# SWSD5-SA 3.57-GB 5.25-Inch Disk Drive SBB For Sun™ Product Notes

StorageW ks

Thank you for purchasing our SWSD5-SA StorageWorks Building Block (SBB), designed and manufactured by Digital Equipment Corporation. Please note that this drive is preformatted and prelabled for Sun and is ready to go.

#### **Brief Overview of SWSD5-SA Drive:**

This 5.25-inch drive has a formatted capacity of 3.57 GB. It features an average seek time of <12 ms and an average latency of 5.6 ms, providing an average data-access time of <17.6 ms. The drive uses a banded recording technique to keep the bit density constant regardless of track radius, obtaining media transfer rates as high as 5.5 MB/s. This drive has a 512-KB segmented cache buffer to maximize the cache hit rate for sequential reads.

The SWSD5-SA drive also offers unsurpassed data integrity, featuring a 264-bit ECC

technique that can correct up to 11 non-contiguous bytes per block. The drive layout ensures proper addressing by providing four separate copies of the header for each sector, along with embedded servo data for fine-tuning the head position. In addition, the drive electronics add end-to-end checksum error detection code (EDC) to the data to ensure the integrity of the data returning to the system bus.

Other special features of note include:

- Fast SCSI-2 interface.
- Downloadable SCSI firmware.
- Automatic sector reallocation.
- Parity on cache RAM.
- 300,000-hour MTBF.
- Self diagnostics.
- Tagged command queuing.
- UL, CSA, and VDE standards.

#### /etc/format.dat Information:

For your convenience, we have labeled this drive with a format utility for the following settings, giving the drive traditional partitions, so that you can install this unit and get it up and running quickly. Note that we designated a fixed *nsect* value, even though this banded drive allows a different number of sectors/track, depending on the radius of a given track. We determined this value by dividing the total number of blocks by the total number of heads, dividing

that result by the total number of cylinders, and then rounding down the result to the next lower whole number. Some partition sizes also were selected to be consistent with the *newfs* command. (For example, the "g" partition was reduced to avoid truncation of the last cylinder group.) We recommend that you enter this information into your /etc/format.dat file so that the data will be readily available for any possible future use:

```
disk_type = "DEC_RZ74" \
    : ctlr = SCSI : fmt_time = 9 \
    : ncyl = 3053 : acyl = 2 : pcyl = 3055 : nhead = 25 : nsect = 91 \
    : rpm = 5400 : bpt = 46952

For SunOS systems, the partition data is as follows:
    partition = "DEC_RZ74" \
    : disk = "DEC_RZ74" : ctlr = SCSI \
    : a = 0, 65975 : b = 29, 193375 : c = 0, 4192825 \
    : g = 114, 3931200 : h = 1843, 2752750

For Solaris systems, the partition data is as follows:
    partition = "DEC_RZ74" \
    : disk = "DEC_RZ74" \
    : disk = "DEC_RZ74" : ctlr = SCSI \
    : 0 = 0, 65975 : 1 = 29, 193375 : 2 = 0, 4192825 \
    : 6 = 114, 3931200 : 7 = 1843, 2752750
```

**Note**: Your operating system may impact your capability to successfully create file systems greater than 2.0 gigabytes in size.

## SWSD5-SA Specifications:

Physical Configuration		
Number of discs (platters) 13		
Number of read/write heads	25	
Servo	Embedded	
Unformatted capacity	4,520 MB	
Formatted capacity 3,572 MB		
Number of cylinders	3,055	
Tracks per surface	3,055	
Track capacity (bytes)	40,960– 61,440	
Bytes/sector	512	
Sectors/track	79–119	
Sectors/drive	6,976,375	

Power Requirements		
Seeking current		
+5 Vdc +/-5% (typical)	1.0 A	
+12 Vdc +/5% (typical)	2.5 A	
Power consumption:		
Active (100% seeking)	35 W	
Active (40% seeking)		
Idle	29 W	

Performance Specifications		
Interface transfer rate:		
Synchronous	10 MB/s	
Asynchronous	5 MB/s	
Media transfer rate	3.6 – 5.5 MB/s	
Cache buffer	512 KB	
Track-to-track seek:	1.3 ms	

Recording		
Track density	2,756 tpi	
Bit density	44,000 bpi	
Areal density	121 MB/in <sup>2</sup>	
Recording method	RLL (1,7)	

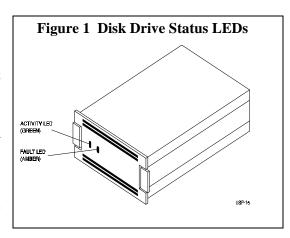
Physical		
Height	82.8 mm/3.25 inches	
Width	146 mm/5.75 inches	
Length	208 mm/8.21 inches	
Weight	3.0 Kg/6.7 lbs	

Environmental Specifications		
Non-Operating:		
Temperature	-40 <sup>o</sup> C to 66 <sup>o</sup> C	
Humidity (RH)	8% to 95%,	
	noncondensing	
Operating:		
Temperature	10 <sup>0</sup> C to 50 <sup>0</sup> C	
Humidity (RH)	10% to 90%,	
	noncondensing	
Shock	10 G peak half sine	
	10 ms duration	
Vibration	22–500 Hz	
	@ 0.5 G peak	
Acoustics:		
Seeking	50 dBA	
	@ 1.0 meter	
Idle	39 dBA	
	@ 1.0 meter	

### **Power On Test**

Disk drive status is displayed by two LEDs on the front of the storage device (Figure 1). Each LED has three states: *on, off,* and *flashing*. When the drive is powered on, both LEDs flash as a hardware/lamp test and then assume the following normal operating status activity:

- The left LED (green) is a device-controlled activity LED and is on or flashing when the drive is active.
- The right LED (amber) is the drive fault LED and indicates an error condition when either on or flashing.



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