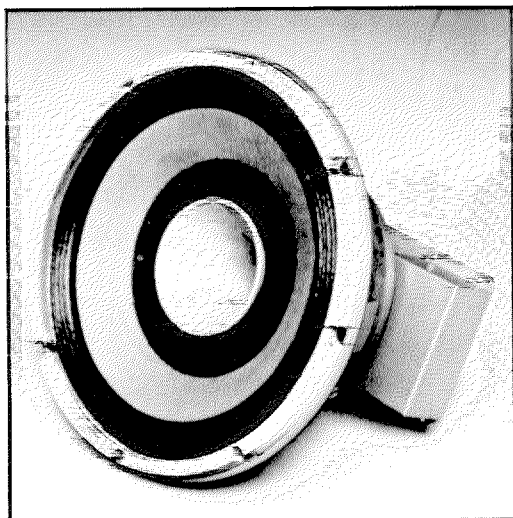




617-8A 12" Duplex® Ceiling Loudspeaker



KEY FEATURES

- ★ Includes Dual Section Crossover Network, Centered at 1500 Hz
- ★ Offers Wide Dispersion, High Efficiency
- ★ Dual Magnet Construction

DESCRIPTION

The Altec Lansing **617-8A Duplex®** loudspeaker system consists of a two-way coaxial loudspeaker and a dividing network with equalization. The loudspeaker features a 12-inch low-frequency cone and a coaxially mounted T-50 high-frequency compression driver. The dual magnet construction allows each speaker to be structurally, magnetically, electrically and mechanically independent of the other. The **617-8A** utilizes a dual section crossover network, centered at 1500Hz and providing 12dB of attenuation for both low-frequencies and high-frequencies.

The low-frequency cone driver features a 3.0-inch diameter edge-wound copper ribbon voice-coil and a 4.8 lb ferrite magnet that produces a gap flux density of 1.2T. The high-frequency compression driver features a 1.5-inch diameter voice-coil and a 0.5 lb ferrite magnet that produces a gap flux density of 1.25T. The high-frequency driver feeds through the low-frequency magnetic structure into a symmetrical 50° exponential horn that provides tight control of frequencies above 3000Hz.

PRIMARY SPECIFICATIONS

System Type: Two-way, full range, Duplex® loudspeaker system employing compression driver and horn.

Pressure sensitivity: 98.5 dB SPL (1W, 500Hz - 3kHz, re: 20µPa, see note 1)

Frequency Response: 60 Hz - 15 kHz (see Figure 1, Note 2)

Power Handling: 60 watts, 60 Hz - 15 kHz, AES method (see note 3)

Maximum Long Term Output: 114.3 dB SPL (60 watts input, 1m, re: 20µPa, see note 4).

Impedance: 5.5 ohms minimum. 8.0 ohms nominal.

Mounting holes are provided on the rear of the loudspeaker to mount an Altec **15716** or **15732** matching transformer to operate the loudspeaker from 70.7V distribution lines. These transformers offer selections of 2,4,8,16 or 32W, delivered to the loudspeaker system.

The Altec **5283-WM** and **5290-WM** steel grille and baffle assemblies provide an attractive means to conceal the loudspeaker in ceiling or wall installations. The perforated grilles are finished in semi-gloss white enamel. Three sealed, metal ceiling type enclosures are offered with the **617-8A**. They are made of heavy-gauge, rugged cold rolled steel, under coated to prevent panel resonance, and finished with rust-inhibiting paint. In addition, the interior is lined with glass wool blankets, and corner mounting brackets are provided to mount the enclosure within a ceiling.

These components are designed to work together as a complete system of in-ceiling loudspeakers and accessories. They give controlled dispersion, high efficiency, high-maximum output, ease of installation, and wide range reproduction of music or voice.

Components: 12 inch, high efficiency, low frequency driver with a coaxially mounted compression driver and symmetrical exponential horn.

Crossover Network: Two-way at 1500 Hz with a 12 dB per octave slope for both low and high-frequencies.

Input Terminals: 250-inch spade type connectors.

Accessories:

Transformers: 15176, 15732
Grille: 5283-WM, 5290-WM
Enclosures: 5185-XM, 5186-X, 5190-XM

Replacement:
VC/Dome Assembly: 33793
LF Recone Kit: R-617-8

Dimensions, Diameter:

Speaker Diameter: 12.0in (30.5cm)
Bolt Circle Diam: 12.6in (32.1cm)
Baffle Opening: 10.4in (26.4cm)
Bolt Hole Slots: 0.25in (0.64cm) by 0.34in (0.86cm)

Depth:

Front Mounted: 6.9in (17.5cm)
Rear Mounted: 7.8in (19.8cm)

Net Weight: 25.5 lbs (11.6 kg), includes network.

Shipping Weight: 28.5 lbs (12.9 kg), includes network.

Finish: Dark grey polyurethane.

SPECIFICATION - TRANSFORMER

Frequency Response: 50Hz to 15kHz, +/- 1dB

Insertion Loss: 0.5dB

Secondary Impedance: 8 ohms
 15716 15732

Primary Impedances and Power Drawn for 617-8A:

15716: 2500 ohms	1250 ohms	: 15732
2 Watts	4 Watts	
1250 ohms	625 ohms	
4 Watts	8 Watts	
625 ohms	312 ohms	
8 Watts	16 Watts	
312 ohms	156 ohms	
16 Watts	32 Watts	

Weight:

15716: 2 lbs 3 lbs : **15732**
 0.91kg 1.36kg

Connection type: 0.25in. blade-type terminals

Additional taps: Additional 0.5dB and 1.0dB taps, to compensate for line losses.

SPECIFICATION - ENCLOSURES

Construction Material: 18 guage cold-rolled steel.

Coating: Undercoated for panel resonance damping.

Glass Wool Lining: 1.5in (3.7cm) glass wool blankets.

Volume:

5185-XM: 2 ft³ (56.5 litres)
5186-X: 3 ft³ (84.9 litres)
5190-XM: 2 ft³ (56.5 litres)

Dimensions: See Table 1

Weight:

5185-XM: 29 lbs (13.2 kg)
5186-X: 34 lbs (15.4 kg)
5190-XM: 29 lbs (13.2 kg)

SPECIFICATIONS -

5283-WM AND 5290-WM GRILLE AND BAFFLE ASSEMBLIES

Construction Material: 18 guage cold-rolled steel.

Components: Perforated grille, subplate for mounting loudspeaker, assembly hardware kit.

Visible Finish: Semi-gloss white baked enamel paint.

Dimensions,

5283-WM: 15.3in (37.4cm) square, with centered perforated 12.0in (30.5cm) square section.

5290-WM: 15.3in (37.4cm) diameter circle, with centered perforated 12.0in (30.5cm) circular section.

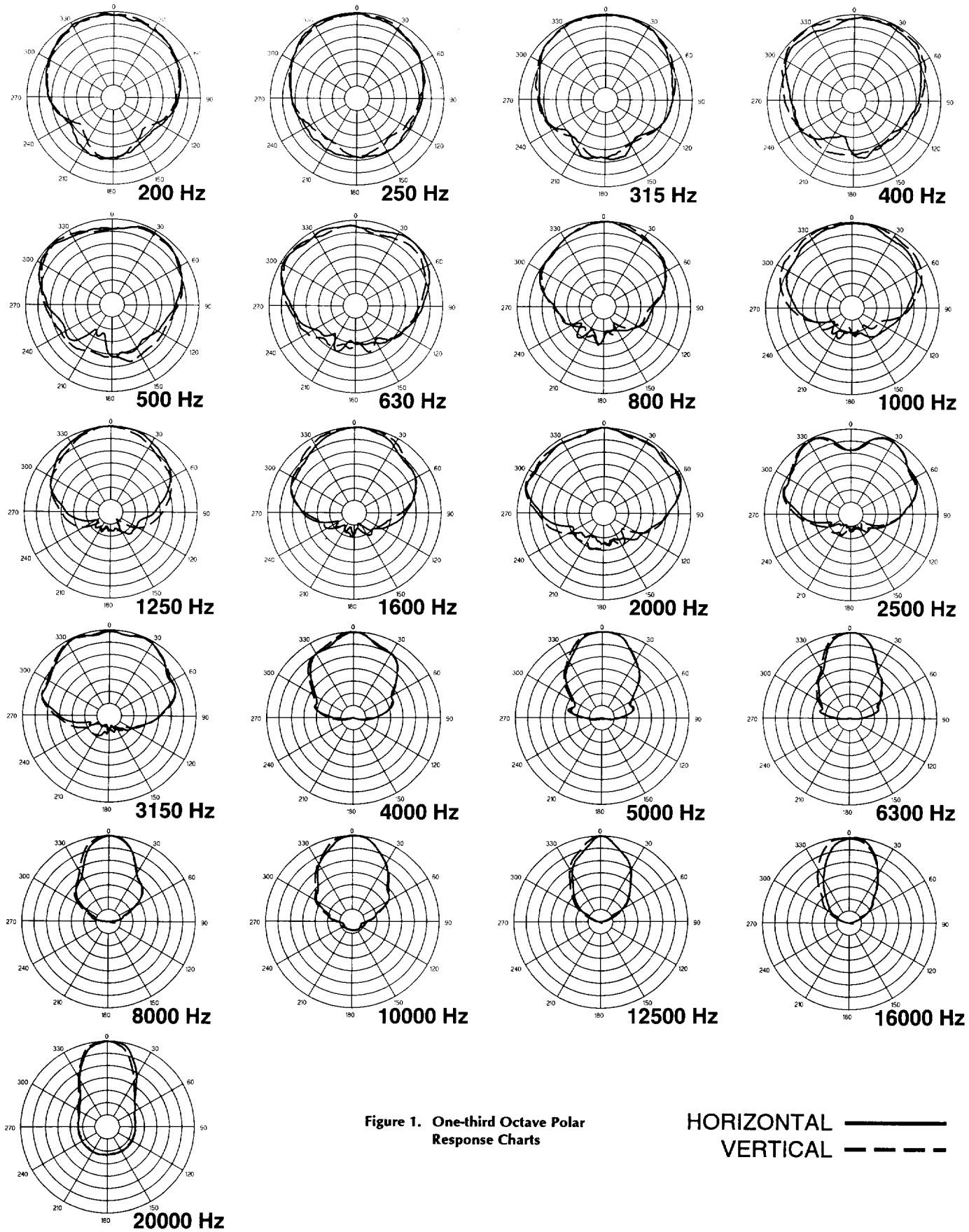
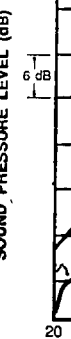
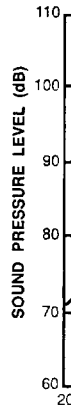


Figure 1. One-third Octave Polar Response Charts

HORIZONTAL ———
 VERTICAL - - - -



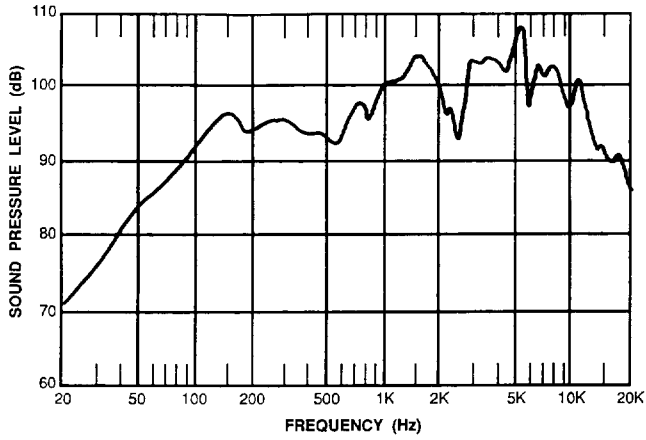


Figure 2. Amplitude Response

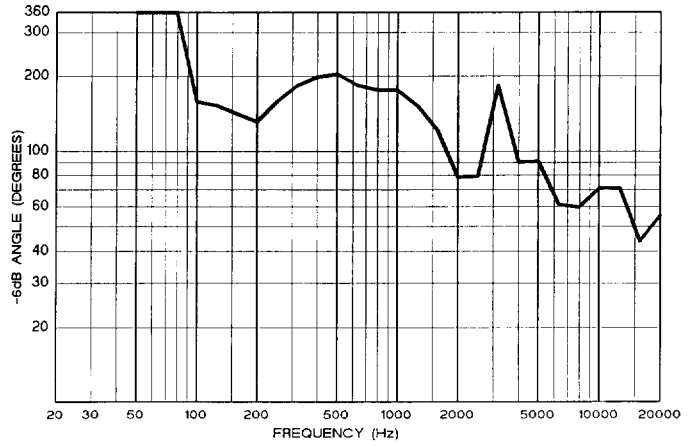


Figure 3. Beamwidth vs. Frequency

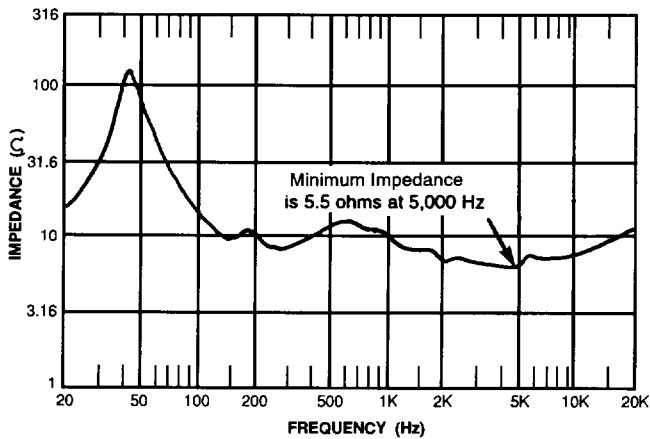


Figure 4. Impedance Response

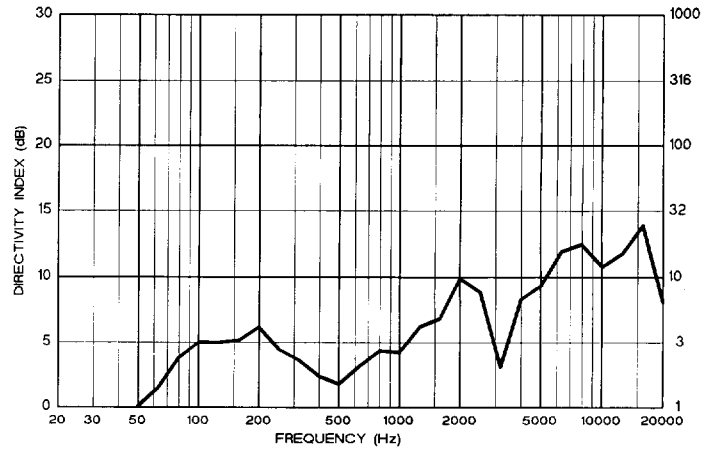


Figure 5. Directivity and Q

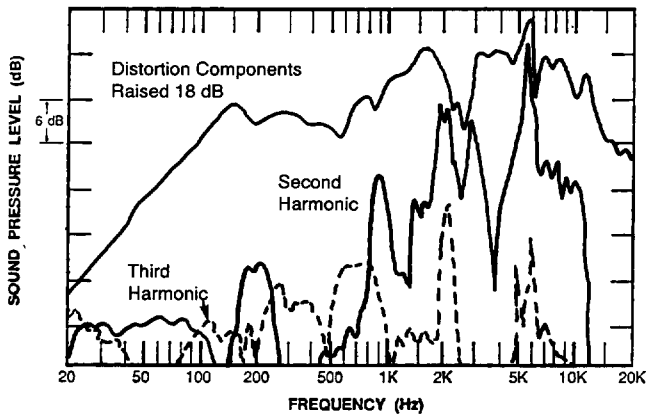


Figure 6. Distortion Response

617-8A THEILE-SMALL PARAMETERS

Free Air Resonance, f_s :	29 Hz
Equivalent Volume Compliance, V_{as} :	7.8 ft ³
Total Q, Q_{ts} :	0.16
Electrical Q, Q_{es} :	0.17
Mechanical Q, Q_{ms} :	3.38
Volume Displacement, V_D :	3.90 in ³
Reference Efficiency:	3.12%

NOTE: MEASUREMENTS WERE MADE IN A 3 FT³ CLOSED ENCLOSURE

NOTES ON MEASUREMENT CONDITIONS

1. Pink noise signal, one Watt calculated using E^2/Z_{min} , 3.16 measurement distance referred to one meter.
2. On-axis, one Watt calculated using E^2/Z_{min} , 3.16 meter measurement distance referred to one meter, low frequencies corrected for anechoic chamber error.
3. This system rating patterned after the A.E.S method for individual driver, where the test signal is pink noise with a 6dB crest factor over the bandwidth of the system, with power calculated using the E^2/Z_{min} , for two hours.
4. This measurement made under the same conditions as Pressure Sensitivity, but at rated power, and takes into account any power compression effects due to non-linearities in the system.
5. Distortion components invalid above 10kHz. The distortion at any given frequency may be found by graphically taking the difference between the fundamental and harmonic, and adding the number of Decibels which the harmonic has been raised on the graph and apply the formula:
percent distortion = $100 \times 10^{-(\text{difference in dB} / 20)}$

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

617-8A DUPLEX® LOUDSPEAKER

The loudspeaker shall be a Duplex® type with a 12-inch low-frequency cone driver coaxially mounted with a high-frequency compression driver and 50° symmetrical exponential horn. The Duplex® loudspeaker shall meet the following criteria. AES power rating shall be 60 watts of band limited pink noise (60 Hz to 15 kHz, 6 dB crest factor). Frequency response, uniform from 60 Hz to 15 kHz. Pressure sensitivity, 98.5 dB SPL at 1 meter on axis with one watt of band-limited pink noise from 500 Hz to 3 kHz (ref. 20 μ Pa). Minimum impedance, 5.5 ohms. The loudspeaker shall be 12.0 in (30.48 cm) in diameter and 7.8 in (19.8 cm) deep and shall weigh 25.5 lbs (11.6 kg) [including the crossover network].

The Duplex® loudspeakers shall be the Altec Lansing model 617-8A.

CEILING-TYPE ENCLOSURES

The ceiling-type enclosures shall be of square shape for new and existing installations to accommodate a 12-inch Duplex® loudspeaker. Construction shall be of heavy gauge, rugged cold rolled steel, heavily undercoated to eliminate panel resonance, and finished with rust-preventing paint. The interior of the enclosures shall be lined with 1-1/2-inch thick glass wool blankets. The enclosures shall have corner mounting brackets to facilitate mounting within the ceiling. The enclosures shall have volumes of 2 cubic feet (**Model 5185-XM**), 3 cubic feet (**Model 5186-X**), 2 cubic feet (**Model 5190-XM**). The ceiling-type enclosure shall be the ALTEC LANSING Model _____.

GRILLE AND Baffle ASSEMBLY

The grille and baffle assembly shall be constructed of 18 gauge steel having a visible finish of semi-gloss white baked enamel paint. A loudspeaker mounting subplate and mounting hardware shall be included. The grille and baffle assembly shall have dimensions of 15.25in square (**Model 5283WM**), or 15.25in diameter (**Model 5290-WM**), with a centered perforated section measuring 12in. The grille and baffle assembly shall be the ALTEC LANSING Model _____.

TRANSFORMERS

The transformers shall deliver within ± 1.0 dB of full rated power over a frequency range of 50 Hz to 15 kHz with a maximum insertion loss of not greater than 0.5 dB for the most unfavorable impedance combination. Primary and secondary windings shall be electrically isolated, and shall provide a balanced line to the load. Secondary impedance shall be 8 ohms. Additional taps of 0.5 dB and 1 dB shall be provided to compensate for line losses. The transformers shall utilize 1/4-inch blade quick-connectors for convenience of installation and wiring. The **Model 15716 Transformer** shall offer selections of 2, 4, 8 and 16 watts, and shall weigh 2 pounds. The **Model 15732 Transformer** shall offer selections of 4, 8 16 and 32 watts, and shall weigh 3 pounds. The transformer shall be the ALTEC LANSING Model _____.



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