

421A Musical Instrument Loudspeaker

421A



The ALTEC 421A Musical Instrument Loudspeaker is a rugged 15" loudspeaker designed for use in musical entertainment systems of moderate size and coverage area where true high-fidelity reproduction must be combined with high power output.

The 421A has a heavy permanent magnet, a structurally reinforced die-cast aluminum frame, a 3"-diameter voice coil of edge-wound aluminum ribbon, and exceptionally compliant cone suspension. It is sealed against dust and dirt.

The smooth response and excellent linearity of the 421A loudspeaker is achieved by strict adherence to precision design and manufacturing tolerances. Axial retention of the voice coil in a magnetic field, uniform over the full excursion, ensures clarity of music reproduction at high power levels. Low cone resonance, when coupled to a suitable enclosure, virtually eliminates all 'doubling' or self-generation of unwanted harmonic components.

The 421A has a continuous power rating of 100 watts and a frequency response from 35 to 8000 Hz. Its design provides high efficiency, high linearity, low distortion, wide range and optimum cone resonance.

ALTEC[®]

SOUND PRODUCTS DIVISION

1515 S. Manchester Ave., Anaheim, Calif. 92803

ALTEC 421A Loudspeaker

SPECIFICATIONS

Type:	Musical instrument loudspeaker	Nominal Free-Air Cone Resonance:	40 Hz
Power Rating:	For sound system use with amplifiers having continuous power rating of up to 100 watts of program material	Voice Coil Diameter:	3"
Frequency Response:	35 Hz to 8000 Hz (see Figure 1)	Magnetic Assembly —	
Pressure Sensitivity:	97 dB SPL measured at 4' on axis with 1 watt input of pink noise from 100 Hz to 10 kHz (Ref.: 0.0002 dyne/cm ²). Equal to EIA rating of 50 dB SPL at 30' from 1 milliwatt input.	Magnet Weight:	4.875 pounds
	98 dB SPL measured at 4' on axis with 1 watt input of pink noise from 100 Hz to 1000 Hz (Ref.: 0.0002 dyne/cm ²).	Assembly Weight:	17.5 pounds
	99 dB SPL measured at 4' on axis with 1 watt input of pink noise from 500 Hz to 1 kHz (Ref.: 0.0002 dyne/cm ²).	Magnet Type:	Ceramic Ferrimag
Impedance:	8 ohms (other impedances available in production quantities)	Flux Density:	14,400 gauss
		Construction —	
		Frame (Basket):	Structurally reinforced die-cast aluminum
		Cone:	Molded fiber
		Cone Suspension:	High-compliance cloth surround with mechanical resistance
		Voice Coil:	Edge-wound aluminum ribbon
		Maximum Core Excursion:	1/2"
		Diameter:	15-5/16 (38.89 cm)
		Weight:	20 pounds, 11 ounces (9.4 kg)
		Mounting Data —	
		Mounting Hole Diameter:	13-5/8" (may be either front or rear mounted)
		Mounting Bolt Centers:	4 holes equally spaced on 14-9/16"-diameter circle
		Loudspeaker Depth:	6-1/4" (15.88 cm)

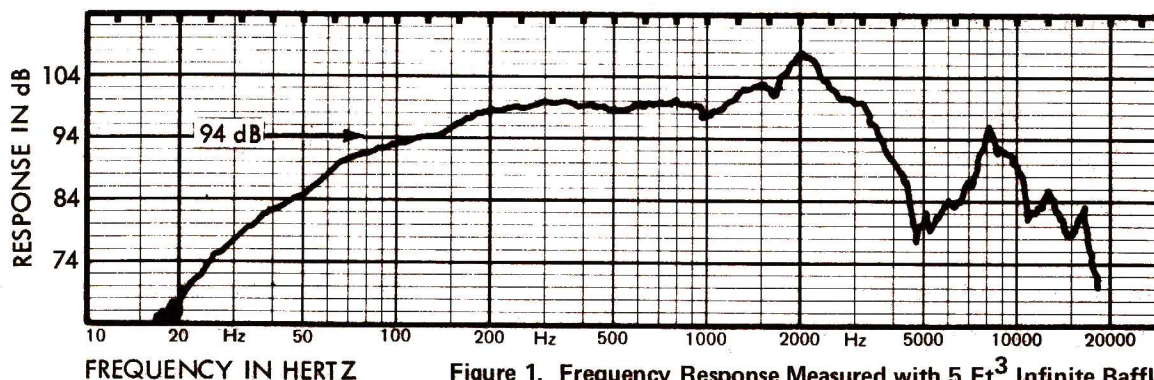


Figure 1. Frequency Response Measured with 5 Ft³ Infinite Baffle Enclosure at 4' on Axis with 1 Watt Input

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The musical instrument loudspeaker shall have a maximum diameter of 15-5/16" and shall weigh 20 pounds, 11 ounces. It shall have a structurally reinforced die-cast aluminum frame which shall be rigid enough to permit front or rear mounting. The voice coil shall be 3" in diameter, of edge-wound aluminum ribbon, and shall operate in a magnetic gap having a flux density of 14,400 gauss. The loudspeaker shall have a permanent magnet weighing not less than 4.875 pounds. The magnetic structure shall have a metal dust cover to protect it from dirt, iron particles and magnetic dust. The cone-surround area shall be of high-compliance cloth. The musical instrument loudspeaker shall meet the following performance criteria. Power rating, up to 100 watts of continuous program material. Frequency response, uniform from 35 to 8000 Hz when loudspeaker is mounted in suitable enclosure. Pressure sensitivity; 97 dB SPL when measured at 4' on axis with 1 watt input of pink noise from 100 Hz to 10 kHz, 98 dB SPL when measured at 4' on axis with 1 watt input of pink noise from 100 Hz to 1000 Hz; 99 dB SPL measured at 4' on axis with 1 watt input of pink noise from 500 Hz to 1 kHz (Ref.: 0.0002 dyne/cm²). Equivalent EIA rating, 50 dB SPL at 30' from 1 milliwatt input. Impedance, 8 ohms. Nominal free-air cone resonance, 40 Hz.

The musical instrument loudspeaker shall be the ALTEC Model 421A.