

Control Data® 9454 Lark™ Micro Unit

Designed for Original Equipment Manufacturers (OEM)

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CONTROL
DATA

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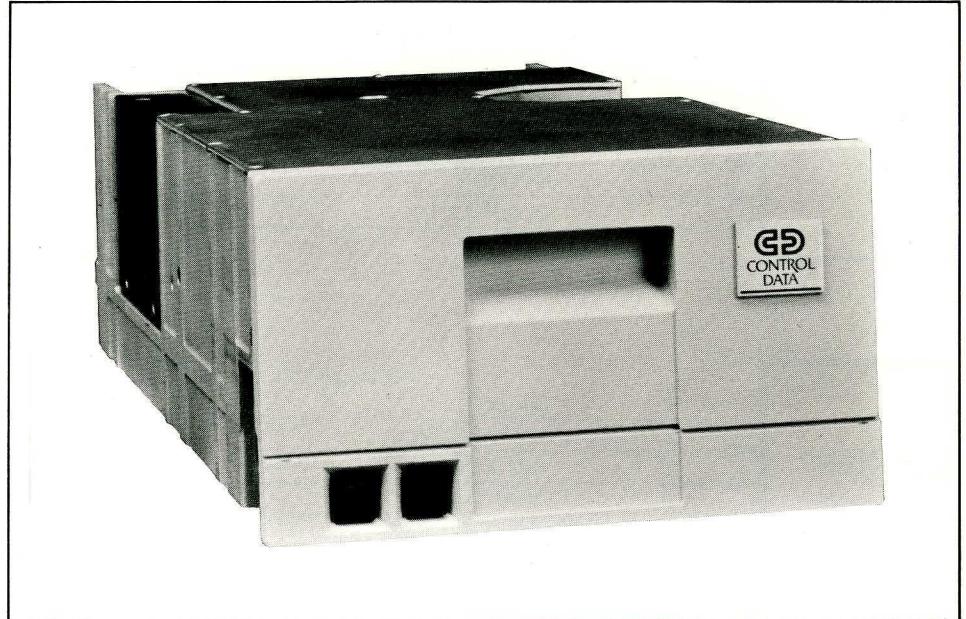
The Control Data 9454 Lark™ Micro Unit (LMU) is a compact, low-cost, high-performance, 203-millimeter (8-inch) rigid disk drive. It provides 8 megabytes of storage on a removable cartridge and 8 megabytes on a fixed disk.

The 9454 uses the CDC® 92108 Lark Module Cartridge and compatible cartridges. This cartridge is top-loading, for stable alignment of removable media to drive. However, it is inserted from the front of the drive for ease of use and operator convenience.

A new Lark Micro Family Interface is used by the 9454 that allows more flexible controller design. The LMU features the same basic system peripheral disk drive as the 9455 Lark Module Drive. However, the 9454 LMU does not include the power and I/O module that is standard in 9455 LMD. That is, it is not Storage Module Drive (SMD) interface compatible and must depend upon its host system to provide a power source.

Features

- New Lark Micro Family Interface.
- Asynchronous bus characteristics of micro unit interface allow multiple commands in the same bus transfer.
- A 9.67 megahertz transfer rate provides high performance.
- Two units mount horizontally, or three vertically, in a standard 483-millimeter (19-inch) Retma rack.
- Quiet operation.
- Low power requirement, approximately 100 watts (341 Btu), for less heat dissipation.
- Cartridge is inserted from front for ease of use; top-loading for reliability.
- Self-contained, self-purging, sealed cartridge eliminates contamination.
- Internal recirculating air system eliminates the need for external air flow system.
- Removability provides backup and high performance in simplified system design.
- Linear voice-coil actuator provides maximum accuracy, reliability and rapid positioning.
- Embedded servo information allows greater use of disk surfaces and provides cartridge interchange reliability.
- No head alignment required.
- Daisy-chain or star configuration—up to 4 units.
- Independent manual write protection of cartridge and fixed media improves security.
- Low mass, lightly loaded, flying heads provide reliability and long life.
- Microcomputer-based controller logic.
- No electrical adjustment or preventive maintenance required.
- Internal fault monitoring.



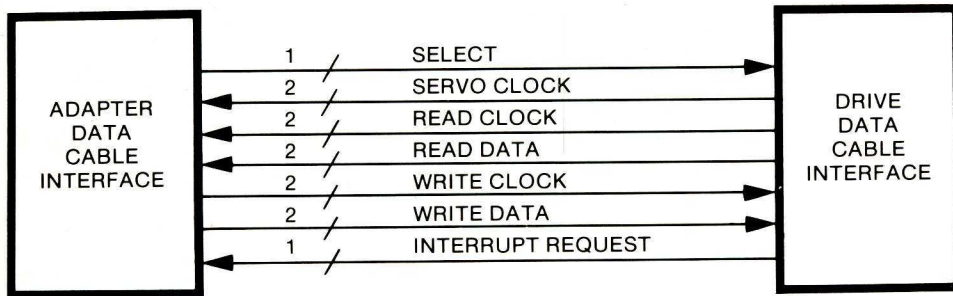
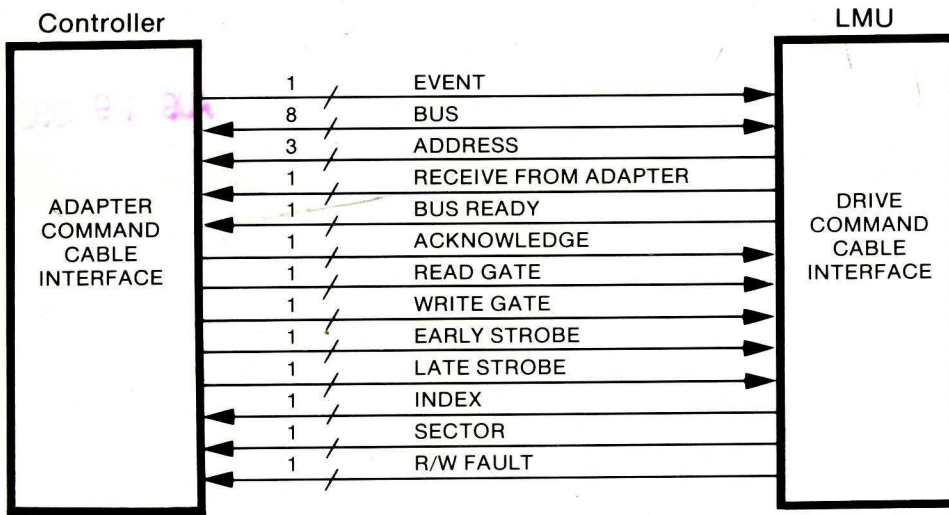
Functional Description

The 9454 LMU consists of the disk assembly, spindle motor, linear voice-coil actuator, operator control panel and the basic electronics assembly. The new Lark Micro Family Interface is standard.

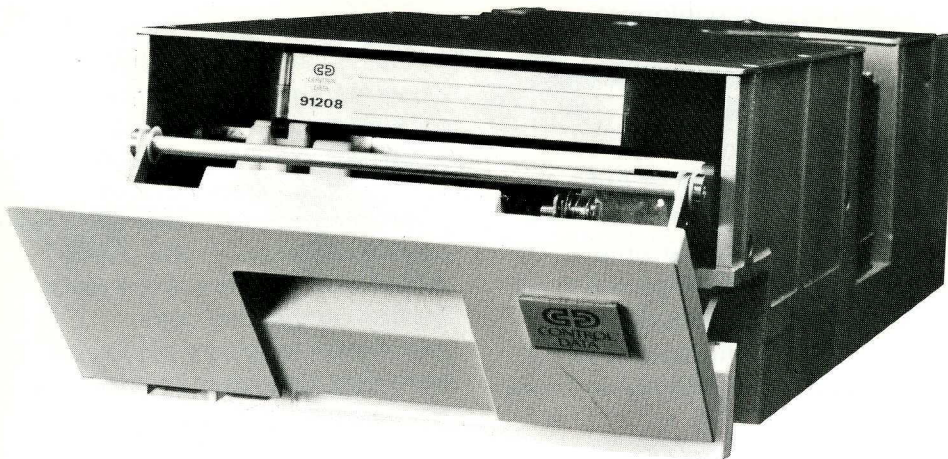
Data recovery circuits of the 9454 operate with fixed sector formats. A 64-sector or 32-sector configuration is available.

The 9454 LMU uses the latest 8-inch Lark rigid disk technology, including low-mass, lightly-loaded, flying read/write heads attached to a precisely controlled linear head positioner. No dedicated servo surface is required for head positioning control, index and sector pulse generation, or the phase-locked oscillator reference clock. Instead, embedded servo information is factory-written on each data surface in those areas not occupied by header or data blocks. No head alignment or adjustments are required as a result of embedded servo head positioning control.

9454 LMU Interface

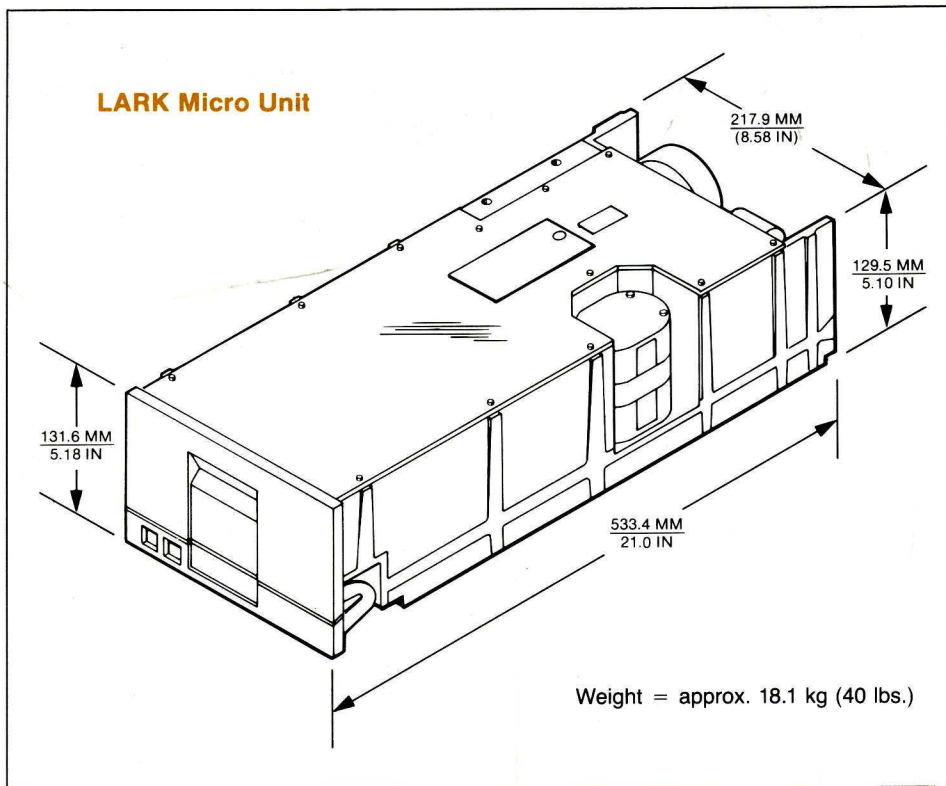


CDC 91208 Lark Module Cartridge Inserts from Front



CDC 91208 Cartridge





Physical Characteristics for 483-mm (19-in) Rack Mount

Lark Micro Unit

Dimensions	Millimeters	Inches
Height		
Drive	131.6	5.18
Drive and Shock Mounts (Horizontal Mount)	139.2	5.48
Width		
Drive	217.9	8.58
Drive and Shock Mounts (Vertical Mount)	248.4	9.78
Depth	553.4	21.0
Weight	18.1 kg (40 lb)	

Specifications

General

Capacity (20,672) bytes per track, unformatted

Bytes per Spindle (8-bit bytes)	16 Mbytes
Tracks per Surface	202
Spare tracks per Surface	4
Track Density (tracks/in)	237
Track Spacing	0.1067 mm (0.0042 in)
Data Surfaces	4
CDC Disk Cartridge Model	91208
Recording Mode	2,9 code
Bit Rate, nominal	9.67 MHz
Coating	Magnetic oxide
Performance (processing speed)	
Data Transfer	1.2 Mbytes/s
Spindle Speed	3510 r/min
Density	6774 FRPI, inner track 5071 FRPI, outer track

Accessing Time	
Average	50 ms
Maximum One Track (Average)	10 ms
Latency Time	
Maximum	17.8 ms
Average	8.55 ms
Recording Heads	
Read/Write Type	4
Read/Write Width	0.0864 mm (0.0034 in)
Type	Low mass, lightly loaded, flying heads
Data Error Rate	
Recoverable	Not more than one error in 10 ¹⁰ bits transferred.
Unrecoverable	Not more than one error in 10 ¹² bits transferred.
Reliability and Service	
MTBF	7500 hrs
MTTR	0.5 hr
Service Life	5 years
Preventive Maintenance	None required
Maintenance Features	No read/write adjustments. No mechanical/electrical adjustments. Total PCB interchangeability. Interface bus wraparound capability. Micro computer detected status.
Operator Control Panel	Start/stop switch Ready Indicator Fixed Protect Switch Fixed Protect Indicator Fault (LED) indicator

Power

Frequency	60 Hz, 50 Hz
AC Voltage	120 or 220/230/240
DC Voltage	±16.5, 10% Regulation +5.0, 2% Regulation -5.2, 2% Regulation

Phase Single

Environmental

Temperature	°C	°F
Operating	10 to 40	50 to 104
Nonoperating	-40 to 70	-50 to 158

Humidity	
Operating	20% to 80% RH (non-condensing)
Nonoperating	5% to 95% RH (non-condensing)
Altitude	-299 to 1983 m (-980 to 6500 ft)

Specifications subject to change without notice.

Control Data sales offices are located in principal cities throughout the world.

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