



UNIVERSITY SOUND
A DIVISION OF LTV LING ALTEC, INC.



Specifications and Instructions



Model ES-75 Electronic Siren Speaker

SPECIFICATIONS

Power Handling Capacity:	75 watts RMS
Frequency Response:	400-7,000 Hz
Sound Pressure Level:	128 dB*
Dispersion Angle:	90°
Impedance:	16 ohms
Air Column Length:	1½ ft.
Low Frequency Cut-Off:	350 Hz
Dimensions:	Bell diameter—8¾" Horn length—10" Height—9½" (overall)
Net Weight:	7½ lbs.

* 4 ft. on axis, at rated power input. Reference .0002 dynes/cm².

DESCRIPTION AND APPLICATION

The University Sound Model ES-75 is a rugged, high-efficiency, weatherproof reflex speaker designed especially for mobile electronic siren applications. A power rating of 75 watts RMS with siren signal input assures reliable, trouble-free, uninterrupted service under the most extreme operating conditions. This model is equipped with a strong 1/16" formed steel mobile mounting bracket as standard equipment. The specially designed bracket allows the ES-75 to be mounted on a fender, the roof or under the hood of all commercial or public-service emergency vehicles. A perforated 1/16" steel wind-screen, located in the speaker's bell, minimizes the entrance of water or foreign particles, such as rocks, insects, etc., into the horn. Complete all-weather protection for the ES-75's built-in high power drive unit is provided by a spun aluminum cover. An extruded-rubber gasket is utilized at the junction of the driver-cover and horn to provide a weather-tight seal. Lead entrance into the cover, for connection to the driver's voice-coil terminals, is provided in its lower side and through a rubber grommet. All metal parts of the horn, driver and mounting bracket are electroplated (aluminum anodized) and finished in a baked-on acrylic paint for maximum corrosion protection. Color finish is light gray. If another color is desired, such as to match the vehicle's finish, the ES-75 is easily repainted to suit the owner's requirements.

The ES-75's driver unit is especially designed for this speaker and further protected from damage by the use of a completely water-tight heavy die-cast outer case. The driver's 2" diameter voice-coil and linen base

molded phenolic diaphragm are tropicalized for resistance to high humidity and fungus. An Alnico Vb magnetic structure provides high flux density and peak electromechanical efficiency. Manufacturing tolerances (some as small as 1/1000 of an inch) are precisely maintained during assembly to assure long-life adherence to original engineering specifications. The driver unit is fully covered by University's exclusive 5 year warranty against defects in assembly or materials. A pre-wired 18" waterproof cable is supplied with the speaker for convenience in installation and wiring. The controlled frequency response of the ES-75, which ranges from 400 to 7,000 Hz, is specially chosen to provide maximum efficiency over the range of frequencies normally encountered in most electronic sirens. Its narrow sound dispersion angle of 90° provides a measure of protection for the operator from the normally high sound intensities present directly in front of the speaker. This means that a much lower ambient noise level is present in the cab of the vehicle when the siren is operating. The sound is directed ahead and to each side of the vehicle, rather than back into the vehicle.

Because of its low profile design, the Model ES-75 is ideal for vehicle roof-top mounting. An over-all height of only 9½", including the mounting bracket, is less than many revolving beacons normally mounted in roof-top positions. An over-all length of only 10" allows easy under-hood or behind-grille mounting for most vehicles. In appearance, the ES-75 is streamlined and modern in shape and lends itself to the general contour of most emergency vehicles.

The Model ES-75 is recommended for use with electronic sirens requiring an 8 or 16 ohm voice-coil impedance. Two ES-75's wired in parallel will provide a power rating of 150 watts and an impedance of 8

ohms. In addition to siren applications, the ES-75 is easily used with many other electronic warning devices, such as buoys, fog horns, etc.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS


Siren speaker shall be University Sound Model ES-75. Type shall be waterproof, hyperbolic reflex equipped with built-in driver unit and designed specially for mobile electronic siren applications. Horn and driver-cover shall be spun aluminum with extruded rubber gasketing provided at junction to insure water-tight seal. A perforated 1/16" steel wind-screen to prevent entrance of foreign particles into horn shall be located in bell mouth. Sound dispersion angle shall be 90° and air-column length 1½ ft. Low frequency cut-off of horn shall be 350 Hz. Driver unit shall have a power handling capacity of 75 watts RMS with siren signal input. Voice-coil impedance shall be 16 ohms. Frequency response of speaker shall be 400-7,000 Hz. Driver unit shall employ rim-centered mechanism, with separate replaceable split path palate-voice-coil/diaphragm assembly. Magnetic structure shall contain at least 15¾ oz. of Alnico Vb magnet. Voice-coil shall be 2" in diameter and diaphragm shall be linen base molded phenolic material. Voice-coil/diaphragm assembly shall be tropicalized for resistance to high humidity and fungus. A 1/16" formed steel mobile mounting bracket designed for roof, fender or under-hood mounting shall be provided. Rubber grommet-type feet shall be supplied with mounting bracket to insulate speaker from vehicle body. Four holes shall be provided in brackets base for mounting purposes. All metal parts of speaker shall be electroplated (aluminum anodized) and finished in a baked on acrylic paint. Finish color shall be light gray. Speaker shall have over-all length of 10" with bell-diameter of 8¾". Maximum over-all height of speaker shall be 9½". Net weight shall be 7½ lbs. University Sound Model ES-75 is specified.

INSTALLATION INSTRUCTIONS

Physical Installation After determining the location where the ES-75 is to be mounted, it is recommended that the mobile mounting bracket be removed and used as drilling template. Removal of the bracket is accomplished by removing the two 6/32" machine screws, nuts and lockwashers from the lower part of the extreme front of the bell, and the 5/16" hex head bolt and lockwasher from the rear center of the driver-cover. Be sure to save this hardware as it will be needed when reassembling horn and bracket. Bracket mounting hardware (not supplied by University) should be 7/32" or #12 size. Machine screws, nuts and lockwashers should be used for mounting whenever possible. However, metal screws may be used if necessary such as when roof mounting the speaker. The bracket should be mounted to the vehicle and the horn then reattached. Be sure to drill a suitably sized hole in the mounting surface so the voice-coil wires may be run on the interior of the vehicle. A rubber grommet should be installed in the hole drilled for the wires to prevent accidental shorting of the voice-coil to the chassis.

NOTE: Use a flat washer of suitable size between the head of the mounting bolt and the rubber grommet in the bracket.

Electrical Installation The Model ES-75 is supplied with a rubber covered waterproof 18" cable. The cable leads are color coded for phasing purposes. When using a single ES-75, either lead may be connected to either output terminal of the siren amplifier as phasing is not important. However, when two ES-75's are used, they must be operated "in-phase" for maximum siren output. To operate two ES-75's in-phase and for 8 ohms impedance, connect the black leads and white leads from the speakers together and then connect to one terminal on the amplifier from the junction of each pair of leads.



UNIVERSITY SOUND warrants that all products are thoroughly inspected and tested in strict quality control procedures at the factory prior to packaging and shipment. UNIVERSITY SOUND products and components are guaranteed to be free of all defects in material and workmanship (except where specifically noted and also with the exception of wood cabinetry or housings) for a period of five years provided we are in receipt of a properly filled-in warranty card mailed to us within 10 days from date of purchase. This warranty does not apply to UNIVERSITY products which have been subjected to abuse or accident, or which have been altered or affected in any way by unauthorized repairs or abuse in the field. Any component, which under normal installation and use becomes defective, will be repaired without charge, or replaced at the company's option. Shipment must be prepaid to our factory, Oklahoma City, Oklahoma, not to a University regional warehouse. Units not in warranty will be repaired at a nominal charge and returned C.O.D. Address all correspondence to: UNIVERSITY SOUND, Customer Service Dept., 9500 West Reno, Oklahoma City, Oklahoma 73126

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