, the C10K600 consumes 70% less space and its small eco-friendly design enables reduced power consumption of up to 65%. Ultrastar C10K600 continues the HGST tradition of environmental leadership with its halogen-reduced components and focus on low power consumption, and carries the HGST EcoTrac classification.

### Driving the Small Form Factor Transition

Ultrastar C10K600 delivers capacity parity with 3.5-inch 10K drives, providing a massive 600GB 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 C10K600 is an efficient solution for online transaction processing, intensive data analysis and multi-user applications. Some models of the C10K600 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.

### Features and Benefits

	Feature / Function	Benefits
<b>Return on Investment</b>	Advanced power management	Cool enterprise SAS with lower power requirements
	600GB, 450GB and 300GB	More capacity for less space and configuration flexibility
<b>Performance</b>	SAS 6Gb/s dual port	Fastest interface for enhanced reliability
	10,000 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
<b>Reliability</b>	Iterative decode	Improves signal processing
	End-to-end data protection (ANSI) without capacity loss	Enhances error detection for optimal data integrity
	Head load/unload ramp	Minimizes handling damage during integration



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



## HGST Quality and Service

HGST's Ultrastar C10K600 extends the company's long-standing tradition of performance and reliability leadership. A balanced combination of new and proven technologies enables high reliability and availability to customer data.

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

### How to read the Ultrastar model number

HUC106060CSS600 = 600GB, SAS 6Gb/s

H = HGST

U = Ultrastar

C = Compact (vs S for Standard)

10 = 10,000 RPM

60 = Full capacity — 600GB

60 = Capacity this model, 60 = 600GB (14 = 147GB)

C = Generation code

S = 14.8mm z-height

S6 = Interface, SAS 6Gb/s

0 = Reserved

0 = Reserved (1 = TCG encryption)

### Information and Technical Support

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

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

### North America

[support\\_usa@hgst.com](mailto:support_usa@hgst.com)

Toll free: 1 888 426-5214, Direct: 1 408 717-8087

### Asia Pacific

[support\\_ap@hgst.com](mailto:support_ap@hgst.com) / 65 6840 9595

### EMEA and UK

[support\\_uk@hgst.com](mailto:support_uk@hgst.com) / 44 20 7133 0032

### Germany

[support\\_uk@hgst.com](mailto:support_uk@hgst.com) / 49 6929 993601

### Program Support

Partners First Program. [channelpartners@hgst.com](mailto:channelpartners@hgst.com)

## Specifications

<b>Models</b>	HUC106060CSS600 HUC106060CSS601 HUC106045CSS600 HUC106045CSS601 HUC106030CSS600 HUC106030CSS601
<b>Configuration</b>	
Interface	SAS 6Gb/s
Capacity (GB) <sup>1</sup>	600 / 450 / 300
Recording zones	39
Data heads (physical)	6 / 6 / 3
Data disks	3 / 3 / 2
Max. areal density (Gbits/sq. in.)	341
<b>Performance</b>	
Data buffer (MB) <sup>2</sup>	64
Rotational speed (RPM)	10,000
Latency average (ms)	3.0
Media transfer rate (Mbits/s, max)	1893
Interface transfer rate (MB/s, max)	600
Sustained transfer rate (MB/s, typical)	176-109
Seek time (read, ms, typical) <sup>3</sup>	3.7
<b>Reliability</b>	
Error rate (non-recoverable, bits read)	1 in 10 <sup>16</sup>
MTBF <sup>4</sup> (M hours)	2.0
Availability (hrs/day x days/wk)	24x7
<b>Acoustics</b>	
Idle (Bels)	2.9
<b>Power</b>	
Requirement	+5 VDC (+/-5%), +12 VDC (+/-5%)
Operating, (W, typical)	5.6 / 5.4 / 5.0
Low RPM idle (W)	3.1 / 3.1 / 2.8
Power consump. efficiency index (W/GB)	0.0052 / 0.0069 / 0.0094
<b>Physical size</b>	
z-height (mm)	14.8
Dimensions (width x depth, mm)	70.1 x 100.6
Weight (g, max)	204
<b>Environmental (operating)</b>	
Ambient temperature	5° to 55° C
Shock (half-sine wave 2ms, G)	60
<b>Environmental (non-operating)</b>	
Ambient temperature	-40° to 70° C
Shock (half-sine wave, 2ms, G)	>300
Vibration, random (G, 5 to 500 Hz)	3, all axes

<sup>1</sup> One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1000GB (one trillion bytes) when referring to hard drive capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drive, the computer's operating system, and other factors.

<sup>2</sup> Portion of buffer capacity used for drive firmware

<sup>3</sup> Excludes command overhead

<sup>4</sup> 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.

