



The LL964H (harness mount) and LL964C (cage mount) are high-performance piezoelectric underwater speakers developed, patented, and manufactured by Lubell Labs of Columbus Ohio. Because of the higher impedance of models LL964C and LL964H, long cable lengths with minimal insertion loss are possible using standard SO cable. For instance, four LL964C/H underwater speakers each having a 1.5km long 14/2 AWG cable may be connected in parallel (via an Ohmite [D225K50RE](#) adjustable power resistor) to each channel of a Crown [XLi800](#) power amplifier, providing a resultant sound pressure level of 180dB/uPa/m at each of the eight underwater speakers! Because of its rugged die-cast aluminum housing with 150 mil PVC overmold, the LL964C/H may be used in rivers, lakes, and ocean without worry of corrosion. The LL964C and LL964H are for sale to OEM manufacturers, the military, and ocean engineering professionals only.

Lubell Labs also offers the portable model [LL916C/H](#) underwater speaker for competitive and synchronized swimming, and the permanent mount [9484](#) underwater speaker for new pool construction.

- **Type:** Piezoelectric dual-piston Tonpiz (US Patent number 3,391,385)
- **Frequency Response:** 200 Hz - 20 kHz
- **Outlet Level:** 180dB/uPa/m @ 1kHz @ 42 Vrms drive
- Nominal Impedance: 32 ohms (varies with frequency and cable length/gauge)
- **Maximum Voltage:** 50 Vrms
- **Maximum Current:** 1.5A (100% duty-cycle)
- **Required External Resistance:** 32 ohms total - combination of round-trip cable resistance + series [adjustable resistor](#))
- **Operating Depth:** 6' - 50' (1.83m - 15.24m)
- **Finish:** Blue PVC
- **Cable:** Choice of attached 25', 50', 100', 150', or 200' 18/3 PVC jacketed cable. (See OPTIONS below for bulkhead connector and mating SO cable.)
- **Net Weight:** **LL964H-025** - 5.4 kg (12.0 lbs); **LL964C-025** - 8.0 kg (17.6 lbs) with attached 25' (7.62m) cable
- **Dimensions:** **LL964H** - 233.68 mm (9.2") diameter x 147.32 mm (5.8") axial length; **LL964C** - 279.4 mm x 279.4 mm x 198.12 mm (11"x11"x7.8") HWD
- **Country of Manufacture:** USA
- **Harmonized Tariff Code:** 8518.21.0000
- **Documents:** [Hook up diagram](#), [CE Certification](#), [RoHS/REACH Declaration](#), [protective cage details](#), [Instruction guide](#)
- **Warranty:** LL964H harness mounted underwater speaker: 2 year limited; LL964C cage mounted underwater speaker: 5 year limited
- **OPTIONS:** The LL964C is available with a Subconn MCBH3MSS bulkhead connector (order LL964C-MCBH) and mating 18/3 SO underwater pluggable cable (50' standard, custom length/gauge special order)
- **Price:** Call