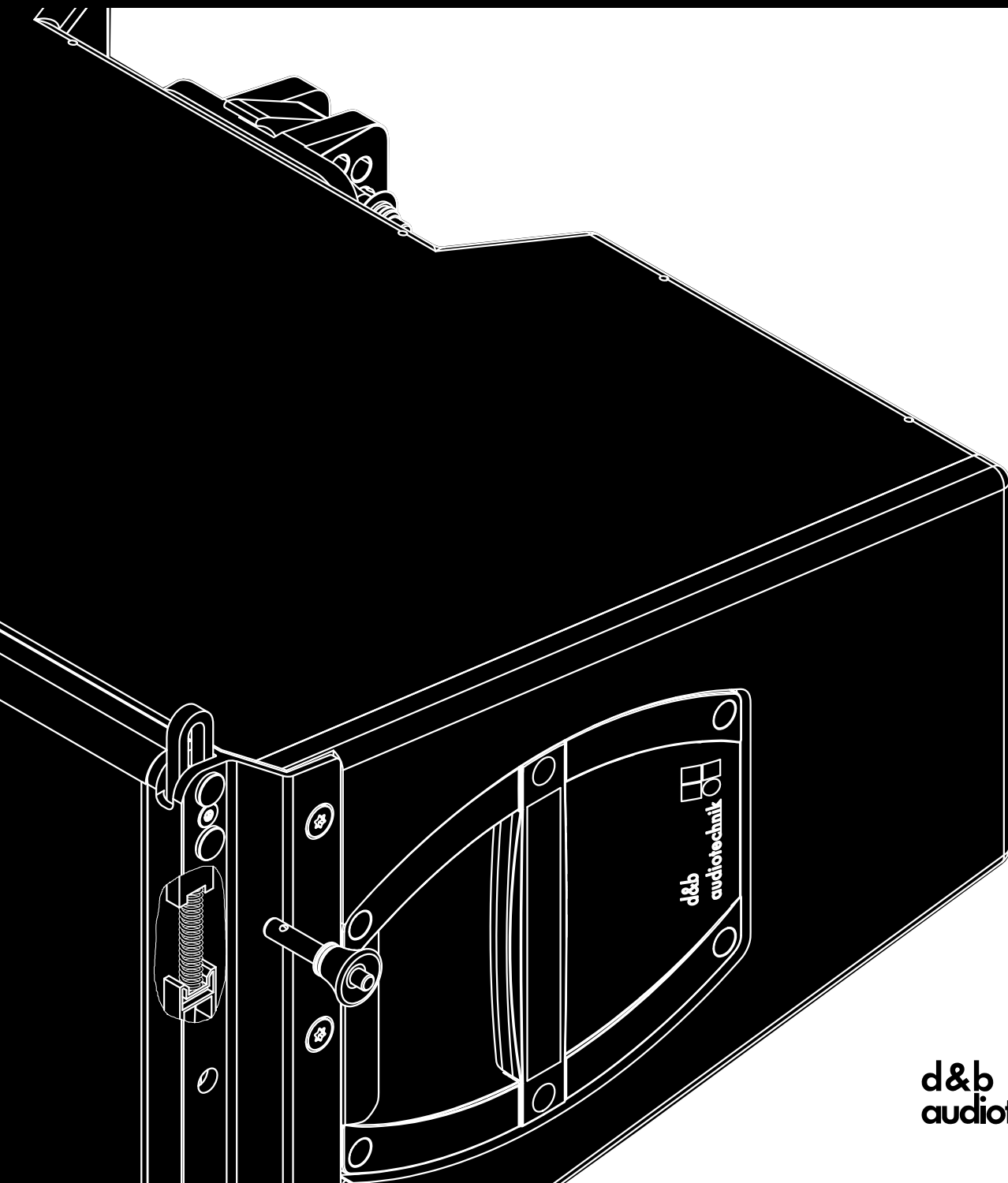


# Y

## Y8/Y12 Manual 1.3 en



## **General information**

Y8/Y12 Manual

Version: 1.3 en, 12/2022, D2712.EN .01

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## **Potential risk of personal injury**

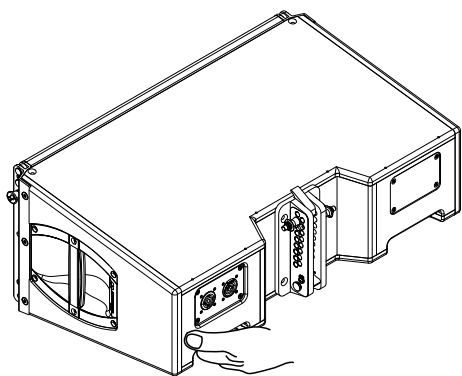
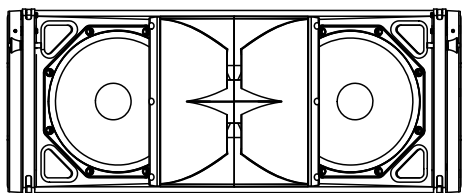
Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over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



### 2.1 Product description

The Y8 line array module is intended for small to medium scale sound reinforcement applications. When the Y Flying frame is used, up to 24 cabinets can be flown in vertical columns producing a constant directivity dispersion pattern of 80° in the horizontal plane.

The Y12 line array module is acoustically and mechanically compatible with the Y8 providing a 120° horizontal dispersion.

The Y8/Y12 cabinets are passive 2-way designs, both housing 2 x 8" neodymium LF drivers, one 1.4" exit HF compression driver with a 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 the range from 0° to 14° with a 1° resolution.

The two LF drivers are positioned in a dipolar arrangement providing an exceptional dispersion control even at lower frequencies with the nominal horizontal dispersion angle being maintained down to 500 Hz.

The frequency response extends from 54 Hz to above 19 kHz.

The cabinets are constructed from marine plywood and have an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The fronts of the cabinets are protected by a rigid metal grill backed by an acoustically transparent foam. Each side panel incorporates a handle while two additional recessed grips are provided at the rear.

### Y-Series rigging components and arrays

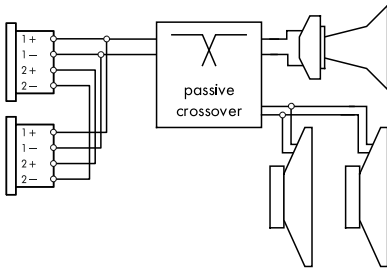
Y-Series arrays may consist of a combination of Y8 or Y12 loudspeakers and/or Y-SUB cardioid subwoofers.

Cabinets are mechanically connected using the rigging strands on both sides of the cabinet front and a central strand at the rear of the cabinet. All necessary rigging components are mounted to the cabinet and fold out or slide out when needed.

A detailed description of the Y-Series rigging components is given in the Y-Series Rigging manual which is provided with the Y Flying frame.

A detailed description of planning and designing Y arrays is given in the technical information "TI 385 d&b Line array design, d&b ArrayCalc" which is also provided with the Y Flying frame.

The d&b ArrayCalc simulation software can be downloaded from the d&b website at [www.dbaudio.com](http://www.dbaudio.com).



**Connector wiring**

## 2.2 Connections

The cabinets are fitted with a pair of NLT4 F/M connectors. All four pins of both connectors are wired in parallel. The Y8 and Y12 loudspeakers use the pin assignments 1+/1-. Pins 2+/2- are designated to actively driven subwoofers. Using the male connector as the input, the female connector allows for direct connection to a second cabinet.

The cabinets can be supplied with NL4 M or EP5 connectors as an option.

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

| NLT4 F/M<br>NL4 M | 1+ | 1- | 2+ | 2- | n.a. |
|-------------------|----|----|----|----|------|
| EP5               | 1  | 2  | 3  | 4  | 5    |

## d&b LoadMatch

Starting with the D80 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.

## 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|D40|D12|D20|D6.

| Application | Setup            | Cabinets per channel |
|-------------|------------------|----------------------|
| Y8          | Y8 Arc/Y8 Line   | 2                    |
| Y12         | Y12 Arc/Y12 Line | 2                    |

The applicable d&b amplifiers provide two setups ("Arc" or "Line") for the Y8 and Y12 loudspeakers. These are available in Dual Channel or Mix TOP/SUB mode.

### Line and Arc setups

The selection of Line or Arc depends on the curvature of the array. Both setups may be used within one array.

The Line setup is used for long throw array sections with three or more consecutive splay settings of 0°, 1° or 2°. Compared to the Arc setup, the mid/high range is reduced to compensate for the extended nearfield.

The Arc setup is intended for line array loudspeakers when used in curved array sections.

The transition from Line to Arc configuration within the array is made according to the splay progression but may allow for certain deviations due to the wiring of the cabinets in groups of up to two.

### 2.3.1 Controller settings

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

#### CUT mode

Set to CUT, the low frequency level of the cabinets is reduced. The Y8/Y12 array is now configured for use with applicable d&b subwoofers.

#### CPL function

The CPL (Coupling) function compensates for coupling effects between the cabinets of an array. CPL begins gradually around 2 kHz, with the maximum attenuation below 100 Hz. As coupling effects increase with the length of the line array, the CPL function can be set to dB attenuation values between 0 and -9. With higher attenuation values the corner frequency of the filter shifts towards lower values.

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.

**Note:** The CPL function is shown in the diagram opposite.

Please note that all cabinets within the array should be operated with the same CPL setting.

When operated with ArrayProcessing (AP), an array will automatically be provided with the system target response. All coupling effects caused by array length and shape are considered in the AP data. The CPL function may still be used for additional corrections, for example of room properties or coupling effects between main hangs and outfills.

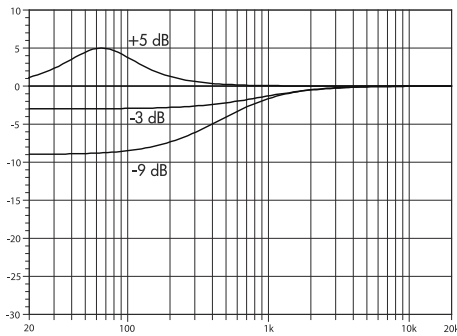
#### HFC function (Line/Arc setups only)

Selecting the HFC (High Frequency Compensation) function compensates for the loss of high frequency energy due to air absorption when loudspeakers are used to cover far field listening positions.

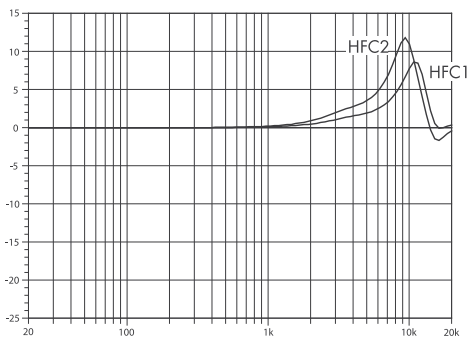
The HFC function has two settings (HFC1 and HFC2) for different distances the cabinets need to cover. The settings should be used selectively; HFC1 compensates for 25 m (82 ft) and HFC2 for 50 m (164 ft) of additional distance from a reference position.

The compensation is adjusted for a typical relative humidity of 40 % at 22 °C. With lower humidity the absorption by air increases, therefore the distances where the respective HFC setting provides a correct equalization are shorter than indicated above.

Using the HFC function provides the correct sound balance between close and remote audience areas, whilst all amplifiers driving the array can be fed with the same signal.



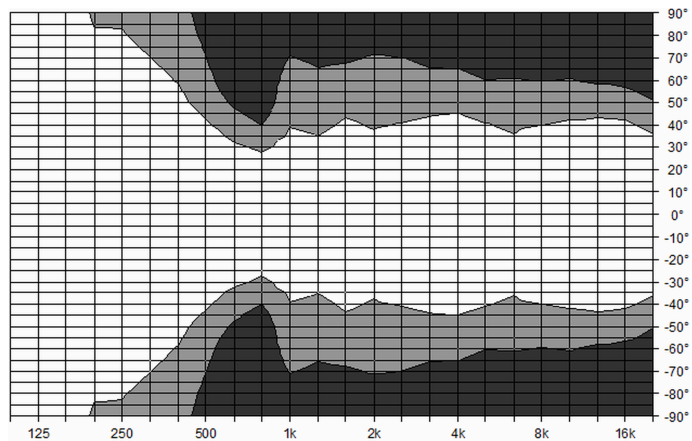
**Frequency response correction of the CPL function \***  
\* schematic diagram



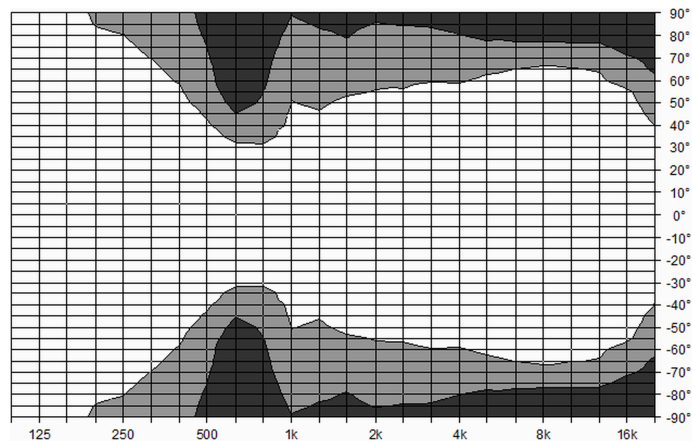
**Frequency response correction of the HFC function \***  
\* schematic diagram

## 2.4 Dispersion characteristics

The graphs below show the horizontal dispersion angle over frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB. The nominal dispersion is maintained above 600 Hz, while a useful horizontal dispersion control is achieved down to 500 Hz.



Isobar diagram Y8 horizontal



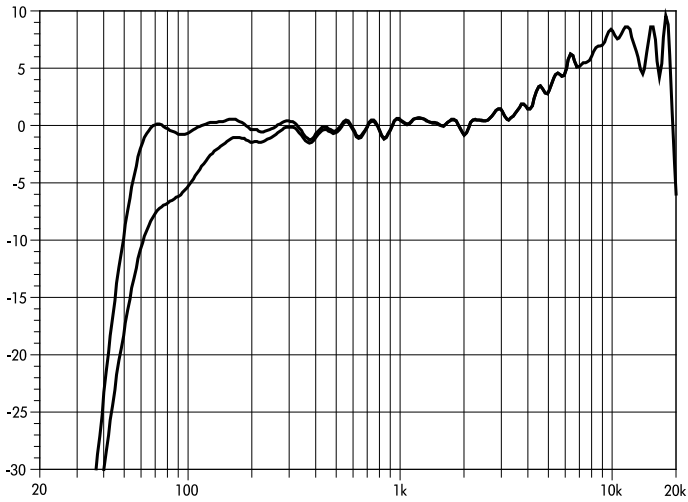
Isobar diagram Y12 horizontal



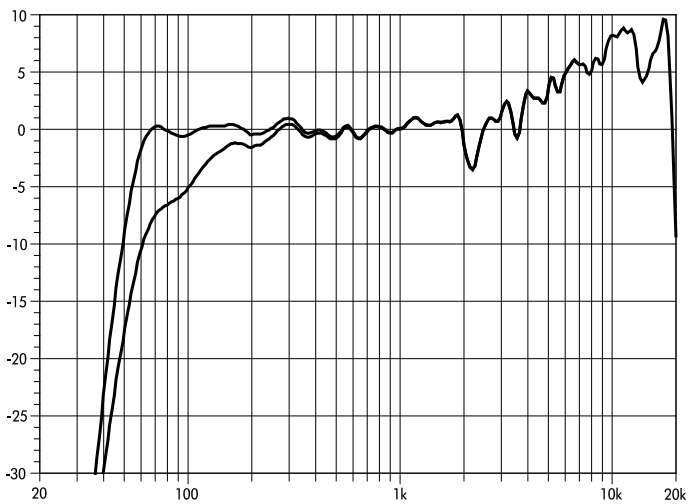
## 2.5 Technical specifications

### System data

|                                       |  |
|---------------------------------------|--|
| Frequency response (-5 dB standard)   | 54 Hz - 19 kHz   |
| Frequency response (-5 dB CUT mode)   | 100 Hz - 19 kHz  |
| Max. sound pressure (1 m, free field) |  |
| with D6                               | 134 dB   |
| with D12   D20                        | 137 dB   |
| with D80   D40                        | 139 dB   |
|                                       | (SPLmax peak, pink noise test signal with crest factor of 4) |



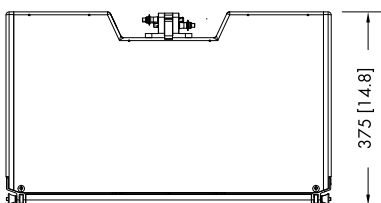
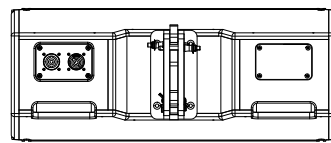
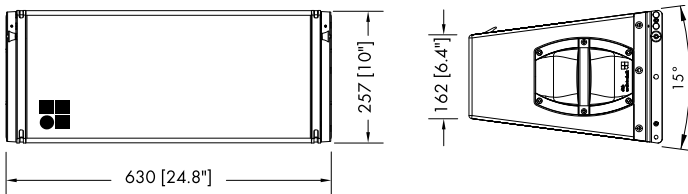
Y8 frequency response, standard and CUT modes



Y12 frequency response, standard and CUT modes

### Y8/Y12 loudspeaker

|   |                                  |
|---|----------------------------------|
| Nominal impedance                         | 8 ohms                           |
| Power handling capacity (RMS/peak 10 ms)  | 400/1600 W                       |
| Nominal dispersion angle (horizontal) Y8  | 80°                              |
| Nominal dispersion angle (horizontal) Y12 | 120°                             |
| Splay angle setting                       | 0° ... 14°                       |
|   | 1° increment                     |
| Components                                | 2 x 8" driver                    |
|   | 1 x 1.4" exit compression driver |
|   | Passive crossover network        |
| Connections                               | 2 x NLT4 F/M                     |
|   | optional 2 x NL4 M or EP5        |
| Pin assignment                            | NLT4 F/M and NL4 M: 1+/1-        |
|   | EP5: 1: + / 2: -                 |
| Weight                                    | 20 kg (44 lb)                    |



Y8/Y12 cabinet dimensions in mm [inch]

### 3.1 Conformity of loudspeakers

This declaration applies to:

**d&b Z0707 Y8 loudspeaker**

**d&b Z0708 Y12 loudspeaker**

by d&b audiotechnik GmbH & Co. KG.

All product variants 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 directives including all applicable amendments.

Detailed and applicable declarations are available on request and can be ordered from d&b or downloaded from the d&b website at [www.dbaudio.com](http://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.

**WEEE-Reg.-Nr. DE: 13421928**



