

**Electro-Voice®**  
a gulton company

## Model 660/660A Dynamic Super Cardioid Microphone

### SPECIFICATIONS

**Element:**  
Dynamic

**Frequency Response:**  
90 to 13,000 Hz

**Polar Pattern:**  
Super Cardioid

**Impedance:**  
150 ohms/Hi-Z, selectable

**Impedance Change:**  
Rear of connector insert  
(see instructions)

**Output Level,**  
**150 Ohm Impedance:**  
-56 dB  
(0 dB = 1 mW/10 dynes/cm<sup>2</sup>)

**High Impedance:**  
-55.5 dB  
(0 dB = 1 volt/dyne/cm<sup>2</sup>)

**EIA Sensitivity Rating,**  
**150 Ohm Impedance:**  
-150 dB

**High Impedance:**  
-150.5 dB

**Diaphragm:**  
Electro-Voice Acoustalloy®

**Case Material:**  
Pressure cast zinc

**Dimensions:**  
165.1 mm (6.50 in.)  
38.1 mm (1.50 in.)  
maximum, (tapered shank)

### Finish,

**660:**  
Satin chrome

**660A:**  
Non-reflecting gray

### Net Weight:

298 g (10½ oz), not including cable

### Cable,

**660/660A:**  
4.6 m (15 foot), two-conductor,  
shielded, vinyl jacketed with  
Switchcraft A3F connector

**LC FOLLOWING MODEL  
NUMBER INDICATES  
MICROPHONE LESS CABLE**

### Accessories Furnished:

358 stand adapter

### Optional Accessories:

314E gray popfilter  
360 gray windscreen  
422 desk stand  
458 simulated leather zippered  
pouch  
PLC25X 25 ft. cable with A3F and  
A3M connectors  
PLC-25P 25 ft cable with A3F &  
1/4 in. phone plug connectors  
PLC-25T 25 ft cable terminated with  
A3F connector at one end and  
unterminated at the other end

### DESCRIPTION AND APPLICATIONS

The Electro-Voice Model 660 is a rugged, super-cardioid, dynamic microphone designed to provide reliable service in the many situations that directional microphones are required.

Nearly all directional microphones exhibit proximity effect (a boost in low frequency response) when used close to a sound source. The 660 does not because it utilizes the Electro-Voice patented Variable-D® principle. Therefore the 660 will more accurately respond in those situations that demand the talker, singer or instrument be close to the microphone. The principle underlying "close miking" is that the sound pressure level at the microphone increases 6 dB each time the distance from the sound source is halved. Obviously the output level of the microphone then increases proportionately resulting in a louder sound system or better signal to noise on a recording. "Close miking" can also reduce the often undesirable effects of reverberation as well as provide an increased separation among competing sounds.

As a super-cardioid the 660 provides maximum rejection at 150° rather than the 180° of a cardioid. This assures greatest rejection in the horizontal plane when the microphone is tilted in its most natural position, 30° from the horizontal (as on a desk or floor stand).

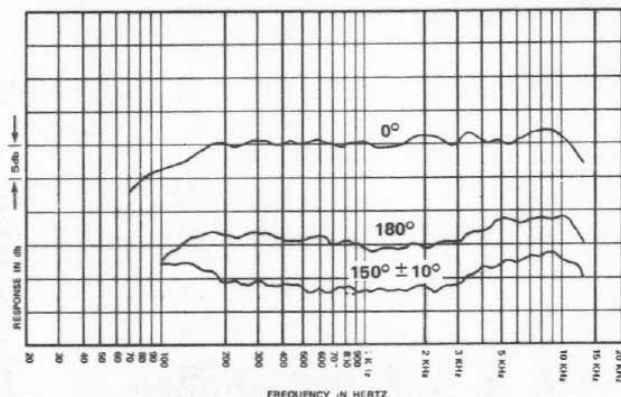


FIGURE 1 – Typical Frequency Response

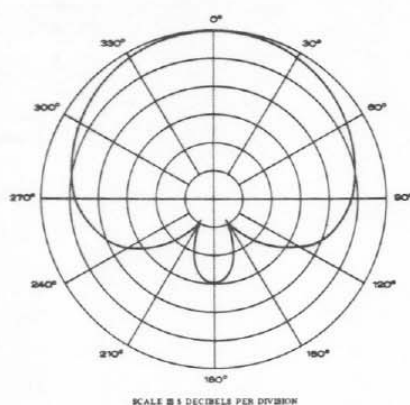


FIGURE 2 – Polar Response

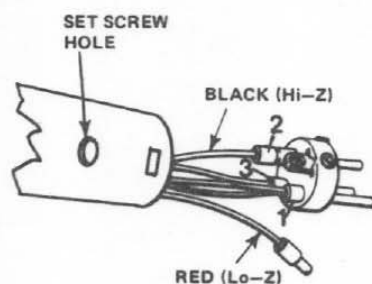


FIGURE 3 – Changing Impedance

The polar response (sound source at varying angles to the microphone diaphragm) is exceptionally uniform with little or no off axis coloration. This is important because it means the microphone's response in actual use will closely parallel the anechoic on axis curve (see Fig. 1). Many cardioids have good on axis response, but radically different response at other angles meaning the microphone's published curve (undoubtedly, on axis, anechoic) is of little practical use.

The 660 uses the mechanical nesting concept of design providing a nearly solid mechanical structure that is highly resistant to damage from shock. The exclusive non-metallic Electro-Voice Acoustalloy® diaphragm is virtually unaffected by extremes of atmospheric conditions. The case is made of pressure cast zinc with chrome plating. The 660A is identical to the 660 except the finish is a non-reflecting gray.

#### IMPEDANCE CHANGE INSTRUCTIONS

The 660 output may be either balanced low impedance or high impedance. To select impedance: (1) Turn the setscrew in the connector insert counter-clockwise (it is a reverse-threaded screw and will not come out, but rather disappear into the insert). (2) Pull the insert out from the end of the microphone, exposing the wires which are connected to it (see Fig. 3). For high impedance, be sure that the black wire is attached to Pin 2 of the connector insert (a small connector sleeve slides over Pin 2 to assure firm connection). For balanced low-Z (150 ohms) remove the black wire from Pin 2 and attach the red wire to Pin 2 by means of the sleeve type connector provided (see Fig. 3).

Unbalanced Lo-Z and Hi-Z operation requires that the black wire at the equipment end of the cable be connected together with the ground shield to the sleeve (or ground connection) of the plug. The white wire is connected to the tip (or positive). (See Figure 6)

## ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a super-cardioid dynamic type with wide-range response uniform from 90 to 13,000 Hz. Response at any angular position away from the major axis shall be essentially similar to the response on the major axis, attenuated uniformly at all frequencies by an amount appropriate to that angular position. Attenuation at all frequencies from 200 to 3,000 Hz (referred to major axis signal value) shall exceed 15 dB at 150° from major axis in any plane. Attenuation at 180° from major axis in any plane at frequencies from 100 to 3,000 Hz shall exceed 10 dB. Attenuation above 3,000 Hz shall exceed 10 dB. Polar characteristic shall be sufficiently uniform in all planes so that it is, effectively, a super cardioid of revolution.

The microphone shall be essentially "flat" from 150 to 10,000 Hz, with an 8 dB rise in response from 50 to 150 Hz. Output level shall be -56 dB (0 dB = 1 mW/10 dynes/cm<sup>2</sup>), and EIA sensitivity rating shall be -150 dB. The diaphragm shall be non-metallic Acoustalloy® and shall have a magnetic shield to prevent dust and iron particles from reaching the diaphragm.

The case shall be made of pressure cast zinc. The microphone shall have a maximum diameter of 38.1 mm (1.50 inches) — with tapered shank — and a maximum length of 165.1 mm (6.50 inches), not including cable connector. Case finish shall be satin chrome or non-reflecting gray. A 15-foot, two-conductor shielded, vinyl jacketed cable shall be provided with Switchcraft A3F or equivalent connector installed. Also available as "LC model" (without cable). The microphone shall have a built-in connector equivalent to the Switchcraft A3M. A Model 358 stand adapter shall be supplied. The Electro-Voice Model 660 is specified.

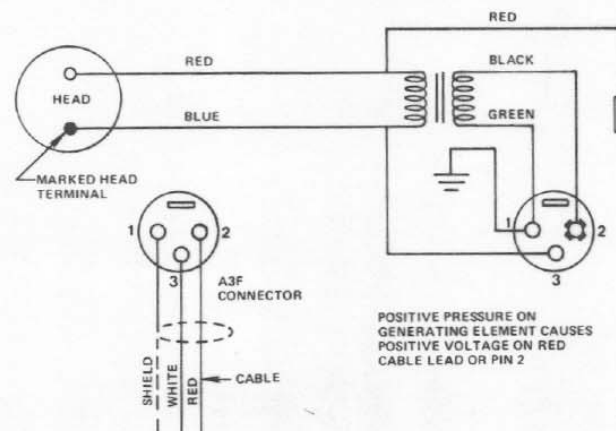


FIGURE 4 - Wiring Diagram

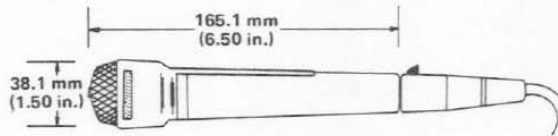


FIGURE 5 - Dimensions

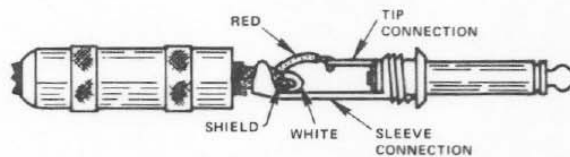


FIGURE 6 - Phone Plug Wiring Connections

#### **WARRANTY (Limited)**

Electro-Voice Commercial/Concert Series Microphones are guaranteed for two years from date of original purchase against defects in workmanship and materials. If such malfunction occurs, microphone will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For repair information and service locations, please write: Service Dept., Electro-Voice, Inc., 600 Cecil St., Buchanan, Michigan 49107 (Phone: 616/695-6831) or Electro-Voice West, 8234 Doe Ave., P. O. Box 3297, Visalia, CA 93277 (Phone: 209/651-7777).

Electro-Voice also maintains complete facilities for non-warranty service of EV products.

Specifications subject to change without notice.