



## Medium Line Arrays

### The Tens

By Mark Frink

**T**his month in Real World Gear we look at the middle-sized category of line arrays, Medium Line Arrays, defined as those with 10-inch woofers. Small line arrays, the largest group by far, are those with 8-inch woofers, discussed in December 2007's issue. Large format line arrays, those with 12-inch and larger woofers, will be featured in our August 2008 issue. Coverage of a new and emerging category: "Mini" line arrays, those with 6.5-inch and smaller drivers, is featured in May 2008. This month it's "The Tens" and we look at 17 that are "not too big, and not too small."

There are several possible designs. Some employ dual woofers with a center high-frequency section to provide horizontal symmetry. The simplest two-way systems have a single cone driver and a high-frequency driver. Quasi-three-way solutions use dual woofers, but roll off one woofer over earlier so the other is the only source of mids, eliminating cancellations from the other. True three-way designs operate separate low-, mid- and high-frequency drivers in their own bands.

Many manufacturers provide a companion subwoofer to achieve sufficient low frequency extension to be useful for musical applications. It is often larger in size but becomes the top-most element in vertical columns, as well as supplying mass for ballast and additional height for ground-stacked applications. Beyond supplemental low-boxes, many systems

benefit from true sub-low cabinets for concert sound applications, whether or not they are driven from an auxiliary send.

Some manufacturers also have companion array elements with larger angles of vertical and horizontal coverage that perform better for the lowest near-throw section of a vertical array, reducing the expense in covering the sharpest angles of vertical transition in the closest listening areas which typically have the fewest seats and need the least SPL.

Some also have, or are developing, long-throw versions with reduced horizontal coverage for higher positions in arrays where narrower dispersion is desirable due to the distance to the farthest listening areas.

The use of line arrays in smaller venues is limited by weight and height. Compact enclosures are not only less expensive, but also weigh less and can bend more rapidly without breaking their coupling due to shorter cabinet height. The physics of coupling dictates a limit to the angle from one enclosure to the next, beyond which beaming and spotty coverage occurs. A line array employing fifteens has a limit of about five degrees, while enclosures with ten-inch drivers can bend by ten degrees. Shorter line array enclosures can therefore provide a greater angle of vertical coverage in a shorter height. ■

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<b>Configuration</b>	3-way symmetrical tri-amp, co-entrant MF/HF, dual LF
<b>Weight</b>	126 lbs.
<b>Size (H x W x D)</b>	10.5 x 42.8 x 24.5 in.
<b>LF (2 x 16 ohms)</b>	10-inch Kevlar Neodymium
<b>MF (1 x 8 ohms)</b>	9-inch Kevlar driver
<b>HF (1 x 8 ohms)</b>	JBL 2451 comp. driver
<b>Freq resp. (<math>\pm 3</math> dB)</b>	60 to 18 kHz
<b>Dispersion (<math>-6</math>dB)</b>	100 x 5 degrees
<b>Crossover(s)</b>	250/1,600 Hz
<b>Short-throw box</b>	SpekTrix
<b>Companion sub</b>	T21 dual-18 subwoofer
<b>Rigging Angles</b>	0 to 5 degrees, one degree increments

## A-Line

## AL10

www.a-lineacoustics.com

<b>Configuration</b>	Quasi-3-way, bi-amped dual LF, single HF
<b>Weight</b>	83 lbs.
<b>Size (H x W x D)</b>	12.6 x 36.2 x 16 in.
<b>LF (8 ohms)</b>	dual 10-in. B&C Neodymium
<b>HF (16 ohms)</b>	1.4-in. exit B&C Neo. on Line Source Replicator
<b>Freq response</b>	75 to 18 kHz
<b>Dispersion</b>	90 x 5 degrees
<b>Crossover</b>	800 Hz, 400 Hz roll-off outside LF driver
<b>Powered version</b>	B&O ICE-Powered with on-board DSP
<b>Short-throw box</b>	AL10W 140-degrees horizontal version
<b>Companion sub</b>	AS215A dual-15 integrate into arrays
<b>Rigging Angles</b>	0 to 5 degrees: half-degree increments



## d&amp;b audiotechnik

## Q-Series

www.dbaudio.com



<b>Configuration</b>	2-way passive crossover, dual LF, single HF
<b>Weight</b>	49 lbs.
<b>Size (H x W x D)</b>	12.1 x 22.9 x 16.1 in.
<b>LF</b>	dual neodymium 10-in. dipolar cones
<b>HF</b>	1.3-in. exit comp. driver, on toroidal waveformer
<b>Freq response</b>	60 to 17 kHz
<b>Q-1 dispersion</b>	75 x 15 degrees
<b>Q-7 Short-throw</b>	75- by 40-degrees via rotatable CD horn
<b>Q-10 Short/Wide</b>	110- by 40-degrees via rotatable CD horn
<b>Companion sub</b>	Q-SUB single 18-in., integrates into arrays
<b>Rigging Angles</b>	0 to 14 degrees, 1-degree increments

## Duran Audio

## AXYS Target T-2820

www.duran-audio.com

<b>Configuration</b>	2-way, self-powered, dual LF, dual HF
<b>Weight</b>	183 lbs.
<b>Size (H x W x D)</b>	18 x 49 x 22 in.
<b>LF (2 x 8 ohms)</b>	dual 10-in. horn-loaded cones
<b>HF (2 x 8 ohms)</b>	dual 1.4-in. exit comp. driver on dual CD horns
<b>Freq response</b>	120 to 18 kHz
<b>Dispersion</b>	90 degrees
<b>Crossover</b>	active onboard amplification & DSP
<b>Short-throw box</b>	AXYS Target U-16 dual 6.5-in./1-in.
<b>Companion sub</b>	AXYS B-215 dual-15, integrates into arrays

