

|                            |   |                          |                |
|----------------------------|---|--------------------------|----------------|
| <b>JBL<br/>Engineering</b> | <b>Engineering Standard</b>                 | Date Effective<br>8/5/96 | Number<br>1714 |
|                            | <b>Engineering Design<br/>Specification</b> | Date Revised             | Page<br>1 of 4 |

**Model: 2251 J 10 inch Low/mid transducer**

Frequency Response: See Attached curves, page 3 & 4

|                  |             |                |              |       |       |
|------------------|-------------|----------------|--------------|-------|-------|
| Response window: | 50-190 Hz   | 1 octave av    | 36 dB/octave | + 2dB | - 2dB |
|                  | 200-990 Hz  | 1/3 octave avg | 36 dB/octave | + 1dB | - 1dB |
|                  | 1-1.990 kHz | 1/3 octave avg | 36 dB/octave | + 1dB | - 1dB |
|                  | 2-3.990 kHz | 1 octave av    | 36 dB/octave | + 2dB | - 2dB |

Impedance: See attached curve, page 3

D.C. Resistance: 12.65 Ohms

Theile- Small Params: See Page 2

Flux Density: 149,000 Maxwells in .3" thick top plate

Free Air Resonance: 61 Hertz before Power test  
61 Hertz after Power test

Motional Impedance: 196 Ohms

Minimum Impedance: 16.5 Ohms @ 414 Hz.

Polarity: EIA Std. (Positive voltage to RED terminal gives forward diaphragm motion.)

Power Test: 80 RMS 200 - 2k Hz. pink noise  
6 dB Crest factor, 2 hr duration. 388 watts  
In free air

Weight: lbs

| LTR      | DESCRIPTION     | DATE   | APPR |
|----------|-----------------|--------|------|
| <b>A</b> | INITIAL RELEASE | 8/5/96 | DEB  |
|          |                 |        |      |

Design Engineer

David Blore

|                             |                                 |                               |                       |                       |
|-----------------------------|---------------------------------|-------------------------------|-----------------------|-----------------------|
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**Model**                    **2251 J**                    **10 inch Low/mid transducer**

**Theile - Small Parameters**

**Before power test**                    **After power test**

|       |                                 |             |             |
|-------|---------------------------------|-------------|-------------|
| Re:   | 12.65                           | 12.65       | Ohms        |
| Fs:   | 61                              | 61          | Hertz       |
| Qts:  | 0.2                             | 0.2         |             |
| Qms:  | 4                               | 3.4         |             |
| Qes:  | 0.21                            | 0.22        |             |
| Vas:  | See A.P.T.                      | 1.011       | Cu. Ft.     |
| No:   | See A.P.T.                      | 2.894094392 | %           |
| Sd:   | See A.P.T.                      | 0.031       | Sq Meters   |
| Mms:  | See A.P.T.                      | 0.032       | Kg          |
| BL:   | See A.P.T.                      | 26.77       | T M         |
| Le:   | n/a (purely resistive at 1 khz) |             |             |
| Xmax: | See A.P.T.                      | 5.7         | mm @10% THD |

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Model 2251 J  
10 inch Low/mid transducer  
4.06VRMS  
10 Cu. Ft. Sealed Enclosure in 1/2 space  
Zero level 70 dB

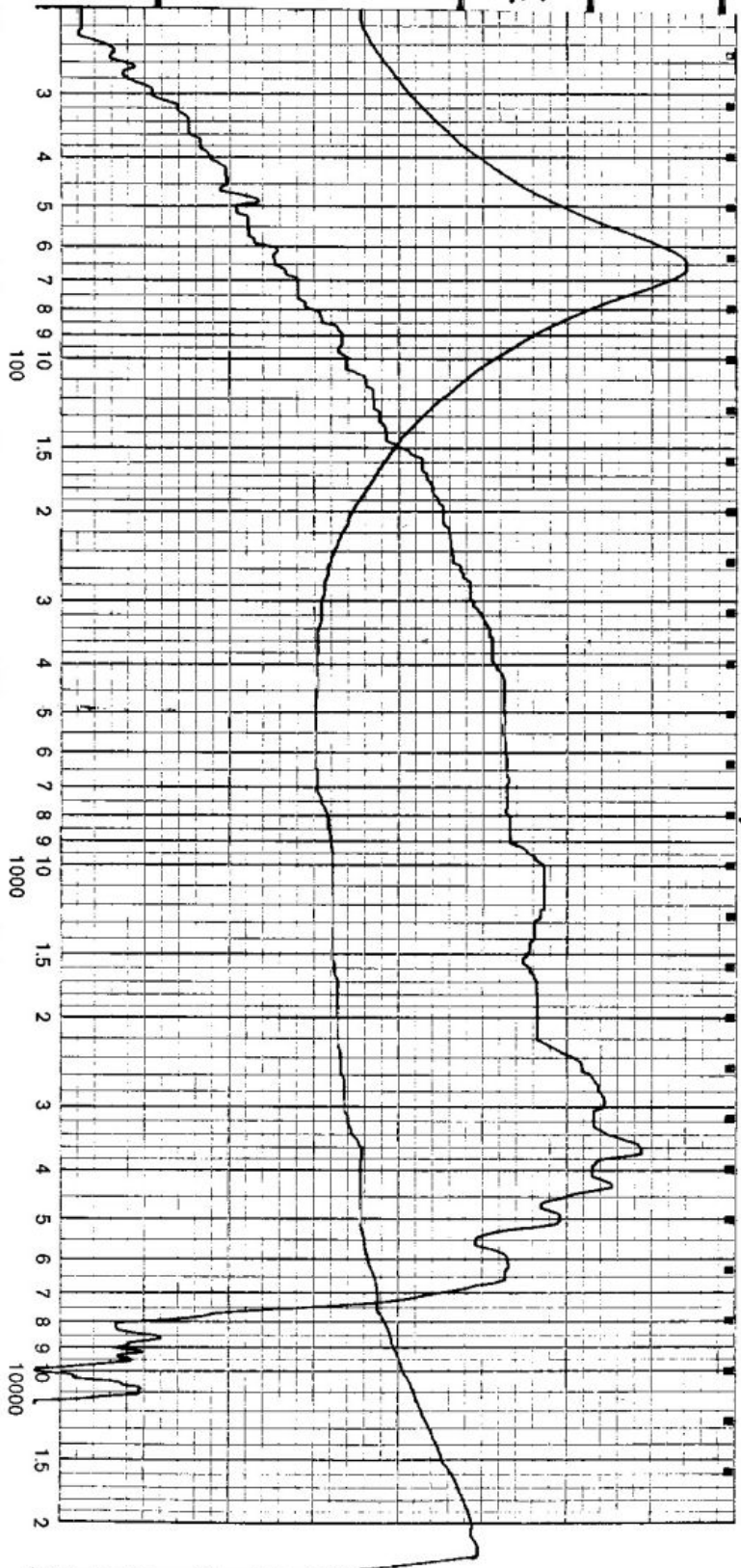
Impedance  
Zero level 3.16 Ohms

Brüel & Kjær  
Copenhagen

Measuring Object: 10" DCD #4 EPA  
16.5 m @ 414 Hz  
4.06 m @ 14

Rec. Nr.: B + KL  
Date: 7-16-96  
Signature: T.M.  
Rectifier:  
Zero Level: 70  
Power Lim. Frequency:  
Potentiometer Range:  
Writing Speed:  
Paper Speed:

QP 1125



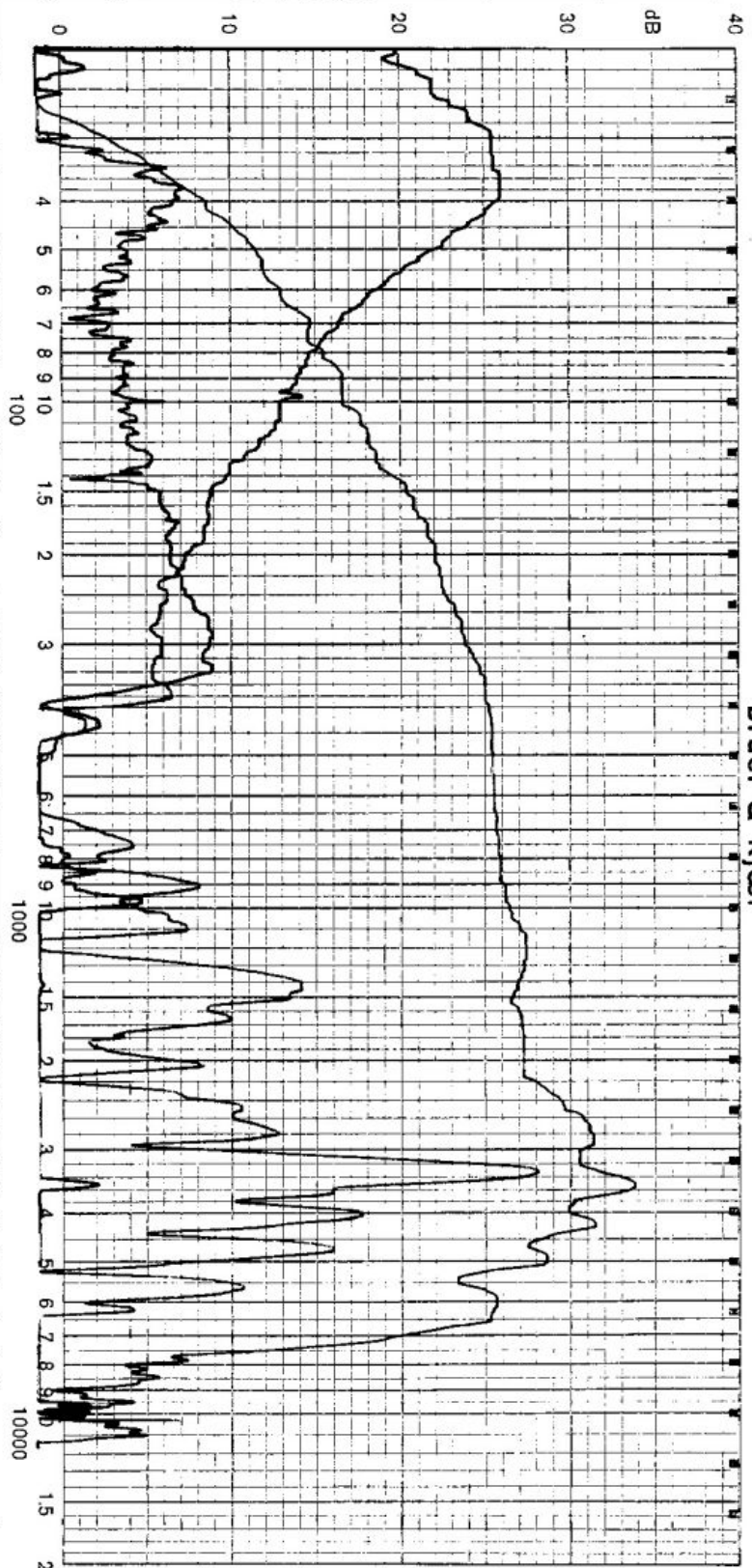
|                      |                          |                        |                |                |
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**Model** 2251 J  
**10 inch Low/mid transducer**  
 40.6 V @ 1 meter  
 100 Watts at 16.5 ohms  
 10 Cu. Ft. Sealed Enclos dB  
 Zero Lev 80  
**Distortion raised 20dB**  
 Red = 2nd Harmonic  
 Blue = 3rd Harmonic

Brüel & Kjær  
 Copenhagen

Measuring Object: 10" DCD #9 EPR  
 16.5  $\Omega$  @ 419 Hz  
 40.6V @ 1m  
 H.D. 20dB  
 RED = 2nd + BLUE = 3rd  
 Nr. B + 41  
 Date: 7-16-96  
 Nature: T.N.  
 Amplifier: 90  
 Zero Level:  
 Over Lim. Frequency:  
 Antenna Range:  
 Operating Speed:  
 Meter Speed:

QP 1125



Brüel & Kjær