



- Wide frequency range
- Spherical differential sensor
- Differential in/output amplifier
- Single or differential output
- Self supporting cables to 1000m
- IVC calibration

### TC4042

The TC4042 is a spherical, low-noise hydrophone with 20dB differential pre-amplifier. The hydrophone provides a single output mode.

The single-end output mode is established with a four conductor cable. The built-in preamplifier has the capability of driving cables of more than 1km.

The TC4042 features an insert voltage calibration facility (IVC), which enables remote testing of the hydrophone condition.

#### TECHNICAL SPECIFICATIONS

Receiving Sensitivity, typical:	-173dB re 1V/uPa (2.2 mV/Pa)
Useable frequency range:	5Hz to 85kHz
Linear frequency range:	15Hz to 45kHz +1/-5dB
Horizontal directivity:	±2dB at 40kHz
Vertical directivity:	±3dB at 40kHz over 270 deg.
Max. operating depth:	1000m
Survival depth:	1200m
Operating temperature range:	-2°to +55°C
Storage temperature range:	-30°to +70°C
Preamplifier gain:	+20dB
Max. voltage output:	3Vrms (at 12V supply) 7Vrms (at 24V supply)
Current consumption:	≤9mA (at 12V supply) ≤22mA (at 24V supply)
Output impedance:	10Ohms + 100µF
High pass filter:	15Hz (-3dB)
Low-pass filter:	150KHz (-3dB)
Hydrophone weight:	450gr.
Housing material:	Alu Bronze AlCu10Ni5Fe4
Encapsulating polymer:	Special formulated NBR



NBR means Nitrile Rubber

The NBR rubber is first of all resistant to sea and fresh water but also resistant to oil. It is limited resistant to petrol, limited resistant to most acids and will be destroyed by base, strong acids, halogenated hydrocarbons (carbon tetrachloride, trichloroethylene), nitro hydrocarbons (nitrobenzene, aniline), phosphate ester hydraulic fluids, Ketones (MEK, acetone), Ozone and automotive brake fluid.

**Documentation:**

Individually calibration curves:

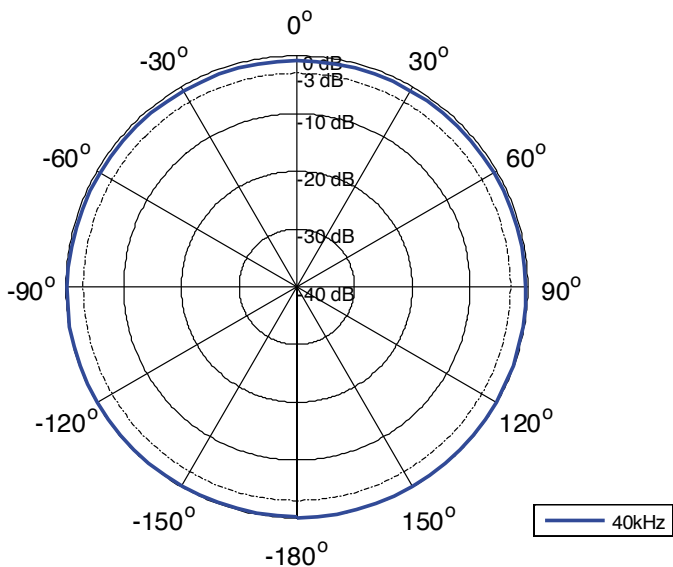
Receiving sensitivity:  
At 5kHz to 90kHz

Horizontal directivity:  
At 40kHz

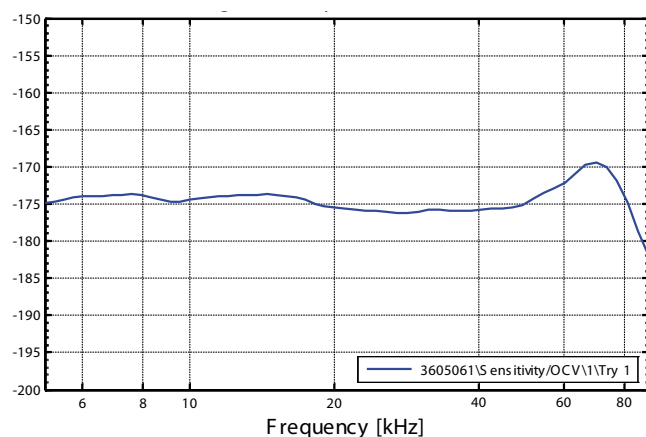
Sensitivity at ref.: frequency:  
250Hz

Vertical directivity:  
At 40kHz

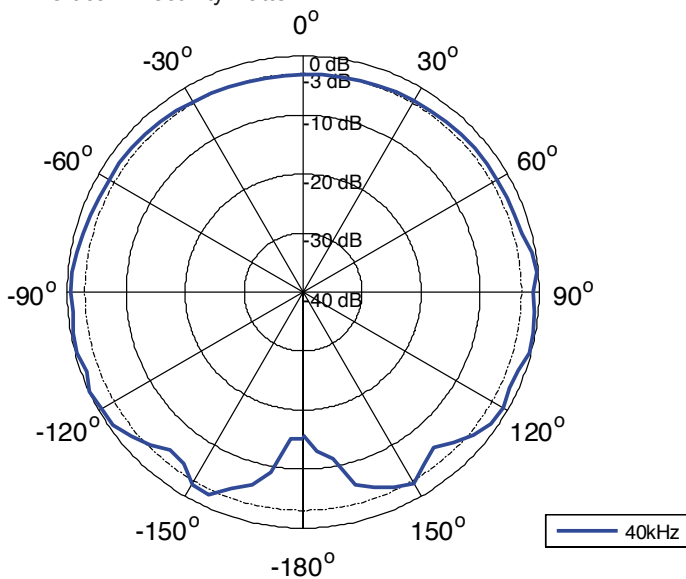
Horizontal Directivity Pattern



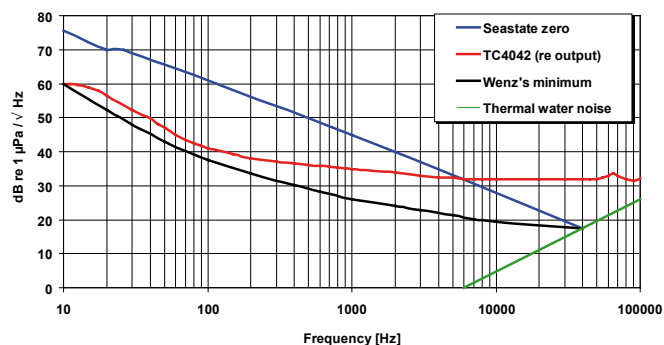
Receiving Sensitivity [dB re 1V/μPa @ 1m]



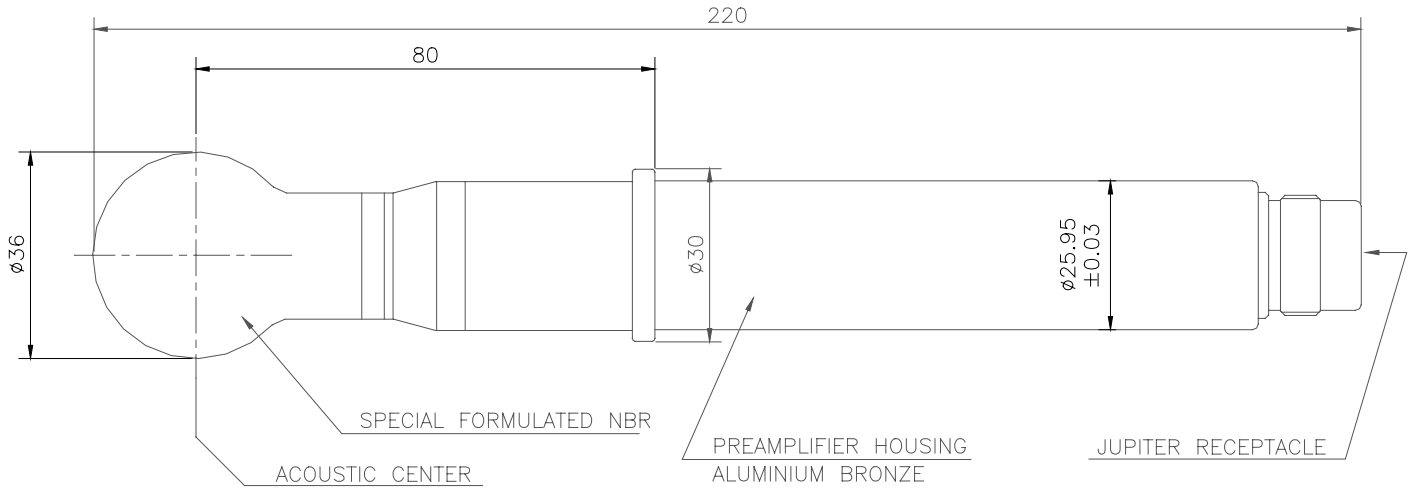
Vertical Directivity Pattern



Typical Equivalent Noise Pressure Curve



### Outline Dimensions



### Note:

#### Insert calibration:

The recommended insert calibration voltage is 2Vp. Insert voltage signal attenuation: -30dB.

Too high insert voltage may damage the insert resistor do not exceed 5Vp.

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



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