

# CALIBRATION STANDARD INSTRUMENTS



## THE NEW DATE RELEASE

A new method of precision monitoring and a calibrated monitor  
have been announced by Calibration Standard Instruments.  
The new monitoring method allows the test points of both  
NFM\* AND MDM-4  
to determine phasing errors and gain positioning, which  
is not possible by the use of the old method of  
monitoring. The new method of  
monitoring is made practical by the use of the  
NEW MDM-4 MONITOR and calibration standard loudspeaker system.

### A NEW MONITORING METHOD AND A NEW MONITOR

The MDM-4 is a full range (50Hz to 20KHz) monitor of compact  
dimensions (13" wide, 13" high, 9 1/4" deep) which can be mounted  
on a control desk, mixer or setting system. The MDM-4  
should be placed with about 2 feet between the inside edges and  
about 2 feet from the top and bottom edges. Such effects are thus  
eliminated, as they are with conventional monitoring, while retaining  
the ability to check the phasing field to check phasing  
and filter effects and overall accuracy. Until now, this method  
of monitoring has been partially successful by using single  
channel monitoring.

### \*NEAR FIELD MONITORING

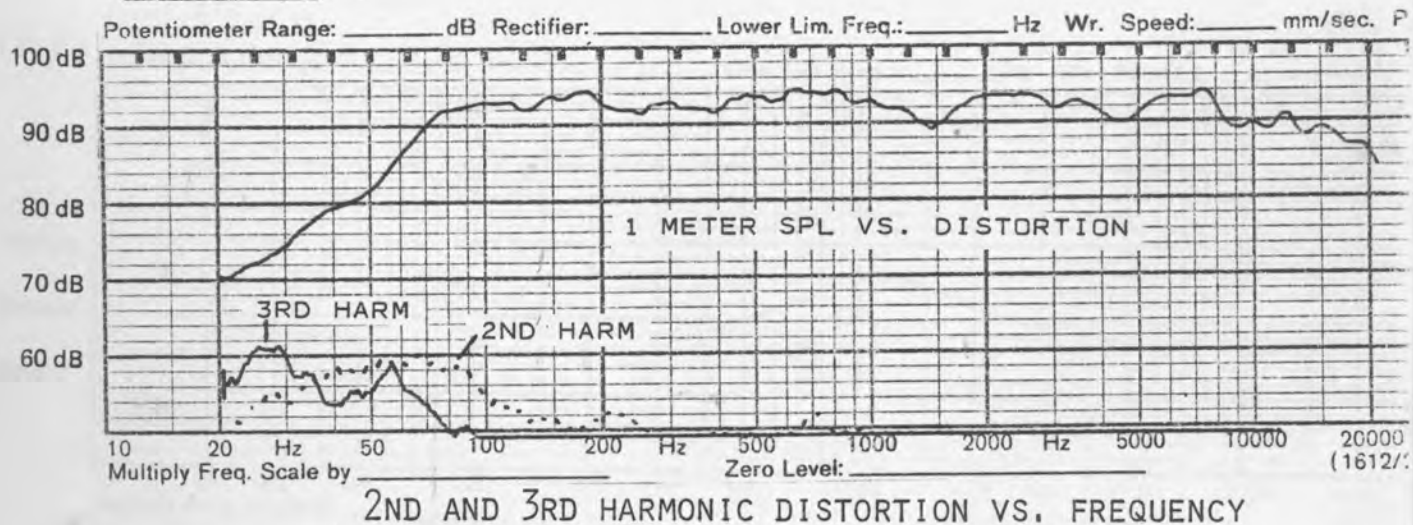
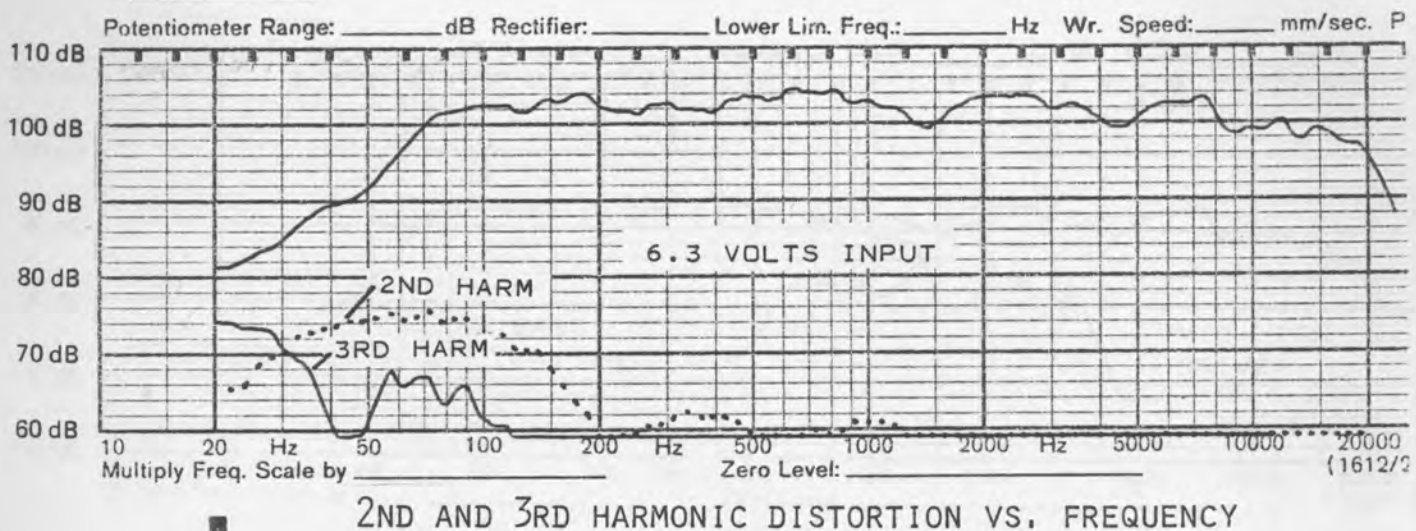
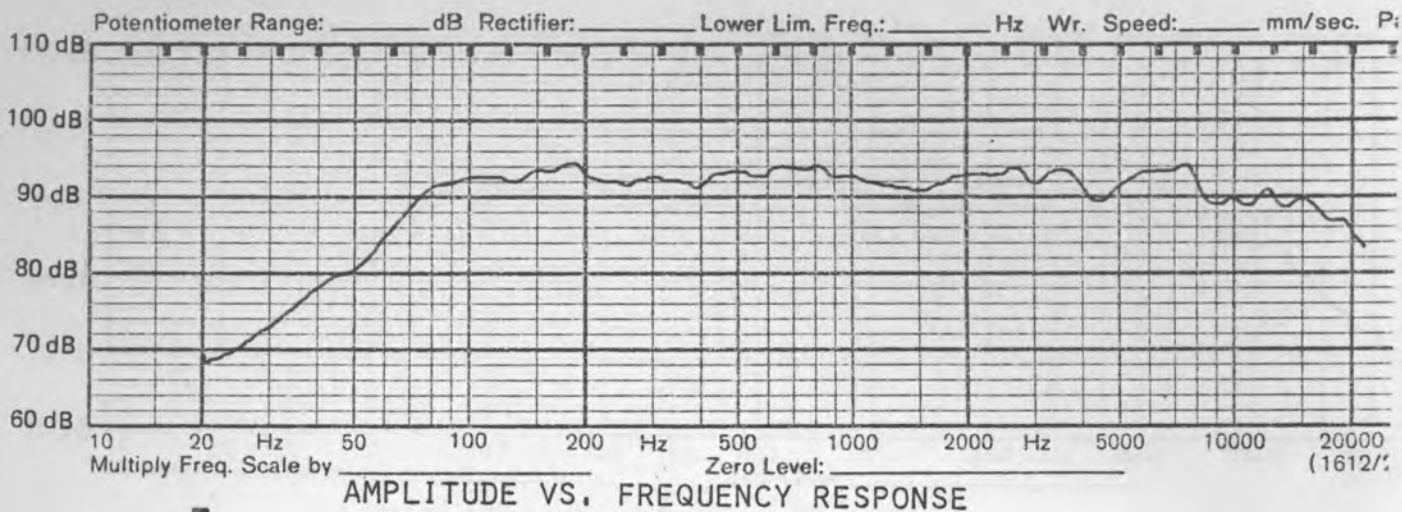
OFFICE COPY

# CALIBRATION STANDARD INSTRUMENTS



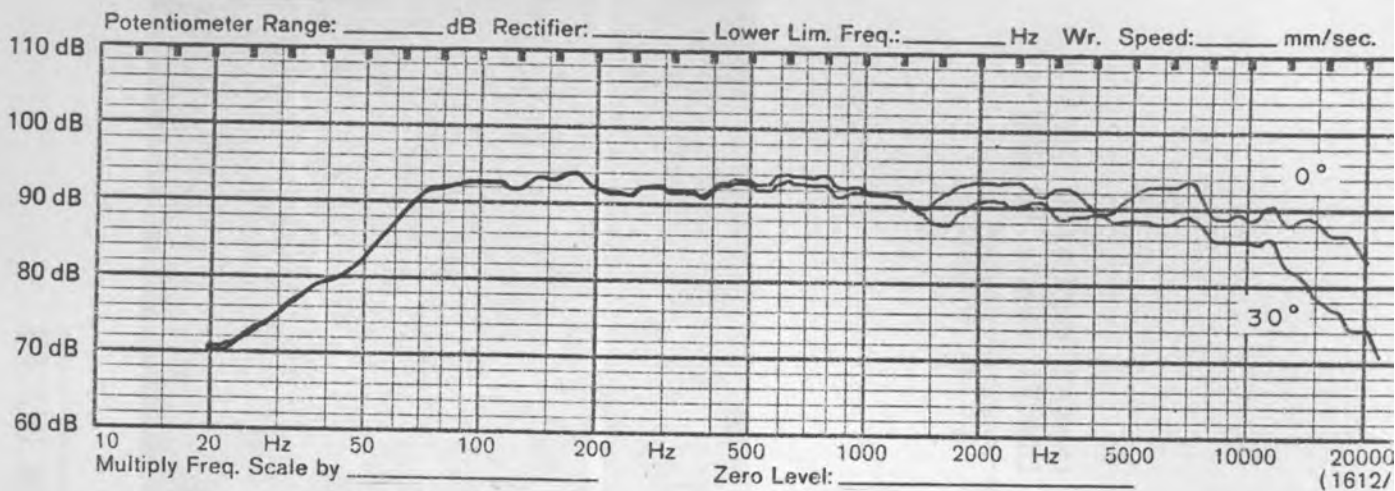
## FOR IMMEDIATE RELEASE

A novel method of precision monitoring and a calibrated monitor loudspeaker have been announced by Calibration Standard Instruments. The new monitoring method allows the best points of both distant loudspeaker monitoring and headphone monitoring. The ability to determine phasing effects and pan positioning, which are only possible by distant loudspeaker monitoring, are retained but the room effects are all but eliminated. The new method of Near Field Monitoring (NFM) is made practical by the use of the MDM-4 MIX-DOWN-MONITOR and calibration standard loudspeaker system. The MDM-4 is a full range (50Hz to 20kHz) monitor of compact dimensions (19" wide, 13" high, 9 3/4" deep) which can be mounted close to a control desk, mixer, or cutting system. The MDM-4 should be mounted with about 3 feet between the inside edges and about 3 feet from the listening position. Room effects are thus eliminated, as they are with headphone monitoring, while retaining the ability to move across the listening field to check phasing, comb filter effects and panning accuracy. Until now, this method of monitoring has only been partially successful by using single driver, narrow range, cube type speakers. The near field, driver phasing effects of larger, full range loudspeakers has precluded their use for NFM applications. The MDM-4 MIX-DOWN-MONITOR has been designed specifically for Near Field Monitoring by causing the acoustic output of its three drivers to be blended to produce a plane wave radiation within 50 cm from the center of the baffle. The MDM-4, which was designed by E.M. LONG ASSOCIATES, comes with its own Bruel & Kjaer amplitude vs. frequency response curve. The MDM-4 can also be used as a microphone measurement source as well as for NFM applications in radio, recording, disc cutting and record plant quality control.

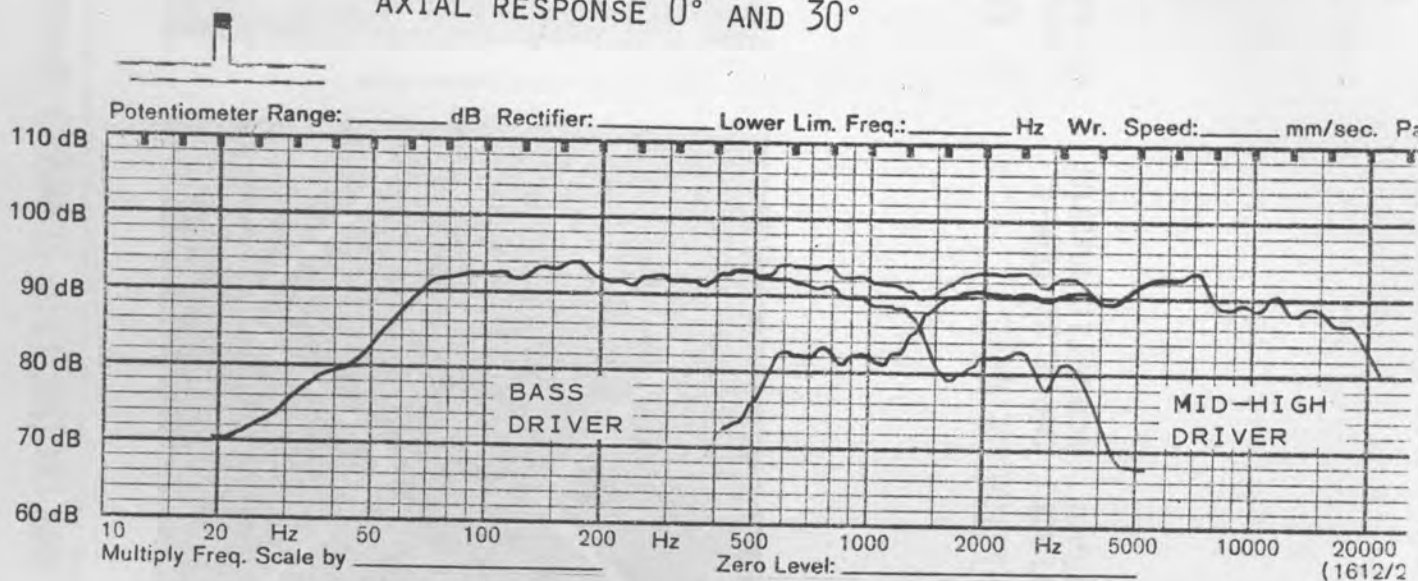


Potentiometer range: 50 dB  
 Rectifier: RMS  
 Lower Limit Frequency: 20 Hz  
 Writing Speed: 25 mm/Sec  
 Paper Speed: 10 mm/Sec  
 Microphone Position: .5 METER ON AXIS  
 Input Voltage: 2V RMS @ 1 KHz

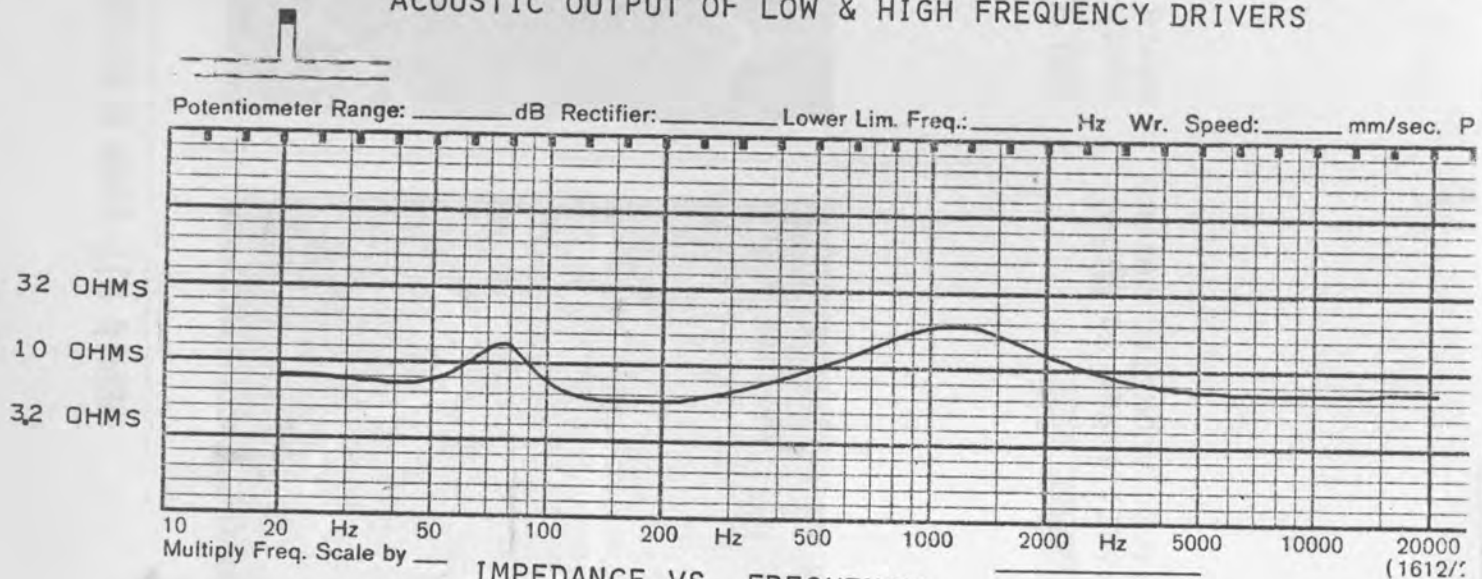
Model Number MDM-4  
 Serial Number \_\_\_\_\_  
 Reference Level 0dB = .0002 DYNES CM<sup>2</sup>  
 Environment FREE FIELD  
 Condition 4 π STERADIANS  
 Date \_\_\_\_\_  
 Signature \_\_\_\_\_



AXIAL RESPONSE 0° AND 30°



ACOUSTIC OUTPUT OF LOW & HIGH FREQUENCY DRIVERS

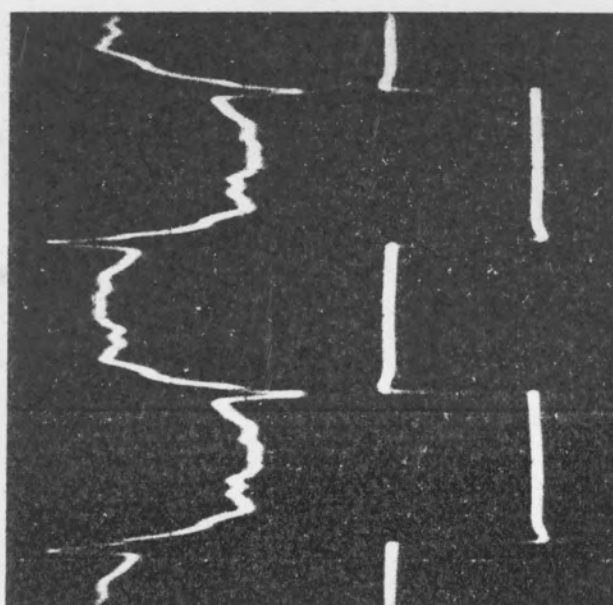


IMPEDANCE VS. FREQUENCY

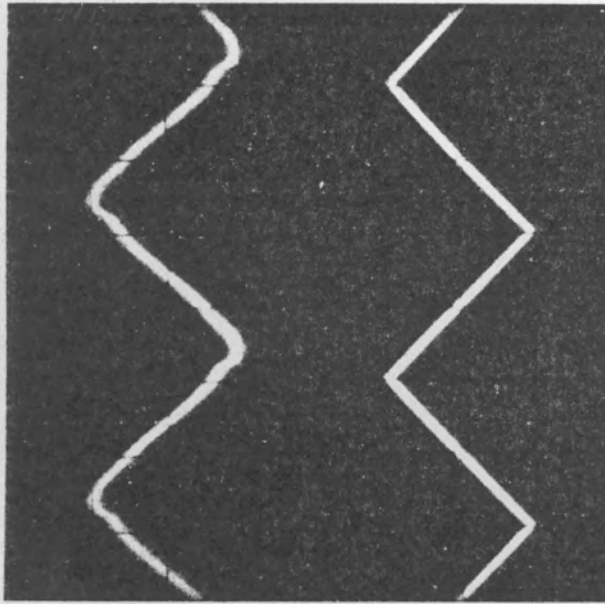
Potentiometer range: 50 dB  
 Rectifier: RMS  
 Lower Limit Frequency: 20 Hz  
 Writing Speed: 25 mm/Sec  
 Paper Speed: 10 mm/Sec  
 Microphone Position: .5 METER ON AXIS  
 Input Voltage: 2V RMS @ 1 KHz

Model Number MDM-4  
 Serial Number \_\_\_\_\_  
 Reference Level 0dB = .0002 DYNES CM<sup>2</sup>  
 Environment FREE FIELD  
 Condition 4 π STERADIANS  
 Date \_\_\_\_\_  
 Signature \_\_\_\_\_

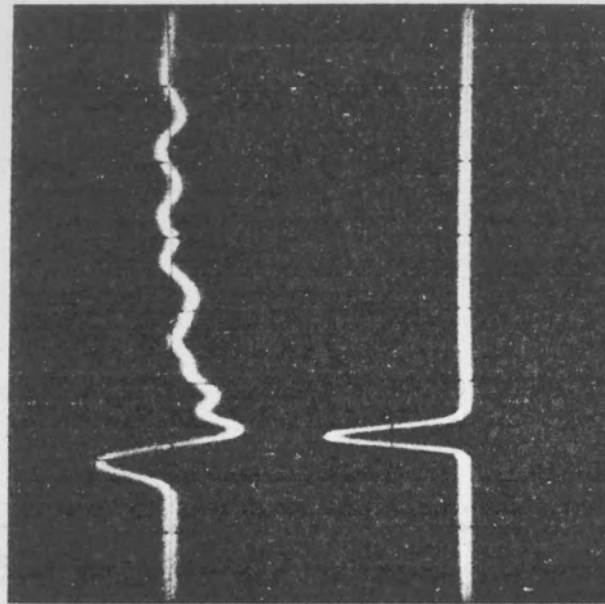
MDM-4 MIX-DOWN-MONITOR AND CALIBRATION STANDARD SPEAKER SYSTEM



500 HZ SQUARE WAVE  
LOWER TRACE: INPUT TO MDM-4  
UPPER TRACE: ACOUSTIC OUTPUT



500 HZ TRIANGLE WAVE  
LOWER TRACE: INPUT TO MDM-4  
UPPER TRACE: ACOUSTIC OUTPUT



20 KHZ COSINE PULSE  
LOWER TRACE: INPUT TO MDM-4  
UPPER TRACE: ACOUSTIC OUTPUT

# MDM-4

## MIX DOWN MONITOR

PERFORMANCE SPECIFICATIONS:	DESIGN SPECIFICATIONS:
<b>FREQUENCY RESPONSE</b> ±3 dB 60 Hz to 17 kHz (4 π steradians, free field) ±5 dB 50 Hz to 20 kHz (4 π steradians, free field)	<b>SYSTEM TYPE</b> Dual woofer, 2-way system WITH VELOCITY CONTROL HIGH PASS FILTER
<b>POWER REQUIREMENTS</b> 10 watts for 97 dB per 1000 cubic feet of room volume 1 watt for 89 dB SPL @ 1 meter (free field)	<b>DRIVERS</b> Two 16 cm (6¼") Low Frequency One 9 cm (3½") Mid-high Frequency
<b>POWER HANDLING</b> 40 watts continuous, 100 watts instantaneous below 1 kHz 15 watts continuous, 40 watts instantaneous above 1 kHz	<b>CROSSOVER</b> Equalizer Filter type at 1500 Hz
<b>DEMAGNETIZATION LEVEL</b> 315 watt low frequency pulse will result in a permanent 1 dB output reduction in the piston band of the bass drivers	<b>ENCLOSURE VOLUME</b> 27 Liters (.95 cubic feet)
<b>SENSITIVITY</b> 80 dB SPL/volt/meter	<b>ENCLOSURE DIMENSIONS</b> 48 cm x 33 cm x 24.8 cm 19" x 13" x 9 3/4"
<b>DISTORTION</b> Less than 5% THD or I.M., 50 Hz to 20 kHz Typically less than 1% 100 Hz to 20 kHz 94 dB SPL at 1 meter	<b>ENCLOSURE FINISH</b> Rosewood Laminate
<b>IMPEDANCE</b> 8 ohms nominal, 6 ohms minimum	<b>GRILLE</b> BROWN CLOTH
	<b>SYSTEM WEIGHT</b> 10.4 kgm. net, 11.3 kgm. shipping 23 lb. net, 25 lb. shipping

# MDM-4

## MIX DOWN MONITOR

This MDM-4 MIX-DOWN-MONITOR has been carefully built and tested. It has been subjected to over 20 special procedures and tests to insure uniformity. The frequency response that accompanies this particular MDM-4 has been individually run and is the actual frequency response of this particular serial number unit. If for any reason this unit must be returned, it must be accompanied by this booklet and frequency response curve.

The MDM-4 has been designed for accurate, smooth response when operated in the  $4\pi$  steradian mode, away from walls, ceiling and floors. The MDM-4 should be placed as close as practical to the listening position. This will reduce the effects of the room upon the acoustic response and result in the best reproduction of the original sound. The MDM-4 was designed to operate at relatively low levels without "fade out" especially in the bass register. This allows extended listening without the temporary threshold shift that occurs when monitoring at higher levels. The MDM-4 may be stacked and operated in parallel for 6 dB more acoustic output. The MDM-4 should be positioned with the longest dimension in the horizontal plane for the broadest, most symmetrical dispersion. If the MDM-4 is located at or below the listening height, the input plate on the back should be on the top. If the MDM-4 is located up higher, the input plate should be toward the bottom. When stacking two MDM-4s, the input plates should be near each other.

### LIMITED WARRANTY

This product is warranted to be free from defects in material and workmanship for a period of one year after delivery to the original purchaser, provided the registration card supplied with the product is completed and returned to the manufacturer within fifteen days of the purchase. Our obligation under this warranty is limited to repairing or replacing any component which our examination shall disclose to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products which have been abused, modified, disassembled or repaired by others than the manufacturer. Products to be covered by this warranty must be returned to the factory service department or to our designated service center with all transportation and insurance charges prepaid. This warranty is in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on our part, and we neither assume, nor authorize any other person to assume for us, any other liability in connection with the sale, repair or return of any product.

# CALIBRATION STANDARD INSTRUMENTS



TO ALL SALES OFFICES:

## PRICE LIST

OCTOBER 1, 1977

<u>MODEL</u>	<u>INVOICE PRICE</u> <u>30 DAYS</u>	<u>CASH WITH ORDER</u>	<u>PROF. USER</u> <u>PRICE</u>
MDM-4	\$172.50	\$153.00	\$230.00

FREIGHT PREPAID ON 6 OR MORE UNITS.  
1½% PER MONTH WILL BE CHARGED ON UNPAID INVOICES AFTER 30 DAYS.

As can be seen from the above prices, a cash with order sale of one pair of MDM-4 MIX-DOWN-MONITORS, gives a profit of \$154.00.

MAKE CHECKS PAYABLE TO E.M.LONG ASSOCIATES



# CALIBRATION STANDARD INSTRUMENTS



TO ALL SALES OFFICES:

## MDM-4 MIX-DOWN-MONITOR CALIBRATION STANDARD LOUDSPEAKER SYSTEM

### SERVICE INFORMATION

OCTOBER 1, 1977

The MDM-4 is a precisely built and adjusted unit. Each MDM-4 is calibrated and accompanied by its own individually run amplitude vs. frequency response curve. It is recommended that units requiring service be returned, prepaid to the SERVICE LABORATORY, 4107 Oakmore Road, Oakland, Calif. 94602. Please indicate the apparent defect and describe the associate amplifier and the purpose for which the MDM-4 is normally used. The unit will be tested, repaired, retested and adjusted until it meets original specifications. A new amplitude vs. frequency response calibration curve will be included with the unit.

For units under warranty, if manufacturing defects are responsible for the failure, they will be repaired or replaced at no charge and returned prepaid.

For units not under warranty or if inspection reveals that they have been misused, they will be repaired at cost and returned C.O.D.

The MDM-4 may also be serviced by the local Sales Office.

Orders for drivers which are accompanied by a check for the proper amount will be shipped prepaid, otherwise they will be shipped UPS Collect. Defective drivers should be returned for inspection. If inspection reveals that a driver has failed due to manufacturing defect, a credit will be issued to the Sales Office.

BD16/102	BASS DRIVER	\$29.00
TD7/38		\$24.00

