

The AL90 loudspeaker



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The AL90 is an augmented array loudspeaker for medium scale sound reinforcement applications.

The loudspeaker module is a passive 2-way design housing 2 x 10" neodymium LF drivers and one 1.4" exit HF compression driver with 3" diaphragm mounted to a dedicated wave shaping device and a passive crossover network. The wave segments of each cabinet couple without gaps and sum up coherently. Splay angles between adjacent cabinets can be set in a range from 20° to 40° in 5° increments resulting in a total coverage of 50° up to 70° for two cabinets, with a maximum total coverage of 150° per array.

All components are arranged symmetrically around the center axis of the cabinet to produce a perfectly symmetrical dispersion pattern.

This setup allows for a smooth crossover design with a well defined overlap of adjacent frequency bands resulting in a very consistent and accurate horizontal dispersion. Due to the bipolar arrangement of the LF drivers, broadband directivity control of is maintained down to 370 Hz. The frequency response extends from 60 Hz to 18 kHz.

The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent fabric. Each side panel incorporates a handle and three M10 threaded inserts are integrated in one side panel to allow the secure attachment of a dedicated flying adapter.

When the d&b Z5455 AL Flying frame is used, up to four loudspeakers can be flown in vertical columns producing a 90° constant directivity dispersion pattern in the horizontal plane.

AL90 cabinets can also be deployed as horizontal cluster of up to four cabinets using the d&b Z5456 AL Flying adapter or stacked with maximum of three cabinets using the d&b Z5458 AL Base plate.

d&b amplifiers

The d&b audiotechnik loudspeaker range is designed exclusively for operation with d&b amplifiers. These provide power as well as comprehensive control and protection functions tailored to achieve the performance, reliability and longevity associated with the d&b system approach.

The d&b D20 amplifier is recommended to drive the AL90 with the appropriate loudspeaker setup selected. The d&b D80 and 30D amplifiers can also be used.

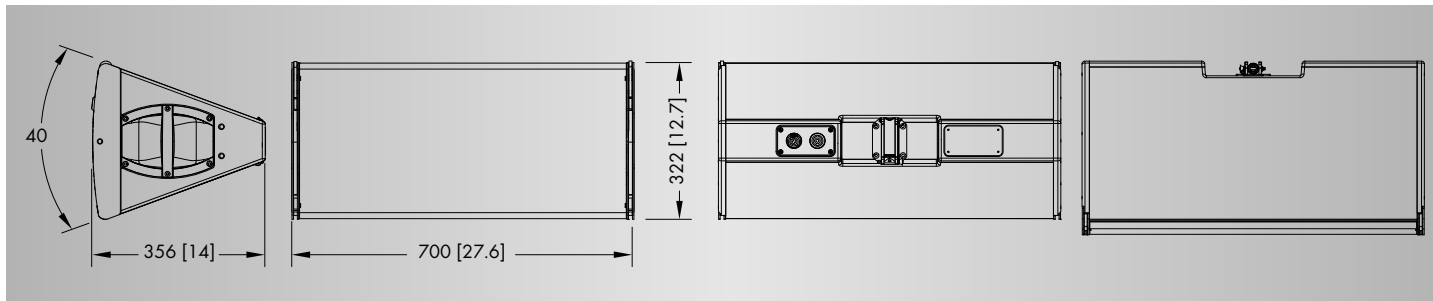
System data

Frequency response (-5 dB standard).....	60 Hz - 18 kHz
Frequency response (-5 dB CUT mode)	95 Hz - 18 kHz
Max. sound pressure (1 m, free field)	
with D20/30D	138 dB
with D80	139 dB
..... (SPLmax peak, pink noise test signal with crest factor of 4)	

Loudspeaker data

Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 ms)	400/1800 W
Nominal dispersion angle (h x v - horizontal setup)	90° x 30°
Components	2 x 10" LF driver with neodymium magnet
.....	1 x 1.4" exit compression driver with 3" coil
.....	Passive crossover network
Connections	NLT4 F/M
.....	optional 2 x NL4 M
Pin assignment	NLT4 F/M and NL4 M: 1+/1-
Weight	23 kg (51 lb)

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AL90 cabinet dimensions in mm [inch]

A-Series features and benefits

- Deployable in vertical and horizontal arrays
- Flexible setup options using variable splay angles
- Midrange Directivity Control ensures even distribution between 200 Hz and 2 kHz at every possible splay angle
- ArrayProcessing optimizes the level and tonal balance over the complete audience listening area
- Provides more SPL than point sources, requires fewer loudspeakers than a line array
- Coherent HF dispersion regardless of splay angle
- Compact arrays minimize weight, while preserving sightlines
- Combines with a range of d&b subwoofers and amplifiers
- Custom solutions options available (upon request)
- IP55 (Weather Resistant option as standard)

Applications

- Midsized stadiums and arenas
- Theaters
- Concert halls
- House of Worship
- Conference facilities
- Corporate shows
- Clubs and live music venues

Architectural specifications

The 2-way bipolar, passive loudspeaker shall consist of two 10" neodymium LF drivers and one 1.4" exit HF compression driver with a 3" diaphragm mounted to a dedicated wave shaping device providing a nominal dispersion of 90° x 30° (h x v - horizontal setup) and a passive crossover network.

Broadband horizontal directivity control of 90° shall be maintained down to 370 Hz.

The loudspeaker shall only be operated by a dedicated, compatible controller amplifier.

The cabinet shall allow the deployment of either vertical columns or horizontal clusters of up to four cabinets in conjunction with a dedicated flying frame or flying adapter. Splay angles between adjacent cabinets shall be adjustable in a range from 20° to 40° in 5° increments resulting in a total coverage of 50° up to 70° for two cabinets, with a maximum total coverage of 150° per array.

The cabinet enclosure shall be constructed from marine plywood with an impact and weather protected PCP (Polyurea Cabinet Protection) finish.

The drivers shall be protected by a rigid metal grill backed by an acoustically transparent fabric.

The cabinet shall incorporate one handle in each side panel.

Three M10 threaded inserts shall be integrated in one side panel for the secure attachment of a dedicated flying adapter.

The connection panel on the back shall be recessed and fitted with speakon NLT4 F/M sockets (NL4 M shall be available as an option).

The power handling capacity shall be 400 W RMS and 1800 W peak (10 ms). The frequency response (-5 dB) measured on axis shall be 60 Hz to 18 kHz with a maximum sound pressure of at least 139 dB.

The dimensions (W x H x D) shall not exceed 700 x 322 x 356 mm (27.6" x 12.7" x 14") and shall weigh no more than 23 kg (51 lb).

The loudspeaker shall be the AL90 by:

d&b audiotechnik GmbH & Co. KG.