

# JBL CBT Series Compact Line Array

This compact line array featuring JBL's patented Constant Beamwidth Technology "nails the trifecta: compact size and great sound with even dispersion," offers PAR's installed audio contributor.

Compact line-array speaker systems are popping up at an increased rate. As the name implies, they are compact, available to fit into tight spaces and, in some instances, can go portable. They also look cool. I mean, really, who wants old, bulky point-and-shoot speakers taking up space and looking, well, old and bulky? Most importantly, compact line arrays can deliver a more consistent sound as you pass through their pattern field.

I try to be unbiased when receiving a delivery for review, but this is not my first rodeo with JBL and, to me, their name is synonymous with quality and innovation. So the question was, how innovative is the CBT Series?

## Features

The CBT Series consists of four passive line-array systems based on JBL's patented Constant Beamwidth Technology. According to JBL, CBT locks in and maintains "a specific [frequency] coverage over a very wide bandwidth." Compared to standard passive speaker columns, in which higher frequency coverage narrows with distance, CBT is designed to "deliver the same quality of sound uniformly throughout a venue."

There are four models in the series' current form — two for a straight array, two for a "J-shaped" array — and each box is equipped with CBT circuitry. The 50LA Compact Speech and Music model is the smallest of the line, as it consists of eight

2-inch drivers. The 50LA's big brother, the 100LA Pattern Control Speech and Music model, is twice the size and offers a switchable vertical coverage from narrow (15 degrees) to broad (40 degrees). Both models are switchable, capable of being fed from a 70V, 100V or 8-ohm amplifier. Reviewed here, the 70J full-range J-shaped model and 70JE LF (low frequency) and Pattern Extension models offer maximum power handling and maximum SPL capabilities (130 dB/136 dB peak) of the series.

The 50LA and 100LA are designed to be used in spaces such as retail, concourses, conference rooms and the like, whereas the 70 series is designed for more "critical listening" applications. Like the 50LA/100LA models, the J models have selectable music or speech filters and switchable vertical coverage selectability (Narrow = 25 degrees asymmetrical and broad = 45 degrees asymmetrical), but they do not have the option for the 70v/100v tap. The J series are set to tap at 8 ohms with a power rating of 500W, or 1,000W for a J/JE pair.

The 70J cabinet gently bends in near the bottom to provide more consistent sound

level from the front to the back of the room. Behind its metal grille are 16 one-inch tweeters mounted directly down the middle with four 5-inch woofers behind them. The 70JE is a straight cabinet equipped with four 5-inch woofers.

CBT Series components ship with the mounting hardware for hanging on the wall (plus brackets for a 70J/70JE system, which allows the two to be attached together). The wall-mount bracket offers fixed adjustments to the angle of the speaker in relation to the mount by +/- 15 degrees.

## In Use

I installed the 70J/70JE cabinets in a room powered by a series of Crown CE 1000 amplifiers, a space currently covered by rigged Woodworx point-and-shoot-style speakers. There are two hats to wear when doing this type of review: designer and audio engineer. I am going to approach this review primarily as an audio engineer because that hat fits me best. (I will admit that, in many circumstances, I have to wear both hats.)

I fired up the system with just the line-array J speakers powered, no external processing or EQ, and ran the production gamut with live voice, acoustic instruments and program material. The best word to describe the CBT Series is "smooth" — even without the JE speaker attached,



they had very good presence in the 100 to 150 Hz range while maintaining sonic integrity in the higher range with no hype. They did not grow harsh as the level increased but maintained what I would most accurately describe as a consistent sound. The two vertical coverage options, Narrow and Broad, really helped shape the coverage well; I was able to cover a 35 feet wide room with the 70J speakers only, spread apart about 12 feet, and their dispersion setting on Broad.

In fact, I would not hesitate to make a 70J pair the go-to speaker system for this room, which comfortably seats about 150, if the primary purpose was acoustic-based music and the spoken word. Add in the 70JE (and maybe even an auxiliary subs pair), and I wouldn't hesitate to run something more "low-end" driven. [According to JBL's Rick Kamlet, "The main reason many people have for adding in the 70JE, even when they're not looking for more bass, is to make the array twice as long, which extends the frequency of beamwidth con-

**"With live voice, acoustic instruments and program material, the best word to describe the CBT Series is 'smooth.'"**

trol down to a lower frequency. That helps to even further tighten up the sound quality [especially in the 250 to 500 Hz range], lowering the reverberation of the space by not sending as much sound to the ceiling. This is especially important in spaces with difficult acoustics, but the effect is apparent to some degree in almost all spaces." — Ed.]

Other instances where the 70J would perform well are in mobile system/DJ/

coffee-house applications, theaters or delay stacks. Due to their low profile and sleek appearance, a foyer/lobby install could also work well. The 70J did not have the ability to tap into a 70V system, but if the other speakers sound this good, I would gladly ditch Belmont Church's current (ceiling) speakers distributed throughout the campus for CBT Series models, especially in key areas where intelligibility is a premium need [i.e., where audio isn't just background ambience].

The Speech mode on the speakers did not impress me because I did not like the midrange boost that seemed to peak between 2 to 3 kHz, especially when music is included as program material. In fairness, I did not have an EQ on the overall system; in this case, I was running the speakers flat, as I wanted to hear what the speakers were truly presenting. However, if speech is the primary need for communicating and cutting through, the speech filter could be the ideal solution. ["If one were to want to increase the maximum output in the midrange, they could put it in the Speech mode and then EQ down the midrange via their EQ," offers Kamlet. "That results in giving the speaker an extra 4-5 dB higher maximum SPL in the midrange. The reason is that the midrange boost from that switch position actually comes from higher sensitivity, not from EQ." — Ed.]

In the CBT Series, JBL SonicGuard technology helps minimize the distortion at high SPL and also protect the speakers from the occasional "overpowering." I can report that I worked the speakers continuously in the 95 – 105 dB range, and they retained their clarity. [Also, I didn't blow one up, which is always a plus.]

The CBT 70JE ups the ante on what program material can be effectively communicated through the system when combined with the 70J. The "oomph" factor increases starting at about 45 Hz and the area coverage is also increased. Each woofer is ported and although they don't move a lot of air,

## Product Points



▶ Compact; even dispersion; offers a variety of mounting hardware and adjustable angles



▶ Bare wire screw mounts for portable system applications

**Score** The CBT Series offers compact size, great sound and even dispersion at an affordable price.

there is a noticeable "thump" produced.

Portable mounts for 70J cabinets really increase their value for small venues, traveling acts, DJs or a facility that needs a portable system to move around and cover different spaces and applications. My only hesitation in using the mounts is the cable jacks are screw in-types for bare wire, which does not make for a quick/easy hook up and disconnect. A quick pigtail adapter could be easily rigged.

### Summary

In my experience, the CBT Series really nails the trifecta for professional, small line array: compact size and great sound with even dispersion. The CBT's footprint is relatively small while its coverage is even and adjustable through the presets. Throw in the ability to custom paint them via JBL's instructions and I find the 70J/70JE is not only a high-fidelity option but an ideal aesthetic fit. Further, JBL offers a downloadable CBT Calculator that quite accurately determines if these speakers are a good fit for your given space. I encourage you to download it and give them a virtual test drive. Or demo a pair and let your engineer ears be the judge. Either way, I believe your ears won't be disappointed.

**Prices:** \$465, \$865, \$1,200 and \$700 list (50LA, 100LA, 70J and 70JE, respectively)

**Contact:** JBL Professional | [jblpro.com](http://jblpro.com)