

T1 Hydrophone Calibrator



www.colmaritalia.it



The T1 Acoustic Calibrator consists in a **“standing wave tube”** and provides a rapid, portable, and reliable hydrophone calibration in the low frequency range (100Hz –1.8kHz).

The calibrator consists of an open-ended column of water that is excited by an electrodynamic driver. The calibration is given by comparison method using a calibrated hydrophone as reference.

Both preamplified and not preamplified hydrophones can be calibrated due to the automatic gain control (AGC).

Main parts of the system are:

- 1) Stainless steel hose
- 2) 19” Rack Control Unit
- 3) Colmar AR0190XS reference hydrophone

System is shipped in Pelicase mod 1660, total weight 40kgs.

User friendly, allows to perform sweep or fixed frequency tests by selecting:

- Start and stop frequency
- Frequency step (10 Hz to 100Hz)

AGC (0-40dB) adjusts the signal level of the device under test (DUT)

Internal 32 bit micro-processor, SD 8GB memory card for storing data., visible as storage mass once connected to a PC. Display visible even under direct sun light

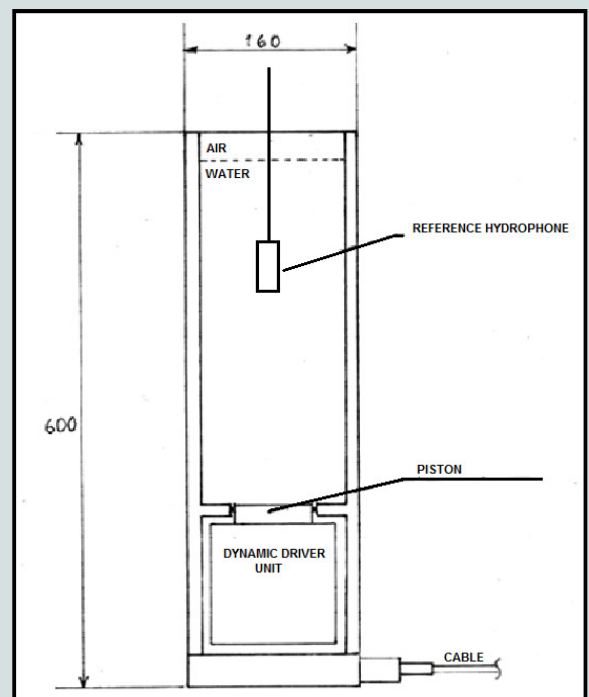
BNC front panel connectors for:

- Monitor transmitted signal for calibration
- Monitor reference hydrophone
- DUT (device under test) hydrophone input
- REF (reference) hydrophone input
- USB output for data. Download and graph visualization.

Calibrated Colmar hydrophone for reference

Configurable with different types of reference hydrophones

Max suggested dimensions for DUT hydrophones are 30mm in diameter and 100mm in length.

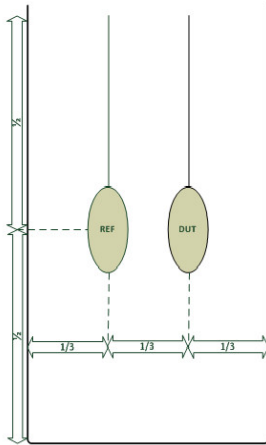


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Quick Start Guide

- 1) place the two transducers on the support and make sure they are in the acoustic center (see picture below)



- 2) Connect GROUND port (rear panel) to EARTH
- 3) connect the reference transducer to the REF IN input and the DUT transducer to the DUT IN input
- 4) Turn the GAIN potentiometer to the maximum value
- 5) From the menu select TEST, ACOUSTIC CAL, then select FIX CAL or SWEEP CAL
- 6) Set the required parameters and start the calibration
- 7) At the end of the calibration, connect the device to a PC and download the file containing the calibration data

Before each calibration session, the system performs a test at 600Hz in order to verify the connections and signal transmissions.

After the selection of Fix or Sweep acoustic test, the GAIN volume knob must be turned to maximum value.

The calibrator for each frequency select the best attenuation of the ref and the best GAIN of the DUT in order to perform a reliable calibration with optimum levels.

If these levels are not reached the systems gives an ERROR warning.

After each test the unit generates a CSV (Comma Separated Value) file with the generated frequencies and the acoustic pressure measured for each step. The files are saved with an identifier (Sweep or Fixed) followed by an incremental index (eg Sweep0001.csv).

The unit, connected to the PC via USB, is seen by the PC as a mass storage unit, where the tests files are saved.

By importing these data a sensitivity graph of the test is generated.

Performs Acoustic calibration in water from 100Hz to 1.8kHz by using reference hydrophone - Sweep or fixed frequency tests - Sweep step selectable - Graphs and data available for download

