

# Hydrophone TC4038

## Broadband Miniature Probe Hydrophone



The TC4038 is a miniature probe hydrophone, specifically designed as a standard reference hydrophone for high frequencies in the range: 100kHz to 500kHz.

The TC4038 provides a flat frequency response and omnidirectional characteristics in the specified frequency range. The sensor element has excellent stability, which ensures reliable sensitivity over long periods of time.

Because of its small size, the TC4038 is an ideal hydrophone for acoustic measurements in near fields.

The sensor element is permanently encapsulated in high density polyurethane to ensure long term reliability. The strain relief and outer jacket of the cable is also made of high density polyurethane.

TC4038 can be used in sea or fresh water.

TC4038 can be used as a projector but is not designed for it. Do not exceed 25Vrms. Duty cycle need to be low around 1%.

## TECHNICAL SPECIFICATIONS

Usable frequency range:	10kHz - 800kHz
Linear frequency range:	100 to 500kHz $\pm 3$ dB
Receiving sensitivity nominal:	-228dB $\pm 3$ dB re 1V/ $\mu$ Pa (at 100kHz)
Horizontal directivity pattern:	Omnidirectional $\pm 2$ dB (at 100kHz)
Vertical directivity pattern:	60° to 120° $\pm 3$ dB (at 100kHz)
Nominal capacitance:	0.5nF (TC4038-1 w 2m of cable) & 1.3nF (TC4038-4 w 10m of cable)
Max. operating pressure:	0.2MPa = 2atm
Max. operating depth:	20m
Max. survival depth:	30m
Equivalent noise:	80dB re 1 $\mu$ Pa (with VP1000 Pre-amp $\sqrt{\text{Hz}}$ at 1 kHz)
Max. sound pressure:	0.3M Pa
Operating temperature range:	-2°C to +40°C
Storage temperature range:	-30°C to +50°C
Leakage resistance:	>2Gohm
Impedance:	100Mohm (min. input for min. noise down to 10kHz lower frequency limit)
Weight in air:	20g
Cable (length and type):	2m double-shielded low noise FEP. Insulated OD 1.65mm
Housing material:	Stainless Steel AISI 304
Connector:	LEMO FFA.00.250.NTAC



## PRODUCT BENEFITS

- Reference hydrophone for high frequencies
- Linear receiving response from 100kHz to 500kHz
- Individually calibrated
- Calibration as standard reference hydrophone traceable to national standards established at NPL, UK



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## Broadband Miniature Probe Hydrophone

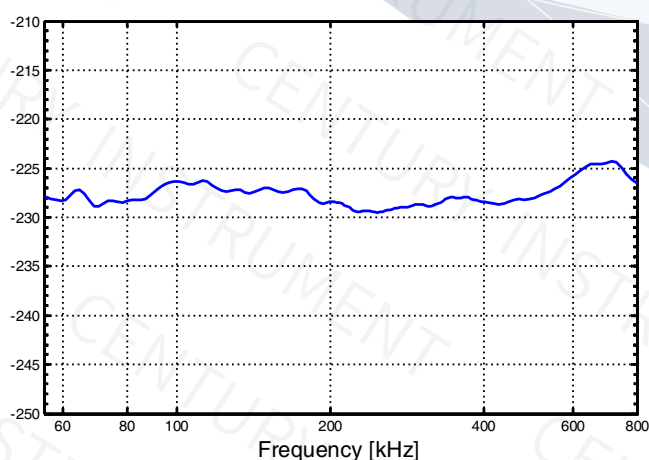
### Documentation:

Receiving sensitivity:  
50kHz to 800kHz

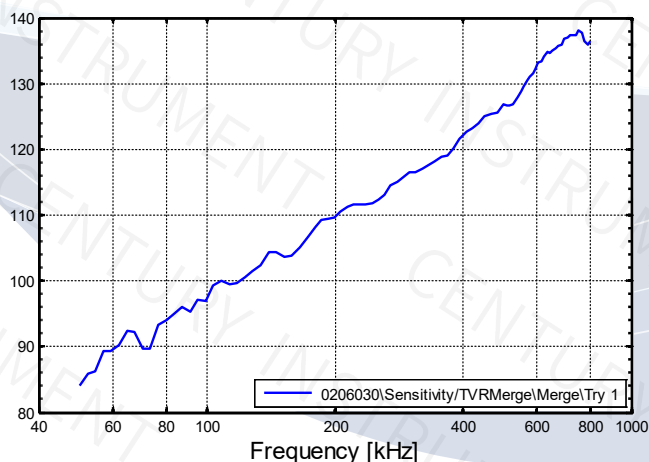
Horizontal directivity:  
250kHz

Vertical directivity:  
250kHz

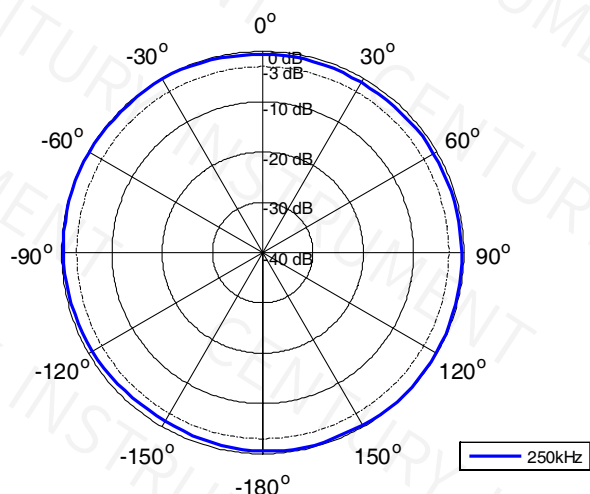
Receiving Sensitivity [dB re 1V/μPa @ 1m]



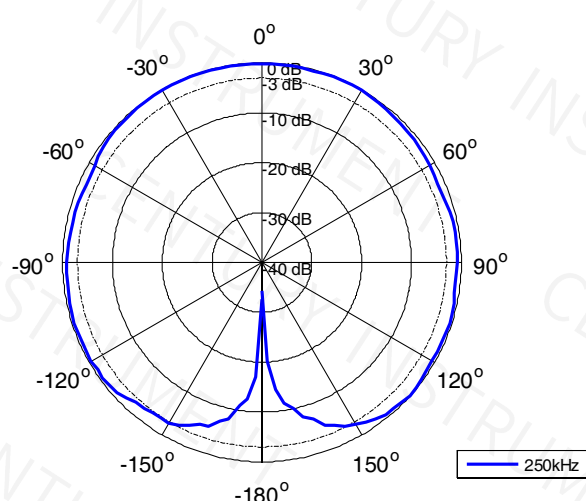
Transmitting Response [dB re 1μPa/V @ 1m]



Horizontal directivity pattern



Vertical directivity pattern



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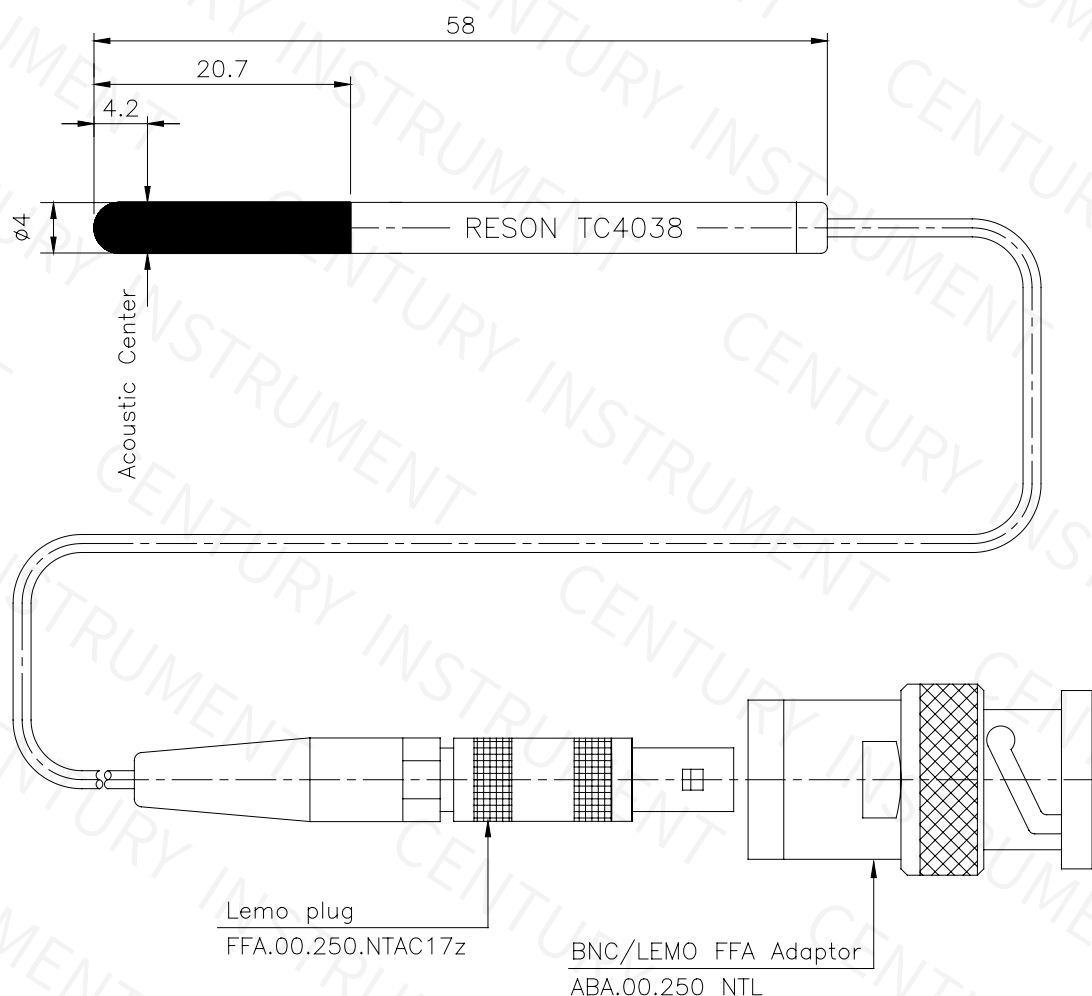
## Broadband Miniature Probe Hydrophone

### Accessories included:

- BNC to MEMO FFA Adapter: 1 pcs Lemo part No.: ABA 00250 NTL

The calibration as standard reference hydrophones are traceable to national standards established at NPL (available upon request).

### Outline Dimensions



For information on export control regulations on this product, please refer to [www.teledynemarine.com/reson](http://www.teledynemarine.com/reson)



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