

# Outstanding Performance and Reliability

RELIABILITY  
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## Key Features and Benefits

- **Greater storage capacity. Industry-leading areal density: 20 GB per platter and up to 60 GB per drive**
- **Higher performance. New Quantum-developed Ultra ATA/100 interface delivers data transfer rates up to 100 MB/sec**
- **Quiet operation. New Quiet Drive Technology delivers the industry's best acoustics, with Hydrodynamic Bearing motors, available as an option on some models, for enhanced acoustical performance**
- **Solid reliability. Featuring the latest advancements in Quantum's Shock Protection System II and Data Protection System**

## The Market

Besides traditional CAD/CAM, desktop publishing, DVD, multimedia, and financial modeling applications, power users are accessing e-commerce, participating in online gaming, downloading MP3 files and more. With innovations in speed, power and acoustics, Quantum Fireball™ Plus drives are the first choice in this market. Now, Quantum extends that leadership with the Fireball Plus AS drive family setting a new standard in capacity, performance, acoustics, and reliability.

## The Industry's Highest Areal Density

To meet growing storage needs, Quantum is continually developing technologies that increase capacity without increasing the numbers of drive platters. In the Fireball Plus AS family, Quantum succeeded brilliantly, achieving the industry's highest areal density: 20 GB per platter for a total of up to 60 GB per drive in a three-disk configuration.

## New Quantum-developed Ultra ATA/100 Interface

Along with massive capacity, Fireball Plus AS drives deliver blazing-fast performance with a 7,200 RPM rotational speed, 8.5 millisecond average seek time and the new Quantum-developed Ultra ATA/100 interface with a data transfer rate of up to 100 megabytes-per-second. With this leading-edge interface, end users should be protected from obsolescence for the next several years.

## Quieter Drive Operation

All this performance is delivered silently thanks to Quantum's innovative Quiet Drive Technology (QDT) that gives Fireball Plus AS drives industry leading acoustics. For even greater acoustical performance, Quantum's new Hydrodynamic Bearing (HDB) motor technology is available as an option in one- and two-platter models (10.2 GB, 20.5 GB, 30.0 GB and 40.0 GB).

## Quantum Quality and Reliability

Quantum products are known for dependability—and Fireball Plus AS drives are no exception. Each drive has the latest Quantum reliability technology, including the Shock Protection System II (SPS II) and the Quantum Data Protection System (DPS). Good reasons why throughout the world, Quantum is synonymous with quality.



Specifications	10.2	20.5	30.0	40.0	60.0
Form Factor	3.5" (low profile)	3.5" (low profile)	3.5" (low profile)	3.5" (low profile)	3.5" (low profile)
Interface	Ultra ATA/100	Ultra ATA/100	Ultra ATA/100	Ultra ATA/100	Ultra ATA/100
Formatted Capacity (MB) <sup>1</sup>	10,273	20,547	30,020	40,027	60,040

#### Disk Drive Configuration

Recording Surfaces	1	2	3	4	6
ATA Logical					
Cylinders	16,383	16,383	16,383	16,383	16,383
Heads	15	16	16	16	16
Sectors	63	63	63	63	63

#### Power Specifications

Nominal Voltage (V)	+5/+12
Voltage Margin (%)	±5/±10
Typical Power Draw (W)	
Idle	7.5
Operating <sup>2</sup>	10.4
Peak Current (mA on +5/+12 V)	900/2,400

#### Reliability Specifications

Start/Stop Cycles (ambient)	40,000
Nonrecoverable Data Errors (per bits read)	<10 per 10 <sup>15</sup>
Warranty (years)	3

#### Physical Specifications

Dimensions—inches (mm)	
Width	4.00 (101.6)
Length	5.75 (146.05)
Height	0.984 (25.0)
Weight—pounds (g)	1.3 (580)

#### Environmental Limits

Operating	
Temperature (°C)	5 to 55
Non-Condensing Humidity (%)	10 to 85
Non-Operating	
Temperature (°C)	-40 to 65
Non-Condensing Humidity (%)	5 to 95
Sound Power (bels, typ) <sup>3</sup>	
Standard Model	
Idle	<3.0
Seek	3.4
Hydrodynamic Bearing Model	
Idle	<2.8
Seek	3.2

#### Performance Specifications

Typical Seek Times <sup>4</sup> (ms)	
Average	8.5
Track-to-Track	0.8
Full Stroke	17
Average Rotational Latency (ms)	4.17
Rotational Speed (RPM)	7,200
Data Transfer Rates (Buffer-to-Host, MB/sec)	
Ultra ATA/100	100
Ultra ATA/66	66.6
Ultra ATA/33	33.3
PIO Mode 4	16.6
PIO Mode 2	16.6
Buffer Size (MB)	2
Typical Power On to Drive Ready (sec)	15

1. Quantum defines a megabyte (MB) as 10<sup>6</sup> or 1,000,000 bytes. 2. Operating is defined as 40% seek, 30% read, 20% active, and 10% write. 3. One-disk model only.  
4. Seek times are at nominal conditions and include settling. **Note:** Warranty is standard when products are purchased directly through authorized Quantum distributors/dealers. Unless otherwise agreed, a one-year warranty is provided to all OEM purchasing directly from Quantum. End-user warranties provided by computer manufacturers may vary.



# Quantum<sup>®</sup> Fireball<sup>™</sup> Plus AS

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 worldwide web site: <http://www.quantum.com>

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