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## THE MAXTOR XT-4000S™ FAMILY



**384- and 179-Megabyte**  
5.25-inch Disk Drives  
with Embedded SCSI Controller  
and 150,000 Hour MTBF

This high-capacity 5.25-inch disk drive features an integral high-performance SCSI or Macintosh® compatible controller, with superior performance of up to 4.8 Mbytes/sec SCSI bus transfer rate in either asynchronous or synchronous transfer modes. Fast seek times of 16 and 14 msec provide the high performance necessary for today's systems applications. The XT 4000S family offers performance, integral controller, and proven reliability.

**Maxtor®**



# THE MAXTOR XT-4000S™ FAMILY

384- and 179-Megabyte 5.25-inch Disk Drives with Embedded SCSI Controller and 150,000 Hour MTBF

## KEY FEATURES

- Capacities of 384 and 179 Mbytes (unformatted)
- High performance with 16 and 14 msec seek times
- 10 Mbit/sec internal transfer rate
- Embedded SCSI or Macintosh®-compatible controller
- Separate microprocessors for spindle control, servo control, and SCSI interface
- High-performance MAXTORQ™ rotary voice-coil actuator with microprocessor-controlled closed-loop track-following servo system
- Maxtor (patented) brushless DC spindle motor inside disk hub
- Dynamic braking during power-down cycle
- Dedicated landing/shipping zone
- Fully automatic, positive actuator latch
- Surface-mounted components allow a single MAXPAK™ printed circuit board for improved reliability
- Standard power requirements
- Physical dimensions and mounting holes identical to industry standards

### Advanced SCSI Features

- Very low command overhead achieved through state machine (hardware) processing
- Super fast DMA data transfer, either in asynchronous or synchronous transfer mode. Data transfers in excess of 4 MBytes/sec with comparable fast SCSI host
- Synchronous offsets up to 16 bytes
- 45 Kbyte Read-Ahead caching buffer maximizes performance in sequential data transfers
- Sector sizes of 180 to 4096 bytes with 1-byte granularity

- Full cylinder in-line sector sparing
- Programmable cylinder skewing
- Dual-ported data buffer maintains simultaneous transfers to SCSI bus and to the drive
- Programmable alternates/zone for sparing flexibility

### Maxtor SCSI Implementation

- ANSI SCSI Standard X3.131-1986 Level 2 Conformance
- Full implementation of Common Command Set
- Programmable 48-bit ECC
- Programmable automatic retry on read errors
- Interleave of 1:1 supported
- Full disconnect/reconnect capability
- SCSI implementation compatible with Maxtor's 5.25-inch magnetic and optical drives

## SPECIFICATIONS

### PERFORMANCE

	XT-4380S	XT-4170S
<b>Capacity, unformatted</b>		
Per drive (Mbytes) .....	384.46	179.41
Per surface (Mbytes) .....	25.63	25.63
Per track (bytes) .....	20,940	20,940
<b>Capacity, typical format</b>		
Per drive (Mbytes)* .....	337.58	157.54
Per surface (Mbytes)* .....	22.51	22.51
Per track (bytes) .....	18,432	18,432
Per sector (bytes) .....	512	512
SCSI bus transfer rate (MBytes/sec) .....	≤4.8	≤4.8
Disk transfer rate (Mbits/sec) .....	10	10
<b>Seek** time (msec), typical</b>		
Average .....	16	14
Track-to-track .....	2.5	2.5
Maximum .....	29	27
Rotational speed (rpm) .....	3,600	3,600
Average latency (msec) .....	8.33	8.33

### FUNCTIONAL

Bit density (bpi) .....	21,064	21,064
Flux density (fci) .....	14,043	14,043
Track density (tpi) .....	1,070	1,070
Disks .....	8	5
Data heads .....	15	7
Servo heads .....	1	1
Tracks .....	18,360	8,568
Sectors/track (512 bytes) .....	36	36
Cylinders .....	1,224	1,224

\* 1221 available cylinders; 512 bytes/sector

\*\* Includes settling

**Maxtor®**

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### RELIABILITY

MTBF	150,000 hours
PM	Not required
MTTR	15 minutes
Recoverable error rate	≤10 in 10 <sup>11</sup>
Unrecoverable error rate	≤10 in 10 <sup>15</sup>
Miscorrected error rate	≤10 in 10 <sup>21</sup>

### PHYSICAL

#### Dimensions

Height	3.25 in. (82.55 mm)
Width	5.75 in. (146.05 mm)
Depth	8.20 in. (208.28 mm)
Weight	7.1 lb. (3.2 Kg)

#### Temperature limits

Operating	10°C to 50°C (50°F to 122°F)
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#### Relative humidity limits

(Non-condensing)	
Operating	8% to 80%
Maximum gradient/hr.	10%
Maximum wet bulb	26.7°C

#### Power dissipation

Typical	27 watts
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#### Power requirements

+12 VDC ± 5%, 1.57A (typical)
4.5A (maximum)
+5 VDC ± 5%, 1.7A (typical)
1.9A (maximum)

#### Acoustic noise

45 dBA at 1 meter
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### SCSI COMMAND SET

Format Unit	Reserve Unit
Inquiry	Rezero Unit
Mode Select	Seek
Mode Sense	Seek (Extended)
Read	Send Diagnostic
Read Capacity	Start/Stop Unit
Read Data Buffer	Test Unit Ready
Read Defect Data	Verify
Read (Extended)	Write
Read Long	Write and Verify
Reassign Blocks	Write Data Buffer

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