



HP Series 6000 Models 1350SX and 670SX

Technical Data

High Performance SCSI Disk Storage for HP 9000 Series 700 Workstations

Features

- 1,355 and 677 Mbyte capacities
- 10 Mbytes per second differential SCSI-2 interface
- 13.5 ms average seek
- Can upgrade to over 4 gigabytes

The Hewlett-Packard Series 6000 Models 1350SX and 670SX disk storage systems are designed to complement the power of the HP 9000 Series 700 workstations. By combining high capacity, exceptional disk performance and reliability, and a new 10 Mbytes per second differential SCSI-2 bus, these disk storage systems are the logical choice for powerful stand-alone workstations and servers.

The Models 1350SX and 670SX have a base configuration of a 1,355 or 677 megabyte drive, power supply and enclosure, with space available for two additional 5.25-inch disks. These additional disk drives can be configured at the factory, or installed later by the customer or by a Hewlett-Packard service representative. Fully loaded, the Model 1350SX provides over 4 gigabytes of high performance storage in an attractive, compact enclosure.

These new 10 Mbytes per second differential SCSI-2 storage systems offer a higher performance alternative to 5 Mbytes per second single-ended disk drives. Due to its increased bandwidth, the fast



differential SCSI-2 bus provides for higher throughput in multiple drive configurations. Also, performance can often be enhanced by configuring slower SCSI devices such as tapes or optical drives on the standard single-ended bus, and utilizing a fast differential bus for high speed disk drives.

The HP designed and manufactured disk drives deliver outstanding random I/O performance with a 13.5 ms average seek time and a 7.5 ms average latency. By virtue of their higher density and specially tuned SCSI-2 firmware, these new disk drives also provide over twice the HP-UX file system sequential throughput as compared to HP's previous generation products.

HP's EISA/differential SCSI-2 host bus adapter (product number 25525A) is required for each differential SCSI-2 bus. Up to seven disk drives, or almost 9.5 gigabytes, can be configured per host bus adapter. Due to the superior signal integrity of the differential SCSI-2 bus, total cable lengths up to 25 meters are supported.

Ordering Information

Product Numbers

C2481A: HP Model 670SX is a 677 Mbyte differential SCSI-2 disk storage system (cabinet, power supply, and one disk drive)

C2482A: HP Model 1350SX is a 1,355 Mbyte differential SCSI-2 disk storage system (cabinet, power supply, and one disk drive)

Upgrade Kits

C2491A*: One 677 Mbyte disk upgrade kit

C2492A*: One 1,355 Mbyte disk upgrade kit

Upgrade Kit Options

OD1: Factory installation

ODF: Customer installation

ODG: Field installation

Accessories:

25525A: EISA/differential SCSI-2 host bus adapter (includes differential SCSI-2 terminator)

K2296: 9 meter SCSI cable

K2297: 1.5 meter SCSI cable

SCSI extender cables:

92222D: 1.0 meter

C2900A: 3.0 meters

C2901A: 5.0 meters

C2902A: 10.0 meters

C2903A: 20.0 meters

12016-80003: Differential SCSI-2 terminator

**Can be added to both the C2481A and C2482A. Both upgrade kits (C249XA) require one installation option to be selected.*

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Product Specifications

Capacity Specifications

	1350SX	670SX
Formatted capacity (Mbytes)	1,355	677
Number of platters	10	6
Data surfaces	19	11
Servo surfaces	1	1
Tracks / surface	1,935	1,670
Sectors / track	72	72
Bytes / sector	512	512
Bytes / surface	71,331,840	61,562,880

Performance Specifications 1350SX/670SX

Seek time	13.5 ms
Rotational delay	7.5 ms
Controller overhead	<1.0 ms
Transfer rate:	
Burst	2.875 Mbytes / second
One track	2.457 Mbytes / second
Full volume	2.2 Mbytes / second
Random I/O's index	
1 Kbyte transfers	44.6 I/O's / second
8 Kbyte transfers	39.6 I/O's / second
HP-UX file system sequential throughput	2.0 Mbytes / second

Interface Specifications 1350SX/670SX

Differential SCSI-2:	
Synchronous transfers	10.0 Mbytes / second
Asynchronous transfers	1.5 Mbytes / second

Physical Characteristics Number of disks/Enclosure

	1 disk	2 disks	3 disks
Net weight: kg (lbs)	16.3 (36.0)	19.7 (43.5)	23.1 (51.0)
Shipping weight: kg (lbs)	20.8 (45.8)	24.2 (53.3)	27.6 (60.8)
Height: mm (inches)	370 (14.6)	370 (14.6)	370 (14.6)
Width: mm (inches)	191 (7.5)	191 (7.5)	191 (7.5)
Depth: mm (inches)	387 (15.25)	387 (15.25)	387 (15.25)

Power Requirements Number of disks/Enclosure

	1 disk	2 disks	3 disks
Voltage:	88-268	88-268	88-268
Frequency:	47.5-63 Hz	47.5-63 Hz	47.5-63 Hz
Phase:	single	single	single
Power / in watts (120V / 230V):			
Maximum	70 / 68	113 / 111	155 / 153
Typical			125 / 123
Current / in amps(120V / 230V):			
Maximum	1.2 / .7	1.9 / 1.1	2.6 / 1.5
Typical			2.1 / 1.2
Heat dissipation (Typical):	70	113	155

Environmental Requirements Operating Non-op

Temperature:	0° to 50° C	-40° to 70° C
Humidity:	8 to 80%	5 to 80%
Shock:	4G max at 11 ms half sine wave form (no data loss)	20 G max at 11 ms half sine wave form
Vibration:	0.2 g RMS 5 to 500 Hz	2 g RMS 5 to 500 Hz
Altitude: meters (feet)	up to 3,048 (up to 10,000)	up to 15,240 (up to 50,000)

Acoustic Emissions:

Average sound power	5.7 bels (per ISO 9296) 3 drives seeking
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Reliability Number of disks/Enclosure

	1 disk	2 disk	3 disk
MTBF (hrs)	>100 K	>60 K	>40 K
Annual failure rate	8.8%	14.6%	21.9%

For more information, call your local HP sales office listed in your telephone directory or an HP regional office listed below for the location of your nearest sales office.

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