



Highest-Performing Drives for Storage Subsystems, Servers, and Workstations

Overview

Quantum Atlas™ II 3.5-inch, 7,200 RPM hard disk drives are top-performing storage devices that meet the needs of high-end storage subsystems, video servers, and workstations. The drives offer high capacity and feature the most advanced technology for exceptional performance and higher areal density.

With formatted capacities of 4,550 megabytes (MB) and 9,100 MB, and an Ultra SCSI-3* (Wide 40 MB per second data transfers) interface, Quantum Atlas II disk drives are outstanding mass storage solutions for applications requiring the fastest data throughput. Systems that can benefit from the family's stunning performance include RAIDs, database servers, video servers, technical workstations, and video editing systems.

Optimized performance features include a custom SCSI controller, a sophisticated seek optimization algorithm, an embedded quadrature servo system, and a large multi-track segmented cache. Quantum Atlas II drives have the industry's fastest seek time for a 9.1 gigabyte (GB) drive at 8 milliseconds (ms).

Magnetoresistive (MR) heads on the drives push areal density to 910 MB per disk. In addition, Quantum's highly automated manufacturing process ensures the industry's highest reliability for its class.

Because Quantum Atlas II drives are used to store mission-critical data, they are extremely reliable. The drives have a reduced parts count, low power consumption, and high data integrity.

Advanced SCSI Architecture and Cache Performance

Quantum's custom ASABET™ SCSI controller provides exceptionally low command overhead and reduced SCSI-bus execution times, as an unprecedented number of functions are automatically executed in hardware.

The Quantum Atlas II family features a large cache and a unique cache-management algorithm that maximizes cache hits for multiple sequential read streams. The result is fast data access and high system throughput.

The drives employ an advanced embedded quadrature servo system that continuously compensates for temperature changes, eliminating the need for thermal recalibrations that interrupt audio/video data streams.

Exceptional Data Integrity and Reliability

Quantum drives have the highest data integrity in the industry. Data from the SCSI bus to the media is protected with an Error-Detection Code (EDC). In addition, Quantum incorporates a powerful Reed Solomon Error-Correction Code (ECC) capable of correcting a single 73-bit error burst for each sector.

*SCSI-3 SPI compliant.

Key Features

- 4.55 GB and 9.10 GB formatted capacities
- 7,200 RPM
- 8 ms average seek time
- Ultra SCSI-3 interface
- MR heads
- Tagged command queuing
- ORCA™ seek optimization algorithm
- Zero-latency read
- Multi-block read/write data transfers
- Automatic sector reallocation
- Adaptive segmented buffer
- Hot pluggable
- Low command overhead
- ID-less controller
- Downloadable firmware
- Robust multi-initiator support
- Automatic power management
- Advanced ECC on-the-fly
- Write splice protection
- Plug-and-Play SCSI

SPECIFICATIONS

Quantum Atlas II

4.5

9.1

Form Factor	3.5 inch	
Interface	Ultra SCSI-3 ¹ single-ended Narrow 50-pin connector Wide 68-pin connector SCA-2 80-pin connector Fast SCSI differential Wide 68-pin connector	
Formatted Capacity (MB ²)	4,550	9,100

Disk Drive Configuration

Disks	5	10
Heads/Recording Surfaces	10	20
Tracks per Surface	5,811	
Sectors per Track	108 to 180	
Bytes per Sector	512	
Track Density (tpi)	6,000	
Maximum Recording Density (bpi)	109,800	
Areal Density (Mb/sq. in.)	659	
Encoding/Detection Method	RLL (1,7)	

Performance Specifications

Typical Seek Times ³ (ms)		
Average (read)	8	
Track-to-Track	1.0	
Full Stroke	<18	
Average Rotational Latency (ms)	4.17	
Rotational Speed (RPM)	7,200	
Internal Data Rate (Mb/sec)	121	
Data Transfer Rates (Buffer-to-Host)		
Ultra SCSI-3 (MB/sec)		
Narrow	20	20
Wide	40	40
Buffer Size (KB)	512	1,024

Reliability Specifications

Preventive Maintenance	Not required	
Data Errors (per bits read)		
Recoverable	<1 per 10 ¹¹	
Nonrecoverable	<1 per 10 ¹⁵	
Error-Correction Method	Reed Solomon	
Warranty ⁴ (years)	5	

Physical Specifications

Dimensions—inches (mm)		
Width	4.0 (101.6)	
Length	5.75 (146.05)	
Height	1.0 (25.4)	1.63 (41.4)
Weight—pounds (kg)	1.2 (0.55)	2.0 (0.9)

Environmental Limits

Operating		
Temperature (°C)	5 to 55	
Non-Condensing Humidity (%)	10 to 90	
Shock (G, 11 ms)	15	
Vibration (G, 22 to 375 Hz, peak-to-peak)	0.5	
Typical Audible Noise (dba @ 1 m, any direction, idle)	34	36
Non-Operating		
Temperature (°C)	-40 to 66	
Non-Condensing Humidity (%)	5 to 95	

Power Specifications

Power Requirement		
+5V DC±5% Seeking (A, typ)	0.6	0.6
+12V DC±5% Seeking (A, typ)	0.7	1.2
Typical Power Draw (W)		
Idle (SCSI)	9.0	12.0
Peak Current (mA on +12)	1,850	2,350

¹ SCSI-3 SPI compliant.

² Quantum defines a megabyte (MB) as 10⁶ or 1,000,000 bytes.

³ Seek times are at nominal environmental conditions and include settling.

⁴ This warranty is standard when products are purchased directly through authorized Quantum distributors/dealers. Unless otherwise agreed, a one-year warranty is provided to all OEMs purchasing directly from Quantum. End-user warranties provided by computer manufacturers may vary.



For More Information

For more information about Quantum's quality products, call toll-free: 1-800-624-5545 in the U.S.A. and Canada, or visit our World Wide Web site: <http://www.quantum.com>

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Specifications subject to change without notice.

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