Model 2405 Ultra-High Frequency Transducer

The 2405 has a powerful Alnico V magnet housed in a cast iron magnetic circuit. Total weight of this assembly is 3 ¼ pounds. By precisely machining these and related parts, a flux density of 16,500 gauss in the voice coil gap is realized.

The diffraction horn assembly is die cast of solid aluminum. Internally, the annular voice coil diaphragm is pneumatically formed of fatigue-resistant aluminum alloy. Wire used in the 1¾-inch voice coil is aluminum, milled to a thin ribbon then tightly wound by hand on its narrow edge. This process places a maximum amount of conductor in the magnetic gap for optimum efficiency and transient response.

Architectural Specifications

The transducer shall have a measured sensitivity (SPL at 30 feet with a 1-mW input, warbled 7000 Hz-20,000 Hz) of at least 56 dB on-axis. On-axis frequency response measured under free field conditions at a distance of six feet or more shall extend from 7000 Hz to 20,000 Hz within plus or minus 3 dB. Horizontal dispersion shall be uniform at 45 degrees off-axis at 16 kHz and 30 degrees off-axis at 20 kHz, when measured at the 6 dB down points relative to on-axis frequency response characteristics using ⅓-octave band pink noise as the signal source.

Nominal impedance shall be 16 ohms and power capacity shall be at least 20 Watts when driven by pink noise, band-limited from 4 kHz to 20 kHz.

The transducer shall have a maximum diameter of 3⅞ inches and a depth of 3¼ inches and weigh not less than 4½ pounds. The diffraction horn shall be die cast of aluminum and the magnetic circuit will consist of Alnico V and low-reluctance iron, weighing not less than 3¼ pounds.

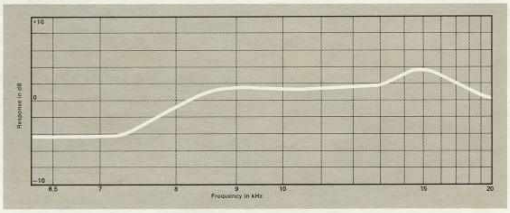
Voice coil diameter shall be 1.75 inches, operating in a magnetic field whose flux density measures at least 16,500 gauss. Voice coil wire shall be aluminum, milled to a ribbon then wound by hand on its narrow edge and mated to an anodized aluminum diaphragm.

The transducer shall be JBL Model 2405.

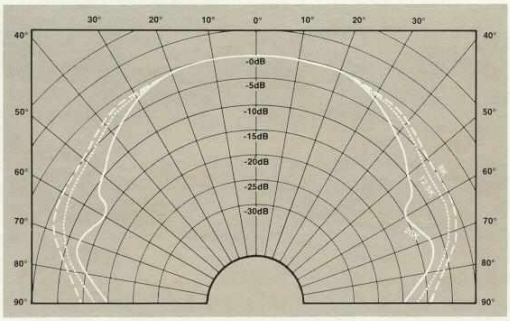
Specifications

Horn Mouth	3.125 x 0.725 inches	7.9 x 1.8 cm
Nominal Impedance	16 ohms	
Power Capacity[1]	20 Watts continuous program	
Sensitivity[2]	56 dB	
Frequency Range	6500 to 21,500 Hz	
Dispersion[3] (6 dB down points, ⅓-octave band, pink noise)	90° horizontal x 30° vertical at 16 kHz 65° horizontal x 25° vertical at 20 kHz	
Recommended Crossover	7000 Hz or higher	
Diaphragm	0.0022" (0.056 mm) aluminum alloy	
Voice Coil Diameter	1.75 inches	4.4 cm
Voice Coil Material	Edgewound aluminum ribbon	
Magnetic Assembly Weight	3¼ lbs.	1.5 kg
Flux Density	16,500 gauss	
Baffle Cutout Diameter	3⅛"	7.9 cm
Dimensions	3⅞" (9.8 cm) diameter 3¼" (8.3 cm) depth	
Net Weight	4½ lbs.	2.0 kg
Shipping Weight	5¼ lbs.	2.4 kg

[1]Continuous program power is defined as 3 dB greater than continuous sine wave power (RMS). It is a conservative expression of the transducer's ability to handle normal speech and music program material.
[2]The measured sensitivity represents the SPL achieved at 30 feet with a 1-mW input warbled from 7000 to 20,000 Hz.
[3]Widest dispersion is in the plane perpendicular to the length of the horn opening.



Frequency response of the 2405.



Polar response of 2405 in the horizontal plane. The above curves were traced by an automatic recorder with the 2405 located in a free-field environment. Power fed to the 2405 was adjusted to provide the same 0-dB reference for each curve.

JBL Professional Series
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