

1035 DISK STORAGE FACILITY

CalComp's 1035 Disk Storage Facility (DSF) is a family of memory equipment that provides low cost, large capacity and high performance data storage capabilities. Attached to a block multiplex channel, the 1035 DSF offers IBM computer users a choice of capacities from 200 million to 3.2 billion bytes of on-line data storage with a data transfer rate of 806 kilobytes per second. The 1035 DSF consists of a Model 1035 Controller and up to 16 spindles of storage using CalComp's Model 235 Disk Storage Unit.

The Model 235 Disk Storage Unit contains two independent spindles in one cabinet and is available in two versions. The spindles may be single density (100 million bytes) or double density (200 million bytes). The single (235-I) and double density (235-II) contain removable disk packs equivalent to an IBM 3336 disk. Cabinets of different densities may be mixed on the same controller. Powered drawers ease disk pack installation at the front of the drives for the removable pack units.

The 1035 Controller is a micro-programmed control unit using a random access memory loaded from a floppy disk with functional control logic. This technique provides flexibility for easily implementing future features and improvements. The 1035 controls CalComp's 235-I and 235-II Disk Storage Units. Numerous features are offered by the 1035 DSF to provide high performance and reliability:

Dual Access (optional) allows two independent data paths from two controllers to any two spindles in a shared string of up to 16 spindles simultaneously. A fail safe capability is provided with dual access by allowing one controller to support all drives in the event of the other controller's failure.

Two Channel Switch (optional) allows controller attachment of two separate channels on the same or different CPUs.

Address Extension (optional) allows a controller to address an additional eight spindles for a total of 16 spindles.

Write Format Release frees the controller during the erase portion of formatting write commands. Erase is accomplished by the device thereby increasing the availability of channel and controller to perform other functions.

Rotational Position Sensing and Multiple Requesting improve response to system I/O requests.

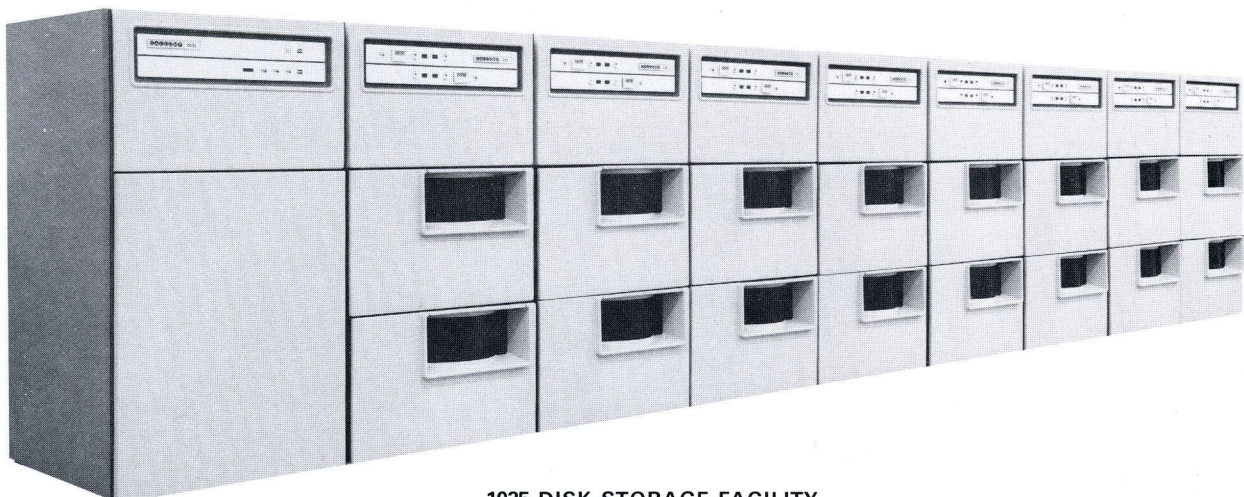
Data Error Detection and correction is implemented through the concept of Error Correction Codes (ECC).

Command Retry allows the controller to reexecute a command chain under certain error conditions without interrupting the central processor.

Command Retry together with ECC increase data integrity and reduce the amount of time which the central processor must dedicate to disk I/O operations.

Error logging improves maintenance by providing a record of errors.

The 1035 DSF offers IBM 370 computer users a large capacity and low cost disk facility that is IBM 3330 compatible. The ability to intermix and select from high performance single and double density drives provides users with a high degree of flexibility.



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ON-LINE CAPACITY

Model 235-I: Single density — 1.6 billion bytes (100 million per spindle).

Model 235-II: Double density — 3.2 billion bytes (200 million per spindle).

DATA TRANSFER RATE

806,000 bytes per second

ROTATIONAL SPEED

3600 RPM (16.7 milliseconds per revolution)

ACCESS TIME

Minimum: 10 milliseconds

Average: 30 milliseconds

Maximum: 55 milliseconds

CYLINDERS PER PACK

Model 235-I — 404 plus 7 alternates

Model 235-II — 808 plus 7 alternates

TRACKS PER CYLINDER

19

BYTES PER TRACK

13,030

COMPATIBILITY

IBM System/370

IBM 3830/3330 Disk Storage Facility

IBM 3336 Disk Pack (or equivalent)

Model I: Single Density

Model II: Double Density

IBM 3830 Command Set

START/STOP TIME

Start — 15 seconds (drive ready)

Stop — 15 seconds

POWER REQUIREMENTS

208V or 230V AC ($\pm 10\%$), Three Phase; 60 ± 0.5 Hz (50 ± 0.5 Hz available)

Model 1035 — Operating Current: 6.6 Amps rms

Model 235 (per spindle) — Start Current: 25 Amps for 12 seconds

Operating Current: 6 Amps rms

OPERATING ENVIRONMENT

Temperature: 60° – 90° F; Maximum rate of change 15° F per hour.

Relative Humidity: 10–80 percent (no condensation).

HEAT DISSIPATION

Model 1035: 5,480 BTU/hour

Model 235: 7,132 BTU/hour (average)

DIMENSIONS

Model 1035: 32-in. wide; 33.5-in. deep; 60-in. high.

Floor space required: 7.4 sq. ft. (with side panels)

Model 235: 32-in. wide; 34.5-in. deep; 60-in. high.

Floor space required: 7.7 sq. ft. (with side panels)

Total floor space for controller and eight spindle system: 38.8 sq. ft. (cabinets bolted together without side panels between).

WEIGHT

	235	1035
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Operating	850 lbs.	600 lbs.
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Shipping	950 lbs.	700 lbs.
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COLORS

Standard IBM: blue, red, gray and yellow

OPTIONAL FEATURES

Two Channel Switch

Dual Access

Address Extension



California Computer Products, Inc.
2411 W. La Palma, Anaheim, CA 92801
Tel (714) 821-2011 Twx 910-591-1154