



Materials Systems Inc.

Piezocomposite Transducer Specification Form

Please complete the applicable sections of this form to facilitate Materials Systems' response to your transducer requirement. To enhance our customer support, it is important to complete the Customer Information, Application Description and Production Requirements sections of this form. Please complete only the sections that describe your requirement, leaving non-applicable sections blank.

Customer Information

Company MBARI Contact Name Michael Godin

Phone # 831-775-2063 FAX # 831-775-1646

Application Description

Application: AUV Homing

Transducer Type: Single Element ☒ Array ☐ Shaded Array
☐ Projector ☐ Hydrophone

Transmit/Receive ☐ Transmit 1 Receive 3 or 4

Frequency Range: 7 kHz to 35 kHz

Beam Pattern Shape: ☐ Omnidirectional ☒ Conical ☐ Elliptical ☐ Other

Sidelobe Levels ☐ dB down from mainlobe @ ☐ kHz
-3 dB Beamwidth, Vertical (deg) 60 @ ☐ kHz

Sidelobe Levels ☐ dB down from mainlobe @ ☐ kHz
-3 dB Beamwidth, Horizontal (deg) 60 @ ☐ kHz

Environmental Specification

Operating Media: ☐ Air ☒ Water ☐ Direct Contact ☐ Corrosive Liquid
☐ High Pressure ☐ High Temperature ☐ Other (Describe)

Operating Depth 4500m Pressure Range 0~6800 psi Temperature Range 0~30 C

Period of use in intended environment 6 months

Hydrophone Specification

RVS: ☐ dB re V/ μ Pa with ☐ length of cable

Bandwidth flatness: +/- ☐ dB

Preamp. required? ☐

Preamp. Specifications: Gain ☐ Roll-off Frequency ☐ Supply Voltage ☐



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Projector Specification

Resonance Frequency: _____ kHz Anti-Resonance Frequency: _____ kHz
Tolerance +/- _____ % Bandwidth _____ %

SPL: _____ dB re $\mu\text{Pa.m}$ or Input Power: _____ watts Drive Voltage Range: _____ Volts

Operational Conditions: CW or Pulsed If Pulsed, Duty Cycle _____ %
Pulse Length _____ ms

TVR: _____ dB re $\mu\text{Pa.m/V}$ Mechanical Q: _____ (re 1/2 G frequencies)

Tuning or Matching? Y/N Impedance _____ Phase (deg) _____

Mechanical Requirements

Size Restrictions: _____

Weight Restrictions: _____

Cable Type: _____ Cable Length: _____ Connector Type: _____

Packaging: X Water Proof Encapsulation _____ Metal Housing _____ Plastic Housing
 _____ Unencapsulated _____ Special Housing (Supplied Drawings)

Dimensional Tolerances +/- _____

Electrical Requirements

Device Capacitance _____ nF Dissipation _____ Electrical Isolation _____ Ω

Electrical Impedance _____ Ω Tolerances +/- _____ %

Production Requirements

Prototype Application ? Summer 2005 Production Application ? 2006

Quantities Required Small Delivery Schedule Summer 2005

Additional
Information _____

