

# Cobreflex IIB

Folded  
Sectoral Horn



COMMERCIAL

### General Product Description

The Cobreflex IIB is an exponentially flared, reflex design for use in public address, paging, and voice warning systems.

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

The patented (patent # 2,751,996) folded design features two separate air columns in a single assembly that virtually eliminates high-frequency phase cancellation present in re-entrant designs.

The 80-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 IIB is constructed from a high-impact acrylonitrile butadiene styrene (ABS) with an ultraviolet inhibiting grey paint 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 reflex type featuring two separate air columns within the single assembly. It shall produce a horizontal beamwidth of 80-degrees and a vertical beamwidth of 60-degrees at 2 kHz. In addition, it shall provide useful acoustic loading at all frequencies above 250 Hz.

The horn shall be constructed from a high impact acrylonitrile butadiene styrene (ABS) and finished with an ultraviolet inhibiting grey paint.



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 1.91 cm (0.75 in.) diameter and shall be provided with a 1 3/8"-18 thread for the mounting of a compression driver. The horn shall be 23.5 cm (9.3 in.) high, 47.0 cm (18.5 in.) wide and 26.0 cm (10.3 in.) deep. It shall weigh no more than 2.3 kg (5.1 lb).

The horn shall be the Cobreflex 11B reflex horn.

### Specifications:

**Horizontal Beamwidth:**

80° @ 2 kHz (see Figure 2)



**Vertical Beamwidth:**

60° @ 2 kHz (see Figure 2)



**Directivity Factor R<sub>θ</sub> (Q):**

9.1 @ 2 kHz (see Figure 3)

**Usable Low-Frequency Limit:**

250 Hz

**Construction:**

High impact acrylonitrile butadiene styrene (ABS) with ultraviolet light inhibiting grey paint 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"-18 thread.

**Dimensions:**

Height: ..... 23.5 cm (9.3 in.)  
Width: ..... 47.0 cm (18.5 in.)  
Depth: ..... 26.0 cm (10.3 in.)

**Net Weight:** ..... 2.3 kg (5.1 lb)  
**Shipping Weight:** ..... 3.0 kg (6.7 lb)

**Recommended Horns:**

ID30C-8	7110XC	ID30C-16	1824S
ID30CT	1828R	ID60C-8	1828T
ID60C-16	1829	ID60T	ID75

## Polar Response

The directional characteristics of the Cobreflex IIB, with driver attached, were measured by running a set of horizontal/ vertical polar responses, in a large anechoic chamber, at each one-third-octave center frequency. The test signal was one-third-octave pseudo-random 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 axes 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 1 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 IIB's 6-dB-down total included beamwidth angle is shown in Figure 2 for each one-third-octave center frequency.

## Directivity

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

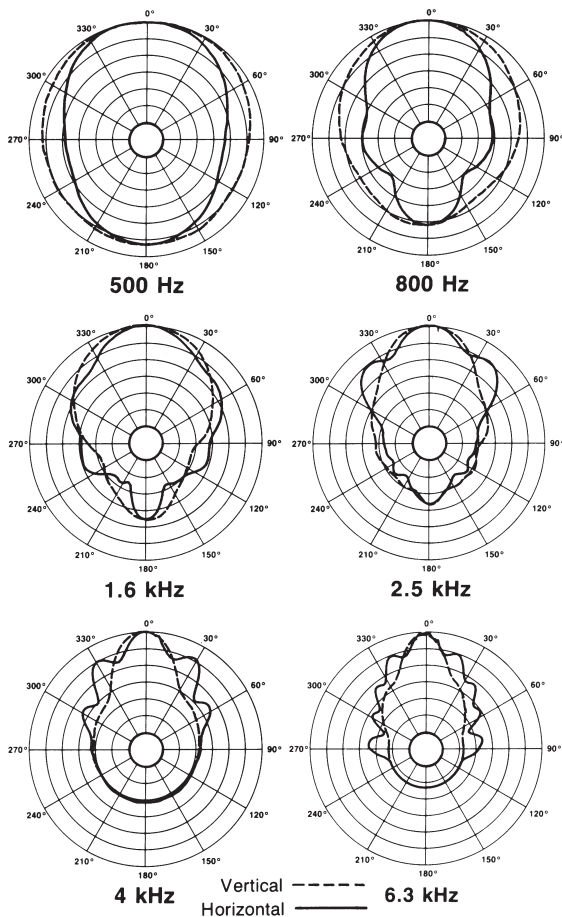


Figure 1.  
Cobreflex IIB Polar Response

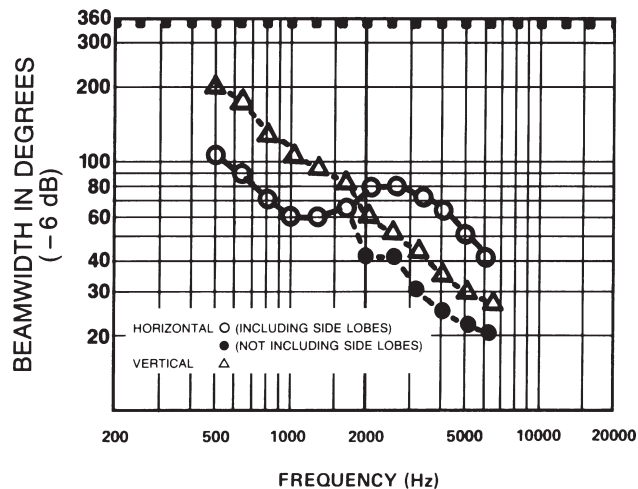


Figure 2.  
Cobreflex IIB Beamwidth vs. Frequency

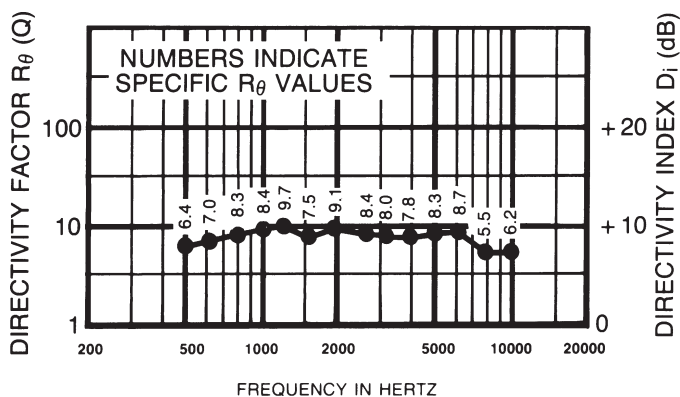


Figure 3.  
Cobreflex IIB Directivity Factor  
and Directivity Index vs. Frequency

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 Specifications subject to change without notice.