



## Model E-188/220 High Frequency, Narrow Beam Ultrasonic Transducer

The MassaSonic™ 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](http://www.massa.com), or call a Massa Applications Engineer at 781-749-4800.



GENERATIONS AHEAD IN SONAR & ULTRASONIC TECHNOLOGY

### MASSA PRODUCTS CORPORATION

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(Photograph of transducer is approximately actual size.)

### FEATURES

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

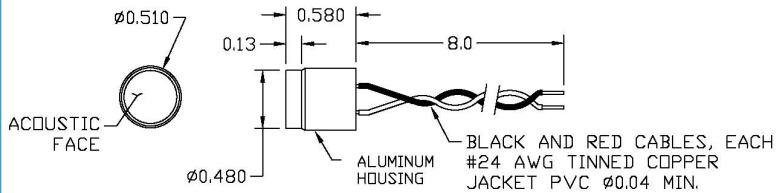
### APPLICATIONS

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

# Model E-188/220

## OUTLINE DIMENSIONS

(inches)



## ORDERING INFORMATION

P/N 200639-501

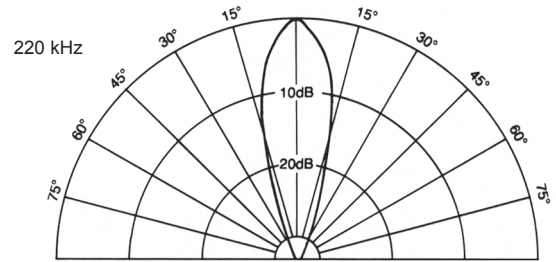
## SPECIFICATIONS

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

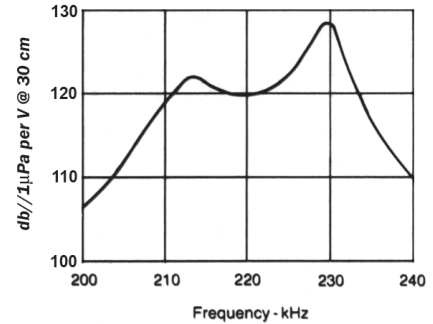
Frequency of Peak Response:	220 kHz
Peak System Sensitivity: (Voltage of echo from flat target at 30 cm, 1 V drive pulse.)	-65 dBV
Transducer Total Beam Angle:	-3 dB 12° -6 dB 18°
System Total Beam Angle:	-3 dB 10° -6 dB 12°
Transmitting Sensitivity: (dB re 1mPa/V at 30 cm)	120 dB
Receiving Sensitivity: (dB re 1V/mPa)	-177 dB
Impedance Magnitude:	800 W
Operating Temperature:	-40° to 85°C
Relative Humidity:	0% to 90% (non-condensing)
Weight:	10 grams

All Specifications Subject to Change Without Notice

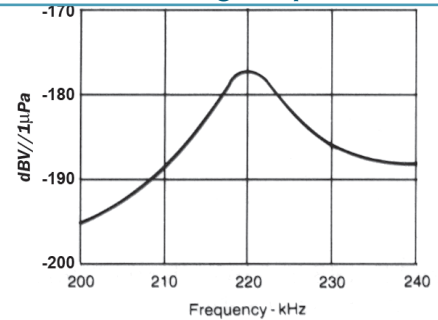
## Transducer Directional Response



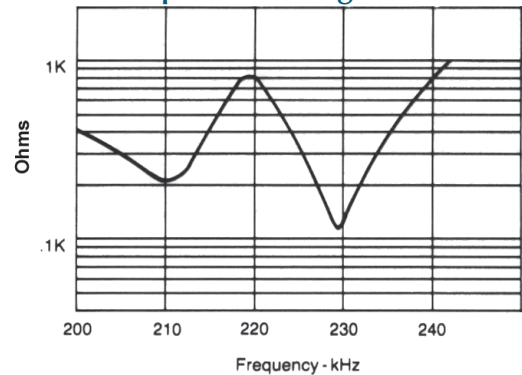
## Transmitting Voltage Response



## Receiving Response



## Impedance Magnitude



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