



Portable LL916C & LL916/H Underwater Speaker Instructions

AMPLIFIER, TRANSFORMER, AND POWER REQUIREMENTS:

1. CAUTION: For reasons of safety, an AC mains operated amplifier used with an underwater speaker must meet the following minimum requirements: 1) UL or ETL label on the rear panel, 2) Grounded 3-prong power cord, 3) Proper output rating (wattage & ohms) to match Lubell transformer box rating, 4) Class AB output circuitry recommended for stability. The amplifier and transformer box must be used in a dry area at least 10' away from the pool, and must be connected to a GFCI protected AC outlet.
2. CAUTION: For reasons of swimmer safety and proper amplifier operation, the Lubell underwater speaker must be used with the correct Lubell Isolation Transformer Box. The Lubell LL916C (caged) and LL916H (harnessed) underwater speakers are rated at **20 volts rms** maximum, and are fitted with a Conxall 3182-3PG-524 3-pin (not XLR) connector that connects to mating Conxall 4182-3SG-300 connector on Lubell transformer boxes. Pin 3 hot. Warning: Do not exceed wattage rating printed on the Lubell transformer box label, and use/store box in dry location only.

CHOOSE THE CORRECT LUBELL TRANSFORMER BOX:

Please call us for assistance in choosing the correct transformer, speaker, and amp for your application.

AC102C: For connection to **SPEAKER OUT** connector on UL listed powered mixers and power amplifiers up to 200 watts @ 8 ohms (40 Vrms) per channel. Lowers amplifier voltage to 20 volt rating of LL916C or LL916H underwater speaker. Connect two AC102C boxes / LL916C (one per channel) to the Crown Xli 800 for full 50 meter Olympic pool coverage.

AC202C: Included with the Chiayo StageMan and APEXPro CAWSS sound systems, or for connection to Lubell approved amplifiers rated up to 50 watts @ 8 ohms (20 Vrms), or 100 watts @ 4 ohms (20 Vrms). 1/4" mono phone jack input; Includes HOSA SKJ-600 2 ft speaker cable with 1/4 TS plugs.

AC205B: Included with the Lubell 9484 in-wall pool speaker kit. 25V screw terminal input, 20V screw terminal output for connection to LL916-XXX underwater speaker. For connection to UL or ETL listed commercial sound amplifier having 25V constant voltage output, allowing 37.5 watts power consumption for each LL916 / AC205C connected in parallel. Use one Russound A2100 amplifier (8 ohm mode) to power one LL916-XXX speaker per channel (2 total), and link multiple amplifiers for additional speaker pairs. Also available is InterM A-120 powered mixer or Bosch PLE-1P120-US power amplifier for 1-3 speakers, and PLE-1P240-US power amplifier for 4-6 speakers.

AC205C: Same as above except 1/4 in mono phone jack input and Conxall 4182-3SG-300 output for connection to one Lubell LL916C or LL916H underwater speaker.

AC203E Circuit Master: For connection to the 4 ohm output (21.9 Vrms) of the InterM A-120 mixer amplifier. Has single Conxall 4182-3SG-300 output connector for connection to mating Conxall 3182-3PG-524 on the Lubell LL916C or LL916H underwater speaker. Also has one 8 ohm air speaker output jack (1/4") with autoformer volume control for connection to the EV ZX1 air speaker. Set volume of underwater speaker using amplifier master volume control, then set volume of air speaker using autoformer volume control on box.

AC211 Circuit Master: Same as above except 200 watt 8 ohm input rating. For a powerful 50 meter pool competition system, connect two AC211 boxes (one per channel) to the Crown Xli 800 power amplifier. Connect one LL916C-100 underwater speaker and one EV ZX1-90 air speaker to each AC211 box, and position speakers at the 1/4 and 3/4 positions down the length of the 50 meter pool.



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SETTING UP SYSTEM:

It is important for the Sound Engineer to read this guide and all equipment manuals before using equipment.

1. Equipment operator should wear dry rubber soled shoes while setting up and operating equipment.
2. Inspect all speaker cables and power cables before, during, and after each use. If cable or speaker coating becomes damaged, return to Lubell Labs for service before using equipment. Do not attempt self-repair of cords or equipment -- return to manufacturer for factory service only. Use a cord protector over exposed cords to help prevent any damage or tripping.
3. Set up wooden or plastic equipment table in dry area only, a minimum distance of 10' from the water. Table typically located at deep end corner of natatorium. Keep all electronic equipment (amplifier, CD/tape players, etc.) on this table. Connect all AC power cords to a audio grade power strip. Connect power strip to GFCI outlet only; Test outlet before each use.
4. Attach a rope to the LL916 cage, or to the stainless steel link on the LL916H underwater speaker harness. Do not lift the underwater speaker by the speaker cable, or drop the underwater speaker, as this will result in non-warranty damage.
5. Place the underwater speaker on a towel on the pool deck. Carefully unwind the cable in a straight line, avoiding any kinks. Rewind cable around cage in a similar manner.
6. When placing the underwater speaker in the water, make sure the connector stays dry, and that the speaker and cord is not scraped against the pool or the deck. Using the rope, lower the underwater speaker to a minimum depth of 6' -15' (1.83 -4.57 meters); Tie rope to gutter hook or place caged speaker on pool bottom.
7. Connect 3-pin connector on end of LL916C/H underwater speaker cord to mating 3-socket connector on transformer box (located on equipment table). Cover cord with cord protector to prevent tripping over cord.
8. Connect input **AMP** side of Lubell transformer box to amplifier per guide on previous page.
9. Do not dive in vicinity of underwater speaker. Keep swimmers a minimum distance of 6' away from the speaker during use. Avoid excessive sound levels and feedback.
10. Always vacate the water during inclement weather and lightning storms.

