



Polydirectional Microphone

TYPE 77-DX

CATALOG

B.1009

FEATURES

- High quality reproduction with greater sensitivity over entire audio frequency range
- Styled for either radio or TV applications
- Choice of directional pattern to control ratio of direct-to-reverberant sound pickup
- Three-position voice-music switch allows selection of best operating characteristic
- Efficient shock mounting

DESCRIPTION

The RCA Type 77-DX Polydirectional Microphone is primarily intended for broadcast use either in the radio or television studio. Two models are available. The MI-4045-F finished in satin chrome and a low-gloss umber gray enamel is intended for AM or FM stations, while the MI-11006-C microphone is intended for television use and is therefore completely finished in a low-gloss umber-gray enamel which eliminates glaring reflections. Both instruments are high-fidelity microphones of the ribbon type which may easily be adjusted to obtain a variety of directional patterns.

As a uni-directional microphone the 77-DX has a wide pick-up angle on front which may be used to advantage as a general programs and announce studio microphone and for television boom operation. It is recommended for use on programs where it is desirable to cover a large area with a single microphone, on programs where studio acoustics are more live than optimum, and programs where it is desirable to eliminate audience noise originating behind the microphone. The 77-DX can also serve as a bi-directional instrument on programs where the players are grouped around the microphone or are seated on opposite sides of a table. In the non-directional position, the microphone is excellent for announce work or for out-door locations.



MI-11006-C

MI-4045-F

The RCA Type 77-DX Polydirectional Microphone operates as a uni-directional, bi-directional or non-directional instrument by positioning of a shutter to secure various areas of opening. The moving element is a thin corrugated metallic ribbon clamped at the ends and suspended in the air gap of a magnetic circuit consisting of an Alnico V permanent magnet and pole pieces. One side of the ribbon is open and the other is connected by means of a tube to a folded acoustically damped pipe contained in the center section of the microphone.

The tube connecting the back of the ribbon to the labyrinth is slotted directly behind the ribbon and fitted with the shutter which controls the directional properties of the microphone. When the opening is completely closed, the microphone operates as a non-directional pressure microphone; at the wide-open position the instrument becomes bi-directional. With the proper size opening the pattern becomes a cardioid by virtue of the phase shift which occurs. Openings smaller or larger than this critical size produce directional patterns with various sized rear lobes. Different amounts of low-frequency attenuation are obtained by a reactor shunting the output.

The shutter opening is operated by turning a slotted shaft which is brought out flush with the rear of the windscreen.

The shutter position is indicated on a plate mounted on the screen and marked "U", "N" and "B". Three additional markings "L-1", "L-2", and "L-3" are used as reference points for other directional patterns which may be obtained. The bottom portion of the microphone contains an impedance matching transformer and switch for selecting response characteristics for voice or music. The switch shaft is slotted and accessible through a hole in the bottom of the lower shell. The transformer is exceptionally well shielded against stray magnetic fields.

The 77-DX will mount on any stand having a 1/2-inch pipe thread. Other stands will require a suitable adaptor. The microphone is cushion-mounted, and a fork mounting is provided so that the instrument may be fitted to the desired position. The microphone is connected for an output impedance of 250 ohms at the factory, but it may be adjusted for an output impedance of 30 or 150 ohms.

SPECIFICATIONS

Directional Characteristics.....	Adjustable, 6 positions (see curves)
Frequency Response.....	50-15,000 cps
Output Impedance.....	250 ohms, may be changed to 30 or 150 ohms
Load Impedance.....	Unloaded input transformer
EIA System	G _M
Effective Output Level (all output connections):	
Bi-directional.....	-50 dbm* G _M = -144 db
Uni-directional.....	-53 dbm* G _M = -147 db
Non-directional.....	-56 dbm* G _M = -150 db
Hum Pick-up Level.....	-128 dbm**
Dimensions (overall).....	11 1/2" long, 3 3/4" wide, 2 1/2" deep
Weight (including 1 1/2 lb. cable).....	4 1/2 lbs.
Cable (MI-43-D, 3 conductor, shielded).....	30 ft., no plug
Mounting.....	1/2" pipe thread

Ordering Information

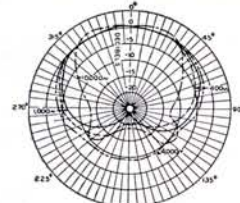
Type 77-DX Polydirectional Microphone in protective cloth bag:	
Satin Chrome Finish.....	MI-4045-F
Low Luster Gray Finish.....	MI-11006-C

* Sound Pressure = 10 dynes/cm².
 ** Referred to a hum field of 1 x 10⁻³ gauss.

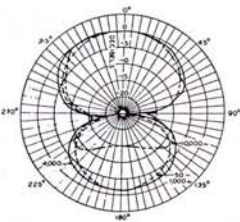
Typical Directional Patterns and Frequency Response Curves of 77-DX Polydirectional Microphone



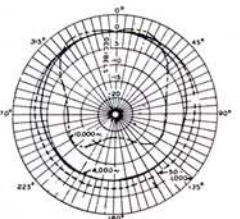
Rear view of 77-DX Microphone



UNI-DIRECTIONAL POSITION

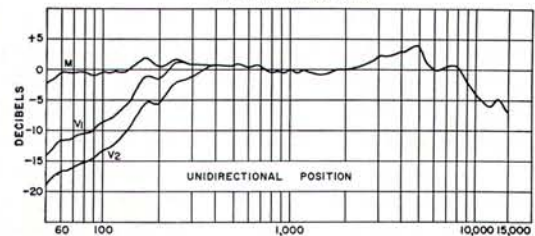


BI-DIRECTIONAL POSITION

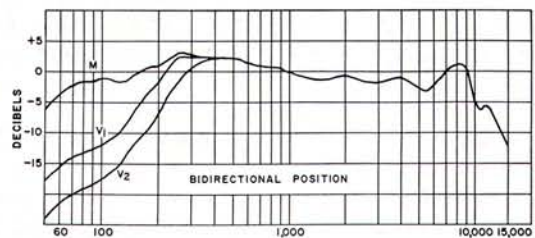


NON-DIRECTIONAL POSITION

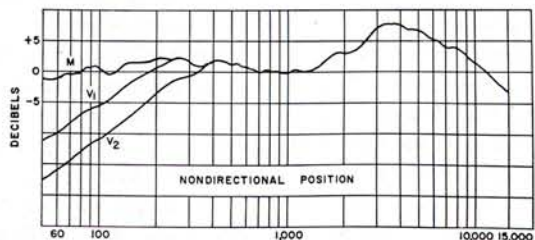
OPEN CIRCUIT RESPONSE OF A TYPICAL TYPE 77DX MICROPHONE



UNI-DIRECTIONAL POSITION



BIDIRECTIONAL POSITION



NON-DIRECTIONAL POSITION



RADIO CORPORATION OF AMERICA
 Broadcast & Television Equipment
 Camden, N. J.

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