ALTEC LANSING

902-8B/902-16B COMPRESSION DRIVER LOUDSPEAKERS

DESCRIPTION

The Altec 902-8B and 902-16B High Frequency Driver Loudspeakers are designed for professional sound applications requiring outstanding production of sound over a wide frequency range at substantial power levels. Such conditions are fulfilled with high efficiency and uniform response from 500 Hz to 20,000 Hz.

These drivers furnish the realistic sound production demanded by theatres and music halls, portable concert sound systems and playback systems when used in conjunction with Altec 511B (500 Hz), 811B (800 Hz), or MR 931-12 (1200 Hz) horns, appropriate Altec dividing networks and Altec professional low frequency loudspeakers.

The 902-8B and 902-16B drivers use a voice coil of 1¾-inch diameter, edge wound with aluminum ribbon and coupled to an aluminum tangential diaphragm. The entire diaphragm and voice coil assembly is field replaceable; no special tools are required. The 902-8B and 902-16B are fitted with a loading cap to permit operation at crossover frequencies from 500 Hz to 1200 Hz.

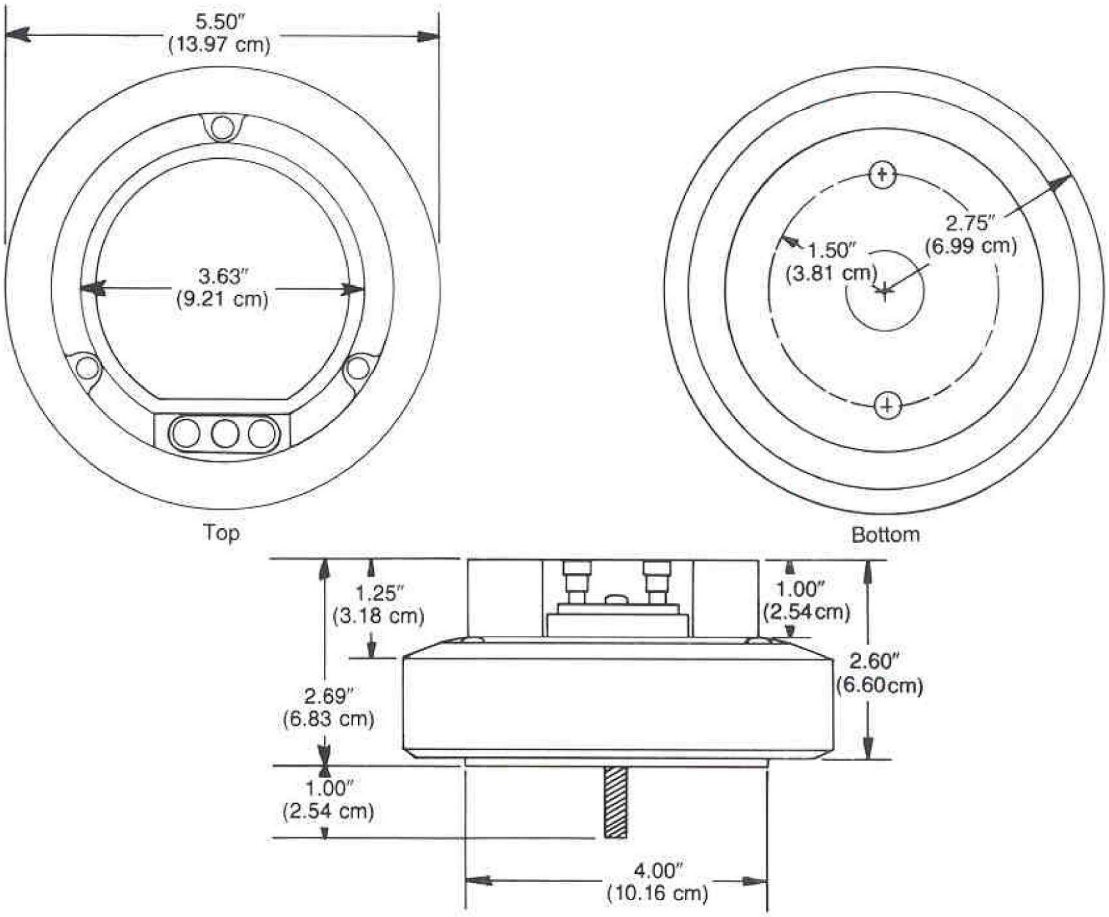
Altec's new Tangerine® radial phase plug* refines the technology of proper phasing, ensuring maximum high frequency reproduction while maintaining smooth overall response.

The driver is capable of uniform, peak-free reproduction throughout the range of human hearing.

SPECIFICATIONS

Power Capacity:	15 watts continuous pink noise from 500 Hz to 20 kHz. Measurements made on Altec 511B horn.
Frequency Response:	500 Hz to 20 kHz
Pressure Sensitivity:	106 dB SPL measured 1 m from mount of Altec 511B horn with 1 watt input of pink noise, band limited from 1200 Hz-5000 Hz
Minimum Impedance:	8 ohms or 16 ohms
Construction:	
Magnet—	Ferrite, 40 ounces
Flux Density—	1.8 Tesla
Magnetic Structure Weight—	5¾ lbs. (2.61 kg)
Diaphragm—	Aluminum tangential
Voice Coil—	Edgewound aluminum riggon
Dimensions:	5½" (13.97 cm) diameter 2⅝" (6.67 cm) deep, less mounting studs
Weight:	6 lbs, 6 oz. (2.90 kg)
Finish:	Gray "Hammertone" enamel with black rubber boot
Mounting Data:	Two ¼"—20 × 1" studs, 180° apart on 1½" centers
Replacement Diaphragm:	34647 (902-8B) 34852 (902-16B)

*Reg. U.S. Patent No. 4,050,541; Foreign patents pending.



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The compression driver loudspeaker shall meet the following criteria. Power capacity; 15 watts continuous pink noise, band-limited from 500 to 20 kHz measured on Altec 511B horn. Frequency response, uniform from 500 Hz to 20 kHz. Pressure sensitivity; 106 dB SPL measured at 1m from mouth of Altec 511B horn with 1 watt input of pink noise, band-limited from 1200 Hz top 5 kHz. The voice coil shall be of edgewound aluminum ribbon and shall operate in a magnetic gap having a flux density of 18,000 T derived from a 40-ounce ferrite magnet. The diaphragm shall be an aluminum tangential. A Tangerine® phasing plug with 13 radial acoustic slots shall be utilized to provide the proper phase relationship between the sound emanating from center and edges of the diaphragm and voice coil assembly. The entire diaphragm and voice coil assembly shall be field replaceable without requiring special tools or skills. The driver shall be 5½" in diameter by 2⅝" deep (excluding 1" depth of mounting studs), and shall weigh 6 pounds, 6 ounces.

The driver shall have a minimum impedance of 8 ohms or 16 ohms and shall operate at crossover frequencies of 500 Hz, 800 Hz, 1200 Hz, or higher.

The compression driver loudspeaker shall be the Altec Model 902-8B, or Model 902-16B.

ROW 1 (1 : 4)

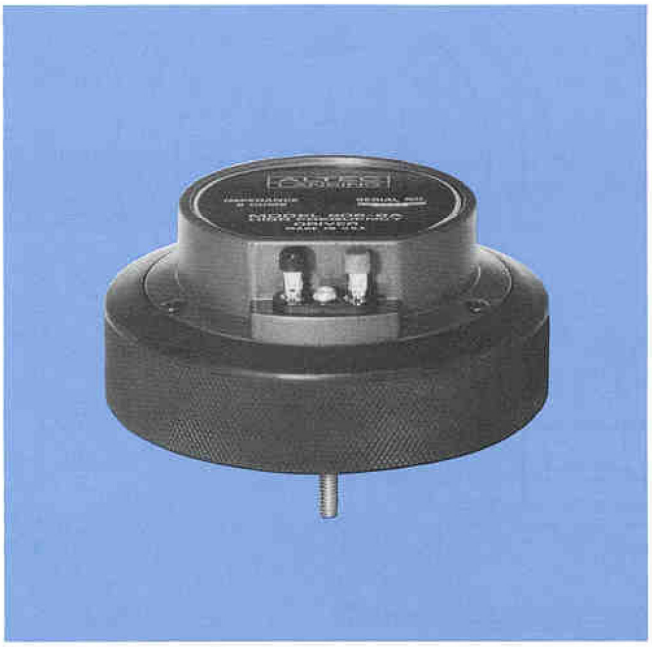
ROW 2 (4 : 4)

ALTEC LANSING

P.O. BOX 26105; OKLAHOMA CITY, OKLAHOMA 73126-0105, U.S.A.

ALTEC LANSING

908-8B COMPRESSION DRIVER LOUDSPEAKER



DESCRIPTION

The Altec Lansing 908-8B High Frequency Driver Loudspeaker is designed for professional sound applications requiring outstanding production of sound over a wide frequency range at substantial power levels. Such conditions are fulfilled with high efficiency and uniform response from 500 Hz to 20,000 Hz.

The driver furnishes the realistic sound production demanded by theatres and music halls, portable concert sound systems and playback systems when used in conjunction with Altec 511B (500 Hz), 811B (800 Hz) sectoral horns, or MR931-12 (1500 Hz) Mantaray horn, appropriate Altec dividing networks and Altec professional low frequency loudspeakers.

The 908-8B driver uses a voice coil of 1¾-inch diameter, edge wound with aluminum ribbon and coupled to a rugged Symbiotik® diaphragm. The entire diaphragm and voice coil assembly is field replaceable; no special tools are required. The driver is designed to operate at a crossover frequency of 500 Hz or higher.

Altec Lansing's new Tangerine® radial phase plug* refines the technology of proper phasing, ensuring maximum high frequency reproduction while maintaining smooth overall response.

The driver is capable of uniform, peak-free reproduction throughout the range of human hearing.

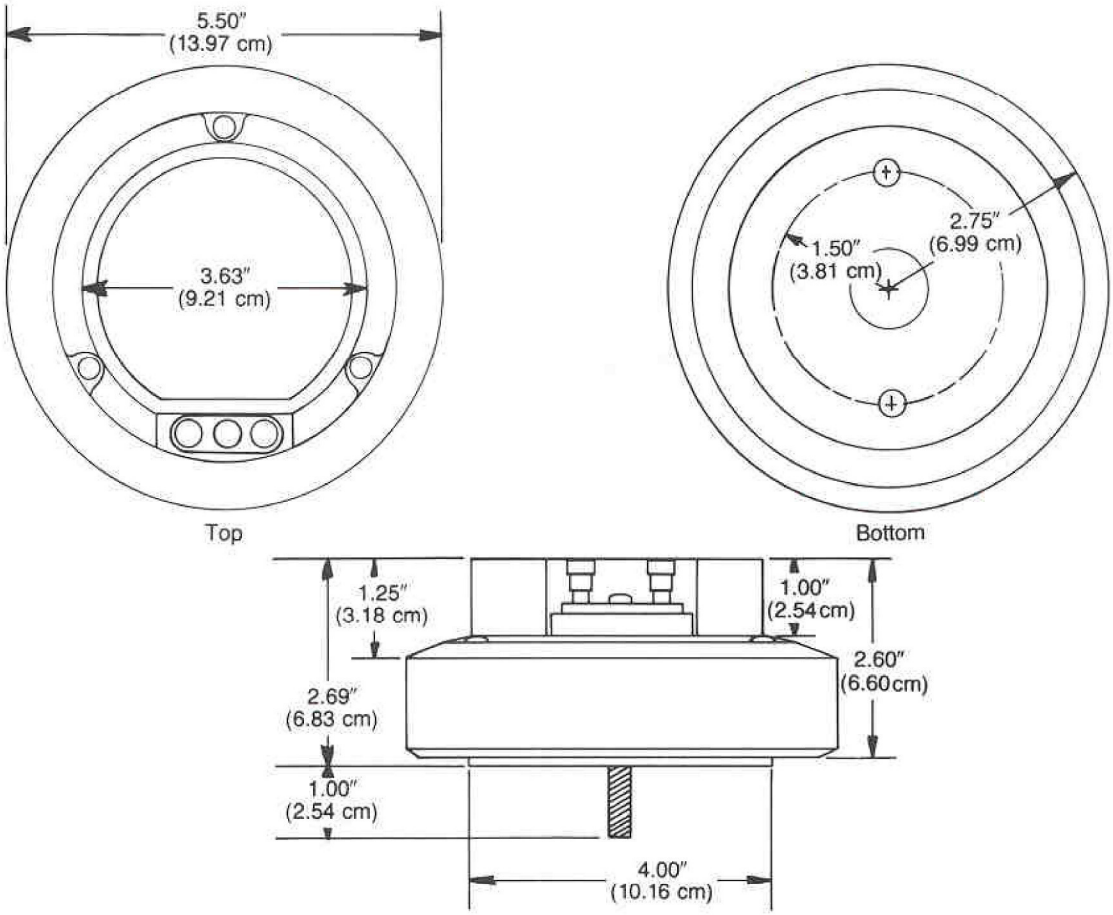
SPECIFICATIONS

Power Rating:	150 watts continuous program** (1000 Hz to 20,000 Hz) 80 watts continous program*** (500 Hz to 20,000 Hz) Measurements made on Altec 511B horn.
Frequency Response:	500 Hz to 20 kHz
Pressure Sensitivity:	105 dB SPL measured 1 meter from mouth of Altec 511B horn with 1 watt (2.83V) input of pink noise, band-limited from 500 Hz-5000 Hz
Minimum Impedance:	8 ohms
Construction:	
Magnet—	Ferrite, 40 ounces (1.13 kg)
Flux Density—	1.8 T
Magnetic Structure Weight—	5¾ lbs. (2.61 kg)
Diaphragm—	Symbiotik, type 34726
Voice Coil—	Edgewound aluminum ribbon
Dimensions:	5½" (13.97 cm) diameter 2⅝" (6.67 cm) deep, less mounting studs
Weight:	6 lbs., 6 oz. (2.90 kg)
Finish:	Gray "Hammertone" enamel with black rubber boot
Mounting Data:	Two ¼"-20 x 1" studs, 180° apart on 1½" centers
Recommended Horns:	511B, 811B, MR931-12
Accessories:	21216 Adapter (use with Altec Lansing large-format horns)

*Reg. U.S. Patent No. 4,050,541; Foreign patents pending.

**75 watts (25V) pink noise band-limited from 1000 Hz to 20,000 Hz

***40 watts (17.9V) pink noise band-limited from 500 Hz to 20,000 Hz



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The compression driver loudspeaker shall meet the following criteria. Power capacity; 40 watts continuous pink noise, band-limited from 500 Hz to 20 kHz, measured on Altec 511B horn. Frequency response, uniform from 500 Hz to 20 kHz. Pressure sensitivity; 105 dB SPL measured at 1 meter from mouth of Altec 511B horn with 1 watt input of pink noise, band-limited from 500 Hz to 5 kHz. The driver shall have a minimum impedance of 8 ohms and shall operate at a crossover frequency of 500 Hz or higher. The voice coil shall be of edgewound aluminum ribbon and shall operate in a magnetic gap having a flux density of 1.8 tesla derived from a 40-ounce ferrite magnet. The diaphragm shall be a Symbiotik®. A Tangerine® phasing plug with 13 radial acoustic slots shall be utilized to provide the proper phase relationship between the sound emanating from the center and edges of the diaphragm and voice coil assembly. The entire diaphragm and voice coil assembly shall be field replaceable without requiring special tools or skills. The driver shall be 5½" in diameter by 2⅝" deep (excluding 1" depth of mounting studs), and shall weigh 6 pounds, 6 ounces.

The compression driver loudspeaker shall be the Altec Lansing Model 908-8B.

ROW 1 (1 : 3)

ROW 2 (4 : 4)

ALTEC LANSING
10500 WEST RENO AVENUE
P.O. BOX 26105, OKLAHOMA CITY, OKLAHOMA 73126-0105

PRINTED IN U.S.A. 1086-2.5M © 1986 ALTEC LANSING CORP. REVISION 5 AL-2403

ALTEC LANSING®

909-8A & 909-16A HIGH FREQUENCY COMPRESSION DRIVERS

DESCRIPTION

The Altec Lansing 909-8A and 909-16A high frequency compression drivers have been designed for use in professional sound reinforcement systems where a wide frequency range at substantial power levels is required. When used with Altec Lansing sectoral or Mantaray® high frequency horns, these drivers provide uniform response to the upper limits of human hearing. As part of a full range system including Altec Lansing low frequency loudspeakers and enclosures, the smooth reproduction of speech and music is insured for all types of installations in churches, auditoriums, hotels, and restaurants.

Combining modern materials and adhesives with a proven dome and compliance geometry has resulted in a driver with a new Pascalite™ diaphragm assembly with a one and three quarter inch dome and voice coil. The result is a driver capable of high electrical power handling and large acoustic power outputs.

An efficient magnetic structure utilizing a 2.5 lb (1.1 kg) ferrite magnet provides a 1.8 Tesla gap flux density. A Tangerine® radial phasing plug is used to maximize the sound power delivered to the throat over the entire frequency range of the driver.

As with every Altec Lansing compression driver, the diaphragm/voice coil assembly can be replaced in the field without the use of special tools. The voice coil is rim centered precisely in the magnetic gap. The model 909-8A provides a minimum impedance of eight ohms; the model 909-16A, sixteen ohms.

The outstanding performance characteristics of these drivers make them ideal as the high frequency component for small and medium size sound system designs.

SPECIFICATIONS

Pressure Sensitivity: 144 dB SPL (1W, 500 Hz — 3.15 kHz, re: 20 μPa, see Note 1)
108 dB SPL on an MR 994A horn or 511B horn (1W, 1m, 500 Hz — 3.15 kHz, re: 20 μPa, see Note 2)

Frequency Response: 500 Hz — 20 kHz (see Figure 1, Note 3, Figures 3, 4, Note 4)

Power Handling: 30 watts, 500 Hz — 5 kHz, AES method, (displacement limit, see Note 6)
60 watts, 500 Hz — 5 kHz, continuous program, (see Note 9)
120 watts, 500 Hz — 5 kHz, peak power, (see Note 10)
40 watts, 800 Hz — 8 kHz, AES method, (thermal limit, see Note 6)
80 watts, 800 Hz — 8 kHz, continuous program, (see Note 9)
160 watts, 800 Hz — 8 kHz, peak power, (see Note 10)

Maximum Long Term Output: 122 dB SPL on an MR 994A horn or 511B horn (30 watts input, 1m, re: 20 μPa, see Note 7)

Impedance: 8Ω minimum, 909-8A,
16Ω minimum, 909-16A
(see Figures 1, 3, 4, Note 8)

Voice Coil Resistance: 6.5Ω, 909-8A; 12.0Ω, 909-16A

Input Connection: Screw terminals with .250 inch lugs for push on connectors, positive terminal marked with a plus sign

Diaphragm Construction: Hydropneumatically formed all metal dome and tangential compliance driven by a 1.75 inch (4.4 cm) diameter voice coil of edge wound aluminum ribbon

Displacement Limit: ±0.023 inch (0.58 mm), mechanical limit when diaphragm dome strikes phasing plug

Thermal Data After Power Handling Test: Voice coil temperature, 96° C (30 watts), measured by resistance change
Magnetic structure temperature, 42° C (30 watts), measured with electronic thermometer

Dimensions: 5.5 inches (14.0 cm) diameter
2.7 inches (6.9 cm) depth, less mounting studs

Replacement Diaphragms: Model 26421, 8 ohms
Model 26420, 16 ohms

Net Weight: 6.4 lb (2.9 kg)

Shipping Weight: 7.2 lb (3.3 kg)

Finish: Gray polyurethane paint

Mounting Data: Two ¼ — 20 studs on a 3.00 inch diameter bolt circle

Accessories: Altec Lansing: MR994A and MR931-12 Mantaray® horns, 511B, 811B, and 32C Sectoral horns

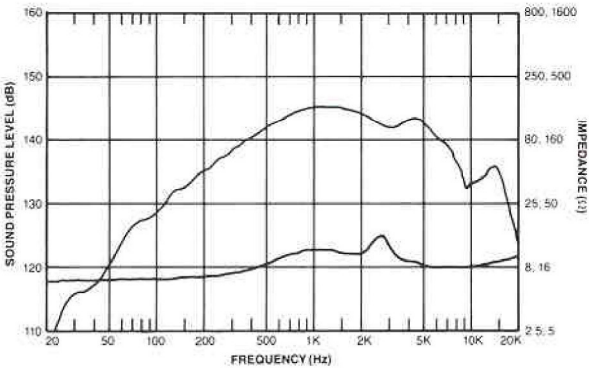


Figure 1. Plane Wave Tube Frequency Response and Magnitude of Impedance (See Notes 3, 8)

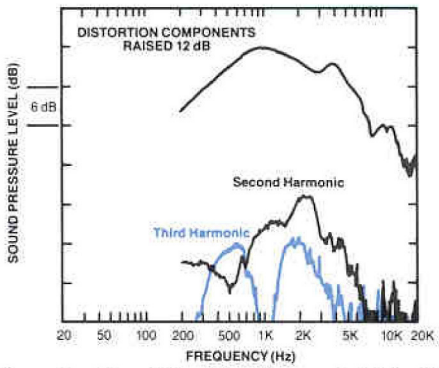


Figure 2. Plane Wave Tube Harmonic Distortion at 0.1 Rated Power (3 watts, See Note 5)

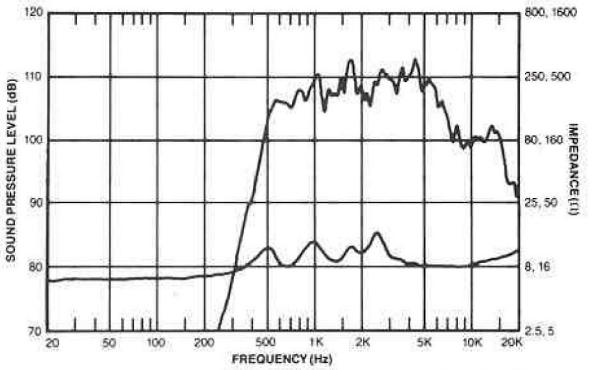


Figure 3. Frequency Response and Magnitude of Impedance on MR944A horn (See Note 4)

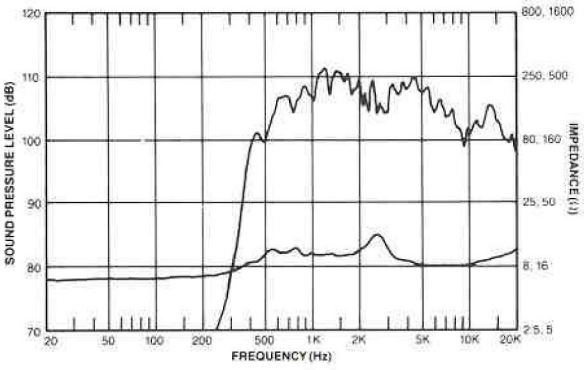


Figure 4. Frequency Response and Magnitude of Impedance on 511B horn (See Note 4)

NOTES ON MEASUREMENT CONDITIONS

1. Pink noise signal, one watt calculated using $E^2/Zmin$, one inch (2.5 cm) diameter plane wave tube measurement.
2. On axis, pink noise signal, one watt calculated using $E^2/Zmin$, 3.16 meter measurement distance referred to one meter.
3. One watt calculated using $E^2/Zmin$, one inch (2.5 cm) diameter plane wave tube measurement.
4. On axis, one watt calculated using $E^2/Zmin$, 3.16 meter measurement distance referred to one meter.
5. Distortion components invalid above 10 kHz. The percentage distortion of a harmonic at any given frequency may be found by graphically taking the difference between the fundamental and harmonic, adding 12 dB, and applying the formula: percentage distortion = $100 \times 10.^{-\text{dB change}/20}$
6. Test made on a horn with loading to 500 Hz, pink noise signal with 6 dB crest factor, power calculated using $E^2/Zmin$, 12 dB/octave filter slopes, for two hours.
7. This measurement made under the same conditions as Pressure Sensitivity, but at rated power, and takes into account any power compression effects due to nonlinearities in the device.
8. Minimum impedance occurs in frequency between 6 kHz and 7 kHz. Maximum production variation in mimimum impedance is ±15%.
9. Continuous program is defined as 3 dB greater than the AES rating using a pink noise signal with 6 dB crest factor.
10. Peak power is defined as 6 dB greater than the AES rating using a pink noise signal with 6 dB crest factor.

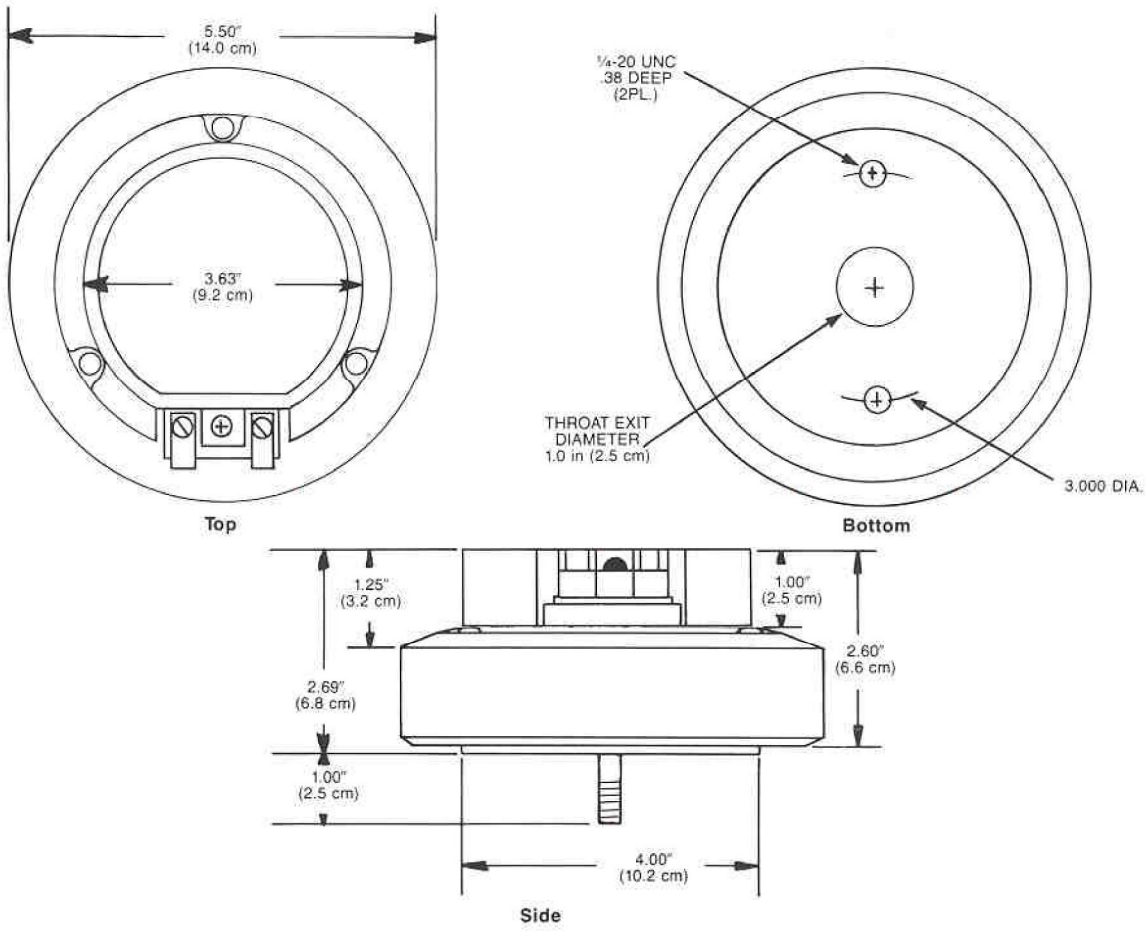


Figure 5. Mounting Information and Dimensions

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The compression driver loudspeaker shall meet the following criteria. Power handling: 30 watts continuous pink noise, band limited from 500 Hz — 5 kHz, when mounted on an Altec Lansing 500 Hz horn. Frequency response, uniform from 500 Hz — 20 kHz. Pressure sensitivity shall be 108 ± 1 dB SPL when measured at one meter on axis from the mouth of an Altec Lansing Mantaray® MR994A horn with one watt input of pink noise, band limited from 500 Hz — 3.15 kHz. Minimum impedance: 8 ohms (909-8A); 16 ohms (909-16A). The voice coil shall be 1.75 inches (4.4 cm) in diameter, of edge wound aluminum ribbon, and shall operate in a magnetic gap having a flux density of 1.8 T derived from a 2.5 pound (1.1 kg) Ferrite V magnet. The dome and tangential compliance shall be of Pascalite™ all metal construction. A Tangerine® phasing plug with eleven radial acoustic slots shall provide the proper phase relationship between sound emanating from the center and edges of the dome. The entire diaphragm and voice coil assembly shall be field replaceable without requiring special tools. The driver shall be 5.5 inches (14.0 cm) in diameter by 2.7 inches (6.9 cm) deep (excluding one inch (2.5 cm) depth of mounting studs), and shall weigh 6.4 pounds (2.9 kg).

The compression driver loudspeaker shall be the Altec Lansing Model 909-8A or the Altec Lansing Model 909-16A.

ALTEC LANSING®

P.O. BOX 26105, OKLAHOMA CITY, OK 73126-0105, U.S.A.

PRINTED IN U.S.A. 5/88 — 2m

AL2436
42-07-026441