

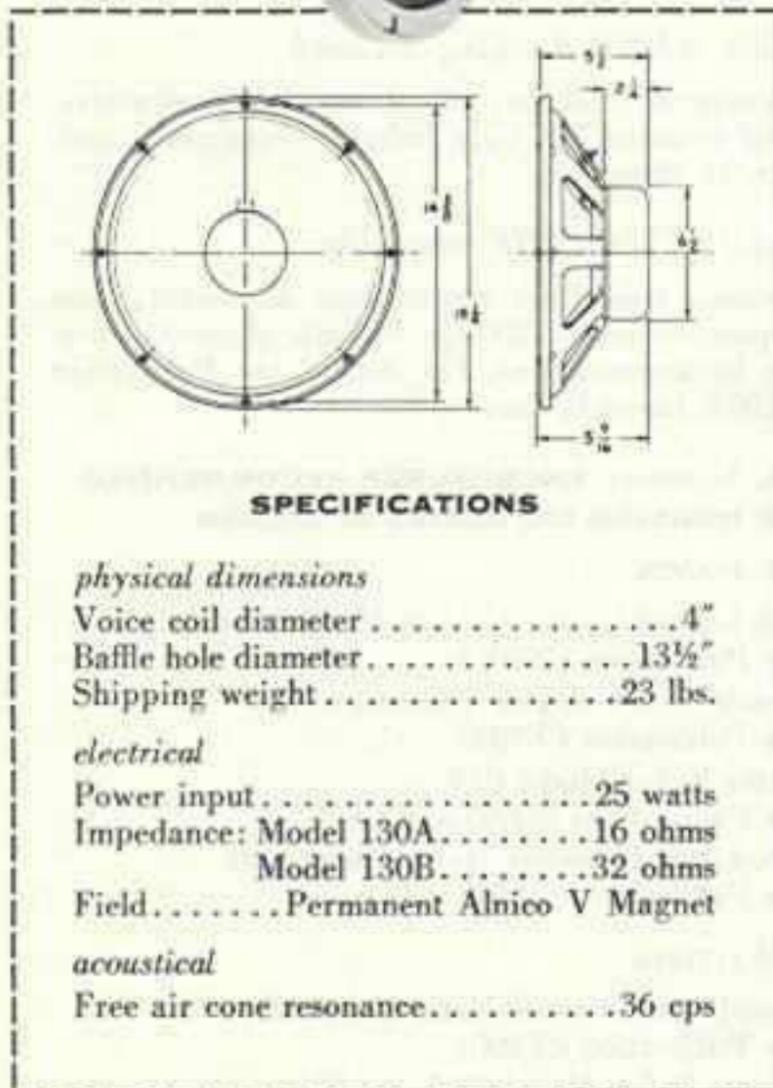
*b u l l e t i n*

Models  
130A & 130B  
15" low  
frequency  
speakers

Number SB1005



- *crisp, clean low-end reproduction*
- *4"-diameter voice coil of edgewound copper ribbon*
- *precise transient response*
- *high efficiency*
- *matched performance with Model 175DLH HF Assembly*



The JBL *Signature* Models 130A and 130B are designed to provide crisp, clean reproduction of all usable audio frequencies below 1500 cps. They are recommended for performance at the lower end of JBL *Signature* sound systems crossing over at 1200 cps. These include *Signature* System 001 which has a single Model 130A at the low end and *Signature* System 050, in which two Models 130B perform in concert. High Frequency Assembly Model 175DLH generates and projects the highs in both systems. Transducers of the 130-series are distinguished in listening tests by the remarkable fidelity with which they articulate the most difficult transients. This quality results from the extremely high electroacoustical efficiency which has been achieved through extensive research, imaginative design and the unstinting use of top-quality materials.

#### CONSTRUCTION

##### *dynamic assembly*

Models 130A and 130B have 4-inch diameter voice coils of edgewound copper ribbon. Machines of unique design operated by highly skilled craftsmen are required for the realization of this exclusive JBL feature. The mechanical advantage of the large, specially wound coil lies in the resulting cone stiffness. This is responsible for the clean, crisp character of the propagated bass notes. In point of electroacoustical efficiency, advantages can be summed up by the statement that there is more than one foot of economically-wound conductor per turn of the coil. In Model 130A the coil is wound to match a source impedance of 16 ohms; in Model 130B, the nominal impedance is 32 ohms. Thus, two Models 130B connected in parallel will match the standard output impedance of 16 ohms.

*every note  
a perfect quote!*

signature

JBL

sound

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### *frame*

The frame is a rigid aluminum casting, eliminating the disagreeable resonances which occur in all punch-press fabricated speaker baskets.

### *pot*

The magnetic circuit of the pot is constructed of a specially developed iron material which provides a low-reluctance return path for the magnetomotive force. Through advanced design, such extremely efficient use is made of the permanent magnet material that stray magnetic fields external to the pot structure are virtually non-existent. This can be demonstrated by holding a small iron object close to the pot. *All available magnetic flux* is conducted to the voice coil gap where it contributes to the field motivating the coil. It should be pointed out in this connection that the magnetic leakage from speakers designed with less care has an extremely detrimental effect on the performance of TV tubes and other electronic equipment operating within the stray field.

### *electromagnetic coupling*

In following transients and steep wave forms, it is necessary that the voice coil exert large forces to overcome cone resistance instantaneously. The force exerted by the voice coil in response to an electric signal of fixed magnitude is governed by the proportionality  $F \propto (Bl)^2$ —where  $B$  is the density of the magnetic field in the gap and  $l$  is the amount of conductor subjected to the uniform field. In transducers of the 130-Series magnetic field density ( $B$ ) is maximized by the application of careful design, specially developed materials and the kind of precision workmanship necessary to hold extremely fine gap tolerances. The amount of conductor ( $l$ ) is maximized by the difficult process of winding metallic ribbon on edge into a coil of unprecedented diameter.

Electrical and magnetic properties of 130-Series transducers are completely tested at final inspection by measuring the  $Bl$  factor of each unit. This measurement is made with special equipment designed specifically for this purpose. No other loudspeaker manufacturer offers this quality control.

### **PERFORMANCE**

Models 130A and 130B perform at maximum efficiency up to 1500 cps. The widest flat frequency response is obtained when these transducers are mounted in correctly designed bass reflex or back-loading horn enclosures. In such installations, frequencies from 30 to 175 cps are generated at the back of the cone and transmitted through the enclosure, while the front of the cone acts as a direct radiator of the midrange frequencies (175-1200 cps). The 130-Series LF Speakers have also been used with

excellent results performing from a lower crossover point in front-loading horns. Reproduction is clean and precise throughout the design frequency band. These transducers have no peer in handling transients or steep wave fronts.

### **TWO-WAY SYSTEMS 001 AND 050**



These systems of matched transducers have long been favored by perceptive listeners for their crisp handling of all tones and transients. Both systems use the High Frequency Assembly Model 175DLH above a crossover point of 1200 cps. System 001 uses JBL Signature Model 130A in the low range, while System 050 has two Models 130B for augmented bass response.

### *model N1200 dividing network*

Crossover at 1200 cps; roll-off rate, 12 db per octave. Panel-mounted HF Gain Selector. Nominal impedance, 16 ohms.

### *model 175DLH HF assembly*

Precision transducer reproducing all useful audio frequencies above 1200 cps. Smooth, efficient dispersion by acoustic lens. For details, see Publication SB1004, James B. Lansing Sound, Inc.

### **JBL Signature ENCLOSURES RECOMMENDED FOR HOUSING 130-SERIES SPEAKERS**

#### *001 system*

- Back-Loaded Corner Console Horn, Model C34 (see Publication CF701)
- Console Reflex Models C35 and C37 (see Publication CF702)
- Corner Reflex Model C39 (see Publications SL603 and CF702)
- Back-Loaded Lowboy Horn, Model C40 (see Publication SL604)

#### *050 system*

- Front-Loaded Corner Horn, Model C31 (see Publication CF700)
- Console Reflex Models C35 and C37 (see Publication CF702)
- Corner Reflex Model C39 (see Publications SL603 and CF702)

For complete description of all JBL Signature units, write for Catalog SC503.

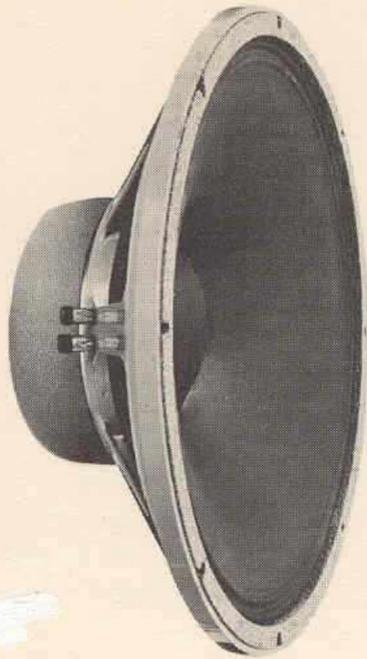
signature **JBL** sound

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**JBL**

**130A & B  
150-4 & 4C**

**HIGH EFFICIENCY  
DRIVERS FOR  
HORN OR  
REFLEX LOADED  
ENCLOSURES**



The JBL *Signature* Models 130A and 130B are designed to provide crisp, clean reproduction of all usable audio frequencies below 1500 cps. They are recommended for performance at the lower end of JBL *Signature* sound systems crossing over at 1200 cps. These include *Signature* System 001 which has a single Model 130A at the low end and *Signature* System 050, in which two Models 130B perform in concert. High Frequency Assembly Model 175DLH generates and projects the highs in both systems. Transducers of the 130-series are distinguished in listening tests by the remarkable fidelity with which they articulate the most difficult transients. This quality results from the extremely high electroacoustical efficiency which has been achieved through extensive research, imaginative design and the unstinting use of top-quality materials.

JBL *Signature* Models 150-4 and 150-4C are designed to provide powerful verbatim reproduction of all usable audio frequencies below 700 cps. They are recommended for use in front loaded horn type enclosures such as the renowned JBL "Hartsfield," and the rear-loading C43 and C55. They comprise the lower frequency transducer, crossing over at 500 cps, when used in such systems as the JBL 081, 083, and the 085. The rigid piston assembly and efficient electromagnetic characteristics of this transducer result in crisp reproduction of the lowest audio frequencies, without "hangover" or boom. The high efficiency, smooth response, and great power-handling reserve of these drivers has prompted their use in the world's finest theater systems.

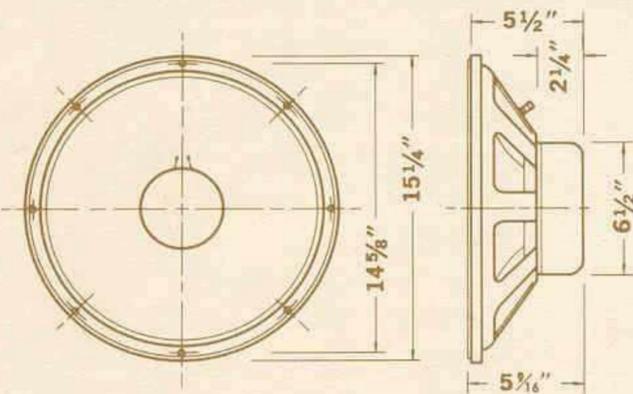
*Edge wound copper voice coils.*

*Maximum efficiency.*

*Massive magnetic structures.*

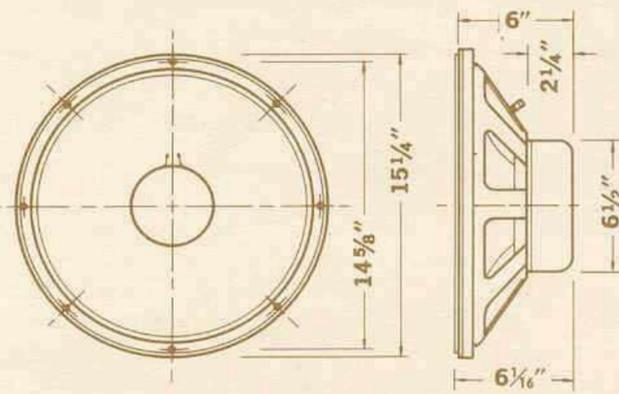
*Precision cast aluminum frames.*

*Grain oriented Alnico V magnetic field supply.*



**SPECIFICATIONS**

Impedance: 130A .....	16 ohms
130B .....	32 ohms
Voice coil diameter .....	4"
Power capacity .....	25 watts
Free air cone resonance .....	36 cps
Field .....	permanent Alnico V magnet
Baffle hole diameter .....	13 1/2"
Shipping weight .....	23 lbs



**SPECIFICATIONS**

Impedance: 150-4 .....	32 ohms
150-4C .....	16 ohms
Voice coil diameter .....	4"
Power capacity .....	30 watts
Free air cone resonance .....	35 cps
Field .....	permanent Alnico V magnet
Baffle hole diameter .....	13 1/2"
Shipping weight .....	25 lbs





**DYNAMIC ASSEMBLY** Models 130A, B and 150-4, -4C have 4-inch diameter voice coils of edgewound copper ribbon. This unique feature requires specialized manufacturing techniques which prohibit ordinary mass-production assembly. The large, specially wound voice coil is coupled to a stiff, straight-sided cone. This combination is the only known method of achieving the goal of true piston action throughout the operating range of the transducer. High electro-acoustic efficiency is achieved by centering the economically-wound voice coil (more than one foot of conductor per turn!) in a precisely machined magnetic gap of the highest possible flux density. These powerful drivers have none of the "muddy," "bubbling" quality associated with less efficient designs.

**FRAME** The frame is a rigid aluminum casting, eliminating the disagreeable resonances which occur in all punch-press fabricated speaker baskets.

**POT** The magnetic circuit of the pot is constructed of a specially developed iron material which provides a low-reluctance return path for the magnetomotive force. Through advanced design, such extremely efficient use is made of the permanent magnet material that stray magnetic fields external to the pot structure are virtually non-existent. This can be demonstrated by holding a small iron object close to the pot. *All available magnetic flux* is conducted to the voice coil gap where it contributes to the field motivating the coil. It should be pointed out in this connection that the magnetic leakage from speakers designed with less care has an extremely detrimental effect on the performance of TV tubes and other electronic equipment operating within the stray field.

**PERFORMANCE** Models 130A and 130B perform at maximum efficiency up to 1500 cps. The widest flat frequency response is obtained when these transducers are mounted in correctly designed bass reflex or back-loading horn enclosures. In such installations, frequencies from 30 to 175 cps are generated at the back of the cone and transmitted through the enclosure, while the front of the cone acts as a direct radiator of the midrange frequencies (175-1200 cps).

**MODEL N1200 DIVIDING NETWORK** Crossover at 1200 cps; roll-off rate, 12 db per octave. Panel-mounted HF Gain Selector. Nominal impedance, 16 ohms.

**MODEL 175DLH HF ASSEMBLY** A precision transducer reproducing all useful audio frequencies above 1200 cps. Smooth, efficient dispersion by acoustic lens.

**PERFORMANCE** Models 150-4 and 150-4C perform at maximum efficiency up to 700 cps. These transducers may be used as drivers for compression-loaded folded horns, such as the *Paragon*, or in reflex or rear-loading horn enclosures as well. The high acoustic loading of properly matched reflex and horn-type enclosures results in the greatest possible acoustic efficiency—hence fidelity—down to the lowest musical frequencies. To realize the clean, crisp quality which characterizes these bass drivers, they should *not* be mounted in resonant, tuned pipe, or "air coupler" type cabinets. Properly installed, these transducers have no equal in natural reproduction of the vital bass frequencies.

**N500 AND N400 DIVIDING NETWORKS** Both units have a crossover frequency of 500 cps, impedance of 16 ohms, and provide for adjustable attenuation of the high frequency driver. The N500 is designed for general purpose heavy-duty use.

