

C A V I A R

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3.1 Gigabyte,

3.5-Inch,

Low-Profile,

Enhanced IDE Drive



**THE WORLD'S MOST
RECOMMENDED
HARD DRIVE**



The Caviar® AC33100 Enhanced IDE (EIDE) hard drive is a high-performance solution designed to meet the requirements of today's most powerful systems. This drive is based on our successful, proven design concepts. By combining enhanced electronics with new head and read-channel technology, Caviar has achieved its highest performance to date and continues to lead the market in areal density.

High-speed host data transfers, advanced caching, increased rotational speeds, and low mechanical latency combine to give the AC33100 the level of performance demanded by today's systems. This drive supports host data transfers of 16.6 MB/s Mode 4 PIO and 16.6 MB/s Mode 2 multi-word DMA, enabling VESA or PCI local bus EIDE integration.

This Caviar drive is an ideal storage solution for systems running Windows 95, Windows 3.x, Windows NT, OS/2 Warp, Novell NetWare, or Unix operating systems on 486, Pentium, Pentium Pro, PowerPC or RISC-based processors.

The AC33100 drive has an added feature, Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.). When used with a S.M.A.R.T. application, the drive can alert the host system of a negative reliability status condition. The host system can then alert and advise the user of appropriate action.

The AC33100 drive supports advanced power management capabilities that can reduce power requirements over 85 percent.

Western Digital's award-winning Caviar drives are designed and manufactured to the highest

FEATURES

- **CacheFlow4™** – Increases performance by adapting read and write operations on-the-fly and works in conjunction with the advanced disk caching capabilities of today's major operating systems.
- **High-Speed Host Transfers** – Enables the maximum disk performance under local bus environments through the use of 16.6 MB/s Mode 4 PIO and 16.6 MB/s Mode 2 multi-word DMA.
- **S.M.A.R.T.** – A technology to assist the user in preventing possible system down time due to hard drive failure.
- **Logical Block Addressing (LBA)** – An alternative addressing methodology of identifying a given location on an EIDE drive that permits disk sizes greater than 528 MB.
- **Low Power Consumption** – Saves energy, money, and the environment.
- **Exceptional Quality** – Guaranteed compatibility and automatic defect management allows easy installation. A three-year warranty and 300,000 MTBF means years of trouble-free operation.

standards of quality and reliability. This is demonstrated by their three-year warranty, 300,000 hours Mean Time Between Failure, and guaranteed compatibility.

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PHYSICAL SPECIFICATIONS

Interface	40-pin EIDE
Formatted Capacity ¹	3166.7 MB
Actuator Type	Voice Coil
Number of Disks	3
Number of Heads	6
Bytes per Sector	512
User Sectors per Drive	6,185,088
Servo Type	Embedded
ECC	Reed Solomon
Dedicated Landing Zone	Yes
Actuator Latch/Auto Park	Yes

PHYSICAL DIMENSIONS

- Height	1.00 Inch, ± 0.02
- Length	5.75 Inches, ± 0.02
- Width	4.00 Inches, ± 0.02
- Weight	1.1 lb (.50 kg) $\pm 10\%$

PERFORMANCE SPECIFICATIONS

Recommended Setup:	6136x16x63
Seek Times:	
- Average Seek Read ²	sub 12 ms
- Average Seek Write ²	sub 14 ms
- Track to Track	3.0 ms
- Full Stroke Seek	22 ms
Average Latency	5.76 ms
Rotational Speed	5200 RPM
Data Transfer Rate:	
- Buffer to Host	16.6 MB/s (Mode 4 PIO) ³ 16.6 MB/s (Mode 2 DMA) ⁴
- Media to Buffer	104 Mbits/s max
Read Cache	Adaptive
Write Cache	Yes
Buffer	128 KB
Interleave	1:1
Spindle Start Time	10.8 sec typical
Start/Stop Cycles	40,000 minimum
Master/Slave Support	Yes
LBA Support	Yes
IODY Support	Yes
Error Rate:	
- Non-Recoverable	<1 in 10^{13} bits read

ENVIRONMENTAL SPECIFICATIONS⁵

Shock:	
- Operating	10G (2 per sec max)
- Non-Operating	150G (3 drops/axis max)
Half sine wave of 3 ms duration, measured without isolation.	
Vibration:	
- Operating	5-20 Hz, .037 inches (dbl amp) 20-300 Hz, .75G (0 to peak)
- Non-Operating	5-20 Hz, .195 inches (dbl amp) 20-500 Hz, 4G (0 to peak)
Operating Temperature & Humidity:	
- Temperature	5°C to 55°C
- Humidity	8-80% RH non-condensing
- Thermal Gradient	10°C/hour max
Non-Operating Temperature & Humidity:	
- Temperature	-40°C to 60°C
- Humidity	5-95% RH non-condensing
- Thermal Gradient	20°C/hour max
Acoustics:	
- Idle Mode	37 dBA typical ⁶
Reliability:	
- MTBF	300,000 POH

POWER REQUIREMENTS (typical)

Voltage:	5V $\pm 5\%$, 12V $\pm 8\%$
Read/Write/Idle	5.1W
Standby/Sleep	0.6W
Spinup	12.4W

¹ Western Digital defines a megabyte (MB) as 1,000,000 bytes, and a gigabyte (GB) as 1,000,000,000 bytes.

² Average Seek Time is determined by dividing the total time required to seek between all possible ordered pairs of track addresses by the total number of these ordered pairs at nominal environmental conditions.

³ Max PIO Burst Rate is specified at 16.6 MB/s using the IORDY signal.

⁴ Max Multi-word DMA Burst Rate is specified using the DMARQ and DMACK signals.

⁵ No non-recoverable errors during operating tests or after non-operating tests.

⁶ Sound power level.

WARRANTY

The warranty on Western Digital Caviar AC33100 drive is three (3) years.



WESTERN DIGITAL CORPORATION
8105 IRVINE CENTER DRIVE, IRVINE, CALIFORNIA 92718

FOR SERVICE AND LITERATURE, CALL: 714.932.4900
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Designed for



Microsoft
Windows 95



yes
NetWare
Tested and
Approved

