

## Iowa Doppler Products (www.iowadoppler.com)

### Description

The IDP Needle Hydrophone is a new product designed for both educational and research laboratories. Well-suited for ultrasonic field mapping and for measuring the frequency response of transducers, this low-cost device can be used with one of two available probe tip sizes: 1.0mm and 0.5mm.

The IDP Needle Hydrophone can be used to:

- measure field patterns of a variety of ultrasound transducers
- measure the frequency response of ultrasound transducers
- observe the acoustic signal from transducers in the time domain

The hydrophone is easily mounted with standard laboratory clamps and contains a built-in preamplifier with a 50 Ohm output resistance.

List of educational experiments possible with the IDP Needle Hydrophone:

- Calculate the acousto-optic constant of water
- Map field patterns of an ultrasound transducer
- Observe pressure signals in the time domain

### Specifications

	<b>0.5 mm transducer</b>	<b>1.0 mm transducer</b>
Usable frequency range	1MHz to 30MHz	1MHz to 30MHz
Usable amplitude range (in pressure)	4 kPa to 1600 kPa	1 kPa to 400 kPa
Usable amplitude range (in output Volts) (open circuit)	15 mV to 6 V	15 mV to 6 V
Minimum amplitude	2 kPa (noise level)	0.5 kPa (noise level)
Maximum amplitude	2000 kPa	500 kPa
Maximum output Voltage	8 V	8 V
Sensitivity (open circuit)	4 $\mu$ V/Pa	15 $\mu$ V/Pa
Output resistance	50 Ohms	
<i>Mechanical dimensions</i>		
Tip length	1.33 inches	
Mounting tube length	6 inches	
Mounting tube diameter	0.5 inches	
Power Supply	Attached with 5 foot cord	
Output connections	3 foot coax with BNC connector	

Note: The data in this table is based on in-house calibrations. They are not traceable to NIST.