



GENERATIONS AHEAD IN SONAR & ULTRASONIC TECHNOLOGY

Model E-188/220

High Frequency, Narrow Beam Ultrasonic Transducer

The Massa Model E-188/220 is a miniature ultrasonic air transducer that operates in the 220 kHz frequency region. A unique design feature results in the transducer having a narrow directional pattern completely free of all side lobes.

The transducer is typically used in non-contact echo ranging applications where either a single E-188/220 is used to first transmit a short duration acoustic signal, and it then detects the echo reflected from a target; or two separate transducers are used, one to transmit and one to receive. The axis of maximum system response is along the line perpendicular to the face of the transducer. The electro-acoustic responses of the transducer are shown on Page 2 of this datasheet.

The standard E-188/220 Transducer is electrically terminated with an eight inch long pair of #24 AWG cables. Other electrical terminations, such as coaxial cables, can be special ordered by contacting Massa.

For more information on ultrasonics, or using the response curve in this datasheet, visit us on the Web at www.massa.com, or call a Massa Applications Engineer at 781-749-4800.



(Photograph of transducer is approximately actual size.)

FEATURES

- High Frequency Operation
- Narrow Beam
- Small Size
- No Side Lobes

APPLICATIONS

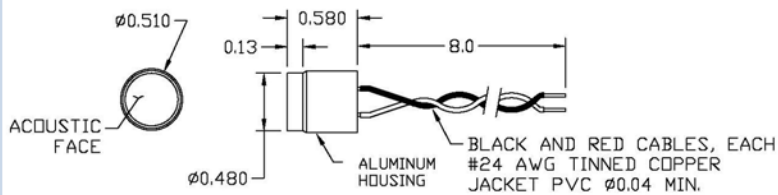
- Proximity Detection
- Robotics
- Level Measurement
- Mechanical Positioning
- Roll Diameter Measurement
- Web Loop Monitoring
- High Speed Counting
- Thickness Control
- Short Range Measurement

MASSA PRODUCTS CORPORATION
280 Lincoln St., Hingham, MA 02043 U.S.A.
Tel: 781-749-4800 Fax: 781-740-2045
Toll Free in USA: 800-962-7543
E-mail: sales@massa.com
Web Site: www.massa.com

Model E-188/220

OUTLINE DIMENSIONS

(inches)



SPECIFICATIONS

(Nominal at Frequency of Peak Response, 22°C , and 50% RH)

Frequency of Peak Response: 220 kHz

Peak System Sensitivity: -65 dBV
(Voltage of echo from flat target at 30 cm, 1 V drive pulse.)

Transducer Total Beam Angle: -3 dB 12°
-6 dB 18°

System Total Beam Angle: -3 dB 10°
-6 dB 12°

Transmitting Sensitivity: 120 dB
(dB re $1\mu\text{Pa}/\text{V}$ at 30 cm)

Receiving Sensitivity: -177 dB
(dB re $1\text{V}/\mu\text{Pa}$)

Impedance Magnitude: 800 Ω

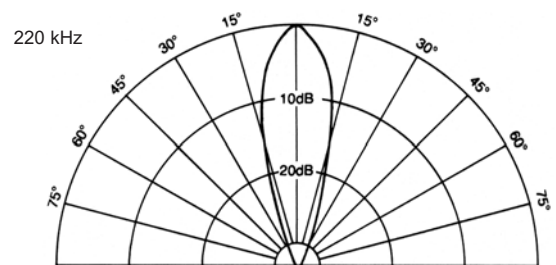
Operating Temperature: -40° to 85°C

Relative Humidity: 0% to 90%
(non-condensing)

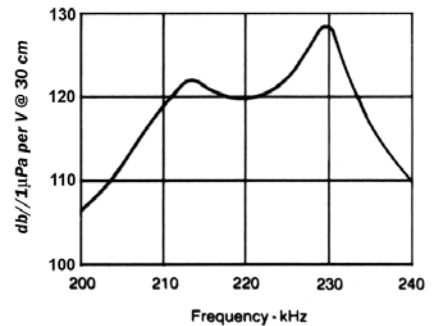
Weight: 10 grams

All Specifications subject to change without notice.

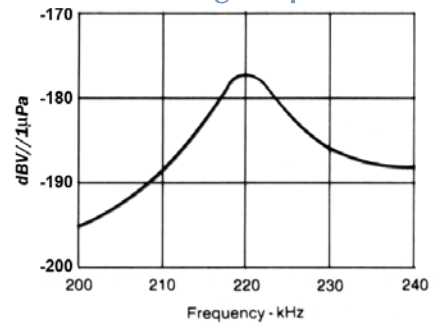
Transducer Directional Response



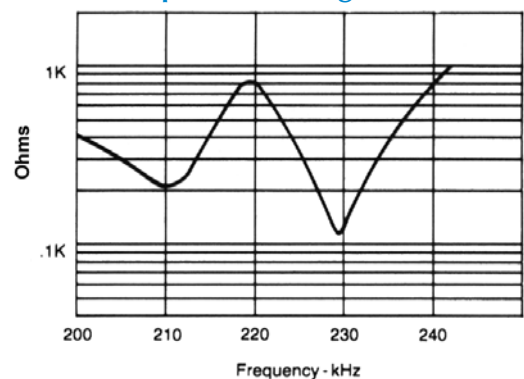
Transmitting Voltage Response



Receiving Response



Impedance Magnitude



REPRESENTED BY:

MASSA

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