

# Exceptional Value for Servers, Workstations, and Subsystems

RELIABILITY  
RELIABILITY  
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## Key Features and Benefits

- **Exceptional value**—36.7 GB, 18.3 GB, and 9.1 GB in a 1-inch-high, 3.5-inch form factor
- **Outstanding performance**—7,200 RPM, 6.3 ms average seek time, 29 MB/sec maximum sustained throughput, up to 160 MB/sec bus transfer rate
- **Proven reliability**—Shock Protection System II (300 Gs non-op shock), Data Protection System, Shock Sensor, Thermal Sensor, 352-bit double-burst ECC on-the-fly, S.M.A.R.T., 5-year warranty
- **Industry-leading acoustics**—drive idle acoustics as low as 3.2 Bels
- **Advanced SCSI interface for superior manageability**—Ultra160 SCSI interface with Fairness, Cyclical Redundancy Check (CRC), Asynchronous Information Protection (AIP), Domain Validation, Ultra2 and Ultra SCSI compatibility, Active LVD bus hot-pluggable design, intelligent SCSI bus management

## The Market

In today's non-stop, Web-reliant world, the demand is skyrocketing for cost-effective, enterprise-level data storage that doesn't compromise performance or reliability. Quantum meets the need with the new Atlas™ V disk drive family—the premier solution for entry-level workstations, departmental servers, and storage subsystems running applications from mechanical CAD, digital video, and medical imaging to e-mail, e-commerce, and ERP.

## Exceptional Performance and Value

The Atlas V provides outstanding performance with a 7,200 RPM rotational speed, lightning-fast 6.3 millisecond (ms) average seek time, and 29 MB/sec maximum sustained data throughput. All this performance is packaged in an economical 9.1 GB-per-platter design, with up to 36 GB of storage capacity in a 1-inch-high form factor, making the Atlas V a truly exceptional value.

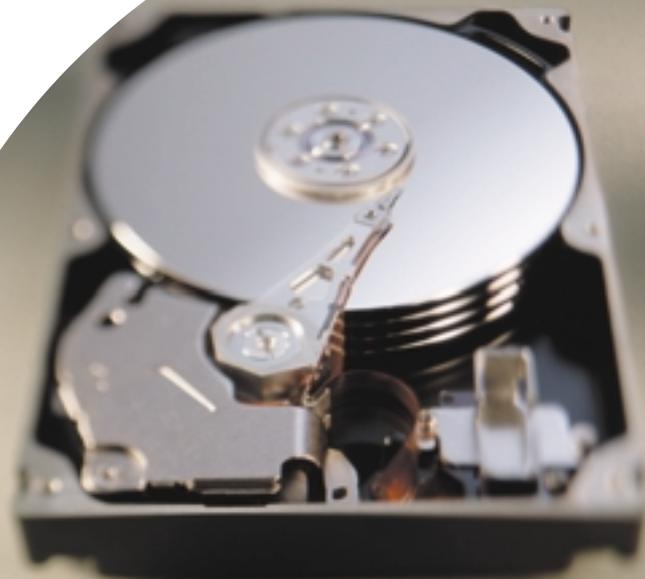
## Quantum Quality and Reliability

The Atlas V drive incorporates Quantum's leadership Shock Protection System II, which guards against non-operating shocks of up to 300 Gs. It also includes Quantum's innovative Data Protection System, which lets users easily verify that all vital drive operations are functioning properly.

The drive is also extremely quiet, allowing its use in noise-sensitive environments. For added confidence, the Atlas V is backed with a five-year warranty.

## Enhanced Data Integrity, System Performance, and Manageability

The Ultra160 SCSI interface on Atlas V disk drives provides features that enhance data integrity and increase subsystem manageability. Cyclical Redundancy Check (CRC) protects data transfers during drive hot plugging, and Domain Validation ensures optimal SCSI operation through intelligent network testing. Atlas V improves data reliability further with a new feature—Asynchronous Information Protection (AIP), which extends CRC protection to asynchronous transfers, such as SCSI commands and messages. It also includes the new "Fairness" feature, which improves system performance in multi-drive configurations by ensuring equitable command execution across all SCSI devices on the bus.



Specifications	9.1 GB	18.3 GB	36.7 GB
Form Factor	3.5"	3.5"	3.5"
Interface/Connectors	Ultra160, Ultra2, Ultra SCSI/68-pin Wide, 80-pin SCA-2		
Formatted Capacity (MB <sup>2</sup> )	9,100	18,300	36,700

#### Disk Drive Configuration

Disks	1	2	4
Head/Recording Surfaces	2	4	8
Bytes per Sector	512	512	512
Maximum Areal Density (Gb/sq. in.)	6.8	6.8	6.8
Encoding/Detection Method	24/25 RLL PRML	24/25 RLL PRML	24/25 RLL PRML

#### Performance Specifications

Typical Seek Times <sup>3</sup> (ms)	
Average	6.3
Track-to-Track	0.8
Full Stroke	15.0
Average Rotational Latency (ms)	4.17
Rotational Speed (RPM)	7,200
Internal Data Rate (Mb/sec)	194 to 340
Sustained Throughput (MB/sec)	17 to 29
Data Transfer Rates -burst (Buffer-to-Host) (MB/sec)	
Ultra160 SCSI	160
Ultra2 SCSI	80
Ultra SCSI	40
Buffer Size (MB)	4

#### Reliability Specifications

Data Errors (per bits read)	
Recoverable	10 per 10 <sup>11</sup>
Nonrecoverable	1 per 10 <sup>14</sup>
Error-Correction Method	352-bit Reed Solomon
Warranty <sup>4</sup> (years)	5

#### Physical Specifications

	9.1 GB	18.3 GB	36.7 GB
Dimensions— inches (mm)			
Width	4.00 (101.6)	4.00 (101.6)	4.00 (101.6)
Length	5.75 (146.1)	5.75 (146.1)	5.75 (146.1)
Height	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
Weight— pounds (kg)	1.3 (0.58)	1.3 (0.6)	1.4 (0.63)

#### Environmental Limits

Operating			
Temperature (°C)	5 to 55	5 to 55	5 to 55
Non-Condensing Humidity (%)	10 to 90	10 to 90	10 to 90
Vibration (G, 5 to 500 Hz)	1.0	1.0	1.0
Sound Power (Bels, Idle)	3.2	3.3	3.5
Non-Operating			
Temperature (°C)	-40 to 65	-40 to 65	-40 to 65
Non-Condensing Humidity (%)	5 to 95	5 to 95	5 to 95
Shock (G, 2 ms, 1/2 sine)	300	300	280
Vibration (G, 5 to 500 Hz)	2.0	2.0	2.0

#### Power Specifications

Voltage Requirements (V)	+5V DC ±5% +12V DC ±10%		
Typical Power Draw (W)			
Idle	7.5	8.7	9.9
Typical Current Draw (A, Read/Write)			
5V	0.3	0.4	0.5
12V	0.79	0.79	0.79
Peak Start-up Current (A on +5V/+12 V)	0.65/2.2	0.65/2.2	0.65/2.2

1. SPI-3 compliant. 2. Quantum defines a megabyte (MB) as 10<sup>6</sup> or 1,000,000 bytes. 3. Seek times are at nominal conditions and include settling. 4. This warranty is standard when products are purchased directly through authorized Quantum distributors/dealers. End-user warranties provided by computer manufacturers may vary.



**Quantum**  
**Atlas V**

For more information about Quantum's quality products,  
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