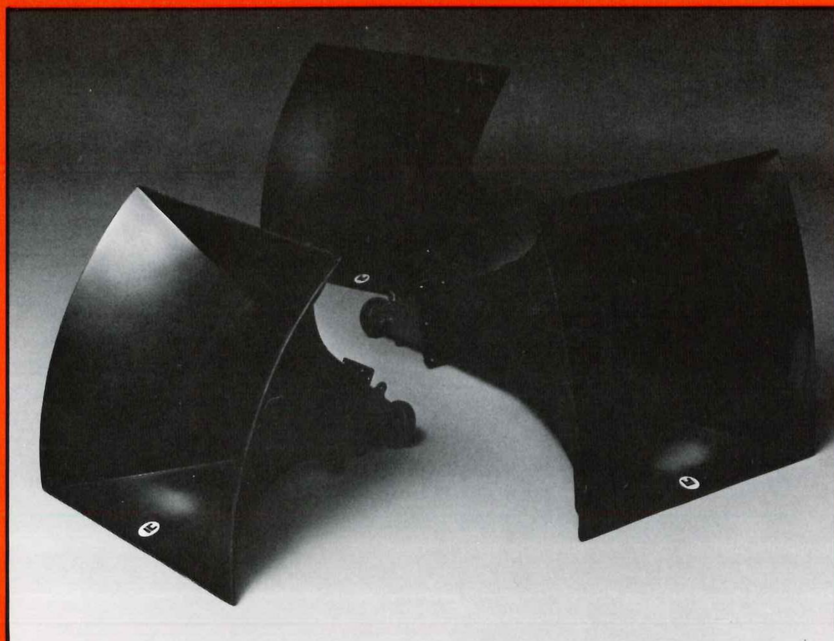
2360
2365
2366

BI-RADIAL™ CONSTANT COVERAGE HORNS



FEATURES:

Uniform on and off axis frequency response

Full horn loading to 350 Hz

Precise horizontal and vertical pattern control

Uncolored sound quality

49 mm (2 in.) throat entry

JBL Bi-Radial™ horns[1] are designed to provide uniform on and off axis frequency response from below 500 Hz to beyond 16 kHz. The horn's unique geometry and relatively tall vertical mouth dimension ensure precise vertical, as well as horizontal, beamwidth control throughout the rated frequency band. Since both horizontal and vertical coverage patterns remain essentially constant, horn performance may be easily predicted for any given frequency or orientation. Cluster design, therefore,

JBL

is simplified and the need for horn overlapping is minimized. Typical cluster performance problems such as lobing and comb filter effects are virtually eliminated.

Computer aided design techniques were used to derive the horn contours in the horizontal and vertical planes. Utilizing sidewall contours based on a polynomial power series formula, the patented horn design yields smooth response, low distortion, and even coverage. This design avoids the problems normally associated with horns that feature sharp flare transitions and flat sidewalls. The Bi-Radial™ compound flare configuration of the horn provides constant coverage over defined, solid angles.

Three horn models are available with nominal coverage angles of 90° x 40°, 60° x 40°, and 40° x 20° (-6 dB, Horizontal x Vertical). All three feature 795 mm (31-5/16 in) square mouth dimensions to further simplify cluster design. In addition, the 90° x 40° and 60° x 40° horns are identical in length.

Each Bi-Radial™ constant coverage horn is supplied with a cast aluminum throat that will accept JBL 2441, 2445, or 2482 50 mm (2 in) throat diameter compression drivers. 25 mm (1 in) throat diameter drivers may be mounted if a proper horn throat adapter is installed. Mounting tabs are provided on all four sides of the supplied horn throat and are located just behind the combined horn/driver center of gravity.

To ensure freedom from resonances, light weight, and superior structural strength, the horn bell is constructed of heavy duty, 7.5 mm (5/16 in) thick, fiberglass reinforced plastic. Mounting holes are provided on the top wall of the bell to facilitate three-point hanging.

[1]U.S. Patent No. 4,308,932. Foreign patents pending.

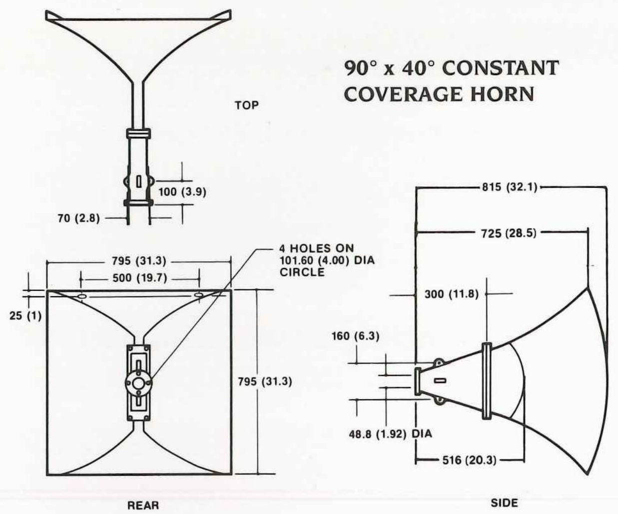
SPECIFICATIONS:

HORN MODEL:	2360	2365	2366
Throw:	Short	Medium	Long
Horizontal Coverage Angle Degrees (−6 dB): Average Range:	 93° (+9°, −13°) 500-16 kHz	 66° (+11°, −9°) 500-16 kHz	 47° (+17°, −10°) 500-16 kHz
Vertical Coverage Angle Degrees (−6 dB): Average Range:	 46° (+13°, −15°) 500-16 kHz	 46° (+11°, −15°) 500-16 kHz	 27° (+5°, −7°) 1000-16 kHz
Directivity Factor (Q): Average Range:	12.3 (+7.5, −4.3) 500-16 kHz	19.8 (+9.0, −5.8) 500-16 kHz	45.9 (+16.0, −12.9) 1000-16 kHz
Directivity Index (Di):	10.8 dB (+2.2, −1.7 dB)	12.9 (+1.7, −1.7 dB)	16.5 dB (+1.4, −1.3 dB)
Usable Low Frequency Limit:	300 Hz	300 Hz	200 Hz
Minimum Recommended Crossover Frequency (using 2441, 2445): (using 2482):	 500 Hz 350 Hz	 500 Hz 350 Hz	 500 Hz 300 Hz
Axial Pressure Sensitivity:	Measured on axis in the far field with 1 watt input (4.0 volts RMS, 16 ohms) and referenced to 1 meter distance using the inverse square law. Listed sound pressures represent an average from 630 Hz to 4 kHz using the model 2445 or 2441 driver.		
1 Watt/1 Meter Axial Sensitivity:	113 dB SPL	115 dB SPL	118 dB SPL
Construction: Horn Bell: Horn Throat:	 Injection molded reinforced urethane resin. Aluminum, sand cast (nominal 7.5 mm [5/16 in] wall thickness).		
Overall Dimensions: (with throat attached) Mouth Height: Mouth Width: Length: Net Weight:	 795 mm (31-5/16 in) 795 mm (31-5/16 in) 815 mm (32-7/64 in) 12.2 kg (27 lb)	 795 mm (31-5/16 in) 795 mm (31-5/16 in) 815 mm (32-7/64 in) 11.3 kg (25 lb)	 795 mm (31-5/16 in) 795 mm (31-5/16 in) 1390 mm (54-45/64 in) 16.3 kg (36 lb)
Shipping Weight:[1]	Horn—26 kg (57.4 lb) Throat—4 kg (8.8 lb)	Horn—26.6 kg (58½ lb) Throat—2.6 kg (5.8 lb)	Horn—32 kg (70½ lb) Throat—3 kg (6.8 lb)

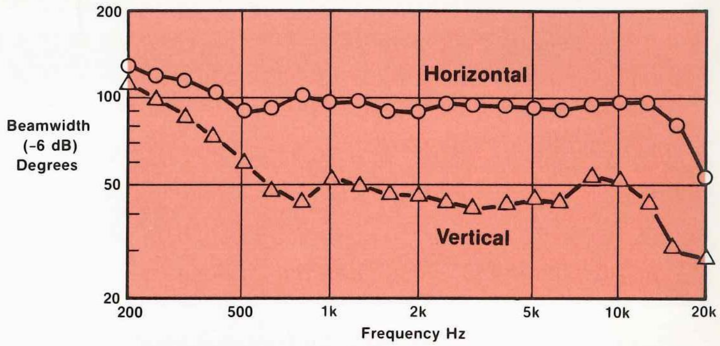
[1]Horn and horn throat are shipped together, but packed separately.

Model 2360

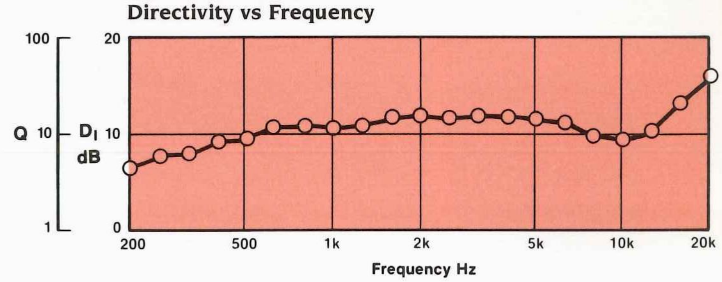
90° x 40° CONSTANT COVERAGE HORN



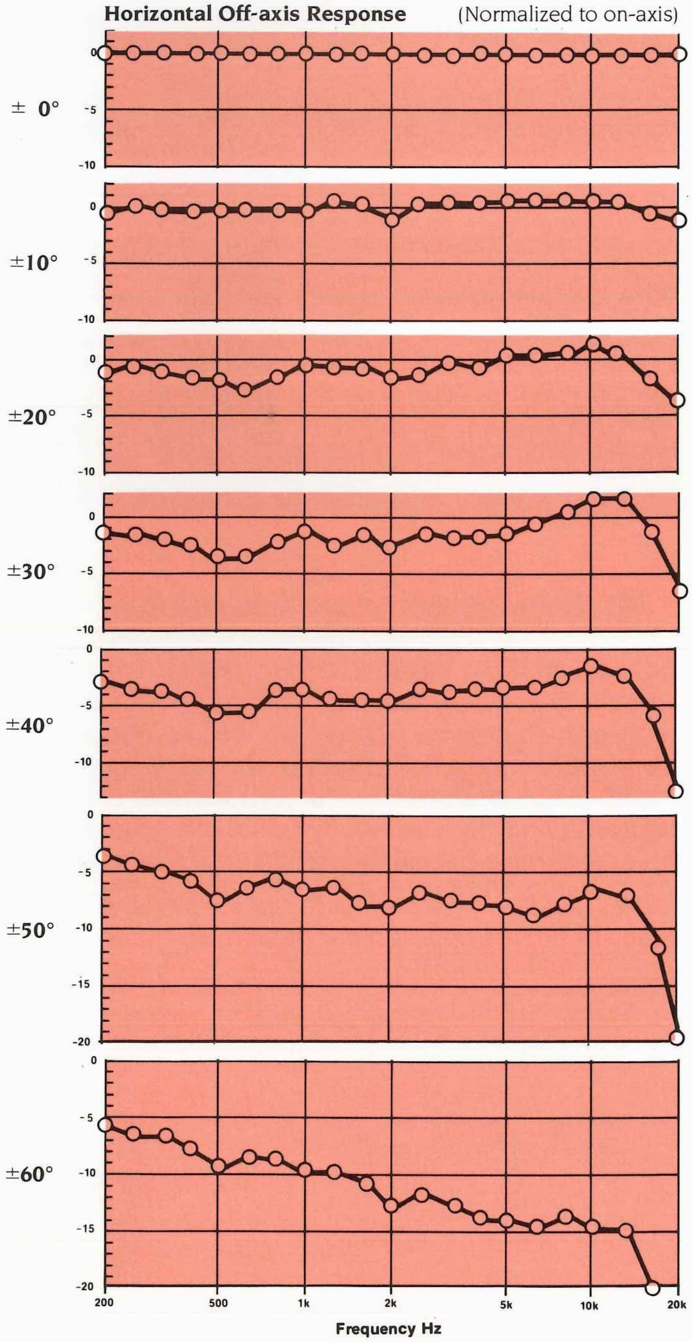
Beamwidth vs Frequency



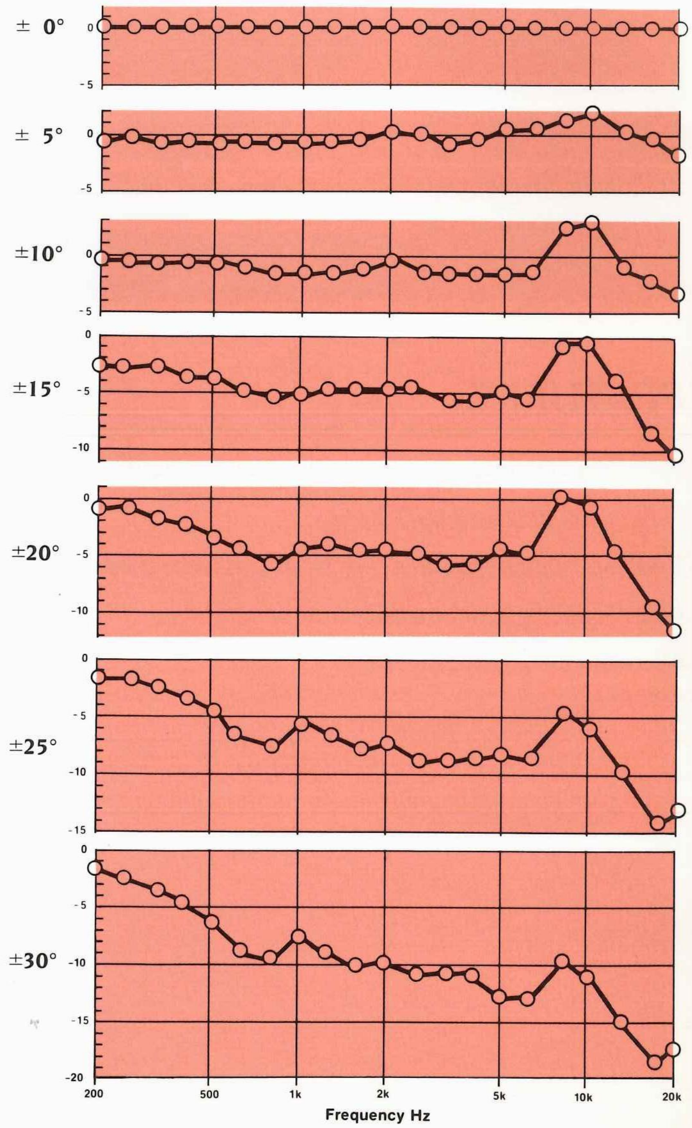
Directivity vs Frequency



Horizontal Off-axis Response (Normalized to on-axis)

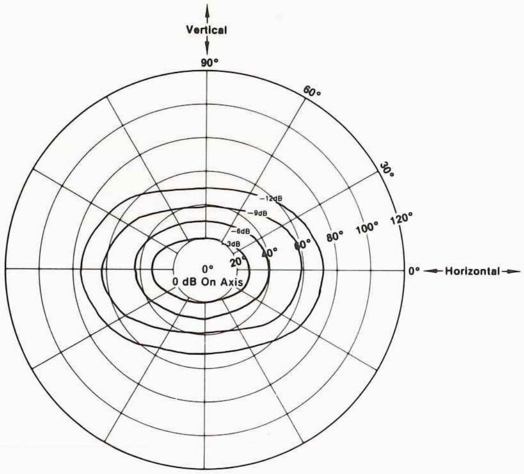


Vertical Off-axis Response (Normalized to on-axis)



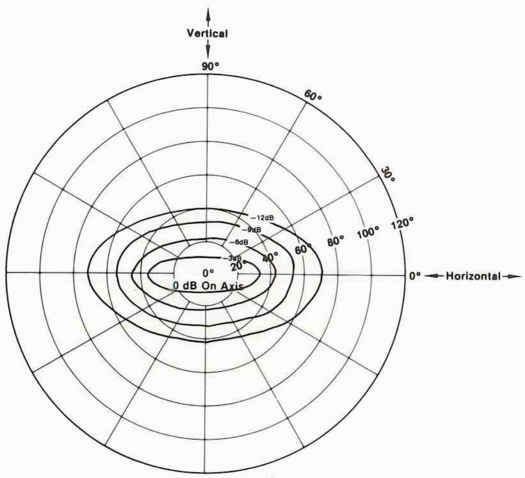
Model 2360 Frontal Isobar Contours

500Hz Octave Band.



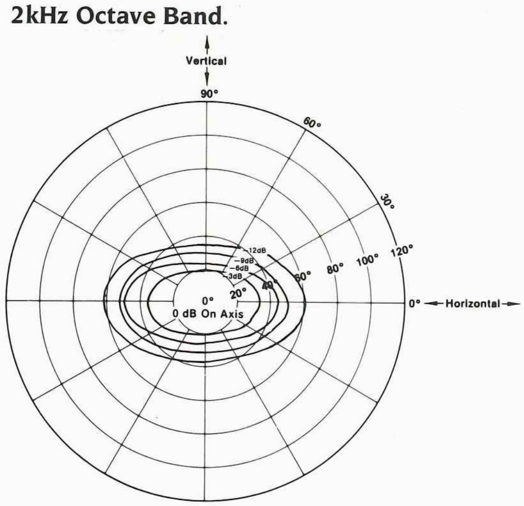
500 Hz octave bandwidth constant sound pressure contours of 0 to -12 dB in steps of -3 dB. The contours are plotted on polar grid lines with on axis being the center of the plot. The data was gathered by taking an octave polar plot at all oblique angles from 0° (horizontal) to 90° (vertical) in steps of 5°.

1kHz Octave Band.



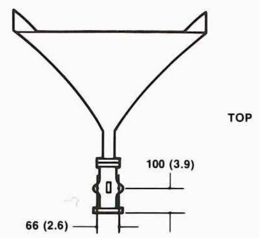
1 kHz octave bandwidth constant sound pressure contours. Same conditions as 500 Hz contours.

2kHz Octave Band.

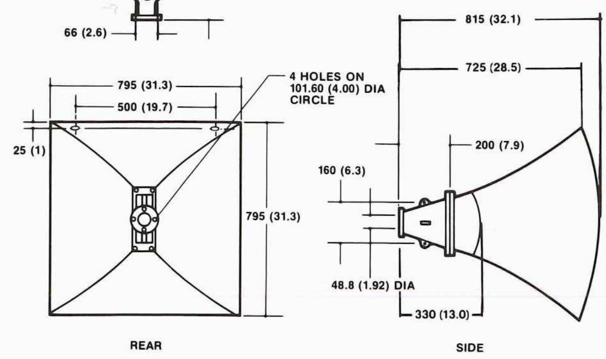


2 kHz octave bandwith constant sound pressure contours. Same conditions as 500 Hz contours. This data may be considered essentially the same as would be observed at 4 kHz and 8 kHz, considering only the -3, -6, and -9 dB insobars.

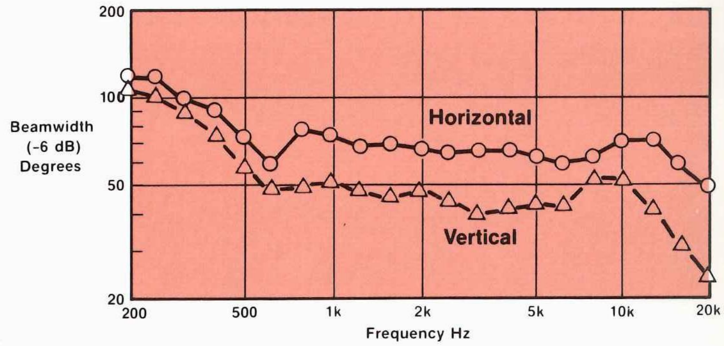
Model 2365



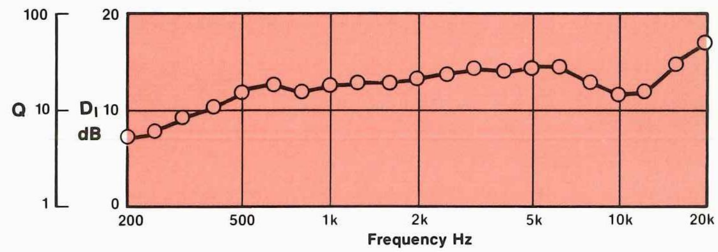
60° x 40° CONSTANT COVERAGE HORN



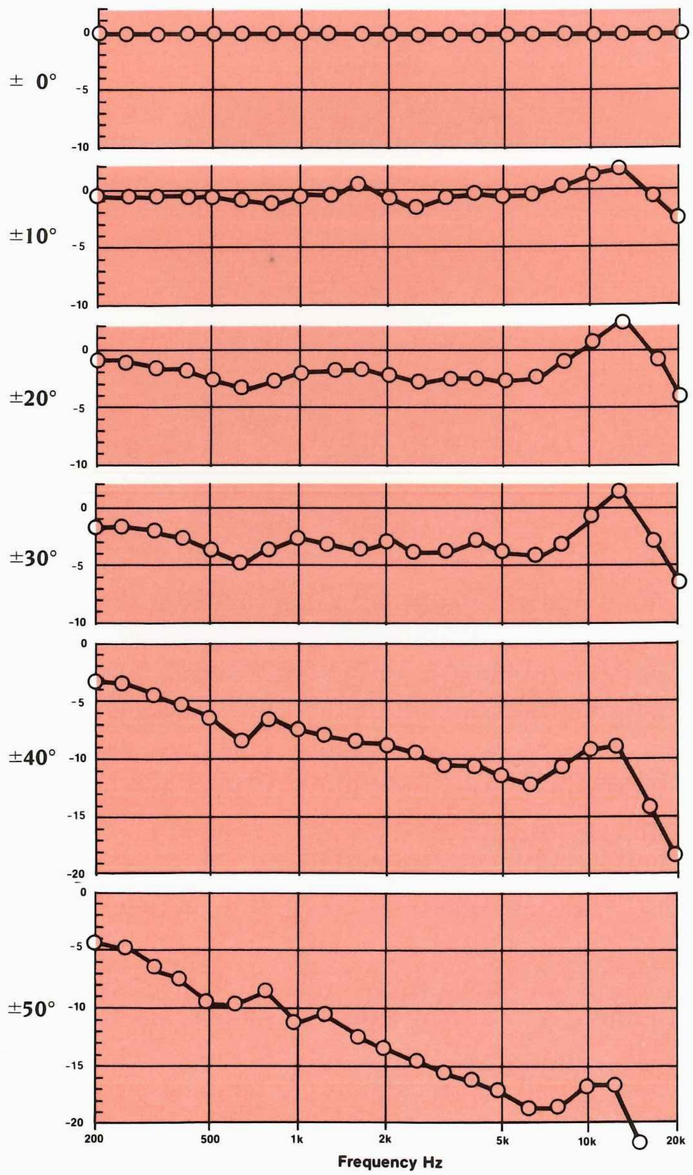
Beamwidth vs Frequency



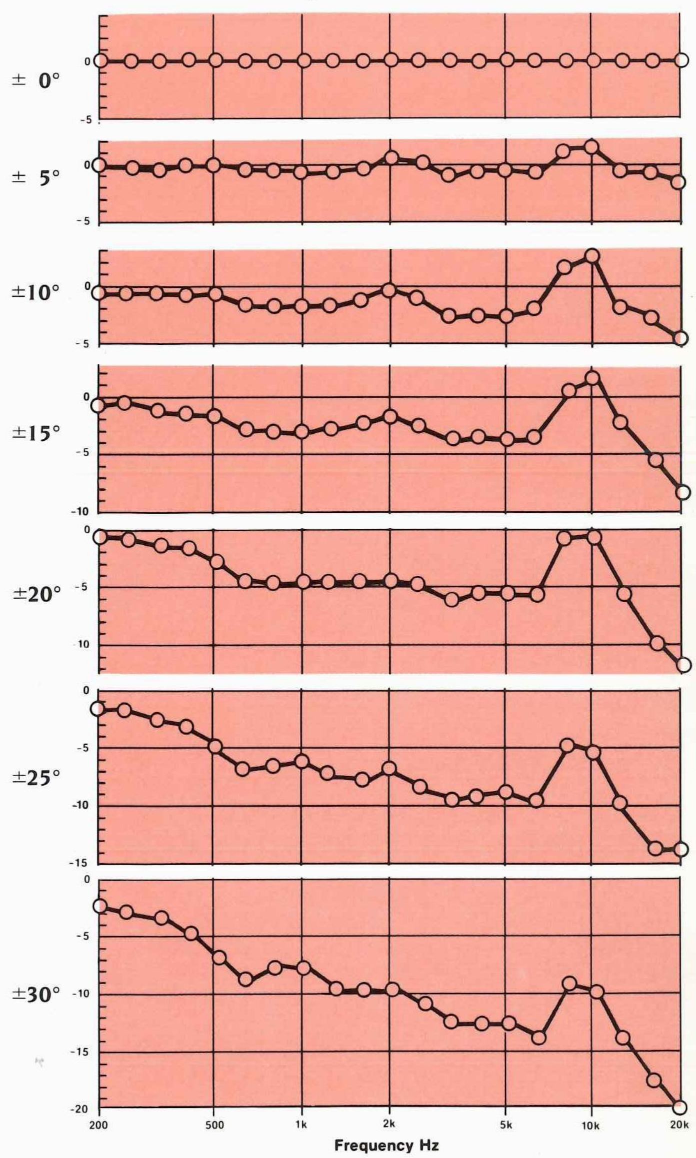
Directivity vs Frequency



Horizontal Off-axis Response (Normalized to on-axis)

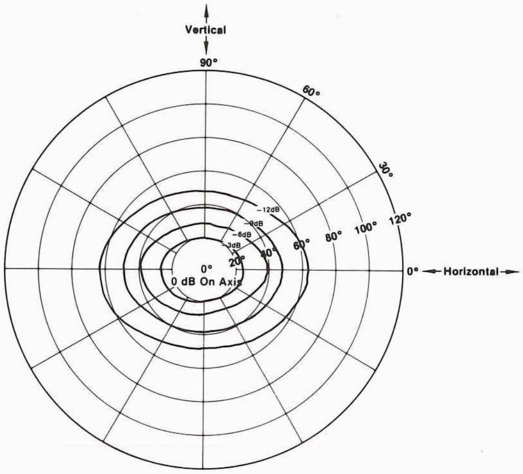


Vertical Off-axis Response (Normalized to on-axis)



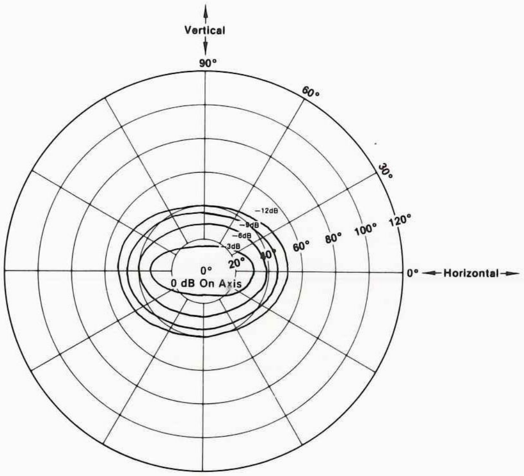
Model 2365 Frontal Isobar Contours

500Hz Octave Band.



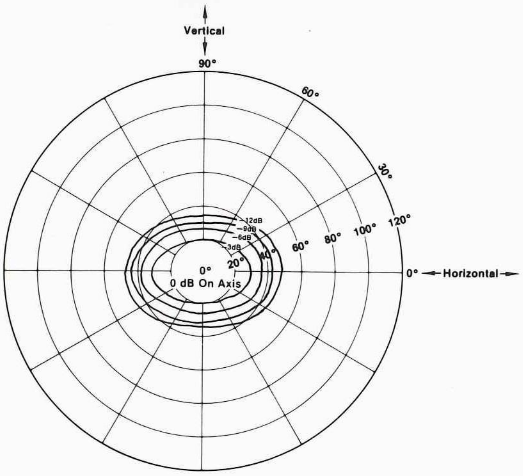
500 Hz octave bandwidth constant sound pressure contours of 0 to -12 dB in steps of -3 dB. The contours are plotted on polar grid lines with on axis being the center of the plot. The data was gathered by taking an octave polar plot at all oblique angles from 0° (horizontal) to 90° (vertical) in steps of 5°.

1kHz Octave Band.



1 kHz octave bandwidth constant sound pressure contours. Same conditions as 500 Hz contours.

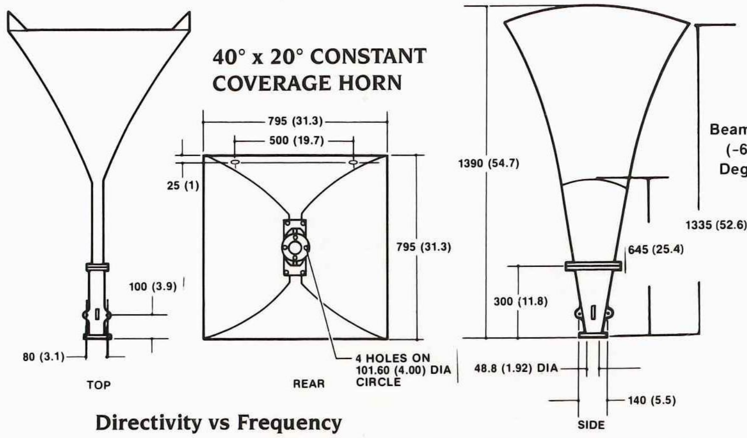
2kHz Octave Band.



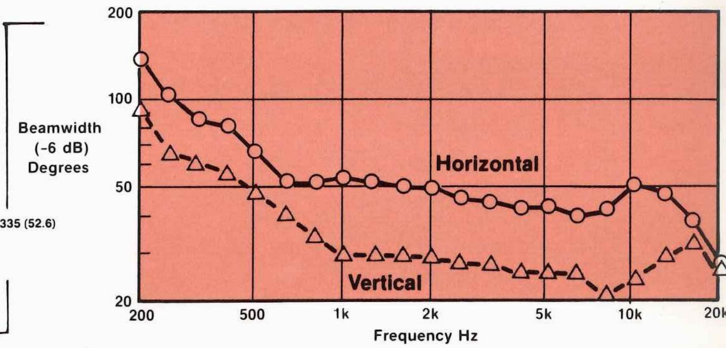
2 kHz octave bandwidth constant sound pressure contours. Same conditions as 500 Hz contours. This data may be considered essentially the same as would be observed at 4 kHz and 8 kHz, considering only the -3, -6, and -9 dB isobars.

Model 2366

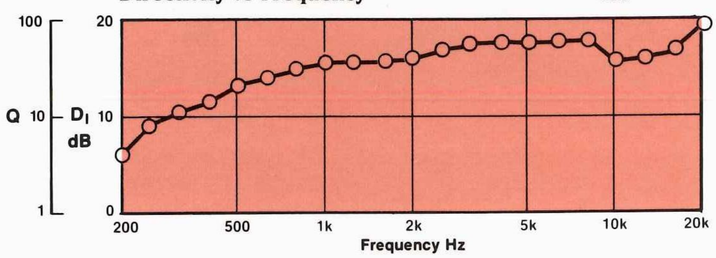
40° x 20° CONSTANT COVERAGE HORN



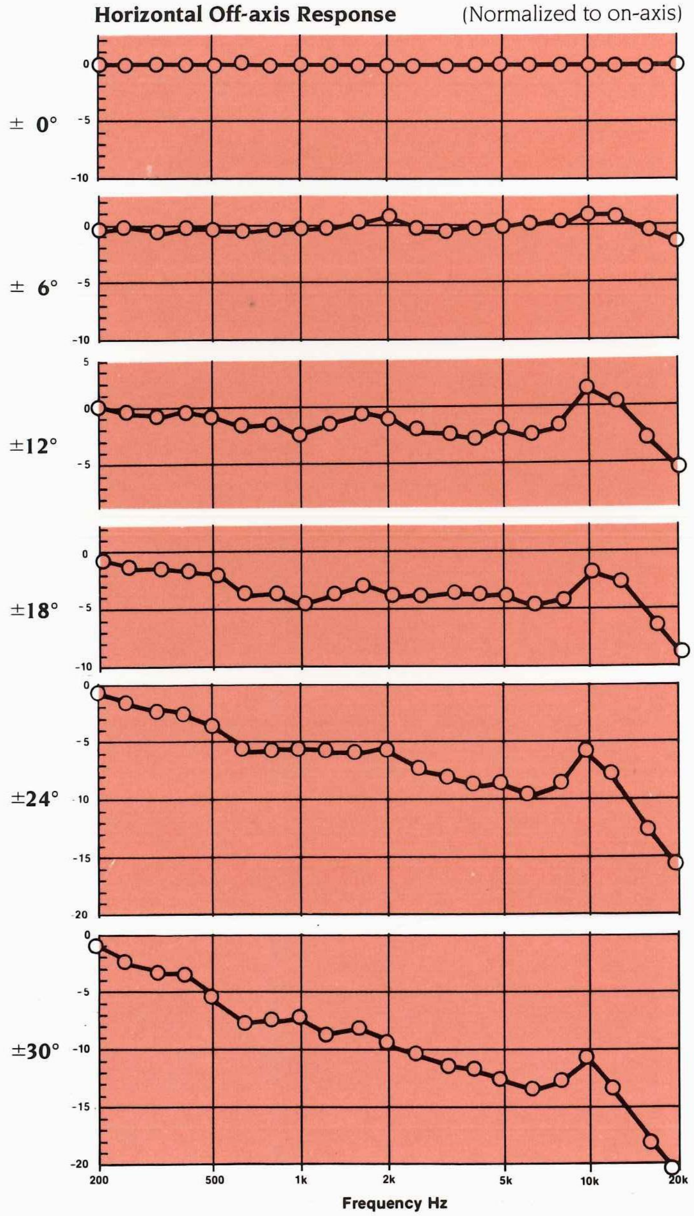
Beamwidth vs Frequency



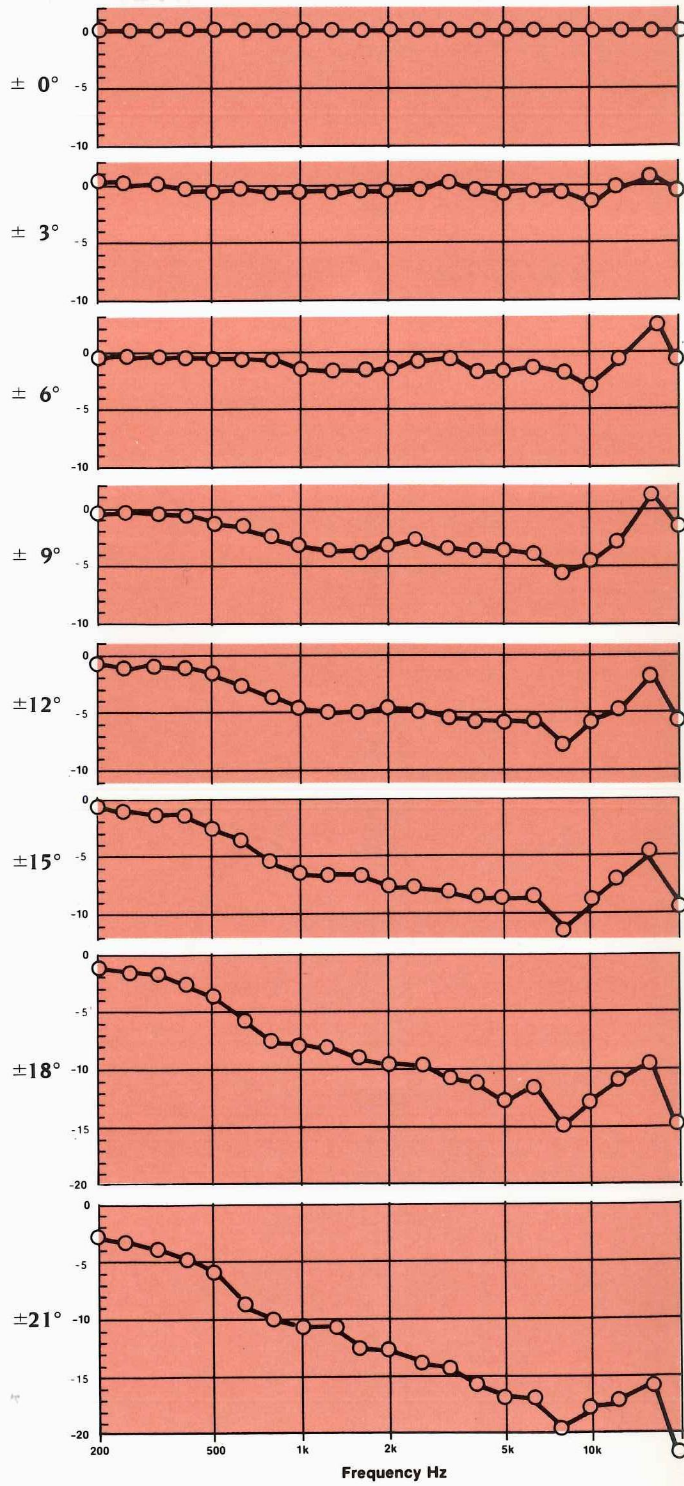
Directivity vs Frequency



Horizontal Off-axis Response (Normalized to on-axis)

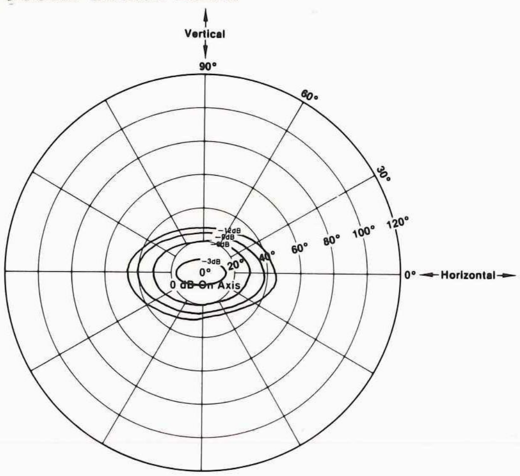


Vertical Off-axis Response (Normalized to on-axis)



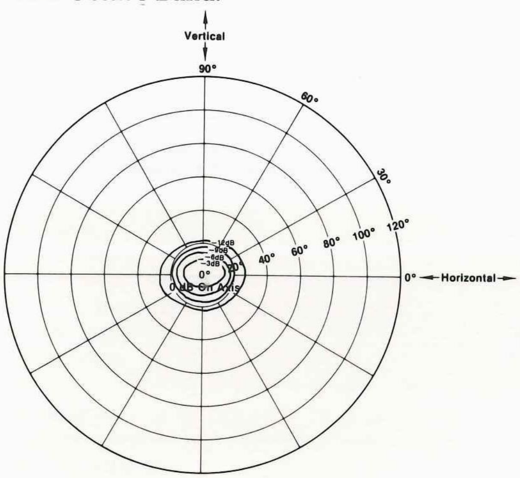
Model 2366 Frontal Isobar Contours

500Hz Octave Band.



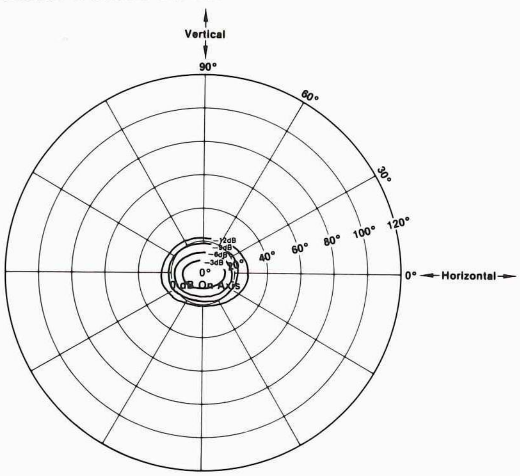
500 Hz octave bandwidth constant sound pressure contours of 0 to -12 dB in steps of -3 dB. The contours are plotted on polar grid lines with on axis being the center of the plot. The data was gathered by taking an octave polar plot at all oblique angles from 0° (horizontal) to 90° (vertical) in steps of 5°.

1kHz Octave Band.



1 kHz octave bandwidth constant sound pressure contours. Same conditions as 500 Hz contours.

2kHz Octave Band.



2 kHz octave bandwidth constant sound pressure contours. Same conditions as 500 Hz contours. This data may be considered essentially the same as would be observed at 4 kHz and 8 kHz, considering only the -3, -6, and -9 dB isobars.

JBL Professional, 8500 Balboa Boulevard, P.O. Box 2200, Northridge, California 91329 U.S.A.

12/87 60715 **10M** SSBRH Printed in U.S.A.