

E12, E12-D

Manual (1.0EN)



Symbols on the equipment

Please refer to the information in the operating manual.

WARNING!
Dangerous voltage!

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General Information

E12, E12-D Manual

Version 1.0EN, 10/2007, D2031.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.

In the case of reselling this product handout 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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Safety precautions



WARNING!

Information regarding use of loudspeakers

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.

CAUTION!

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.

E12, E12-D

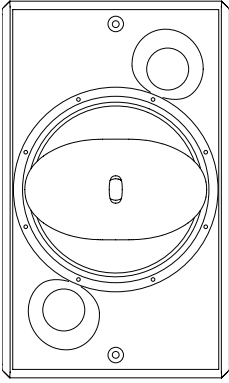


Fig. 1: E12 loudspeaker

The E12 is a high performance multi purpose loudspeaker employing an integrated 12"/1.3" exit coaxial driver design with neodymium magnet and constant directivity horn loading. It is available in two different dispersion versions, the E12 providing a 80° x 50° dispersion pattern (hor. x ver.), the E12-D a wider 110° x 50° pattern. Both horns are easily rotatable through 90° without the use of tools, providing 50° x 80° or 50° x 110° dispersion patterns.

The E12 is a two way design with a built in passive crossover network. Its frequency response extends from 50 Hz to above 17 kHz.

E12 and E12-D have identical enclosures constructed from polyurethane integral hard foam with impact resistant paint finish. The cabinet shape allowing the systems to be set up in upright or horizontal orientation as well as a stage monitor.

The front of the loudspeaker cabinet is protected by a rigid metal grill in front of a acoustically transparent foam. The grill can easily be removed without tools to modify the horn orientation.

The cabinets incorporate a pair of handles, a recessed pole mount socket and six M10 threaded inserts to connect to different rigging accessories like Z5352 E12 Flying bracket, Z5354 E8/E12 Flying adapter, Z5020 Flying adapter 02, Z5025 Flying adapter 03 or Z5353 E12 Horizontal bracket. An additional M10 thread in the rear panel can be used to connect a safety wire.

CAUTION!

Only operate E12 loudspeakers with a correctly configured d&b amplifier otherwise there is a risk of damage to the loudspeaker components.

Please note that E12 and E12-D require different controller setups and therefore cannot be wired in parallel.

Connections

The E12 cabinet is fitted with a pair of EP5 connectors. All five pins of both connectors are wired in parallel. The E12 uses the pin assignments 1/2. Pins 3/4 and 5 are designated to active subwoofers, where pin 5 is used for SenseDrive (only available when using a D12 amplifier and 5-wire cabling). Using the male connector as the input, the female connector allows for direct connection to additional loudspeakers.

The E12 can be supplied with NL4 connectors as an option. Pin equivalents of EP5 and NL4 connectors are listed in the table below.

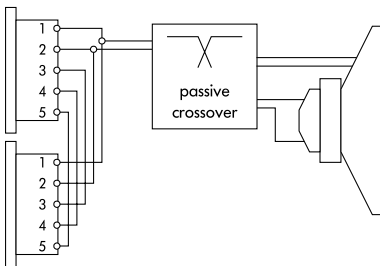


Fig. 2: Connector wiring

EP5	1	2	3	4	5
NL4	1+	1-	2+	2-	n.a.

Operation with D12 or D6

Select the controller setups E12 or E12-D.

Within the D12 amplifier they are available in "Dual Channel" and "Mix TOP/SUB" mode. For combinations with active subwoofers fed by a single 4/5-wire cable "Mix TOP/SUB" mode must be selected.

D6 and D12 provide the additional setups E12-X and E12-DX to be selected when E12 or E12-D cabinets are used in combination with passive E15X-SUB loudspeakers on the same channel. They provide a dedicated correction for the combined frequency response of these systems.

Selecting E12 (E12-D) setup enables up to a total of two E12 (E12-D) loudspeakers to be driven by the respective D12 or D6 channel.

Selecting the E12-X (E12-DX) setup enables a combination of one E12 (E12-D) and one E15X-SUB to be driven by the respective D12 or D6 channel.

In applications with low continuous levels and low ambient temperatures up to three cabinets can be connected to a D12 channel.

IMPORTANT!

Controller settings

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

CUT circuit

Set to CUT, the E12 low frequency level is reduced. The E12 is now configured for use with E15X-SUB in active mode or other d&b active subwoofers.

HFA circuit

In HFA mode (High Frequency Attenuation), the HF response of the E12 system is rolled off. The 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.

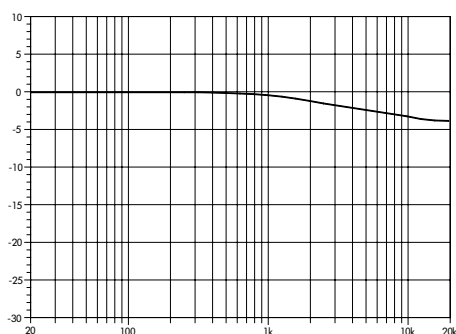


Fig. 3: Frequency response correction of HFA circuit

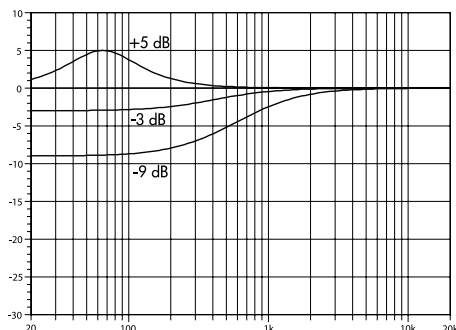


Fig. 4: Frequency response correction of CPL circuit

CPL circuit

The CPL (Coupling) circuit compensates for coupling effects when building closely coupled arrays or when the cabinet is used as a stage monitor. CPL begins gradually at 1 kHz, with maximum attenuation below 250 Hz, providing a balanced frequency response when E12 cabinets are used in arrays of two or more. The function of the CPL circuit in the D12 and D6 amplifier is shown in the diagram opposite and can be set in dB attenuation values between -9 and 0, or a positive CPL value which creates an adjustable low frequency boost around 65 Hz (0 to +5 dB).

Operation with E-PAC

Selecting E12 or E12-D mode enables the E-PAC to drive one E12 loudspeaker. LO IMP mode configures the E-PAC to drive a maximum of two E12 loudspeakers with a 6 dB reduction in input level to the loudspeakers.

For acoustic adjustment the functions CUT and HFA can be selected. The characteristics of the CUT and HFA settings are explained under the previous section "Operation with D12 or D6".

Dispersion characteristics

The graphs below show dispersion angle over frequency of a single E12 cabinet plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB.

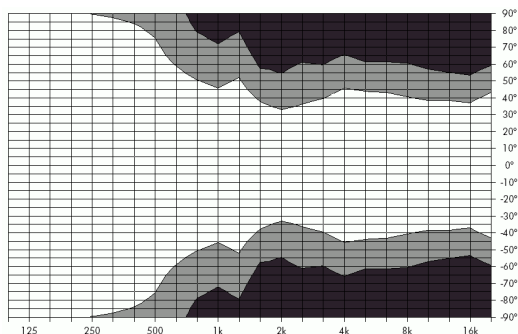


Fig. 5: Isobar diagram E12 horizontal, standard setup

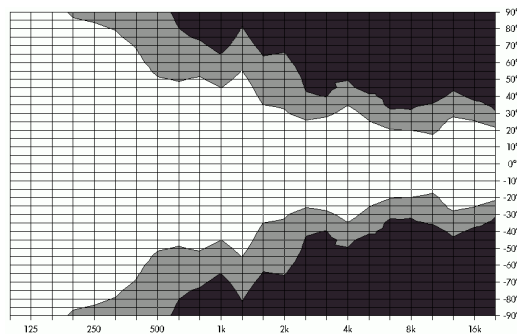
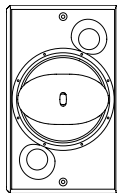


Fig. 6: Isobar diagram E12 vertical, standard setup

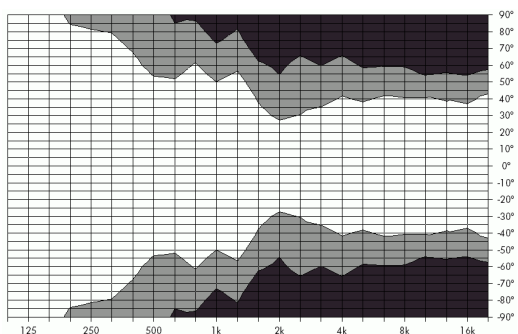


Fig. 7: Isobar diagram E12 horizontal, horizontal setup with the horn rotated

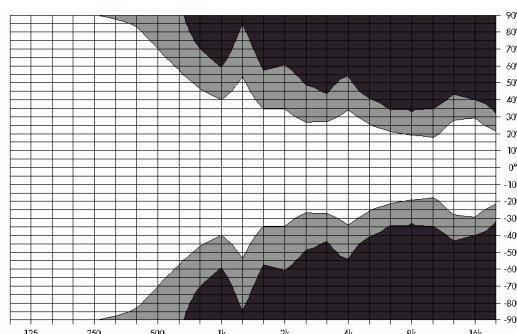
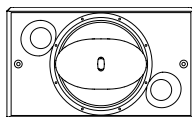


Fig. 8: Isobar diagram E12 vertical, horizontal setup with the horn rotated

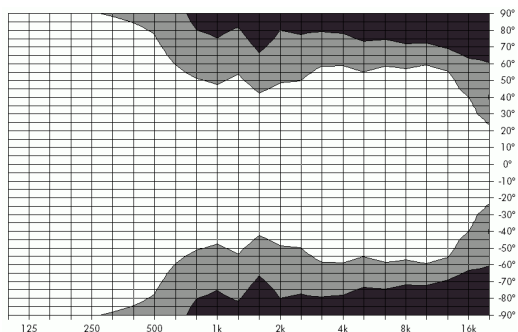


Fig. 9: Isobar diagram E12-D horizontal, standard setup

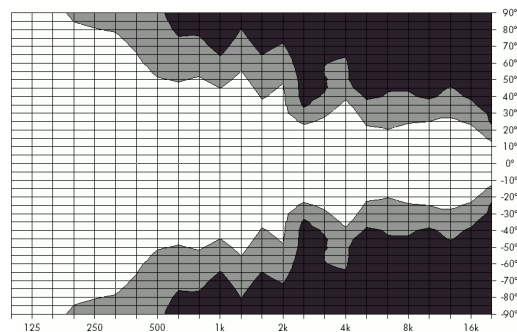
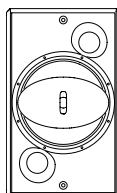


Fig. 10: Isobar diagram E12-D vertical, standard setup

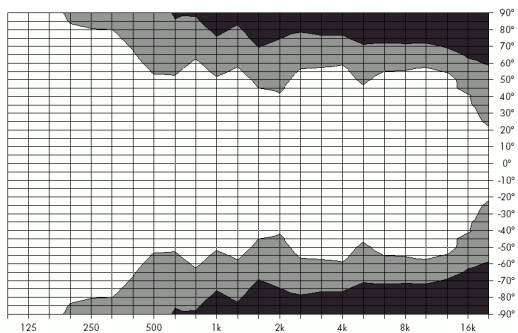


Fig. 11: Isobar diagram E12-D horizontal, horizontal setup with the horn rotated

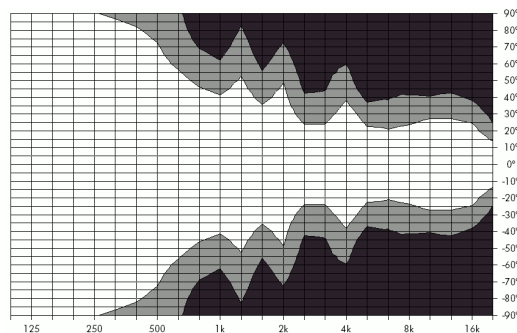
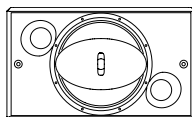
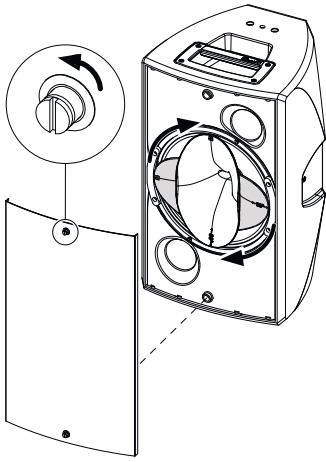


Fig. 12: Isobar diagram E12-D vertical, horizontal setup with the horn rotated



Altering the HF horn dispersion

The E12 HF horn can be rotated through 90° within the coaxial driver assembly. Tools required: screw driver or an appropriate coin.

- Undo the quick locks at the top and bottom of the front grill and remove the grill
- Pick the horn it at its the outer edges and turn it until it snaps into the desired orientation.
- Relocate and fix the front grill.

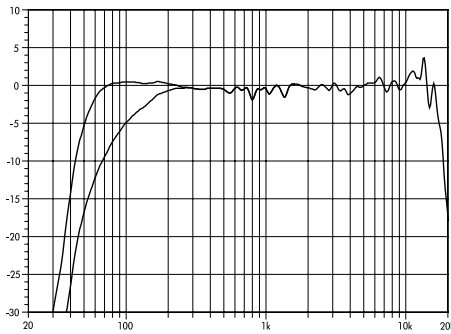


Fig. 13: E12 frequency response, standard and CUT settings

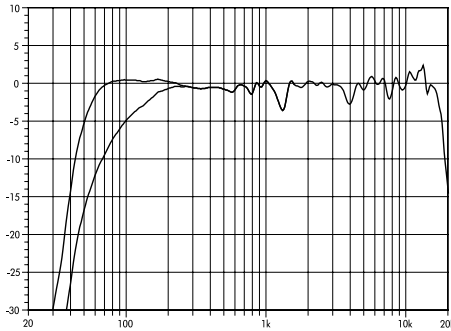


Fig. 14: E12-D frequency response, standard and CUT settings

Technical specifications

E12, E12-D system data

Frequency response (-5 dB standard).....	50 Hz ... 18 kHz
Frequency response (-5 dB CUT mode).....	100 Hz ... 18 kHz
Max. sound pressure (1 m, free field) E12/E12-D with D12.....	134/133 dB
Max. sound pressure (1 m, free field) E12/E12-D with D6.....	131/130 dB
	(SPLmax peak, pink noise test signal with crest factor of 4)
Input level (100 dB-SPL/1 m).....	-17 dBu
Polarity to controller INPUT (XLR pin 2: +/3: -).....	LF: -/HF: +

E12, E12-D loudspeakers

Nominal impedance.....	8 ohms
Power handling capacity (RMS / peak 10 ms).....	300/1600 W
Nominal dispersion angle (hor. x vert.).....	80° x 50°, 110° x 50°
Components.....	12" driver with neodymium magnet
	coaxial 1.3" exit compression driver with 3" coil and rotatable CD horn
	Passive crossover network
Connections.....	2 x EP5
	(optional 2 x NL4)
Pin assignments.....	EP5: 1/2
	NL4: 1+/1-
Weight.....	16 kg (36 lb)

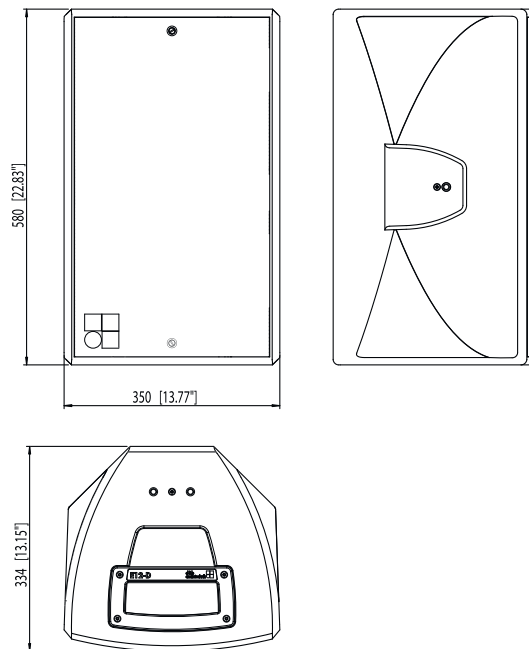


Fig. 15: E12, E12-D cabinet dimensions in mm [inch]

Manufacturers declarations



EU conformity of loudspeakers (CE symbol)

This declaration applies to loudspeakers manufactured by d&b audiotechnik AG and includes the types listed in the table below:

d&b E12/E12-D loudspeaker, Z0601/Z0602

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 following 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.

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.

