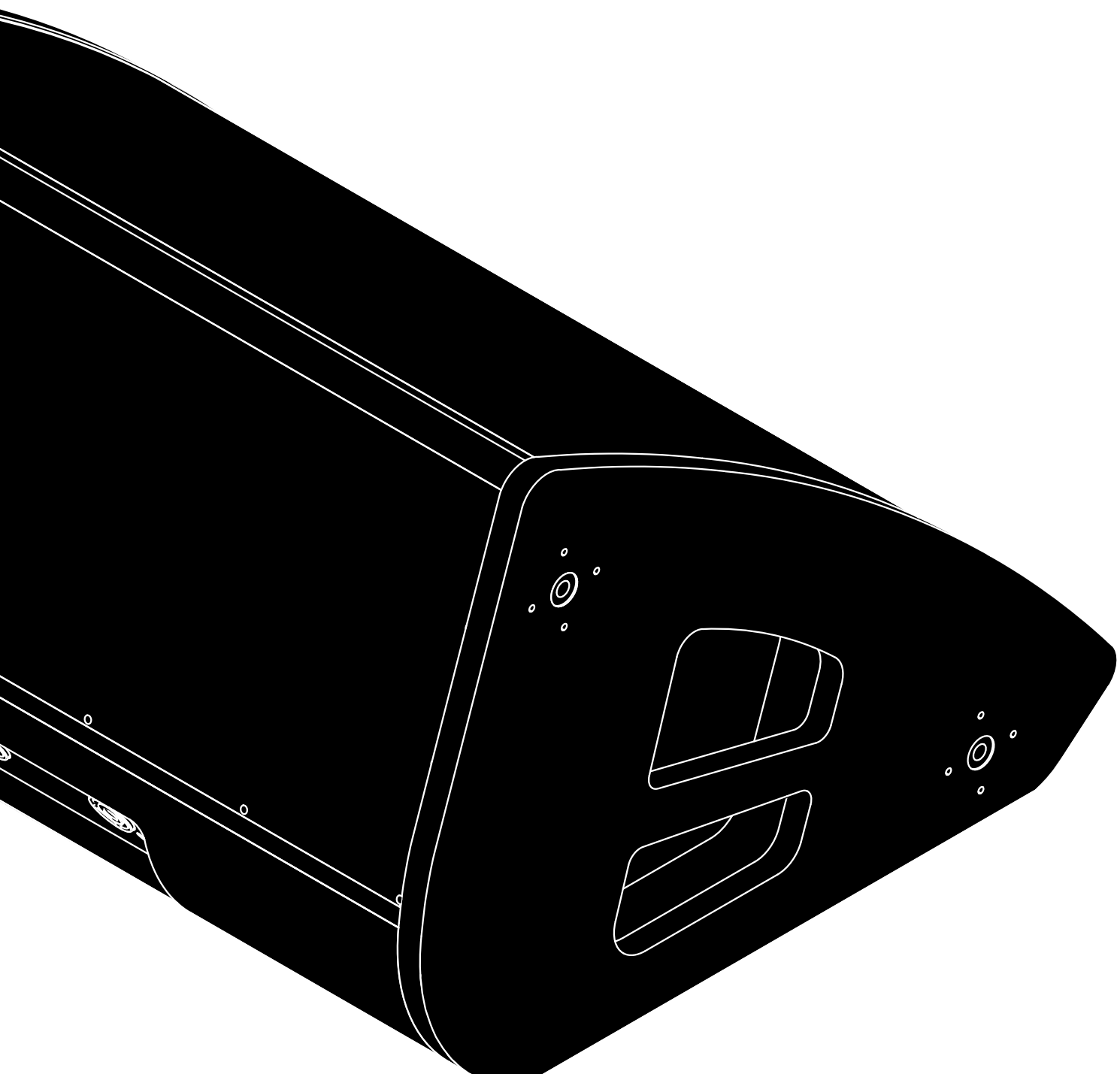


M

M2
Manual 5.1 en



General information

M2 Manual

Version: 5.1 en, 11/2016, D2092.EN .05

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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 owner.

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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1.1. 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.

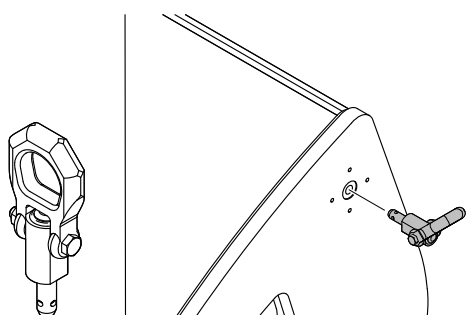
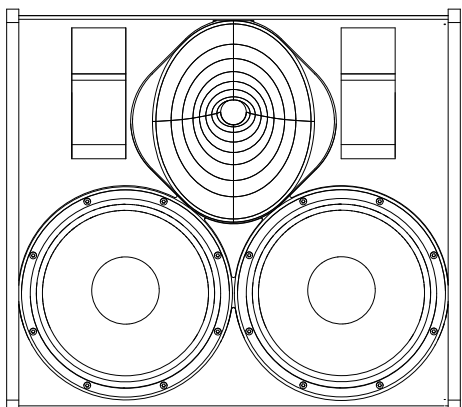
In order to prevent accidents when deploying loudspeakers on the ground or when flown, please take note of the following:

- 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.

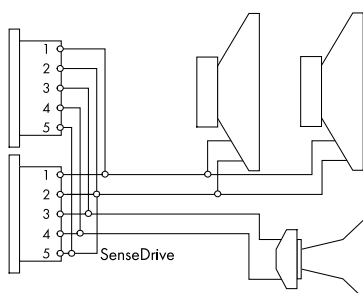
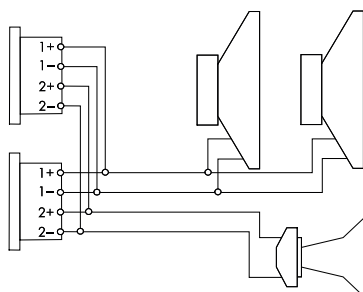
Potential risk of material damage

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. M2 loudspeaker



Z5048 Flying pin 10 mm



NLT4 F/M and EP5 connector wiring

2.1. Product description

The M2 is a 2-way active high performance loudspeaker for stage monitoring purposes. The bass-reflex enclosure is optimized for minimal air compression and houses two 12" LF drivers. It is actively crossed over and powered by both channels of an appropriate d&b amplifier. The 1.4" exit HF compression driver has a compact but strong neodymium magnet assembly operating into a very low distortion waveguide oriented horn, optimized for monitor applications.

The component configuration permits the use of a low profile cabinet which achieves a constant directivity from an unusually low frequency of 600 Hz upwards with a nominal dispersion of 45° x 60° (h x v). Together with a cabinet baffle angle of 40° to the floor, this dispersion offers a realistic artist listening area starting directly above the cabinet and ranging quite far upstage.

The cabinet is constructed from marine plywood and has an impact resistant paint finish. The front of the loudspeaker cabinet is fitted with a rigid metal grill backed with a replaceable acoustically transparent foam. Each side panel incorporates a handle while two runners are recessed in the bottom panel to prevent cabinet movement and protect the bottom panel against scratching.

In addition two sockets which accept the Z5048 Flying pin 10 mm are located on both side panels of the cabinet allowing quick and flexible rigging.

2.2. Connections

The cabinet is fitted with NLT4 F/M connectors. All four pins of both connectors are wired in parallel using the pin assignments 1+/1- (LF) and 2+/2- (HF). Using one connector as the input, the second connector allows for direct connection to a second cabinet.

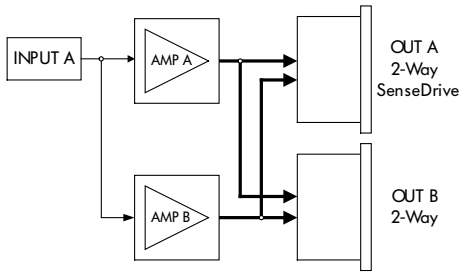
The cabinet can be supplied with EP5 or NL8 connectors as an option.

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

	LF +	LF -	HF +	HF -	SenseDrive
NLT4 F/M	1+	1-	2+	2-	n.a.
EP5	1	2	3	4	5
NL8	1+	1-	4+	4-	3-

d&b LoadMatch

With the d&b four channel amplifier platform, the LoadMatch function enables the amplifier to electrically compensate for the properties of the loudspeaker cable used without the need for an additional sense wire. For applicable loudspeakers, LoadMatch is therefore independent of the connector type used.



D12 Input/Output routing 2-Way Active mode

d&b SenseDrive

The SenseDrive feature within D12 amplifiers enables electrical compensation for the properties of the loudspeaker cable used. SenseDrive requires an additional sense wire. SenseDrive is therefore only available with EP5 connectors and 5-wire cabling for applicable loudspeakers.

Note: To enable SenseDrive for the LF drivers, the loudspeaker cabinet has to be connected to the output A connector. For two cabinets, they should be linked together locally and then connected to the output A connector.

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.

Applicable d&b amplifiers:

D80/D12/30D.

Application	Setup	Cabinets per pair of amplifier channels
M2	M2	2

For applicable d&b amplifiers, the controller setup is available in 2-Way Active mode.

2.3.1. Controller settings

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

CUT mode

Set to CUT, a high pass filter with a 110 Hz cut off frequency is inserted in the controller signal path. The M2 is now configured for use with actively driven d&b subwoofers.

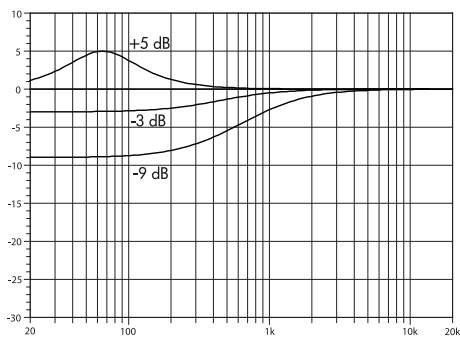
CPL function

The CPL (Coupling) function compensates for coupling effects between the cabinets when building closely coupled arrays. CPL begins gradually around 1 kHz, with the maximum attenuation below 400 Hz providing a balanced frequency response when the M2 cabinet is used in arrays of two or more. To achieve a balanced frequency response, the CPL function can be set to dB attenuation values between 0 and -9.

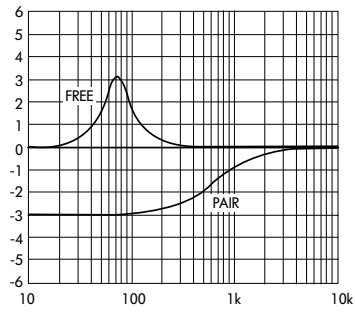
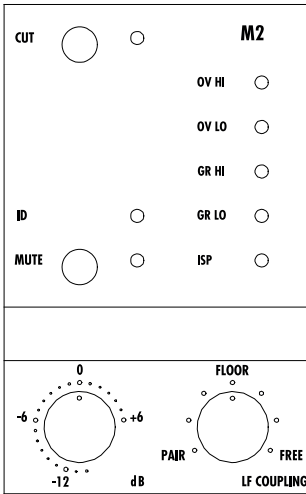
Positive CPL values create an adjustable low frequency boost around 65 Hz (0 to +5 dB).

The following CPL settings correspond to the M2 controller settings of the A1 and are described in the following section => "Operation with A1 - LFC level control":

0 dB = Floor, +3 dB = Free, -3 dB = Pair



Frequency response correction of the CPL function



Controls on M2 controller module.
Frequency response LFC setting (min. and max.)

2.3.2. Operation with A1

Two M2 cabinets can be driven by a single A1 mainframe fitted with an M2 controller module.

CUT switch

The CUT setting is available. The characteristics of the CUT setting is described in the previous section ⇒ "Controller settings - CUT mode".

LF Coupling level control

The LF Coupling level control (**L**ow **F**requency **C**oupling) adjusts the systems low and low/mid response for the different operating environments of the M2 cabinet.

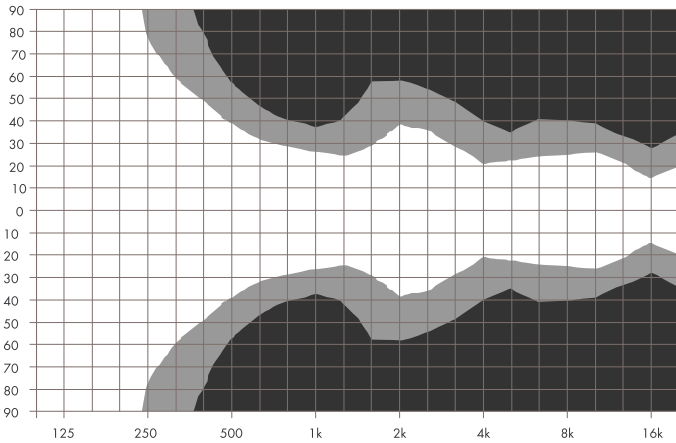
The **FLOOR** position is the standard setting for a single M2, used as a floor monitor.

Turning the control to the **PAIR** position, the low and lower/mid frequency range is further reduced (Corner frequency about 600 Hz). The maximum left position fully compensates the different coupling behaviour of the low and high frequencies when two cabinets are used in a paired monitor application.

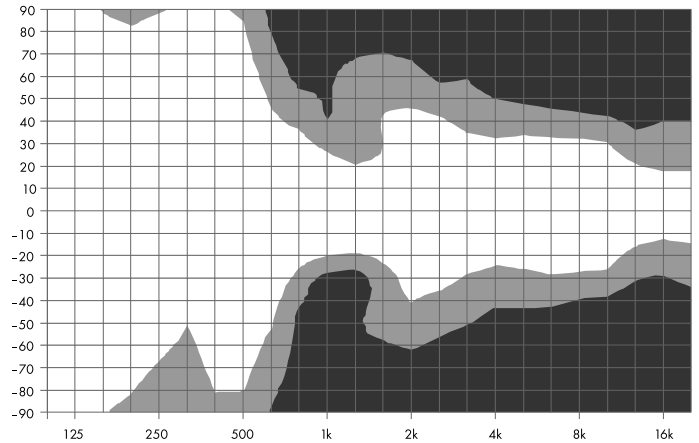
Turning towards **FREE** increases the systems low end for operation without floor coupling (e.g. flown).

2.4. Dispersion characteristics

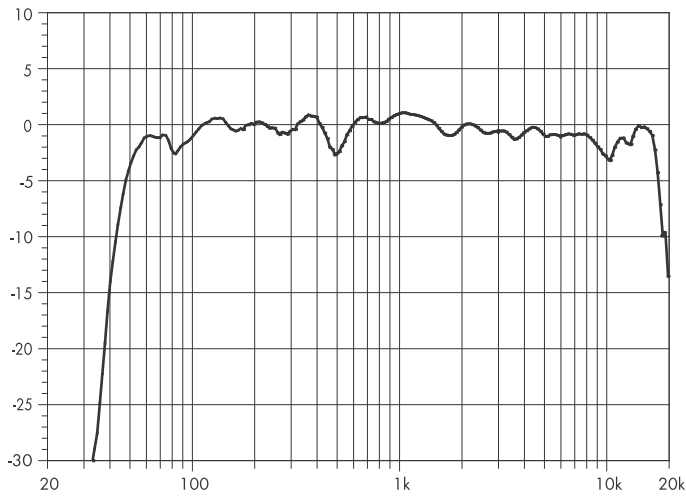
The diagrams below show dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB. The nominal 45° horizontal dispersion angle is maintained from 800 Hz - 10 kHz.



M2 isobar diagram horizontal



M2 isobar diagram vertical



M2 frequency response, listening position in monitor operation
 Measured on axis at a height of 1.7 m (5.6 ft)

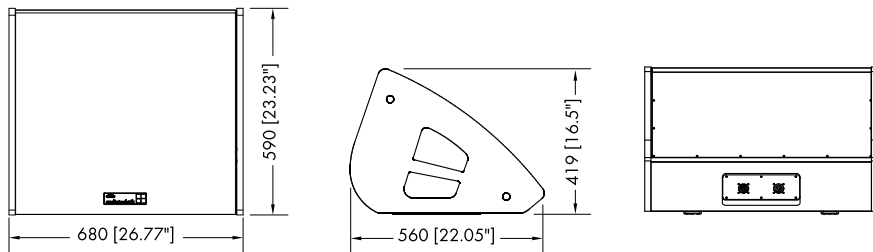
2.5. Technical specifications

M2 system data

Frequency response (-5 dB standard)57 Hz - 17 kHz
 Frequency response (-5 dB, floor coupling)50 Hz - 17 kHz
 Max. sound pressure (1 m, free field)
 with D80 143 dB
 with D12 143 dB
 with 30D 143 dB
(SPLmax peak, pink noise test signal with crest factor of 4)

M2 loudspeaker

Nominal impedance LOW/HIGH4/8 ohms
 Power handling capacity LOW (RMS / peak 10 ms)500/2000 W
 Power handling capacity HIGH (RMS / peak 10 ms)50/200 W
 Nominal dispersion angle (h x v)45° x 60°
 Components2 x 12" LF driver with neodymium magnet
1.4" exit compression driver with CD horn
 Connections NLT4 F/M
optional 2 x EP5 or NL8
 Pin assignment
 NLT4 F/M: LF +/-: 1+/1- | HF +/-: 2+/2-
 EP5: 1: LF+ | 2: LF- | 3: HF+ | 4: HF- | 5: SenseDrive
 NL8: LF +/-: 1+/1- | HF +/-: 4+/4- | SenseDrive: 3-
 Weight 38 kg (83 lb)



M2 cabinet dimensions in mm [inch]



3.1. EU conformity of loudspeakers (CE symbol)

This declaration applies to:

d&b M2 loudspeaker, Z0061

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.

3.1.1. 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.

