419-8B, 420A Biflex® Loudspeakers

419-8B
420A

419-8B

420A

FULL-RANGE MUSIC AND PA SYSTEMS FOR:
STUDIO MONITORING • SCHOOLS • CHURCHES • CLUBS
HI-FI SYSTEMS • MUSIC ROOMS • STORES

The 419-8B and 420A Biflex Loudspeakers provide the audio engineer and the serious listener with high efficiency, wide range and smooth response over an unusually wide distribution area.

The Altec patented Biflex principle solves the problem of obtaining full frequency reproduction from a single-cone loudspeaker. It is no longer necessary to compromise between the smaller cone of minimum weight and diameter, best for HF reproduction and the larger, heavier cone, optimum for base response. The Altec Biflex speakers utilize the principle of damped cone compliances. The entire area of the speaker cone propagates the low frequency; the smaller central cone, the high frequencies.

Below 1000 Hz, the stiffness of the mid-cone compliance couples the inner and outer sections into a single moving element. Above 1000 Hz, the balanced mass of the outer section prevents the transmission of sound beyond the mid-compliance. The outer portion of the cone uncouples at this point, permitting the inner section to operate independently. The ALTEC Biflex design (U.S. Patent 2834424), coupled with the famed Altec precision standards, produces a loudspeaker with specifications exceeding those of many two and three-way units.

Both speakers employ Alnico V magnets for maximum efficiency; the voice coil of each is of edge-wound aluminum, situated in a deep magnetic gap to maintain proper cone linearity. This results in extremely low distortion, even during excessive cone excursion.

The 419-8B loudspeaker frame has been redesigned to provide greater strength and rigidity. Structurally reinforced with heavy ribs, it enables the loudspeaker to be front or rear mounted.

Altec Biflex speakers have a valuable dual purpose feature. In addition to providing outstanding performance as full range units, they may also serve as fine low-frequency reproducers. This versatility makes them ideal as the initial speaker in a high quality music system that may be expanded at a later date into a two-way speaker system with the overall response extended to 22,000 Hz. The addition of a suitable Altec high-frequency driver unit and associated dividing network are all that is required.

ALTEC®
A DIVISION OF ALTEC CORPORATION

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

ALTEC 419-8B, 420A Biflex® Speakers

SPECIFICATIONS

DESCRIPTION	MODEL 419-8B	MODEL 420A
Power Rating:	20 watts maximum	25 watts maximum
Frequency Response:	30-15,000 Hz	25-14,000 Hz
Pressure Sensitivity:	96 dB SPL w/1 watt input measured on axis 4' from cone (Ref: 0.0002 dyne/cm^2 for 1 watt input)	97 dB SPL w/1 watt input measured on axis 4' from cone (Ref: 0.0002 dyne/cm^2 for 1 watt input)
	109 dB SPL w/20 watts input measured on axis 4' from cone	111 dB SPL w/25 watts input measured on axis 4' from cone
E.I.A. Rating:	49 dB SPL at 30' from 1 mW	50 dB SPL at 30' from 1 mW
Impedance:	8 ohms	8 ohms
Cone Resonance:	39 Hz	27 Hz
Voice Coil Diameter:	3"	3"
Magnetic Assembly —		
Magnet Weight:	1.8 lbs	2.4 lbs
Magnet Type:	Alnico V	Alnico V
Assembly Weight:	9 lbs, 7 oz	10 lbs, 8 oz
Flux Density:	10,400 Gauss	11,400 Gauss
Crossover:	1000 Hz (mechanical)	1000 Hz (mechanical)
Construction —		
Frame (Basket):	Structurally-reinforced die-cast aluminum	Die-cast aluminum
Cone:	Molded fiber	Molded fiber
Cone Suspension:	Damped-compliance cloth surround with mechanical resistance	Damped-compliance cloth surround with mechanical resistance
Voice Coil:	Edge-wound aluminum ribbon	Edge-wound aluminum ribbon
Terminals:	Binding Post	Binding Post
Diameter:	12-1/8"	15-3/16"
Weight:	15 lbs	17-1/2 lbs
Color:	White and Gray	White and Gray
Mounting Data —		
Mounting Hole Diameter:	11-1/8" (may be either front or rear mounted)	13-5/8"
Mounting Bolt Centers:	4 holes equally spaced on 11-9/16" diameter circle	8 holes equally spaced on 14-9/16" diameter circle
Loudspeaker Depth:	5-5/8"	7"

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

419-8B

The loudspeaker shall be 12" in diameter nominal, weigh 15 pounds and shall have a minimum pressure sensitivity of 96 dB SPL at 4 feet with 1 watt and 109 dB SPL at 4 feet with 20 watts, measured on axis; reference shall be 0.0002 dyne/cm^2. The loudspeaker shall have a power rating of at least 20 watts. The voice coil shall be 3 inches in diameter of edge-wound aluminum ribbon and shall operate in a magnetic gap of 10,400 gauss, derived from an Alnico V magnet of at least 1.8 pounds. The frequency response shall be uniform over the range of 30 to 15,000 Hz when the unit is mounted in a suitable enclosure. The loudspeaker shall employ the Biflex principle of damped mid-cone compliances, producing wide frequency distribution. The cone-surround area shall be treated with a permanent damping material permitting free air resonance of 39 Hz nominal. The speaker shall include a metal dust cover over the magnetic structure, providing a protective seal against dirt, iron particles, and magnetic dust. Output impedance shall be 8 ohms.

The loudspeaker shall be Altec Model 419-8B.

420A

The loudspeaker shall be 15" in diameter nominal, weigh 17½ pounds and shall have a minimum pressure sensitivity of 97 dB SPL at 4 feet with 1 watt and 111 dB SPL at 4 feet with 25 watts, measured on axis; reference shall be 0.0002 dyne/cm^2. The loudspeaker shall have a power rating of at least 25 watts. The voice coil shall be 3 inches in diameter, of edge-wound aluminum ribbon and shall operate in a magnetic gap of 11,400 gauss, derived from an Alnico V magnet of at least 2.4 pounds. The frequency response shall be uniform over the range of 25 to 14,000 Hz when the unit is mounted in a suitable enclosure. The loudspeaker shall employ the Biflex principle of damped mid-cone compliance, producing wide frequency distribution. The cone-surround area shall be treated with a permanent damping material, permitting free-air resonance of 27 Hz nominal. The loudspeaker shall include a metal dust cover over the magnetic structure providing a protective seal against dirt, iron particles, and magnetic dust.

The loudspeaker shall be Altec Model 420A.

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Specifications and components subject to change without notice. Overall performance will be maintained or improved.

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