

12.8-25.6 MByte 3 1/2" Winchester Disk Drives

MiniScribe's rugged 8000 family of 3 1/2 inch Winchester disk drives has been in high volume production since early 1985, supporting the growing market demand for lap portable personal computers, transportables and increased disk storage in a smaller physical size. The 8000 family consists of 12.8 and 25.6 MByte models, each with an average access time of 68 milliseconds. The drives feature an unusually low average power consumption of 9.9 watts.

The 8000's utilize MiniScribe's field proven rack and pinion linear actuator system. Having manufactured and installed over 900,000 rack and pinion based drives, MiniScribe has refined this system to perfection. The rack and pinion provides high density positioning accuracy throughout temperature extremes in addition to rugged resistance

to shock and vibration. The 8000 family also utilizes a single printed circuit board employing three custom integrated circuits that increase reliability and reduce component count and power consumption.

The 8000 family mounting requirements are identical to 3 1/2 inch microfloppy drives. In addition, the drives incorporate the industry standard ST412 interface. Like all MiniScribe products, the 8000 family continues the tradition of a rigorous testing and burn-in process. For shipping and handling, the R/W heads can be positioned over a non-data area of the disk until power is applied.

The MiniScribe line of 3 1/2" and 5 1/4" Winchester disk drives begins at 12.75 MBytes and extends to high capacity/high performance models.

8000 Family Key Features

- Storage Capacities of 12.8 and 25.6 MBytes Unformatted
- 615 Cylinders
- 68 msec. Average Access Time (including settling)
- 1.625"H X 4.00"W X 5.75"L
- Rack and Pinion Linear Actuator
- 9.9Watts Average Power Requirement
- Whitney Technology Flexures and Sliders
- Single Printed Circuit Board For Improved Reliability
- 5.0 Mbit/sec. Data Transfer Rate
- ST412 Compatible Interface
- Optional 5 1/4" Bracket Available

3 1/2" Winchester Disk Drive Specifications

Capacity Unformatted	8425	8212	Error Rates	
Per Drive (MBytes)	25.6	12.8	Soft Read Errors	1 per 10 ¹⁰ bits transferred
Per Track (Bytes)	10,416	10,416	Hard Read Errors	1 per 10 ¹² bits transferred
Capacity Formatted			Seek Errors	1 per 10 ⁶ seeks
Per Drive (MBytes)	21.4	10.7	DC Power Requirements	
Per Track (Bytes)	8,704	8,704	+ 5 V DC ± 5%	0.45 amps typical
Per Sector (Bytes)	512	512	+ 12 V DC ± 5%	0.65 amps typical
Sectors Per Track	17	17	Max. Starting (10 sec.)	2.0 amps
Functional			Power Dissipation	9.9 watts average
Disks	2	1	Shock	
R/W Heads	4	2	Operational	10 G's, 10 msec. pulse duration, 1/2 sine wave (10 hits)
Cylinders	615	615	Non-Operational	50 G's, 10 msec. pulse duration, 1/2 sine wave (10 hits)
Total Data Tracks	2,460	1,230	Environmental Limits	
Track Density (tpi)	804	804	Ambient Temperatures	40°F to 122°F (4°C to 50°C)
Recording Density (bpi)	13,412	13,412	Relative Humidity	8% to 80%
Areal Density (Mbits/sq.in)	10.78	10.78	Maximum Wet Bulb	78°F (26°C)
Rotation Speed (RPM)	3,600	3,600	Physical	
Data Transfer Rate			Height	1.625 in. (41.3 mm)
(Mbits per second)	5.0		Width	4.00 in. (101.6 mm)
Access Time (including settling)			Depth	5.75 in. (146 mm)
Average (msec.)	68		Weight	1.8 lbs. (.82 kg)
Track-to-Track (msec.)	15			
Maximum (msec.)	150			
Latency (average, msec.)	8.33			
Interface	ST412			
Reliability				
MTBF	20,000 hours			
PM	None			
MTTR	30 minutes			
Component Design Life	5 years			



MiniScribe Offices

MiniScribe Corporate Office

1861 Lefthand Circle
Longmont, Colorado 80501
(303) 651-6000
(Telex) 216174 (miniur)

MiniScribe Sales Offices

Campbell, CA (408) 866-4144
Fountain Valley, CA (714) 968-3369
Marlborough, MA (617) 485-0964
Dallas, TX (214) 783-6832

U.S. Distributors

Arrow Electronics, Inc.
(516) 391-1300

Kierulff Electronics, Inc.
(800) FOR-PROS

European Operations

MiniScribe GmbH
Eschborn, Germany
06196-481608
06196-481609
(Telex) 418368 (crod)



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