



UNDERWATER SPEAKERS

HEAVY DUTY TRANSDUCERS FOR POWERFUL UNDERWATER SOUND

Lubell Labs, the world leader in portable and in-wall underwater speakers.

Underwater acoustics research
Bioacoustics of Marine Mammals
SCUBA Diving
Synchronized swimming

Sound Level

Up to 180 dB with only 20 V rms input voltage

Frequency band

Wide band coverage spanning an interval from 200 Hz to 20 kHz

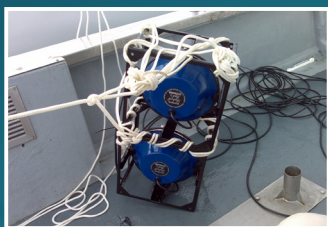
Durability

Its extremely rugged construction provides long durability
(up to 5 years warranty)



For application in oceans, lakes, tanks, or pools.





DESCRIPTION

The LL916 is an economical yet powerful piezoelectric underwater speaker developed, patented, and manufactured by Lubell Labs Inc. (Columbus, Ohio). The LL916 series continue to set the world record for having the widest frequency response and output level of any commercial underwater speaker made, at a price that is reasonable and affordable. Because of its rugged PVC construction and cage mounting system, the LL916 is nearly immune to damage, and may be used in test tanks, swimming pools, rivers, lakes, and oceans. The LL916 is provided with choice of audio isolation transformer box with cord, allowing phone jack connection to popular commercial sound amplifiers of various power and impedance ratings.

APPLICATIONS

Lubell underwater loudspeakers and systems find application in research in underwater acoustics (including marine bioacoustics, acoustic tomography, underwater communications, etc.), SCUBA instruction and diver recall, and synchronized swimming. These underwater speakers are very popular for its exceptional performance and easy applicability.

REFERENCES

- READ** C. Soares, S. M. Jesus, P. Hursky, T. Folegot, et al. *Random array of drifting acoustic receivers (RADAR'07)*. Technical report. Faro, Portugal. July 2007.
- READ** C. Soares, F. Zabel, and C. Martins. *An acoustic inversion technique using a single autonomous hydrophone: Experimental results*. In Proc. INTERNOISE 2010. Lisbon, Portugal. 13-16 June, 2010.
- READ** C. Soares, E. Cruz, F. Zabel and A. Moura. *Environmental Inversion with an Autonomous Hydrophone in a Wave Energy Device Deployment Site*. In Proc. Underwater Acoustics Conferences 2014. Island of Rhodes, Greece. 22-27 June, 2014.
- READ** P. Felisberto, S. M. Jesus, F. Zabel, et al. *Acoustic monitoring of O₂ production of a seagrass meadow*. Journal of Experimental Marine Biology and Ecology. Vol. 464, pages 75-87. March 2015.

SPECIFICATIONS

Frequency Response

200 Hz - 21 kHz.

Sound level

180 dB re 1μPa @ 1 m (at 1 kHz).

Maximum Cable Voltage/Current

20 Vrms / 3A (100% duty cycle).

Maximum power rating

38 W.

Maximum operating depth

15 m.

Finish

Blue PVC.

Cable

8 m length 18/3 PVC (or customised).

Cable Termination

3-pin proprietary (Conxall 3182-3PG-524) mates with transformer box.

Weight

7 kg in air; 1.4 kg in water.

Dimensions

Speaker: 23 cm diameter; 15 cm axial length;

Cage: 27 cm×27 cm×20 cm.

Transformers

AC102 (50 W; 32 Ω; 40 V rms); AC201 (50 W; 2 Ω; 10 V rms); AC202 (50 W; 8 Ω; 20 V rms); AC205C (38 W; 16 Ω; 25 V rms); AC203E (80 W; 8 Ω; 25 V rms de 8 Ω air output and attenuator); AC211 (200 W; 10.7 Ω; 40 V rms; 8 Ω air output and attenuator).

Warranty

5 years.

THE LL1424HP ACOUSTIC TRANSDUCER

Frequency Range

200Hz - 9kHz.

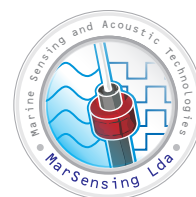
Sound Level

197dB/μPa/m @ 600Hz
(80 V rms applied at cable end).



MARSENSING LDA

Centro Empresarial Pav. A5, Campus de Gambelas
8005-139 Faro - PORTUGAL
web: www.marsensing.com
e-mail: contact@marsensing.com
phone: +351 913729660



Official dealer for:

ALGARVE 21
PROGRAMA OPERACIONAL

QR
QUADRO
DE REFERÊNCIA
ESTRATÉGICO
NACIONAL
PORTUGAL2007-2013



UNIÃO EUROPEIA
FEDER

