

Cobreflex III

Folded Sectoral Horn



COMMERICAL

General Product Description

The Cobreflex III is a folded sectoral, wide-angle horn for use in public address, paging, and voice warning systems.

This folded sectoral construction results in both compactness and high efficiency when combined with appropriate compression drivers.

The patented (patent #4.176.731) folded design features two separate air columns in a single assembly that virtually eliminates high-frequency phase cancellation present in reentrant designs.

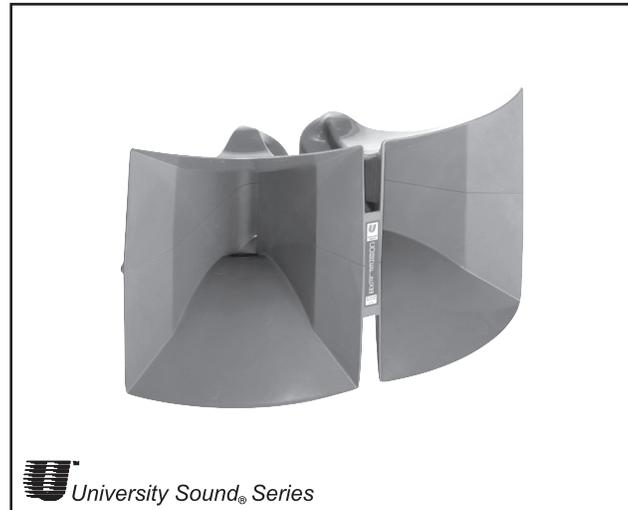
The 100-degree horizontal by 60-degree vertical dispersion pattern is beneficial in many applications requiring a wide coverage pattern. Furthermore, excellent loading is maintained to a low-frequency cutoff of 250 Hz.

The Cobreflex III is constructed from a non-resonant glass fibre reinforced polyester with a self-colored gray finish. A serrated positive-lock "U" mounting bracket is provided for maximum mounting flexibility and ease of installation.

Architects' and Engineers' Specifications

The horn shall be of the folded sectoral type featuring two separate air columns within the single assembly. It shall produce a horizontal beamwidth of 100 degrees and a vertical beamwidth of 60 degrees at 2.0 kHz. In addition, it shall provide useful acoustic loading at all frequencies above 250 Hz.

The horn shall be constructed from a non-resonant glass fibre reinforced polyester and self-finished in an ultraviolet-inhibiting gray.



A serrated, positive-lock "U" mounting bracket shall be affixed to the bell by self-locking nuts and shall provide orientation adjustment in all three planes.

The horn shall possess a throat of 2.54-cm (1.00 in.) diameter and shall be provided with a 1 3/8"-18 thread for the mounting of a compression driver. The horn shall be 36.8 cm (14.5 in.) high, 69.9 cm (27.5 in.) wide and 38.1 cm (15.0 in.) deep. It shall weight no more than 3.2 kg (7.0 lb).

The horn shall be the Cobreflex III folded sectoral horn.

Specifications:

Horizontal Beamwidth:

100° @ 2 kHz (see Figure 2)



Vertical Beamwidth:

60° @ 2 kHz (see Figure 2)



Directivity Factor $R_0(Q)$:

15.9 @ 2 kHz (see Figure 3)

Usable Low-Frequency Limit:

250 Hz

Construction:

Non-resonant glass-fibre reinforced polyester compression molding with self-colored gray finish. Positive-lock painted steel U-bracket.

Mechanical Construction of Driver:

Threaded metal throat insert to accommodate a screw-in driver with a throat opening of 0.7-inch to 1.0-inch diameter and a standard 1 3/8-inch thread.

Dimensions:

Height: 36.8 cm (14.5 in.)

Width: 69.2 cm (27.5 in.)

Depth: 38.1.0 cm (15.0 in.)

Net Weight: 3.2 kg (7.0 lb)

Shipping Weight: 4.5 kg (10.0 lb)

Recommended Horns:

ID30C-8 7110XC ID30C-16 1824S

ID30CT 1828C ID60C-8 1828T

ID60C-16 1829 ID60CT 1829T

ID75

Polar Response

The directional characteristics of the Cobreflex III, with driver attached, were measured by running a set of polar responses, in a large anechoic chamber, at each one-third-octave center frequency. The test signal was one-third-octave pseudorandom pink noise centered at the indicated frequencies. The measurement microphone was placed 6.1 m (20 ft.) from the horn mouth, while rotation was about the waveguide geometric apexes. These apexes of rotation are quite close to the apparent (acoustic) apexes across the frequency range of measurement. Errors attributable to the slight differences between the geometric and acoustic apexes are reduced to an inconsequential level by the relatively long, 20-foot measuring distance. The horn was suspended freely with no baffle. The polar

plots shown in Figure 2 display the results of these tests. The center frequency is noted on each plot. The wider plot on each chart is the horizontal polar (—) and the narrower plot is the vertical polar (---).

Beamwidth

A plot of the Cobreflex III's 6-dB-down total included beamwidth angle is shown in Figure 1 for each one-third-octave center frequency.

Directivity

The axial directivity factor R_0 (formerly Q) of the Cobreflex III horn was computed at each one-third-octave center frequency from the horizontal/vertical polars and is displayed in Figure 3.

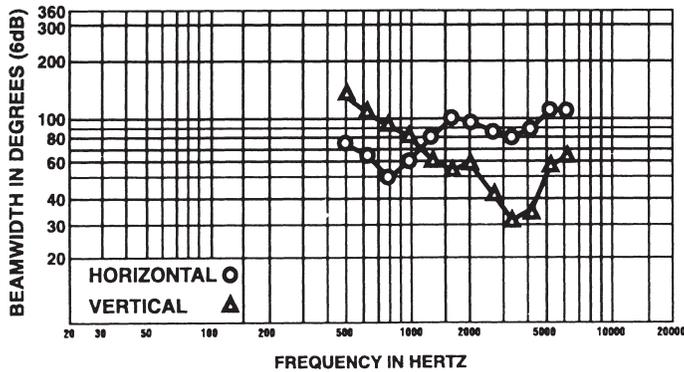


Figure 1.
Cobreflex III Beamwidth vs. Frequency

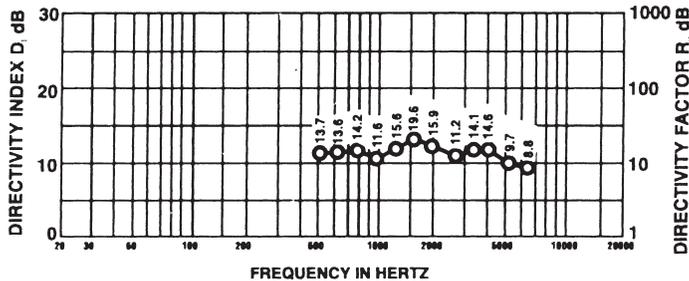


Figure 3.
Cobreflex III Directivity Factor
and Directivity Index vs. Frequency

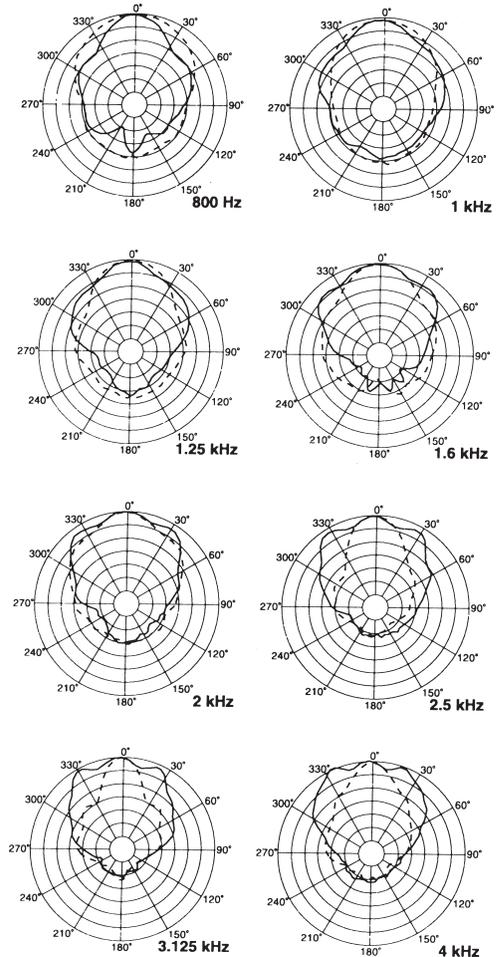


Figure 2.
Cobreflex IIB Polar Response

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Please refer to the Engineering Data Sheet for warranty information.

Specifications subject to change without notice.