



S A M S U N G H A R D D I S K D R I V E



WINNER (SCSI)



The HDD Power that gets you ahead in business - Samsung HDD

WINNER (SCSI)

WN34324U

Key Features

- Leading Desktop Capacity 4.32 GBytes
- PRML Read Channel
- Embedded Servo Scheme
- 9.5msec Average Seek Time
- Automatic Parking and Locking
- 5,400 RPM
- Ultra SCSI Interface
- Narrow, Wide and SCA-2 Option
- 512Kb Multi-segmented Buffer
- ID-less Controller
- Reed-solomon Triple-burst ECC On-the-fly
- Auto Match Read / Write
- Read Ahead Cache / Write Cache
- Automatic Reassignment of Defective Sector
- Tagged Command Queuing
- S.M.A.R.T and S.C.A.M
- Audio Visual Friendly



Performance Characteristics

Formatted Capacity	
Megabytes per Drive	4329.5 MB
Megabytes per Surface	721.2 MB
Typical Seek Time (msec)	
Track to Track	<3.0
Average	<9.5
Full Stroke	<22.0
Head Switching Time	<2.0
Disk Data Rates (Mb/s. min/max)	63/117
Rotational Speed	5400RPM±0.1%
Sectors Size	512 bytes

Functional Characteristics

Recording Density (bpi,max)	136,826
Flux Density (fcpi,max)	153,930
Recording Method	PR4 8/9 (0,4,4)
Areal Density (Mb/In ²)	985
Track Density (tpi)	7,610
Total Cylinders	7,057
Data Heads	6
Disks	3
Data Zones	16
Spare Cyl per Zone	1
Actuator Type	Rotary Voice Coil
Servo Type	Embedded
Spindle Motor	Brushless DC

Interface Characteristics

SCSI Performance (Narrow)	
Host Transfer Rate (Async.)	7 Mbytes/s
(Sync.)	20 Mbytes/s
SCSI Performance (Wide)	
Host Transfer Rate (Async.)	14 Mbytes/s
(Sync.)	40 Mbytes/s
Cache Buffer (Kbytes)	512

Physical Characteristics

Height	1.0 inches
Width	4.0 inches
Depth	5.75 inches
Weight	1.1 lb Typical

Environmental Characteristics

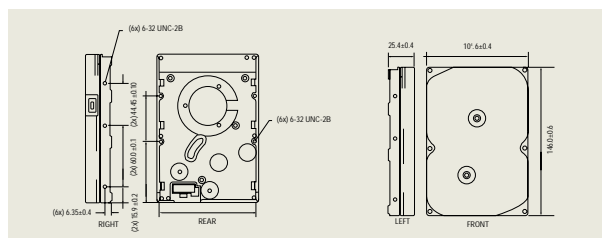
Ambient Temperature	
Operating	5 ~ 55 °C
Non-operating	-40 ~ 70 °C
Thermal Gradient (max.)	20 °C/hr
Rel. Humidity (non-condensing)	5 ~ 90 %
Maximum Wet Bulb	26 °C
Altitude (relative to sea level)	
Operating	-1,000 to 10,000 feet
Non-operating	-1,000 to 40,000 feet
Vibration (Swept sine, 1 octave per minute)	
Operating (5-400 Hz)	1.5 Gp-p
Non-operating (5-500 Hz)	8.0 Gp-p
Shock (1/2 sine pulse, 11 ms duration)	
Operating (with retry)	10 G
Non-operating	75 G
Acoustic Noise (Idle)	35.0dbA
(Random)	40.0dbA

Reliability Characteristics

MTBF (POH)	500,000 hours
Recoverable Read Error	1 in 10 ¹¹ bits
Non-recoverable Read Error	1 in 10 ¹⁴ bits
Seek Error	1 in 10 ⁹ bits
Contact Start/Stop Cycles	50,000 times
Start/Stop Time (sec)	15/15

Power Characteristics

Voltage	±5	±12
Regulation	±10%	±10%
Current (Max.)	0.5	1.75
Power Up (max.)		23.0 watts
Random Read/Write (typical)		6.4 watts
Seek (typical)		7.6 watts
Idle (typical)		5.0 watts
Standby (typical)		2.9 watts



* Design and specifications are subject to change without notice.



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