

WINNER-2 Project (2M) WN316025A

**NEW 1.60 Gbyte
High Performance
3.5" - 1" Height Disk Drive**

FEATURES

- Formatted Capacity 1.62 GByte
- 4,500 rpm spindle speed
- Under 10 msec average seek time
- PRML Read Channel
- PIO Mode 4 Multi Word DMA Mode 2
- Automatic/Host Power Saving Mode
- Rugged : 10 G's of Operating Shock
- 128KB segmented read/write cache buffer
- Fast ATA-2/E-IDE Interface
- Automatic reassignment of defective sector
- Read Ahead Cache
- Write Cache
- Write Auto Reassignment
- Power On Self Diagnosis
- Error Correction on the Fly (Multi-Burst)
- Automatic Update of ATA Task File Resistors
- Data Buffer Streaming Support

DRIVE ARCHITECTURE

| | |
|-----------------------|------|
| Formatted Capacities | |
| Megabytes per Drive | 1620 |
| Megabytes per Surface | 540 |
| Physical Organization | |
| Disks | 2 |
| Data Surfaces | 3 |
| Read/Write Heads | 3 |
| Cylinder | 6082 |

FUNCTIONAL SPECIFICATIONS

| | |
|---|-----------------------|
| Actuator Type | Rotary Voice Coil |
| Interface | Fast ATA-2/E-IDE |
| Servo | Embedded Sector Servo |
| Recording Method | 8/9 (0,4,4) |
| Recording Density (bpi,max.) | 118,215 |
| Flux Density (fcpi,max.) | 132,992 |
| Track Density (tpi, 0 skew.) | 6,115 |
| Areal Density (Mb/In ² ,max) | 737 |
| Sector Size (Bytes) | 512 |

PERFORMANCE SPECIFICATIONS

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|---------------------|------------------|
| Seek Time (typical) | |
| Track to Track | <2 ms |
| Average | <10 ms |
| Full Stroke | <20 ms |
| Average Latency | 6.7 ms |
| Spindle Speed | 4,500 ± 0.1% rpm |
| Data Transfer Rate | |
| To/From Media | 45/88 Mbits/s |
| To/From Buffer | 16.6 Mbytes/s |
| Buffer Size | 128 Kbytes |

RELIABILITY SPECIFICATIONS

| | |
|----------------------------|----------------------------|
| Seek Error | 1 in 10 ⁷ bits |
| Recoverable Read Error | 1 in 10 ¹¹ bits |
| Non-recoverable Read Error | 1 in 10 ¹⁴ bits |
| MTBF (POH) | 500,000 hours |
| MTTR (typical) | 5 minutes |
| Start/Stop Cycles | 50,000 |
| Component Design Life | 5 years |

ENVIRONMENTAL SPECIFICATIONS

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|----------------------------------|------------------|
| Temperature | |
| Operating | 5 ~ 55 °C |
| Non-operating | -40 ~ 70 °C |
| Thermal Gradient (max.) | 20 °C/hr |
| Humidity (non-condensing) | |
| Operating | 5 ~ 80 % |
| Non-operating | 5 ~ 90 % |
| Maximum Wet Bulb | 26 °C |
| Altitude (relative to sea level) | |
| Operating | 0 to 10,000 feet |
| Non-operating | 0 to 40,000 feet |

SHOCK AND VIBRATION

| | |
|---|---------------------------|
| Shock (1/2 sine pulse, 11 ms duration) | |
| Operating | 10 G |
| Non-operating | 75 G |
| Vibration (swept sine, 1 octave per minute) | |
| Operating | |
| 5 ~ 21 Hz | 0.034" (double amplitude) |
| 22 ~ 400 Hz | 1.5 Gp-p |
| Non-operating | |
| 5 ~ 21 Hz | 0.195" (double amplitude) |
| 22 ~ 500 Hz | 8 Gp-p |

POWER CHARACTERISTICS

| | | |
|---------------------------------|-----------|------------|
| Voltage | 5V±10% | 12V±10% |
| Current(Max.) | 0.49 Amps | 1.18 Amps |
| Total Power Dissipation (Watts) | | |
| Power Up (max.) | | 16.5 watts |
| Read/Write (typical) | | 5.9 watts |
| Seek (typical) | | 7.9 watts |
| Idle (typical) | | 3.3 watts |
| Standby (typical) | | 1.4 watts |
| Sleep (typical) | | 1.3 watts |

ACOUSTIC NOISE

| | |
|--------------------------|--------|
| Maximum value at 1 meter | |
| Idle | 35 dBA |
| Random Read/Write | 40 dBA |

PHYSICAL DIMENSION

| | |
|--------|-------------|
| Height | 1 inch |
| Width | 4 inches |
| Depth | 5.75 inches |
| Weight | 1.2 pounds |

Specifications are subject to change without notice

