

## DESCRIPTION

The Altec Lansing Model 3156 15-inch low-frequency loudspeaker is part of Altec's new generation of woofers. Each loudspeaker in this line was engineered for a particular purpose. The 3156 is designed for applications requiring **high efficiency** and **linear response** with low distortion.

When used as an integral component of the 8156 Loudspeaker System (3-cubic foot vented enclosure), full capability of the 3156 is achieved. This system provides a 3 dB down frequency of 65 Hz with an optimum Thiele-Small alignment.

Power capacity for the 3156 is 250 watts when measured by the new AES standard specifications. The 3156 will handle 500 watts of program material when configured as the 8156 system, or mounted in another suitable enclosure.

As with all Altec professional series woofers, the 3156 is built with a structurally reinforced die-cast frame. The ferrite magnet structure coupled with an exceptionally high power voice coil provides low distortion even at very high sound pressure levels.

## SPECIFICATIONS

**Frame Diameter:** 16"  
**Power Rating:** 500 watts program material  
\*250 watts continuous pink noise band-limited

**Frequency Response (Hz):** 50-2000

**Pressure Sensitivity**  
(1 watt (E x I) with pink noise band-limited 100-1000 Hz): 97 dB at 4 feet  
99 dB at 1 meter

**\*\*Maximum Sound Pressure (Full power (E<sup>2</sup>/Z) with pink noise band-limited 60-600 Hz):** 119 dB at 4 feet  
121 dB at 1 meter

**Impedance:** 8 ohms nominal

**Recommended Enclosures:** 8156-X (3 ft<sup>3</sup>) and 8256-X (6 ft<sup>3</sup>) System F<sub>3</sub>: 65 Hz

**Maximum Excursion Before Damage (Peak to Peak):** 1.10 in.

**Voice Coil Diameter:** 3 in.

### Thiele-Small Parameters—

**Free-Air Resonance (f<sub>s</sub>):** 38 Hz

**Equivalent Volume Compliance (V<sub>AS</sub>):** 8.7 ft<sup>3</sup>

**Total Q (Q<sub>TS</sub>):** 0.24

**Electrical Q (Q<sub>ES</sub>):** 0.29

**Mechanical Q (Q<sub>MS</sub>):** 1.40

**Reference Efficiency (η<sub>0</sub>):** 4.4%

**D. C. Resistance (R<sub>E</sub>):** 6.1 ohms

**Peak Linear Displacement (X<sub>MAX</sub>):** 0.15 in.

**Peak Linear Volume Displacement (V<sub>D</sub>):** 19.2 in.<sup>3</sup>

**Effective Surface Area of Driver Diagram (S<sub>D</sub>):** 128 in.<sup>2</sup>

### Additional Parameters—

**Effective Piston Diameter:** 12.75 in.

**Voice Coil Inductance:** 4.0 mH

**BL Factor:** 18.2

**Magnet Type:** ferrite

**Magnet Weight:** 80 oz.

**Flux Density:** 1.25 T

### Mounting Information—

**Baffle Opening Diameter:** 14 1/8" (35.87 cm)

**Mounting Bolt Circle Diameter:** 15" (38.1 cm)

**Loudspeaker Depth (front mounting):** 5 3/8" (14.13 cm)

**Loudspeaker Depth (rear mounting):** 6 3/8" (16.20 cm)

**Weight:** 21.5 lbs (9.8 kg)

\*AES power rating measured E<sup>2</sup>/Z where E = 45V, Z = 8Ω, band-limited 60-600 Hz.

(AES Recommended Practice Specification of Loudspeaker Components Used in Professional Audio and Sound Reinforcement. See J. Audio Eng. Soc., Vol. 30, No. 3, 1982 March.)

\*\*In 8156-X Enclosure.

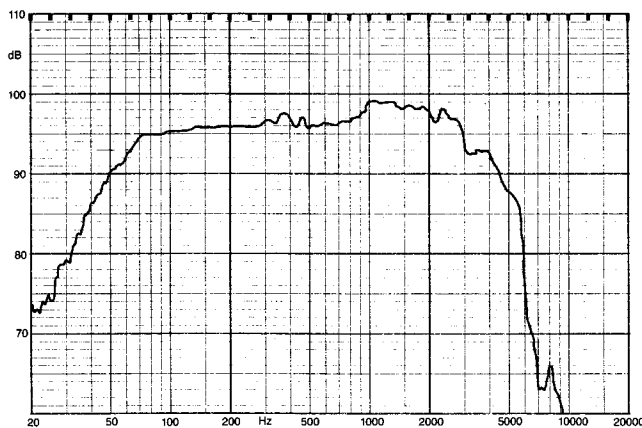


Figure 1. Frequency Response

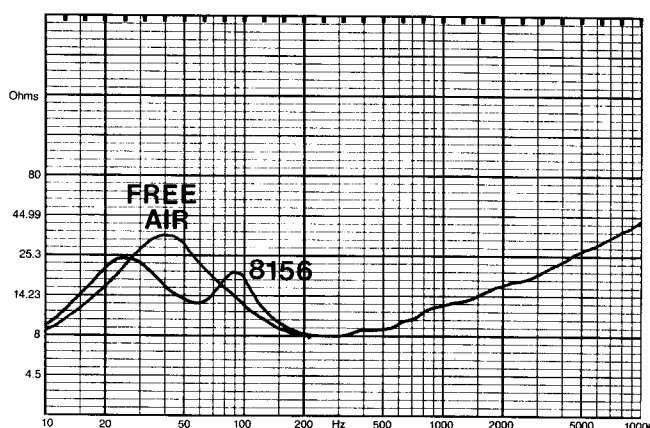
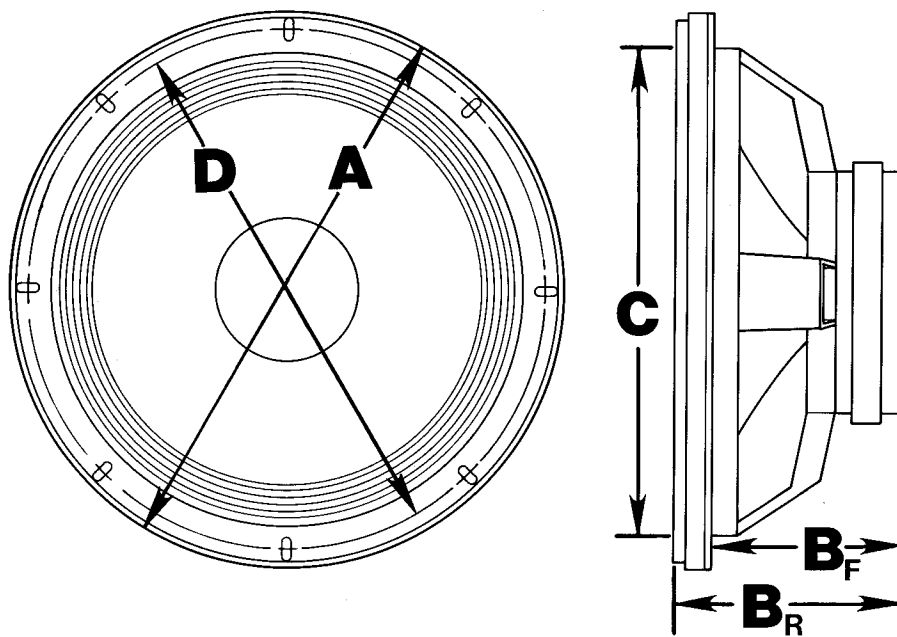


Figure 2. Impedance



#### LOUDSPEAKER MOUNTING DIMENSIONS

- |   |   |
|---|---|
| (A) Loudspeaker Diameter: 16" (40.64 cm)                      | (C) Baffle Opening Diameter: 14 1/8" (35.87 cm)                                 |
| (B <sub>F</sub> ) Depth When Front Mounted: 5 1/8" (14.13 cm) | (D) Bolt Circle Diameter: 15" (38.1 cm)   |
| (B <sub>R</sub> ) Depth When Rear Mounted: 6 3/8" (16.20 cm)  | (E) Bolt Hole Slots: 1/4" (0.64 cm) x 3/4" (2.02 cm); 8 slots spaced 45° apart. |

#### ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The low-frequency loudspeaker shall meet the following criteria. AES power rating, up to 250 watts of band-limited pink noise (60-600 Hz). Frequency response, uniform from 50-2000 Hz when mounted in a suitable enclosure. Pressure Sensitivity, 99 dB SPL for the 8156 Loudspeaker System (102 dB SPL for the 8256 Loudspeaker System) when measured at 1 meter on axis from front edge of the system with one watt of band limited pink noise from 100-1000 Hz

(Ref.: 20  $\mu$ Pa). Minimum impedance, 8 ohms. Nominal free-air LF cone resonance, 38 Hz. The voice coil shall be 3" in diameter, driven by a ferrite magnet having a flux density of 1.25 tesla. Dimensions, 16" diameter x 6 3/8" deep. Weight, 21.5 pounds.

The low frequency loudspeaker shall be the ALTEC LANSING Model 3156.



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

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