



US694

DYNAMIC CARDIOID MICROPHONE

SPECIFICATIONS

Element:

Dynamic

Frequency Response (see Figure 1),

Close Response:

25 to 15,000 Hz

Far Response:

70 to 15,000 Hz

Polar Pattern (see Figure 2):

Cardioid

Open-Circuit Voltage:

2.37 mV/Pa @ 1,000 Hz

Sensitivity:

-53 dB (0 dB = 1 mW/Pa) @ 1,000 Hz

Impedance:

300 ohms bal. (lo-Z)

Switch:

On/Off

Color:

Non-reflective black

Dimensions,

Length:

6.56 in. (166.6 mm)

Maximum Diameter:

2.01 in. (51.1 mm)

Net Weight:

9.31 oz (264 g)

Shipping Weight:

17.41 oz (493.6 g)

Accessories Included:

Stand clamp; 19.7 ft (6 m)

2-conductor, shielded broadcast-type cable with XLR-type connector at microphone end, XLRM-type connector at equipment end



DESCRIPTION

The University Sound US694 is a Single-D cardioid dynamic microphone utilizing a revolutionary neodymium alloy magnet with four times the power of conventional microphone magnets. The exceptional power sensitivity combined with a smooth frequency response ensures a superior signal-to-noise ratio and performance suitable for recording. This microphone is also recommended for use in general sound applications, including hand-held or public address. The US694 uses the broadcast standard three-pin XLR-type connector, with pin 2 positive.

The directional polar characteristic resists feedback when working close to the sound reinforcement speakers. A built-in Acoustifoam™ pop filter enables close talking while virtually eliminating excessive breath blasts.

The US694 is equipped with an on/off switch that shorts the microphone element when set to "off" position permitting the user to have local muting control.

The US694 features a rugged dynamic element that will provide years of reliable operation even in humidity and temperature extremes. The dynamic element is attached to an elastomeric shock mount which reduces mechanical noise produced by handling or stand-induced vibration.

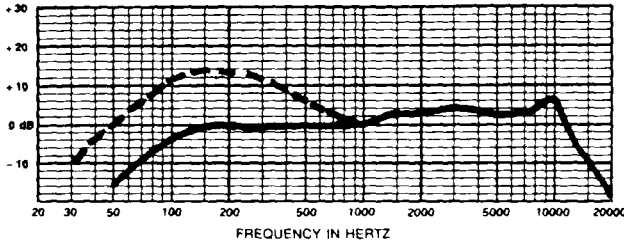


FIGURE 1
Frequency Response

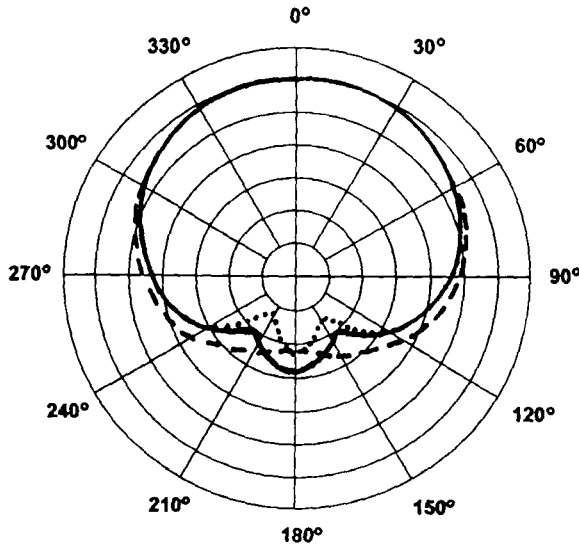


FIGURE 2
Polar Response

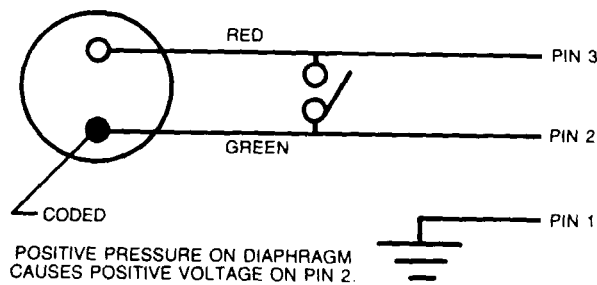


FIGURE 3
Wiring Diagram

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a cardioid dynamic type with "on/off" switch and uniform close field frequency response of 25 to 15,000 Hz. The microphone output shall be balanced, and the output level shall be -53 dB/Pa measured at 1,000 Hz for a 300 ohm load.

The case shall be cast zinc and the pop screen shall be steel mesh. Dimensions shall be 51.1 mm (2.01 in.) major diameter and 166.6 mm (6.56 in.) long. The finish shall be non-reflective black.

The University Sound US694 is specified.

WARRANTY (Limited) — University Sound Commercial Microphones are guaranteed for two years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to University Sound. Unit will be returned prepaid. Warranty does not extend to finish, appearance items, cables, cable connectors, switches, or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than University Sound will void this guarantee. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For warranty repair and service information on University Sound products, contact: University Sound, Inc., 13278 Ralston Avenue, Sylmar, CA 91342-7607; Phone: 818-362-9516; FAX: 818-362-3463; Attention: Customer Service Department.

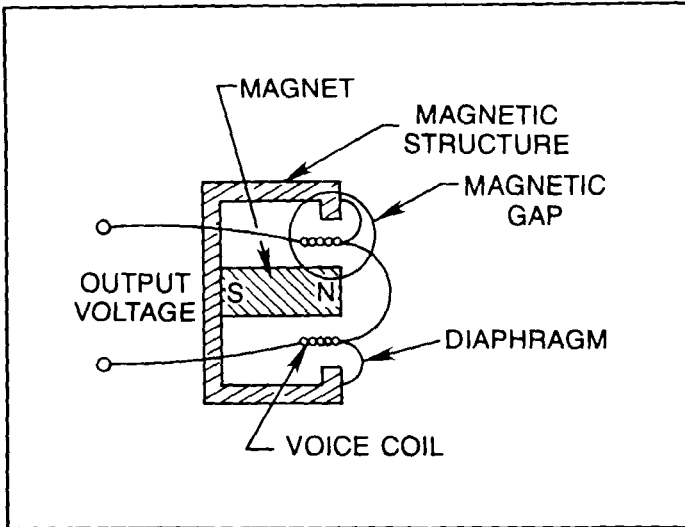
For technical assistance, contact the Technical Services Representative at University Sound, Inc.

Repair locations: University Sound, Inc., 600 Cecil Street, Buchanan, MI 49107; Attention: Service Department.

For Rocky Mountain and Western U.S.: University Sound, Inc., 8234 Doe Avenue, Visalia, CA 93291; Attention: Service Department.

Specifications subject to change without notice.

MICROPHONE SELECTION AND APPLICATION GUIDE



HOW DO MICROPHONES GENERATE THEIR ELECTRICAL VOLTAGE?

The diaphragm of a dynamic microphone is a thin formed-plastic membrane. Attached to the diaphragm is a coil of wire, known as the "voice coil." As sound pressure moves the diaphragm/voice coil assembly within the magnetic gap, a very small voltage is generated. This small, induced voltage is the output of the microphone.

Dynamic microphones are used in a wide range of applications from public address to professional recording. The dynamic microphone provides excellent fidelity, extremely stable performance characteristics and ruggedness—all at a reasonable price to make the dynamic an excellent choice for any application.

POLAR PATTERN

A microphone's polar pattern is three dimensional in character. Omnidirectional microphones pick up sound from all directions. Unidirectional microphones reject or reduce sound from their sides and rear.

OMNIDIRECTIONAL POLAR PATTERN

The polar pattern of an omnidirectional microphone may be visualized as an inflated balloon with the microphone at the center.

Usually, the polar pattern is represented on polar graph paper, as illustrated in Figure B. The polar pattern shows the loss in output level (in dB) experienced as the microphone is rotated 360° with a constant-output sound source at a fixed distance and frequency.

UNIDIRECTIONAL POLAR PATTERN

The most common unidirectional microphone is called a cardioid, with a "heart-shaped" polar pattern. The output of the microphone is moderately reduced (about 6 dB) for sources coming from the side and dramatically reduced for sources to the rear. The polar pattern of a cardioid microphone is shown in Figure C.

Directional microphones are widely used for live sound applications where gain-before-feedback is a problem. Depending on the application, different null angles other than 180° may be advantageous. (See Figure D.)

NOISE CANCELING

The term "noise canceling" is widely used for communications products. What does it mean? A true noise-canceling microphone is a pressure-gradient microphone (bi-directional polar pattern). When a directional microphone is talked at a close distance, 1/4-inch or less, the low-frequency response is greatly emphasized. This emphasis is known as "proximity effect." Look at Figure E; both the free-field curve (equivalent to having the source a long way from the microphone) and the close-talking curve are shown. The difference between the on-axis close response and the free-field distant response greatly reduces the low-frequency noise arriving at the microphone. Since most unwanted noise is at low frequencies, the subjective effect is one of a much clearer voice signal. The ratio of direct to indirect sound is very high. In addition, the microphone element is directional, which further reduces unwanted noise arriving at the microphone from different angles.

NOISE-CANCELING FREQUENCY RESPONSE.

For communications noise-canceling style microphones, the frequency response is tailored for voice. Typically, the 2,000-to-5,000-Hz response is peaked to provide presence and the low frequencies are rolled off. The tailoring of the frequency response provides greater intelligibility.

The combination of the noise-canceling effect and frequency tailoring make communications microphones ideal for voice applications where ambient noise is extremely high.

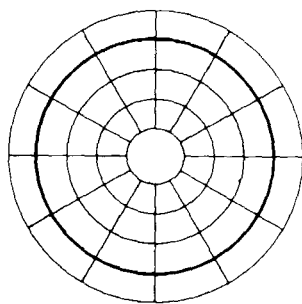


FIGURE B
Polar Pattern

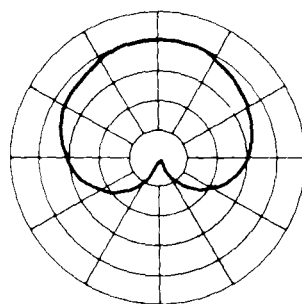
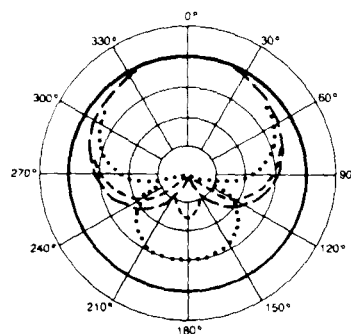


FIGURE C
Polar Pattern



Scale 5 dB Per Division
— OMNI
- - - CARDIOID
... SUPERCARDIOID
- · - · - HYPERCARDIOID

FIGURE D
Polar Pattern

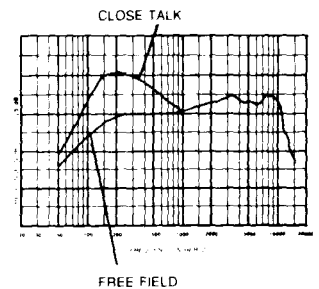


FIGURE E
Vocal Frequency Response



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