Professional Series
Model 2421A/B Compression Driver

60 watts continuous program
Diamond-pattern diaphragm suspension
44 mm (1¾ in) edgewound aluminum ribbon voice coil
44 mm (1¾ in) aluminum alloy diaphragm
25 mm (1 in) horn throat diameter
Silver plated pole piece

The model 2421 is a professional quality high frequency compression driver which has an exceptionally wide range and flat response. It is built to typical JBL standards of precision. The mathematically determined phasing plug consists of concentric exponential horns to minimize phase cancellations. The aluminum alloy diaphragm is pneumatically drawn to shape in order to eliminate stresses that cause fatigue. A new patented suspension, consisting of a three-dimensional diamond pattern, has been designed to reduce bending stresses in the diaphragm support structure. The depth of the diamond pattern is closely controlled to provide predictable frequencies for the 2nd and 3rd normal resonance modes and for the basic suspension resonance.

This suspension design and precise manufacturing control give the 2421 more consistent high frequency response and approximately twice the power capacity of its predecessor.

A machined ring of pure silver surrounds the pole piece to counteract the inductance of the voice coil at high frequencies After manufacture, the frequency response of each driver is tested for conformity to rigid performance standards.

The 2421 is ideally suited for critical playback systems or reinforcement systems of the highest quality. Its high efficiency and power capacity permit great dynamic range. The peak-free response of the 2421 allows greater system gain without acoustic feedback. For maximum flexibility in system design, the driver is offered in two impedance ratings: the 2421B at 16 ohms, and the 2421A at 8 ohms.

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Model 2421—Compression Driver

Architectural Specifications

The compression driver shall consist of an Alnico V magnet encased in a cast iron return circuit. All magnetic assembly parts shall be machined from cast or extruded billet stock. No ceramic parts shall be used. The phasing plug shall be assembled of concentric horns to minimize phase cancellations, and it shall be further coupled to a tapered throat, the mouth of which shall be 25 mm (1 in) in diameter. The back cover shall be cast aluminum with reinforcing ribs to prevent ringing resonances. The diaphragm shall be 0.05 mm (0.002 in) aluminum alloy pneumatically drawn to shape. The voice coil shall be edgewound aluminum ribbon of not less than 44 mm (1¾ in) in diameter, operating in a magnetic field of not less than 1.5 tesla (15,000 gauss). An impedance controlling ring shall be affixed to the pole piece in order to increase efficiency at high frequencies and maintain flat response.

Performance specifications of a typical production unit shall be as follows:

Measured sensitivity with a 1 W input at 1 m distance on-axis from the mouth of a JBL model 2350 90° radial horn, averaged from 500 Hz to 2500 Hz, shall be at least 110 dB. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 7.7 (5.4) Newtons per ampere. Frequency response, measured on a terminated tube, shall be flat within ±5 dB from 800 Hz to 12 kHz. On a JBL Model 2350 horn, response shall be ±3 dB from 500 Hz to 15 kHz. Nominal impedance shall be 16 (8) ohms and power capacity shall be at least 60 watts normal speech or music program material.

The compression driver shall be JBL Model 2421. Other drivers will be considered for equivalency provided that submitted data from a recognized independent test laboratory verify that the above performance specifications are met.

Specifications

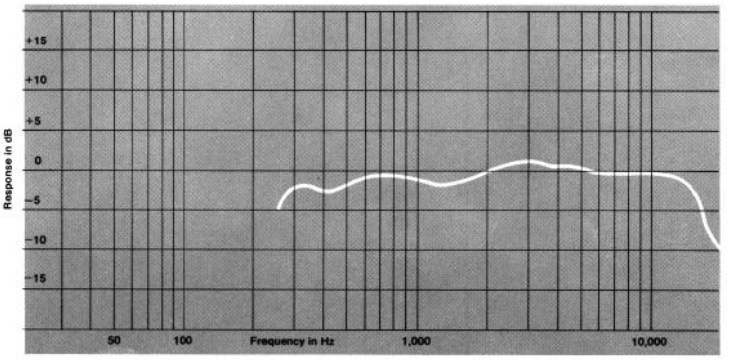
Horn Throat Diameter	25 mm 1 in
Nominal Impedance	2421A 8Ω
	2421B 16Ω
Power Capacity[1]	60 W continuous program at 800 Hz, 12 dB/octave slope
	100 W continuous program at 1.6 kHz or higher, 18 dB/octave slope
Sensitivity[2]	110 dB 1 W, 1 m
Nominal Efficiency	20% (500 Hz to 2500 Hz)
Frequency Range	800 Hz to 20 kHz
Distortion[3]	Less than 3%
Recommended Crossover[4]	800 Hz or higher
Diaphragm	0.05 mm (0.002 in) aluminum alloy
Voice Coil Diameter	44 mm 1¾ in
Voice Coil Material	Edgewound aluminum ribbon
Flux Density	1.5 T (15,000 gauss)
BI Factor	5.4 N/A (A)
	7.7 N/A (B)
Positive voltage to black terminal gives diaphragm motion toward the phasing plug.	
Dimensions	146 mm (5¾ in) diameter, 98 mm (3⅞ in) depth
Net Weight	5 kg 11 lb
Shipping Weight	5.4 kg 12 lb

1. Continuous program power is defined as 3 dB greater than continuous pink noise and is a conservative expression of the transducer's ability to handle normal speech and music program material. Continuous pink noise power ratings are tested with pink noise input having a 6 dB crest factor, with a high pass filter set at the specified lower limiting frequency.

2. Sensitivity measured with 1 W input at 1 m distance on axis from the mouth of a JBL 2350 90° radial horn, averaged from 800 Hz to 2500 Hz.

3. Third harmonic, 10 W input.

4. A 2421 can be used to 500 Hz, however power capacity will be reduced to 20 W continuous program in the region between 500 Hz and 800 Hz.



Frequency response contour of Model 2421 coupled to a 2350 horn. Measured response of a typical production unit, including all peaks and dips, does not deviate more than 2 dB from the above curve.

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