

# CBT 70JE-1

Purpose-Designed Extension  
for CBT 70J-1 Line Array  
Column Speaker

## CBT SERIES

CONSTANT BEAMWIDTH TECHNOLOGY™

### Key Features:

#### CBT 70JE-1:

- ▶ Components: Four 125 mm (5 in) high-power LF drivers
- ▶ 500 Watt power handling
- ▶ Built-in purpose-designed crossover network, for combining with CBT 70J-1
- ▶ Coupler plate included

#### CBT 70J-1 + 70JE-1 ARRAY SYSTEM:

- ▶ Extended pattern control (to 400 Hz for  $\pm 20^\circ$  control, to 200 Hz for substantial off-axis cancellation)
- ▶ Extended bass response to 45 Hz.
- ▶ Components: Sixteen 25 mm (1 in) soft dome tweeters and eight 125 mm (5 in) high-power LF drivers.
- ▶ Patent-pending Constant Beamwidth Technology™ provides constant directivity up to the highest frequencies and reduces out-of-coverage lobing.
- ▶ Vertical pattern coverage switchable between  $45^\circ$  for medium-throw coverage and  $25^\circ$  for long-throw applications.
- ▶ Switchable voicing provides flat response in music mode or mid-range presence peak in speech mode.
- ▶ Coupler plate and wall swivel (pan)/tilt bracket included (rear insert-point pattern fits standard third-party brackets)

### Overview:

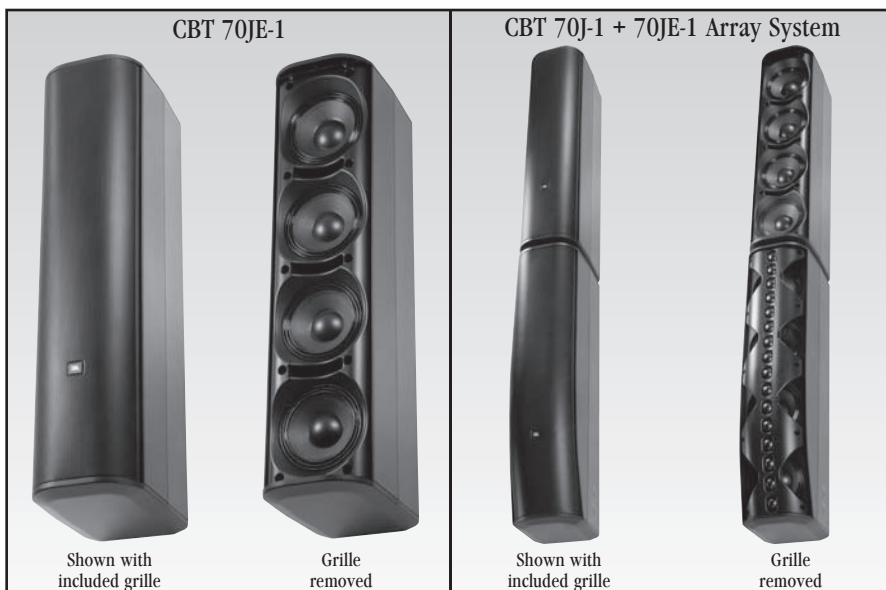
#### CBT 70JE-1

The CBT 70JE-1 cabinet contains four low frequency drivers and a crossover network purposely designed for use in the CBT 70J-1 + 70JE-1 System, in a tough fiberglass-reinforced ABS enclosure. The 500W power handling and high sensitivity delivers powerful low frequency output.

The drivers have lightweight dual magnet neodymium motors with 38 mm (1.5 in) diameter voice coils. The dual-magnet system provides maximum flux in a compact package. The magnet structure is magnetically shielded and the pole tips are magnetically saturated for lower flux modulation and minimum distortion. The 16 mm (0.63 in) long coils provides high linear drive and high power handling in a compact driver. The drivers feature damped blended surrounds and coated sealed paper cones found in high performance large format drivers. Drivers feature coated diaphragm materials to provide moisture, UV and salt resistance for outdoor capability. The thick, heavy-duty aluminum grille stands up to portable/event applications while allowing for rust-free installation outdoors.

#### CBT 70J-1 + 70JE-1 ARRAY SYSTEM

When connected to a CBT 70J-1 line array column speaker, the CBT 70JE-1 Extension provides extended bass response, extended pattern control, and increased sound output levels. The combined array system provides Constant Beamwidth Technology™, which represents a breakthrough in pattern control consistency, utilizing complex analog beam-forming and amplitude tapering to accomplish



superior, consistent vertical coverage without the narrow vertical beaming and out-of-coverage lobing that are typical of passive column speakers.

The CBT 70JE-1 attaches to the top of the CBT 70J-1, utilizing the included coupler plate, resulting in a very well controlled progressive line array with asymmetrical vertical coverage. This coverage produces a higher concentration of sound with a tighter pattern projecting to the far areas of the listening space, and a lower concentration with a broader vertical pattern projecting toward the near area of the space. This results in more even front-to-back SPL levels than would be the case from a traditional speaker or column that projects symmetrically.

The CBT 70J-1 + 70JE-1 System provides a wide 45 Hz – 20 kHz bandwidth, and the slim footprint fits well into virtually any architectural décor. The 140 cm (55.2 in) tall line array height provides consistent pattern control throughout the intelligibility band, making the System work well in difficult acoustic environments.

### Applications

The superior sound quality, excellent pattern control, asymmetrical vertical coverage and compact design makes the CBT 70J-1 + 70JE-1 System ideal for applications such as performance spaces, lecture halls, classrooms, A/V, transit centers, school stadiums, multipurpose spaces, racetracks, theme parks, and fill applications, among many others.

### Adjustable Coverage to Fit the Application

The innovative coverage adjustability of the CBT 70J-1 + 70JE-1 System allows switching between broad and narrow vertical coverage settings to allow matching the coverage and throw requirements of the application. Coverage can be easily switched in-venue with the speaker already installed. This innovation allows a single loudspeaker system to excel in a wide range of project types.

### User Variable Voicing

The voicing of the CBT 70J-1 + 70JE-1 System can be set to match the application through a Music/Speech switch. The Music setting provides flat frequency response, while the Speech setting produces a mid-range presence boost to provide clear, intelligible speech, along with increased midrange sensitivity for higher midrange maximum output capability.

### SonicGuard™

Dynamic SonicGuard protection of the CBT 70J-1 + 70JE-1 System (built into the CBT 70J-1) protects the high frequency section, minimizing distortion at high drive levels by limiting driver excursion dynamically. This maximizes music clarity and speech intelligibility at high drive levels while protecting the drivers from damage due to occasional overpowering.

### Bracketry

A thick coupler plate for connecting the CBT 70J-1 + 70JE-1 end-to-end is included with the 70JE-1. The CBT 70J-1 + 70JE-1 System can utilize the swivel (pan) / tilt wall bracket that is included with the 70J-1, or can utilize industry-standard mounting points on the coupler plate (OmniMount™ 60.0 and 120.0 patterns) for attaching to a wall. Alternatively, the M6 inserts on the back panel can be utilized to suspend the speaker using forged shoulder steel eyebolts or swivel mounting rings, providing installation versatility.

The CBT 70J-1 + 70JE-1 System can be installed either indoors or outdoors. The drivers are weather-treated, the fiberglass reinforced ABS cabinet is excellent for outdoor applications, external screws are stainless steel, and the painted aluminum grille resists rusting. Available in black or white (-WH)

# CBT 70JE-1 Purpose-Designed Extension for CBT 70J-1 Line Array Column Speaker

## Specifications:

### CBT 70JE-1 EXTENSION LOUDSPEAKER

Components:	Four (4) 130 mm (5 in) LF drivers
Frequency Range (-10 dB) <sup>1</sup> :	45 Hz – 700 Hz
Sensitivity (2.83V @ 1m):	90 dB full space, 96 dB half-space (65 Hz - 300 Hz)
Nominal Impedance:	8 ohms
Power Capacity <sup>2</sup> :	500 W (2000 W peak), 2 hrs 350 W (1400 W peak), 100 hrs
Max SPL <sup>3</sup> :	117 dB
Net Weight:	8.2 kg (18 lb)

### CBT 70J-1 + 70JE-1 SYSTEM (connected end-to-end, driven in parallel)

Components:	Eight (8) 130 mm (5 in) LF drivers Sixteen (16) 25 mm (1 in) HF drivers
Frequency Range (-10 dB) <sup>1</sup> :	45 Hz – 20 kHz
Coverage:	Vertical (selectable via switch) Narrow Mode: 25° (2 kHz – 16 kHz) (±10°) Broad Mode: 45° (350 Hz – 16 kHz) (±10°) Horizontal 150° (500 Hz – 18 kHz, ±20°)
Sensitivity (@1m):	Narrow: (speech mode) 98 dB @ 2.83V, 95 dB @ 2.0V (150 Hz – 8 kHz) (music mode) 94 dB @ 2.83V, 91 dB @ 2.0V (80 Hz – 18 kHz) Broad: (speech mode) 97 dB @ 2.83V, 94 dB @ 2.0V (100 – 8 kHz) (music mode) 93 dB @ 2.83V, 90 dB @ 2.0V (70 Hz – 18 kHz)
Nominal Impedance:	4 ohms
Power Capacity <sup>2</sup> :	1000 W (4000 W peak), 2 hrs 700 W (2800 W peak), 100 hrs
Max SPL <sup>3</sup> :	Narrow: (speech mode) 125 dB cont ave (131 peak) (music mode) 121 dB cont ave (127 peak) Broad: (speech mode) 124 dB cont ave (130 peak) (music mode) 120 dB cont ave (126 peak)

### Transducers:

Low Frequency Drivers:	8 pcs, 130 mm (5 in) drivers, dual magnet neodymium, 38 mm (1.5 in) voice coil, damped blended textile surround, coated diaphragm for moisture, UV and salt resistance, shielded.
High Frequency Drivers:	16 pcs, 25 mm (1 in) drivers, dual magnet neodymium, encased magnet and coated diaphragm for moisture, UV and salt resistance, shielded.

### Enclosure:

Enclosure:	Fiberglass-reinforced ABS cabinet, painted aluminum grille.
Outdoor Capability:	IP-55 rated, per IEC529, when installed with optional MTC-PC2 panel cover. UV, moisture and 200-hr ASTM G85 acid-air/salt-spray resistant.
Colors:	Black or white (-WH)
Insert Points:	20 insert points total, 8 utilized for coupler plate, M6 (16 mm deep) on back panel
Mounting:	Coupler plate joins the CBT70J-1 and 70JE-1 end-to-end. Threaded points on coupler plate accepts OmniMount™ 60.0 Series and 120.0 Series compatible wall-mount brackets, as well as points for the swivel (pan)/tilt wall bracket that is included with CBT 70J-1. Twelve (12) additional M6 mounting points accept forged shoulder steel eyebolts or swivel clips for suspension.
Dimensions (H x W x D):	1388 x 170 x 237 mm (54.8 x 6.7 x 9.3 in)
Net Weight:	20.4 kg (45 lb)
Included Accessories:	Coupler plate (included with 70JE-1) Swivel (pan) / tilt wall bracket (included with 70J-1)
Optional Accessories:	MTC-PC2 terminal panel cover MTC-CBT-SMB1 Stand-Mount Bracket for use with 35 mm heavy duty speaker stand (must be heavy-duty stand for stability with this array) MTC-CBT-FM2 flush-mount low-profile wall-mount bracket

<sup>1</sup>Full space

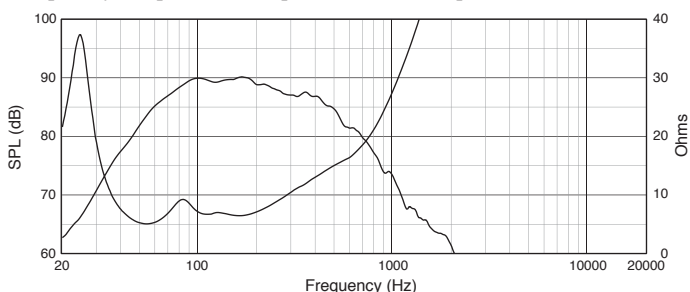
<sup>2</sup>IEC standard, full bandwidth pink noise with 6 dB crest factor.

<sup>3</sup>Calculated based on power rating and measured sensitivity, exclusive of power compression.

JBL continually engages in research related to product improvement. Some materials, production methods and design refinements are introduced into existing products without notice as a routine expression of that philosophy. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

## CBT70JE-1

### Frequency Response (full-space, 4π) and Impedance



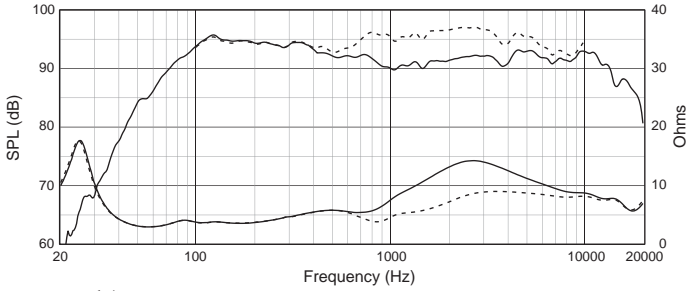
# CBT 70JE-1 Purpose-Designed Extension for CBT 70J-1 Line Array Column Speaker

## CBT 70J-1 + 70JE-1 Array System

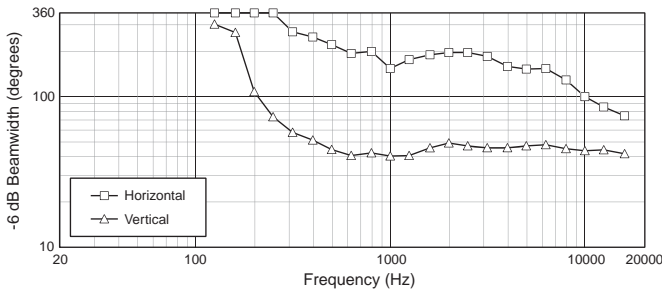
### Broad Setting

#### Frequency Response:

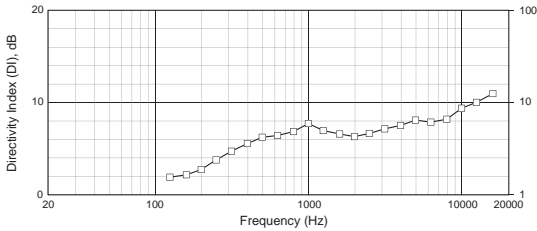
“Music” Mode (solid); “Speech” Mode (dotted), 1W (2.83V, full-space,  $4\pi$ ), 1m, and Impedance



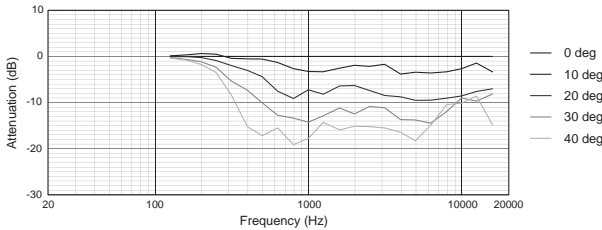
#### Beamwidth:



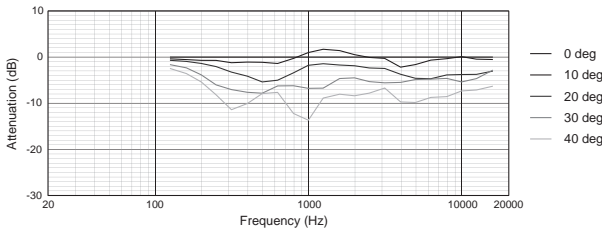
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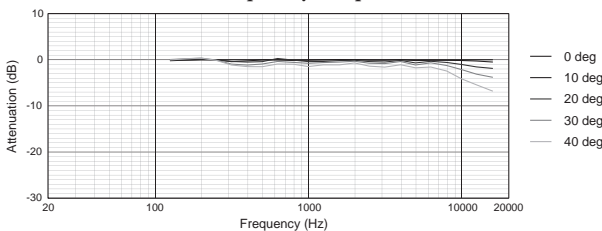
#### Vertical Off-Axis Frequency Response, Up



#### Vertical Off-Axis Frequency Response, Down



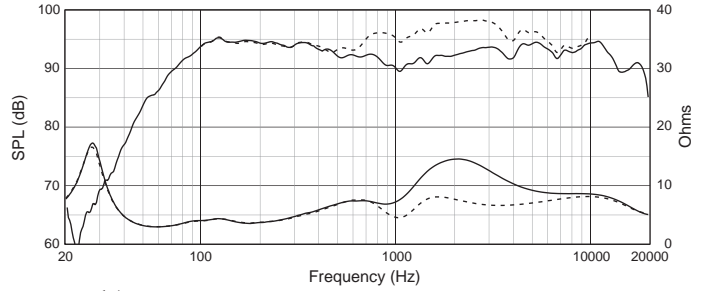
#### Horizontal Off-Axis Frequency Response



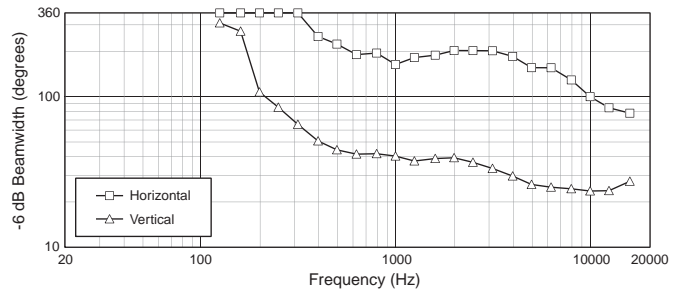
### Narrow Setting

#### Frequency Response:

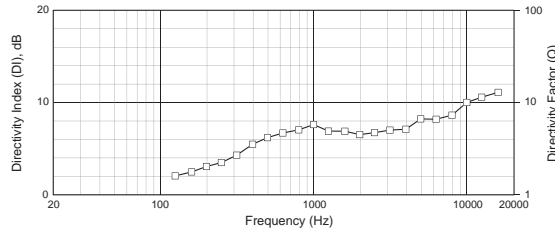
“Music” Mode (solid); “Speech” Mode (dotted), 1W (2.83V, full-space,  $4\pi$ ), 1m, and Impedance



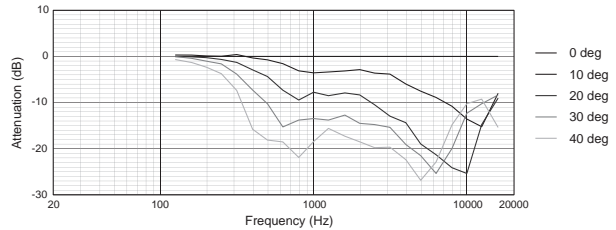
#### Beamwidth:



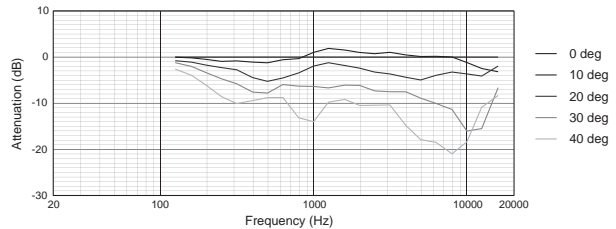
#### Directivity, Q



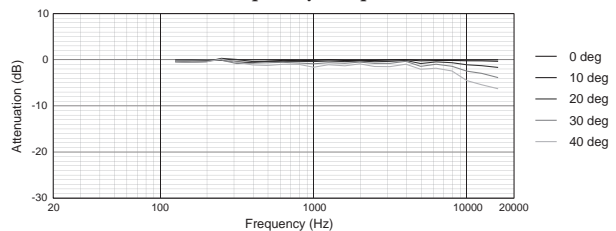
#### Vertical Off-Axis Frequency Response, Up



#### Vertical Off-Axis Frequency Response, Down



#### Horizontal Off-Axis Frequency Response



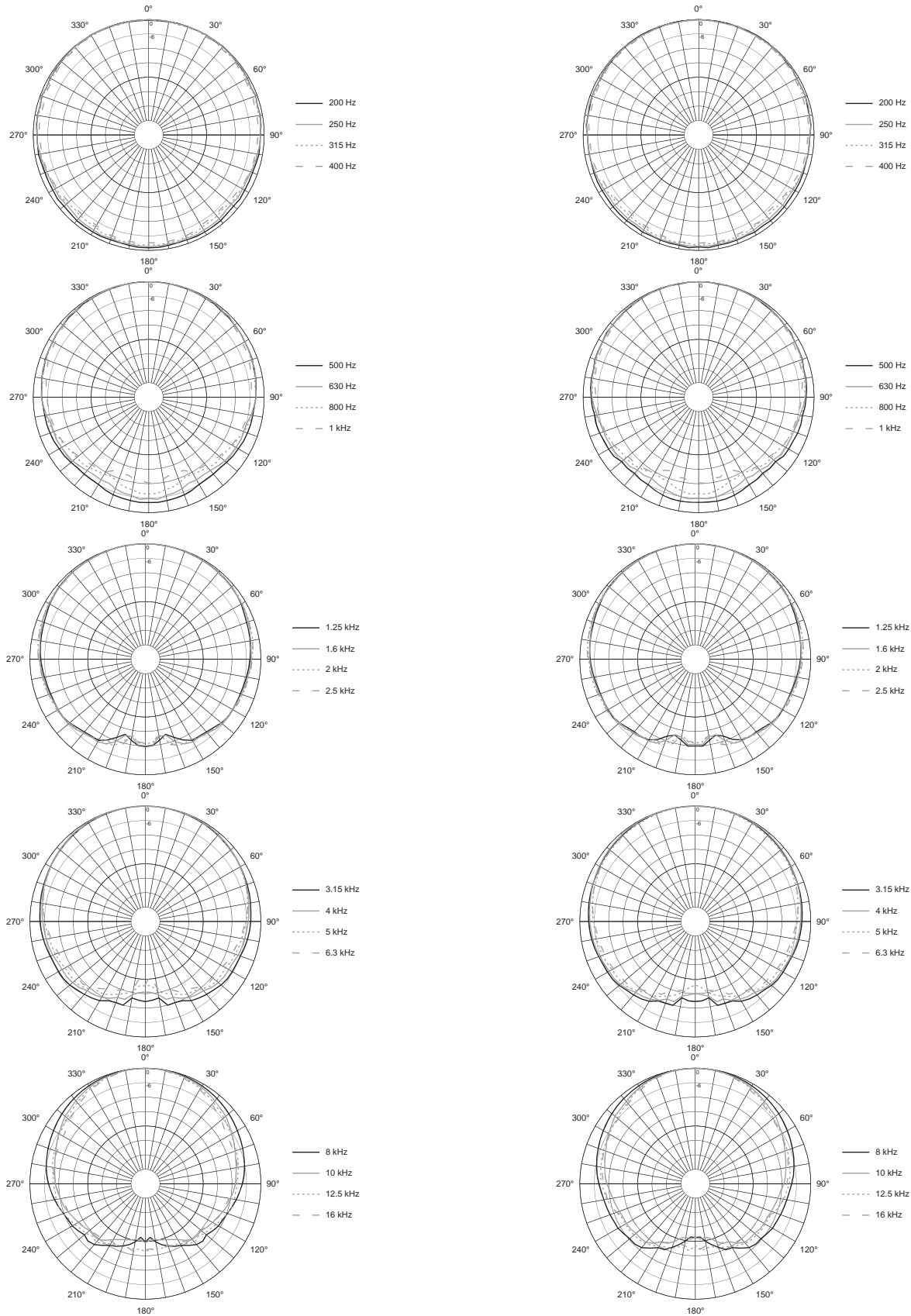
# CBT 70JE-1 Purpose-Designed Extension for CBT 70J-1 Line Array Column Speaker

## CBT 70J-1 + 70JE-1 Array System

### Broad Setting

### Narrow Setting

### Horizontal 1/3 Octave Polars



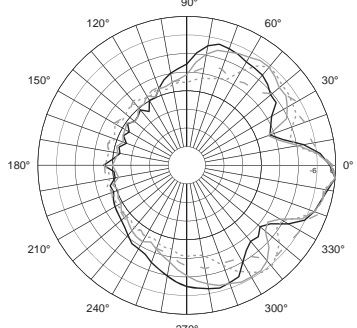
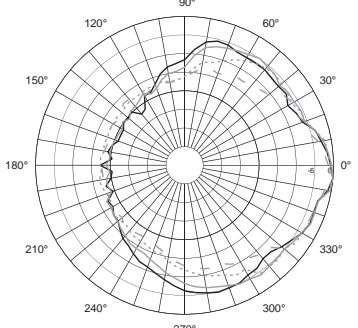
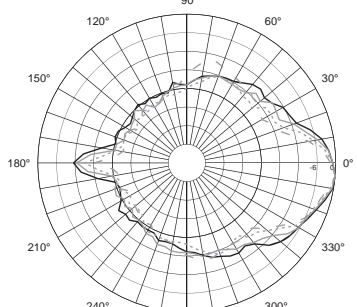
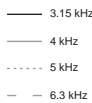
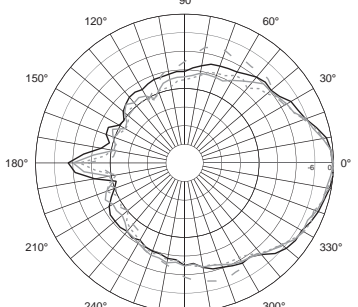
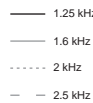
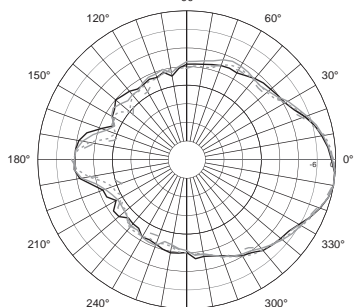
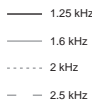
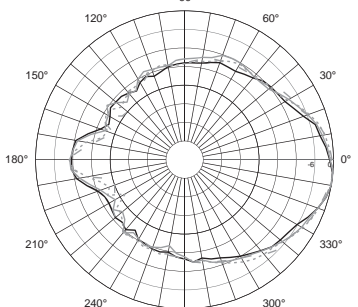
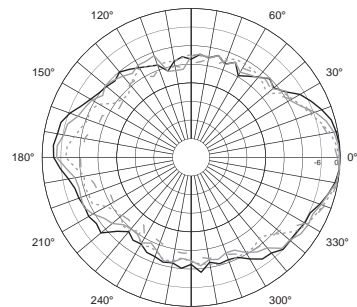
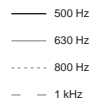
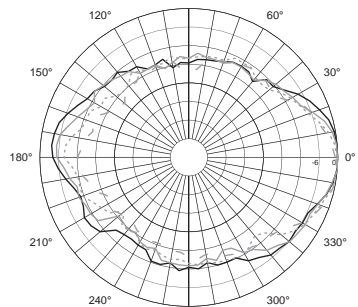
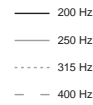
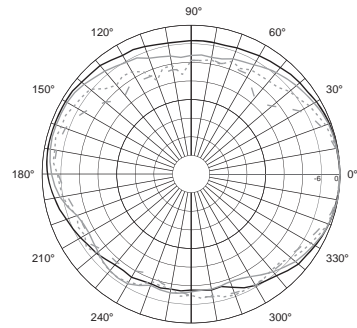
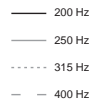
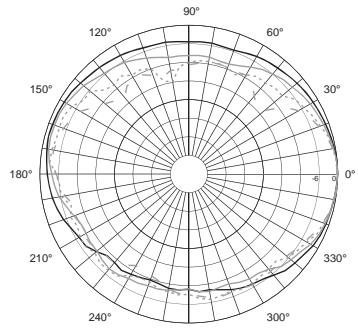
# CBT 70JE-1 Purpose-Designed Extension for CBT 70J-1 Line Array Column Speaker

## CBT 70J-1 + 70JE-1 Array System

### Broad Setting

### Narrow Setting

### Vertical 1/3 Octave Polars

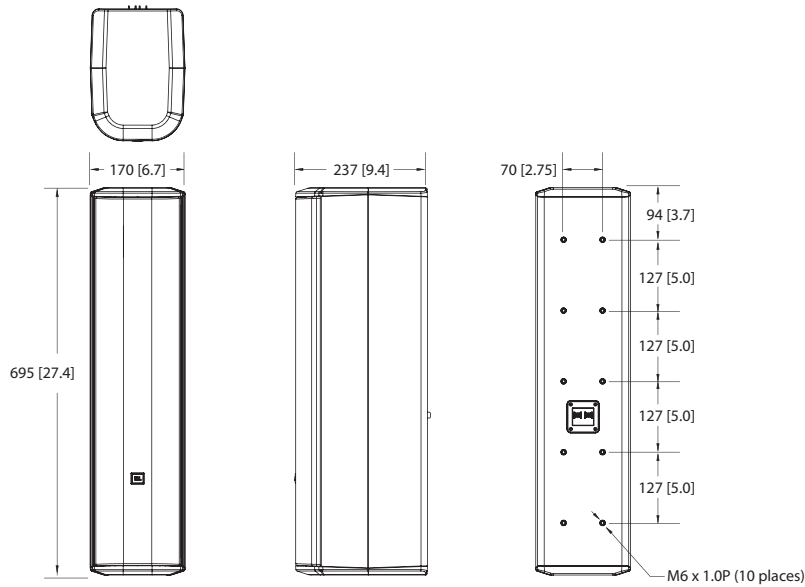


# CBT 70 JE-1 Purpose-Designed Extension for CBT 70J-1 Line Array Column Speaker

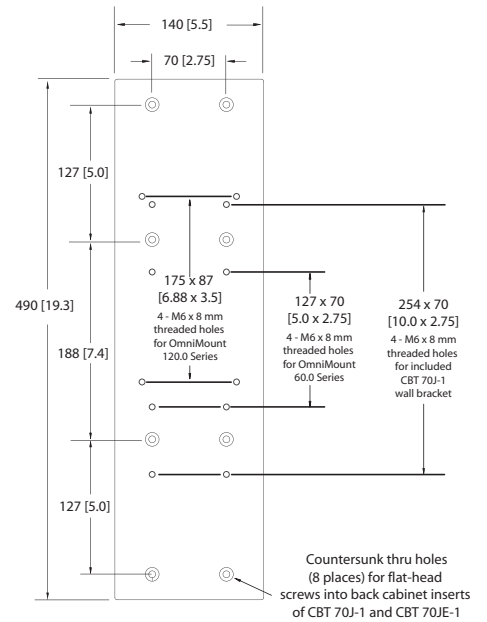
## Dimensions:

Dimensions in mm [in]

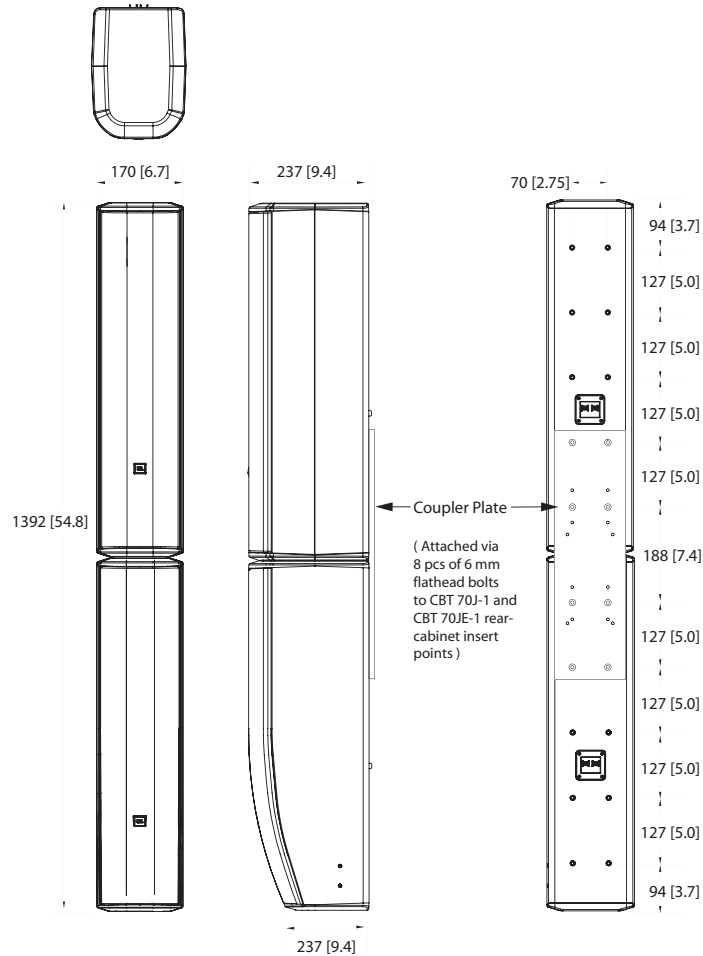
CBT 70JE-1



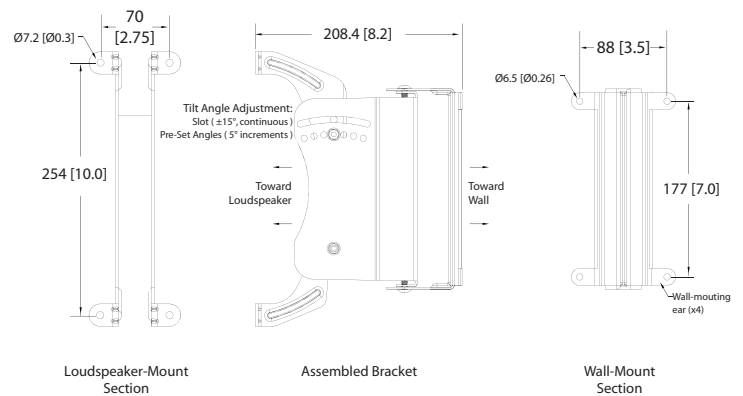
## Coupler Plate



## CBT 70J-1 + 70JE-1 System



## Wall Bracket



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