

CALCOMP

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MODEL 215 DISK DRIVE

The CalComp Model 215 is a dual density, high speed, random access, mass storage unit consisting of two separate and independent disk drives, each utilizing an 11-high removable disk pack for the storage and retrieval of data. Over 58 million 8-bit bytes of data can be stored on the 20 recording surfaces of each disk pack, giving the single 215 cabinet a storage capacity of over 116 million 8-bit bytes.

The Model 215 incorporates 200 track-per-inch technology and a temperature compensation system. Access to any one of 406 positions on the disk is accomplished with a maximum track-to-track access time of 10 MS, and a maximum full stroke of 55 MS. Data is transferred at a rate of 312,000 8-bit bytes per second. At a rotational speed of 2400 RPM, the drive is up to speed, temperature stabilized, and operational in 90 seconds, and dynamically braked in 11 seconds.



FEATURES

DUAL DENSITY TECHNIQUES double data storage on a 2316 type disk pack.

TWO INDEPENDENT SPINDLES IN A SINGLE CABINET greatly reduces floor space requirements.

ELECTROMAGNETIC ACTUATOR combined with **OPTICAL DETENT SENSING** provides superior head positioning accuracy and reliability, and assures pack interchangeability.

FAST ACCESS TIME allows greater system throughput.

CIRCUIT MONITORING OF READ, WRITE AND ERASE FUNCTIONS assures high data integrity.

FUNCTIONALLY ORGANIZED PRINTED CIRCUIT BOARDS facilitate maintenance and afford the lowest possible MTTR.

SPINDLE DRAWERS CAN BE EXTENDED FROM THE FRONT AND BACK OF THE UNIT providing operator convenience and ease of maintenance.

INTERNAL DIFFERENCE CALCULATOR provides absolute addressing capability, thereby simplifying controller design.

NUMEROUS OPTIONS including Sector and Sector Divider Logic, and 75 or 104 pin interface may be selected to meet individual OEM requirements.

STRADDLE ERASE HEADS sharpen the track edges and create a guard band between tracks to minimize crosstalk.

215 SPECIFICATIONS AND CHARACTERISTICS

CAPACITY

Per Pack — 58 million 8-bit bytes
Per Unit — 116 million 8-bit bytes

TRANSFER RATE

2.5 Megabits per second nominal

ACCESS TIME

Track to Track — 10 msec. max.
Full Stroke — 55 msec.

ROTATIONAL SPEED

2400 rpm $\pm 2\%$

PACK START/STOP TIME

Start — 90 sec. to operating speed
Dynamic Braking — 11 sec. to stop

DISK PACK CHARACTERISTICS

Recording Surfaces — 20
Tracks per Surface — 406
Disk Pack — IBM 2316 or equivalent

DENSITIES

Track Density — 200 tracks per inch
Recording Density — 2200 bits per inch

DIMENSIONS

32" wide x 34.75" deep x 61" high

WEIGHT

850 pounds

POWER REQUIREMENTS

Input Voltage — 208 or 230 VAC; 3 ϕ
Line Frequency — 60 Hz ± 0.5 Hz (50 Hz optional)
Operating Current — 4.3 amps rms/spindle
Starting Current — 20 amps/spindle for 7 seconds

OPERATING ENVIRONMENT

Temperature — 60° to 90°F.
Temperature Gradient — 20°F. per hour maximum
Humidity — 10% to 80% (no condensation)

ERROR RATE

Recoverable: 1 error in 10¹⁰ bits
Non-recoverable: 1 error in 10¹³ bits
Positioning: 1 error in 10⁶ seeks

RELIABILITY

MTBF: over 1800 hours
MTTR: under 1.5 hours
Service Life: 7 years or 34,000 hours



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