

406B, 414A, 416A, 515B L. F. Loudspeakers

406B
414A
416A
515B



406B



414A



416A



515B

Features

- Heavy Alnico V magnet
- Edge-wound voice coil
- Rugged construction
- Smooth response
- High efficiency
- Low cone resonance
- Low distortion
- High power capacity
- High linearity

LOW FREQUENCY SPEAKERS FOR WIDE-RANGE, TWO-WAY SOUND REINFORCEMENT SYSTEMS • OUTSTANDING AUDIO REPRODUCTION FOR THE LARGEST CONCERT HALL, THEATRE, AND AUDITORIUM SYSTEMS • PROFESSIONAL 'PLAYBACK' SYSTEMS • BROADCAST AND RECORDING STUDIO MONITORING

ALTEC low frequency loudspeakers are designed for use in the finest recording and broadcast studio 'Playback' systems as well as providing outstanding reproduction of the lower audio spectrum when used in two-way systems for the largest theatres and auditoriums. Utilizing heavy Alnico V permanent magnets, rugged, die-cast frames, edge-wound copper ribbon voice coils of the largest practical diameter, and exceptionally compliant cone suspension, these LF transducers combine the advantages of long-term operation with unparalleled response throughout the entire audible bass frequency range.

The smooth response and exceptional linearity of each loudspeaker is achieved by means of strict adherence to precision design and manufacturing tolerances. The axial retention of the voice coil, in a magnetic field uniform over the full excursion, assures the clarity of bass reproduction at high power levels. The low cone resonance, when coupled to a properly designed Altec enclosure, eliminates virtually all 'doubling' or self-generation of unwanted harmonic components.


The ALTEC 406B is a 10-inch low frequency loudspeaker with a continuous power rating of 15 Watts and a frequency response of 25 to 4500 Hz. It is ideal for limited-space enclosures where true high-fidelity reproduction must not be compromised in two-way loudspeaker systems.

The ALTEC 414A, with a range exceeding 30 to 4,000 Hz, is an outstanding 12-inch LF transducer — ideal for use in institutional and entertainment systems of moderate size and coverage area. The power rating of 25 Watts makes the 414A, singly or in multiples, an excellent choice in two-way systems utilizing ALTEC high frequency drivers and sectoral horns.

The ALTEC 416A is a 15-inch low frequency loudspeaker of professional quality, chosen to complement the finest broadcast and recording studio monitor systems (such as the Altec A7 and A7-500) in addition to providing the critical listener with superb bass reproduction for all wide-range public address, sound reinforcement and theatre or auditorium systems.

The ALTEC 515B, with its exceptional low frequency response, high efficiency and ability to faithfully reproduce the lowest audio frequencies at unusually high power levels remains the unchallenged leader in the largest and finest two-way systems throughout the world. When used in conjunction with the ALTEC 288 HF driver, N-500C dividing network and multicellular horn of the desired size and coverage angle, the 515B becomes an integral part of the identical Altec 'Voice of the Theatre' loudspeaker systems currently employed by the majority of the largest and finest theatres, auditoriums and concert areas.



A Division of  Ling Altec, Inc.

1515 S. Manchester Ave., Anaheim, Calif.
New York

ALTEC 406B, 414A, 416A, 515B

SPECIFICATIONS

	406B	414A	416A	515B
Power Rating (Continuous):	15 Watts	25 Watts	30 Watts	35 Watts
Frequency Response:	25-4,500 Hz	30-4,000 Hz	20-1,600 Hz	20-1,000 Hz
Pressure Sensitivity:	96 dB (SPL at 4' from 1 Watt*)	99 dB (SPL at 4' from 1 Watt*)	99 dB (SPL at 4' from 1 Watt*)	103 dB (SPL at 4' from 1 Watt*)
Impedance:	8 Ohms	113 dB (SPL at 4' from full 25 Watts)	114 dB (SPL at 4' from full 30 Watts)	118.5 dB (SPL at 4' from full 35 Watts)
Cone Resonance:	28 Hz	16 Ohms	16 Ohms	16 Ohms
Voice Coil Diameter:	2" Diameter (Copper)	30 Hz	25 Hz	25 Hz
Magnetic Assembly:—		3"	3"	3"
Magnet Weight:	1.8 lbs.	1.8 lbs.	2.4 lbs.	4.4 lbs.
Magnet Type:	Alnico V	Alnico V	Alnico V	Alnico V
Flux Density:	11,000 Gauss	10,000 Gauss	12,000 Gauss	14,750 Gauss
Construction:—				
Frame (Basket):	Die Cast Aluminum	Structurally-reinforced cast aluminum	Structurally-reinforced cast aluminum	Structurally-reinforced cast aluminum
Cone:	Molded Fibre	Molded Fibre	Molded Fibre	Molded Fibre
Cone Suspension:	High-compliance cloth surround with mechanical resistance	High-compliance cloth surround with mechanical resistance	High-compliance cloth surround with mechanical resistance	High-compliance cloth surround with mechanical resistance
Effective Mass:	32 grams			
Effective Compliance:	1.25×10^{-6} cm/dyne			
Voice Coil:		Edge-wound copper ribbon	Edge-wound copper ribbon	Edge-wound copper ribbon
Diameter:		12 1/4"	15 5/8"	15 5/8"
Weight:	11 3/4 lbs.	15 lbs.	17 1/2 lbs.	26 lbs.
Mounting:—				
Mounting Hole Diameter:	9" (may be either front or rear mounted)	10 1/4"	13 1/4"	13 1/4"
Mounting Bolt Centers:	4 holes equally spaced on 9 5/8" centers	4 holes, equally spaced, on 11 1/8" centers	4 holes, equally spaced, on 14 1/8" centers	4 holes, equally spaced, on 14 1/8" centers
Loudspeaker Depth:	5 1/4"	5 5/8"	7"	7 3/4"

The ALTEC 406B, 414A, 416A, and 515B low frequency speakers may be used to greatest advantage in wide range, two-way systems with the addition of the following ALTEC components:

HF Drivers & Horns: 802D & 806A (with 511A/B or 811B Sectoral Horns)
288C, 288D & 290E (with ALTEC multicellular horn having proper cutoff frequency and distribution pattern)

Accessories:

Altec Loudspeaker Enclosures: **For 414A:** 612B, 614B, 618B, 622B, 855A, 858A, 859A.
For 416A & 515B: 612A, 614A, 825A, 855A, 856A, 857A, 858A, 859A, 210, 410.

Dividing Networks: N-800G (800 cycle crossover)
N-500C (500 cycle crossover)
N-500F (500 cycle crossover)

*406B = EIA rating of 49dB at 30 ft. from 1 milliwatt
414A = EIA rating of 52dB at 30 ft. from 1 milliwatt
416A = EIA rating of 52dB at 30 ft. from 1 milliwatt
515B = EIA rating of 56dB at 30 ft. from 1 milliwatt

ARCHITECTS AND ENGINEERS SPECIFICATIONS

406B

The low frequency speaker shall have a maximum diameter of 10 3/8 inches, weigh 11 3/4 lbs., and have a frequency response of 25 to 4500 Hz. It shall utilize an Alnico V permanent magnet weighing 1.8 lbs., a rugged die-cast aluminum frame, and an effective cone compliance of 1.25×10^{-6} cm/dyne. Free air cone resonance shall be 28 Hz, which, when coupled to a properly designed enclosure, will eliminate virtually all 'doubling' or self-generation of unwanted harmonic components. The continuous power rating shall be at least 15 Watts, and the output impedance shall be 8 Ohms. Voice coil diameter shall be a minimum of 2 inches and it shall operate in a magnetic field of at least 11,000 gauss. Any low frequency loudspeaker not meeting the above requirements shall be unacceptable under this specification. The loudspeaker shall be the ALTEC Model 406B.

414A

The low-frequency speaker shall be 12 1/4" in diameter and shall have a minimum pressure sensitivity of 99 dB (spl at 4 ft. from 1 Watt) measured on axis. The voice coil shall be approximately 3" in diameter and shall be of edge-wound copper ribbon operating in a magnetic field of at least 12,000 gauss derived from an Alnico V magnet weighing 1.8 pounds minimum. Speakers with smaller voice coils or round wire windings are not acceptable under this specification. The free-air resonance of the speaker shall not be greater than 30 Hz and it shall have a continuous power rating of at least 25 Watts. Frequency response of the speaker shall range from 30 to 4,000 Hz. Any low-frequency speaker not meeting all of these requirements shall be unacceptable under this specification. The loudspeaker shall be ALTEC Model 414A.

416A

The low-frequency speaker shall be 15 5/8" in diameter and shall have a minimum pressure sensitivity of 99 dB (spl at 4 ft. from 1 Watt) measured on axis. The voice coil shall be approximately 3" in diameter and shall be of edge-wound copper ribbon operating in a magnetic field of at least 12,000 gauss derived from an Alnico V magnet weighing 2.4 pounds minimum. Speakers with smaller voice coils or round wire windings are not acceptable under this specification. The free-air resonance of the speaker shall not be greater than 25 Hz. The speaker shall have a continuous power rating of at least 30 Watts and shall have a frequency response from 20 to 1,600 Hz. Any low frequency speaker not meeting all of these requirements shall be unacceptable under this specification. The loudspeaker shall be ALTEC Model 416A.

515B

The low-frequency speaker shall be 15 5/8" in diameter and shall have a minimum pressure sensitivity of 103 dB (spl at 4 ft. from 1 Watt) measured on axis. The voice coil shall be at least 3" in diameter, of edge-wound copper ribbon, operating in a magnetic field of at least 14,750 gauss derived from an Alnico V magnet weighing 4.4 pounds minimum. Speakers with smaller voice coils or round wire windings are not acceptable under this specification. The free-air resonance of the speaker shall not exceed 25 Hz. The speaker shall have a continuous power rating of at least 35 Watts. Frequency response shall be uniform from 20 to 1000 Hz. Any low-frequency speaker not meeting all of these requirements shall be unacceptable under this specification. The loudspeaker shall be ALTEC Model 515B.

NOTICE
We recommend that you obtain your Altec products from factory trained authorized Altec Sound Contractors and Distributors. This will assure you of proper installation, a continuing source of knowledgeable advice, service, and quick warranty protection.