

DG1330 Hydrophone



The DG1330 is a digital omnidirectional hydrophone, a professional tool specifically designed and produced for the Km3Net project, where our hydrophone was selected by INFN to record acoustic signals at depths of up to 3500m.



Two channels with different gain

Very low self noise on both channels

Wide frequency range

High sensitivity, high dynamic range

24Bit, up to 216 kHz sample rate

External 25MHz digital clock input or internal clock

AES/EBU interface

Customizable

This new version of Colmar digital hydrophone has been engineered with similar electronics and performances from the original DG0330 but employs different mechanical solutions to ensure an increase in performance and reliability.

Apart from the AC-Ground copper ring, the external POMC jacket has no external metallic parts to avoid any issue associated with galvanic corrosion, thus permitting very long term deployments. The internal stainless steel core guarantees at the same time resistance against hydrostatic pressure, making the DG1330 an hydrophone suited for ultra deep applications.

The sensor consists of a spherical omnidirectional piezo-ceramic element, interfaced to an analogue board that splits the signal in two channels with different gains (+46 dB and +26dB respectively). The two analogue signals are then sampled by a stereo 24bit ADC (Analog to Digital Converter) and converted into AES protocol using a DIT (Digital Interface Transmitter).

The time latency of the hydrophone electronics (including 4 m of cable) has been measured using a dedicated setup and its value is $50.65 \pm 0.25 \mu\text{s}$ for the low gain channel and $50.71 \pm 0.25 \mu\text{s}$ for the high gain channel.

The electronic card is protected by the internal stainless steel core and, differently to the previous version of the digital DG0330 hydrophone, it can be substituted if necessary.

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Working band:	5-90.000 Hz
High pass filter on preamplifier :	700 Hz (on demand)
CH1 output sensitivity:	-156dB re 1V / uPa @ 5kHz
CH2 output sensitivity:	-176 dB re 1V / uPa @ 5kHz
Directivity :	Spherical - Omnidirectional
Max working depth :	3500 m
Gain @5kHz:	46 dB (CH1), 26dB (CH2)
Equivalent input acoustic noise @5kHz:	34 dB re 1uPa / sqrtHz
Input impedance:	10 MOhm
Supply voltage range:	9 -18 Vdc
Current consumption:	100mA @ 12 Vdc
Output:	AES3 protocol
Weight in air:	1600 gr with 4m cable
Body construction:	POMC (stainless steel inner core)
Dimensions:	330 x 52 mm

