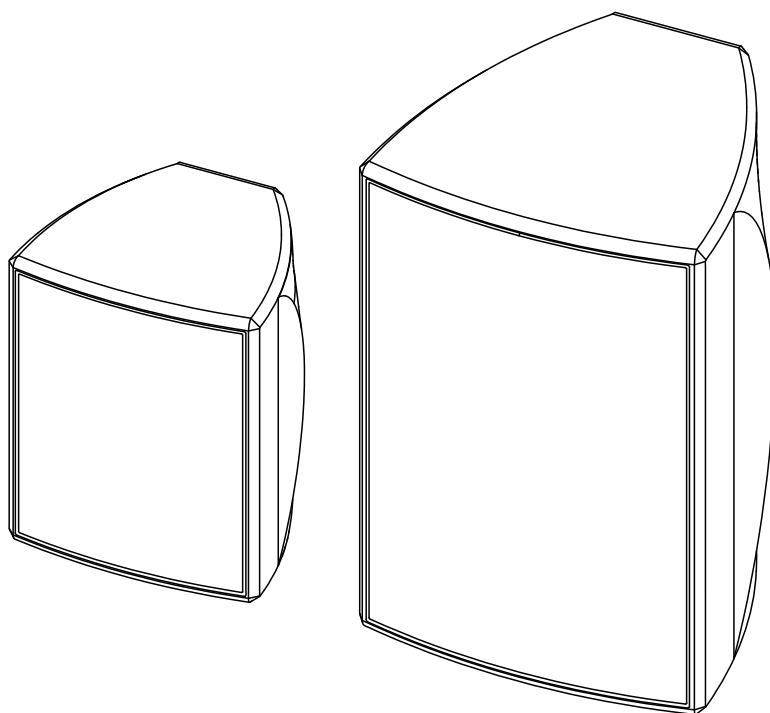


E4/E5 Manual (1.3 EN)



General information

E4/E5 Manual

Version: 1.3 EN, 10/2011, D2616.EN .01

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Keep this manual with the product or in a safe place so that it is available for future reference.

When reselling this product, hand over this manual to the new customer.

If you supply d&b products, please draw the attention of your customers to this manual. Enclose the relevant manuals with the systems. If you require additional manuals for this purpose, you can order them from d&b.

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1. Safety precautions

1.1. Information regarding the use of loudspeakers

Potential risk of personal injury

Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over a long period.

In order to prevent accidents when deploying loudspeakers on the ground or when flown, please take note of the following:

- When setting up the loudspeakers or loudspeaker stands, make sure they are standing on a firm surface. If you place several systems on top of one another, use straps to secure them against movement.
- Only use accessories which have been tested and approved by d&b for assembly and mobile deployment. Pay attention to the correct application and maximum load capacity of the accessories as detailed in our specific "Mounting instructions" or in our "Flying system and Rigging manuals".
- Ensure that all additional hardware, fixings and fasteners used for installation or mobile deployment are of an appropriate size and load safety factor. Pay attention to the manufacturers' instructions and to the relevant safety guidelines.
- Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.
- Regularly check all load bearing bolts in the mounting devices.

Potential risk of material damage

Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. Generally speaking, a distance of 0.5 m (1.5 ft) from magnetic data carriers (floppy disks, audio and video tapes, bank cards, etc.) is sufficient; a distance of more than 1 m (3 ft) may be necessary with computer and video monitors.

2. E4/E5 loudspeaker

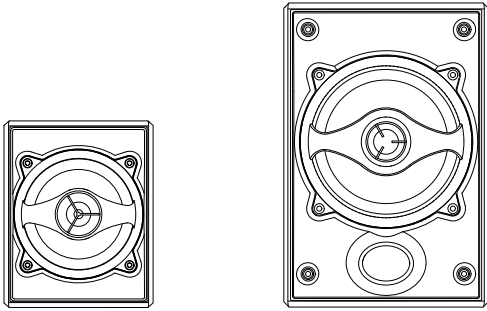


Fig. 1: E4/E5 loudspeaker

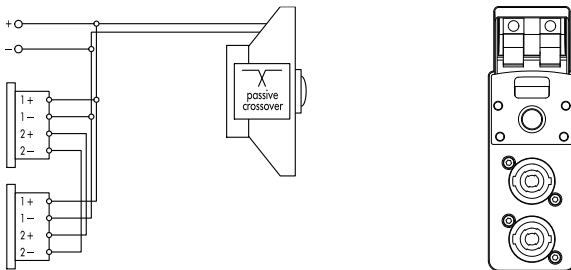
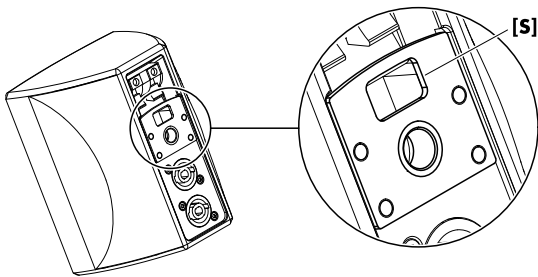


Fig. 2: Connector wiring

2.1. Product description

The E4 and E5 cabinets are light-weight 2-way passive loudspeakers using coaxially mounted, wide dispersion dome tweeters. The coaxial design offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinets may be mounted in either attitude.

The E4 employs a 4" neodymium LF driver in an ultra-compact, sealed enclosure. Its frequency response extends from 130 Hz to 20 kHz.

The E5 employs a 5" ferrite LF driver in a bass-reflex enclosure covering the range from 85 Hz to 20 kHz.

Both systems can be used stand-alone or supplemented by different E-Series subwoofers.

The enclosures are injection molded with an impact resistant black paint finish. The fronts of the loudspeaker cabinets are protected by a rigid metal grill.

The E4 and E5 rear panels incorporate a M10 threaded insert to accept the Z5356 E4/E5 Ball joint adapter.

In addition, a safety hook **[S]** is integrated in the rear panel to allow the attachment of a secondary safety wire.



CAUTION!

No load suspension device

Under no circumstances should the safety hook **[S]** be used to support other loads.

2.2. Connections

The cabinets are fitted with a pair of NL4 connectors and a two pole push terminal block (PT - cross-section up to 6 mm²/ AWG 10). All four pins of both NL4 connectors are wired in parallel. The cabinets use the pin assignments 1+/1-. Pins 2+/2- are designated to active subwoofers.

Pin equivalents of the applicable connector options are listed in the table below.

NL4	1+	1-	2+	2-
PT	Red (+)	Black (-)	n.a.	n.a.

2.3. Operation

NOTICE!

Only operate d&b loudspeakers with a correctly configured d&b amplifier, otherwise there is a risk of damaging the loudspeaker components.

Operation with D6 or D12

Select the controller setup E4 for E4 loudspeakers and E5 for E5 loudspeakers.

Within the D12 amplifier they are available in "Dual Channel" or "Mix TOP/SUB" mode. For combinations with active subwoofers fed by a single 4-wire cable "Mix TOP/SUB" mode must be selected.

Up to a total of four E4 or E5 loudspeakers can be driven by each channel of the D6 or D12 amplifiers.

2.3.1. Controller settings

For acoustic adjustment the functions CUT, HFA and CPL can be selected.

CUT circuit

Set to CUT, the cabinet low frequency level is reduced. The cabinets are now configured for use with d&b active subwoofers.

HFA circuit

In HFA mode (High Frequency Attenuation), the HF response of the system is rolled off. HFA provides a natural, balanced frequency response when a unit is placed close to listeners in near field or delay use.

High Frequency Attenuation begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

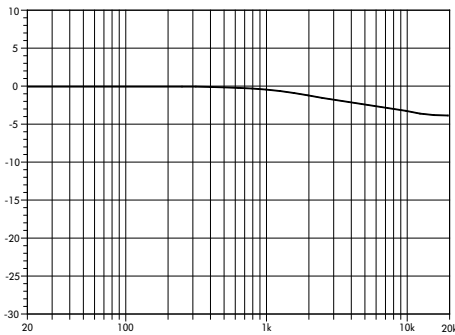


Fig. 3: Frequency response correction of HFA circuit

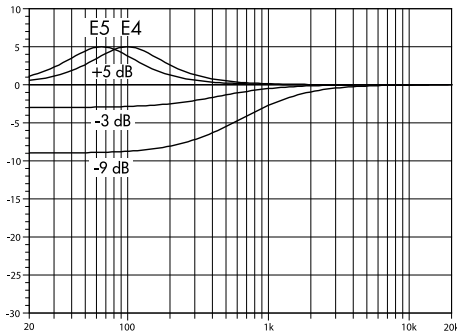


Fig. 4: Frequency response correction of the CPL circuit

CPL circuit

The CPL (Coupling) circuit compensates for coupling effects between the cabinets when building closely coupled arrays. CPL begins gradually around 1 kHz, with the maximum attenuation below 200 Hz. To achieve a balanced frequency response, the CPL circuit can be set to dB attenuation values between 0 and -9.

Positive CPL values create an adjustable low frequency boost (0 to +5 dB) and can be set when the system is used in full range mode without subwoofers.

2.4. Dispersion characteristics

The following graphs show dispersion angle over frequency of a single cabinet plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB.

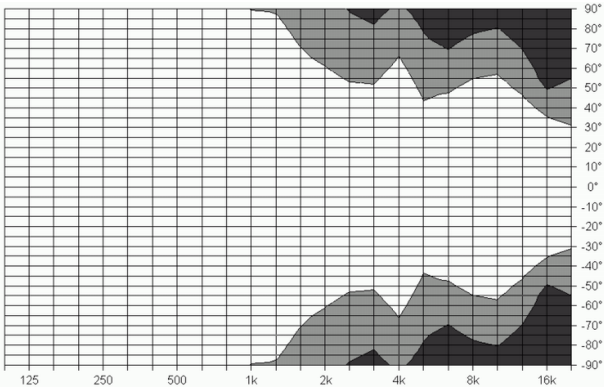


Fig. 5: Isobar diagram horizontal



E4

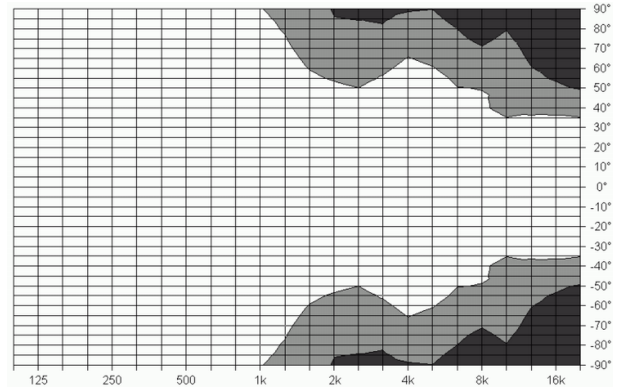


Fig. 6: Isobar diagram vertical

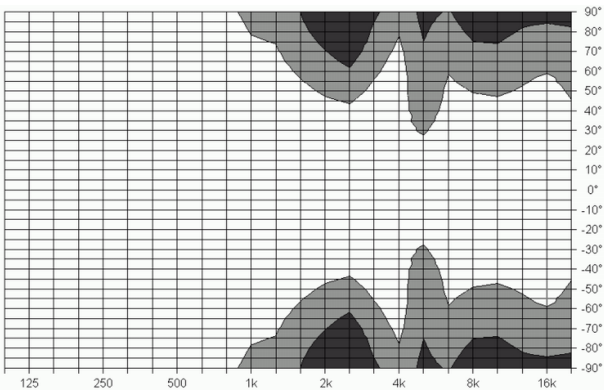
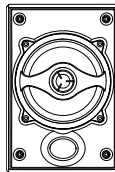


Fig. 7: Isobar diagram horizontal



E5

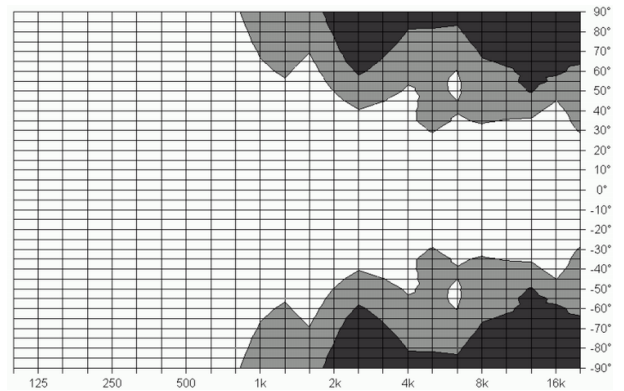


Fig. 8: Isobar diagram vertical

2.5. Technical specifications

E4 system data

Frequency response (-5 dB standard mode).....	130 Hz - 20 kHz
Frequency response (-5 dB CUT mode)	180 Hz - 20 kHz
Max. sound pressure (1 m, free field) with D6.....	114 dB
Max. sound pressure (1 m, free field) with D12.....	115 dB
.....(SPLmax peak, pink noise test signal with crest factor 4)	
Input level (100 dB-SPL/1 m).....	-4 dBu

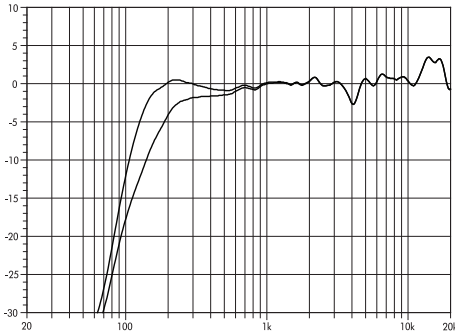


Fig. 9: E4 frequency response, standard and CUT modes.

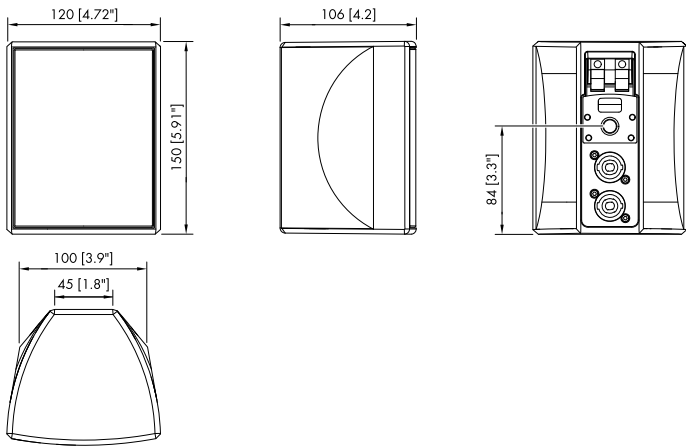


Fig. 10: E4 cabinet dimensions in mm [inch]

E4 loudspeaker

Nominal impedance.....	16 ohms
Power handling capacity (RMS/peak 10 ms)	60/400 W
Nominal dispersion angle (hor. x vert.).....	100° conical
Components.....	4" driver with neodymium magnet
.....	0.75" dome driver, coaxially mounted
.....	Passive crossover network
Connections.....	2 x NL4
.....	1 x two pole push terminal (PT - up to 6 mm ² /AWG 10)
Pin assignments.....	NL4: 1+ / 1-
.....	Push terminal: Red: (+) / Black: (-)
Weight.....	1.1 kg (2.4 lb)

E5 system data

Frequency response (-5 dB standard mode)	85 Hz - 20 kHz
Frequency response (-5 dB CUT mode)	130 Hz - 20 kHz
Max. sound pressure (1 m, free field) with D6.....	116 dB
Max. sound pressure (1 m, free field) with D12.....	117 dB
.....(SPLmax peak, pink noise test signal with crest factor 4)	
Input level (100 dB-SPL/1 m).....	-6 dBu

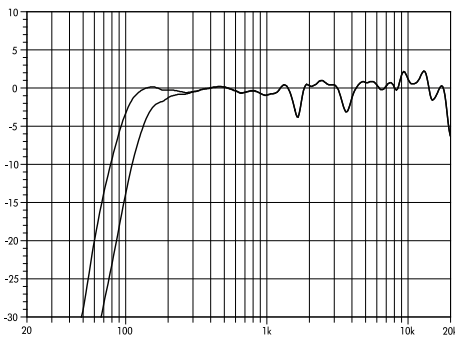


Fig. 11: E5 frequency response, standard and CUT modes

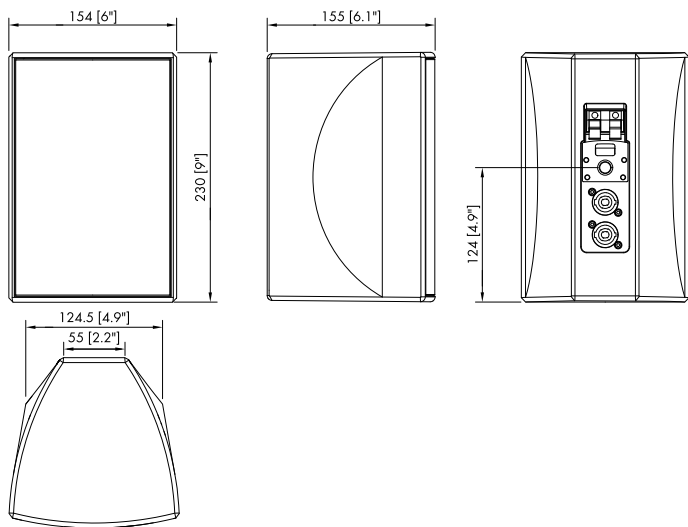


Fig. 12: E5 cabinet dimensions in mm [inch]

E5 loudspeaker

Nominal impedance.....	16 ohms
Power handling capacity (RMS/peak 10 ms)	60/400 W
Nominal dispersion angle (hor. x vert.).....	100° conical
Components.....	5" driver with ferrite magnet
.....	1" dome driver, coaxially mounted
.....	Passive crossover network
Connections	2 x NL4
.....	1 x two pole push terminal (PT - up to 6 mm ² /AWG 10)
Pin assignments.....	NL4: 1+ / 1-
.....	Push terminal: Red: (+) / Black: (-)
Weight.....	2.7 kg (6.0 lb)

3. Manufacturer's Declarations



3.1. EU conformity of loudspeakers (CE symbol)

This declaration applies to:

d&b E4 loudspeaker, Z0440

d&b E5 loudspeaker, Z0450

manufactured by d&b audiotechnik GmbH.

All production versions of these types are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective EC directives including all applicable amendments.

A detailed declaration is available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

3.2. WEEE Declaration (Disposal)

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product, please contact d&b audiotechnik.

