

Lubell Labs LL916, LL916H, and LL916C Pistonic Piezoelectric Underwater Speakers



The portable Lubell Labs LL916 series underwater loudspeakers are efficient full-range pistonic piezoelectric underwater acoustic transducers developed and manufactured by Lubell Labs of Columbus, Ohio USA, the inventor of the underwater speaker. Their unique design (Patent # 3391385) provides the *highest output levels* and *widest frequency response* of any commercial underwater speaker on the market, making product suitable for synchronized swimming, lap swimming, diver recall, and dozens of other applications in the pool, river, and ocean. And unlike some competitors who cut corners and run over a thousand volts thru their underwater speaker cables, Lubell Labs follows safe engineering practices by operating at voltages of 20 volts or less on the underwater speaker cable. **No other brand compares!**

The Lubell LL916C is our cage mounted underwater speaker, which allows placement on bottom of swimming pools or lakes, or for mounting to piers, etc. in the lake or ocean. The cage also provides added protection to the sensitive internal electronics against breakage due to accidental drops. The LL916C is available with choice of 25 foot (7.62 m), 50 foot (15.24 m), 100 foot (30.48 m), 150 foot (45.72 m), or 200 foot (60.96 m) cable lengths. The LL916C includes a transferable 5 year limited warranty. The warranty does not cover breakage of speaker due to dropping or overpowering, or failure of cable due to abuse, so please coil cable properly (video) after each use to avoid kinks, handle with care, and follow instructions.

The Lubell LL916H is our harness mounted underwater speaker, which offers lower profile and lower cost, but offers no protection against damage from accidental drops or blows. The LL916H is available with choice of 25 foot (7.62 m), 50 foot (15.24 m), 100 foot (30.48 m), 150 foot (45.72 m), or 200 foot (60.96 m) cable lengths. The LL916H includes a transferable 2 year limited warranty. The warranty does not cover breakage of speaker due to dropping or overpowering, or failure of cable due to abuse, so please coil cable properly (video) after each use to avoid kinks, handle with care, and follow instructions.

The Lubell LL916 underwater speaker is included with the Lubell 9484 in-wall underwater speaker kit, for integration during construction phase of new concrete and gunite swimming pools.

Because the Lubell LL916C and LL916H underwater speakers have special safety requirements and present a capacitive load, they are always sold and used with [Lubell Labs AC series transformer boxes](#). These custom transformer boxes incorporate a tuned RLC circuit with isolated winding transformer and 50 watt series resistor in order to provide broadband performance, impedance matching, current limiting, and electrical isolation of the attached LL916 underwater loudspeaker. Some of the more popular boxes include the [AC202C](#) for use with the portable [CAWSS-Stageman](#) system for synchronized swimming, and the [CAWSS-APEX](#) system for competitive swimming. Also available is the [AC102C](#) and [AC211C](#) for connection to amplifiers between 150 watts to 200 watts @ 8 ohms (such as the Crown XLi 800). *Always match the wattage rating of the Lubell transformer box with the speaker output wattage rating of the amplifier that it will be used with.*

- **Transducer Type:** Piezoelectric Pistonic Underwater Acoustic Transducer
- **Construction:** 150 mil PVC injection molded over die-cast AL pistons, with redundant silicone and TPV seals
- **For use in:** Pool water, freshwater, saltwater
- **Frequency Response:** 200 Hz - 23 kHz (500 Hz - 21,000 Hz +/-10 dB)
- **Maximum Output Level:** 180 dB/uPa/m @ 1 kHz
- **Maximum Cable Voltage/Current:** 20 Vrms / 3A (100% duty cycle)
- **Recommended Amplifier Power:** 78 watts @ 8 ohms (25 Vrms) w/AC205C xfmr box
- **Operating Depth Range:** 1 meter - 18 meters
- **Operating temperature:** 0°C - 41°C (32°F - 105°F)
- **Standard Cable:** 7.62 meter (25') 0,785 mm² (18/3) cable fitted with 3-pin Conxall 3182-3PG-524 ([pic](#), [wiring](#), [order](#)). Other stock lengths available including 50 foot (15.24 m), 100 foot (30.48 m), 150 foot (45.72 m), and 200 foot (60.96 m).
- **Weight (in air):** **LL916H** - 5.67 kg (12.5 lbs); **LL916C** - 8.0 kg (17.6 lbs) with standard 25 foot (7.62 m) cable
- **Dimensions:** **LL916 & LL916H** - 234.95 mm (9.25 inch) diameter x 152.4 mm (6 inch) axial length; **LL916C** - 279.4 mm x 279.4 mm x 198.12 mm (11"x11"x7.8") HWD
- **Documents and Data:** [Instructions](#), [brochure](#), [SPL plot](#), [TVR on/off axis plot](#), [Polar plot](#), [Impedance plot](#), [Receive sensitivity plot](#), [CE Certification](#), [RoHS/REACH Declaration](#), [Cage dwg & install](#), [connector replacement](#), [warranty](#)
- **Warranty:** LL916H harness mounted underwater speaker: 2 year limited; LL916C cage mounted underwater speaker: 5 year limited; AC series transformer boxes: 2 year limited
- **Required Inline Transformer Box:** AC102C (200 watts / 40 Vrms), AC202C (50 watts / 20 Vrms), AC203E splitter (78 watts / 25 Vrms), AC205C (78 watts / 25 Vrms), AC211C splitter (200 watts / 40 Vrms). More transformer box info at this [link](#).
- **Complete Systems:** Lubell [CAWSS-STAGEMAN](#) Bluetooth Sound System (for Artistic Swimming); Lubell [CAWSS-APEX](#) Bluetooth Sound System (for Competitive Swimming)
- **PRICE:** North American customers, please call or [email](#) for price. International customers, please contact your local [authorized dealer](#).

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