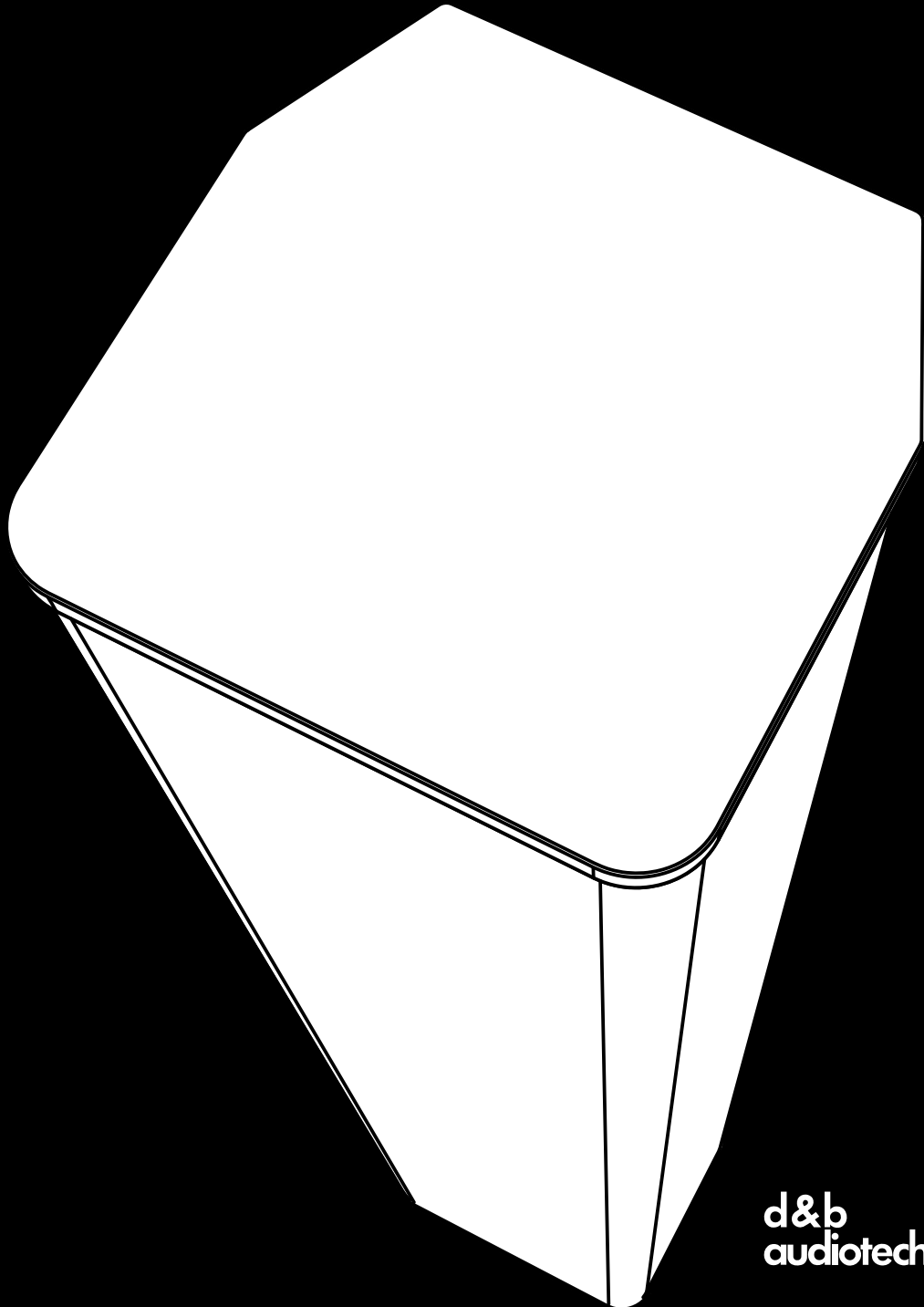


# X C

**16C**  
**Manual 1.3 en**



## **General information**

16C Manual

Version: 1.3 en, 09/2023, D2619.EN .01

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## **Potential risk of personal injury**

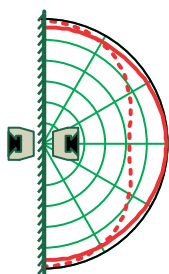
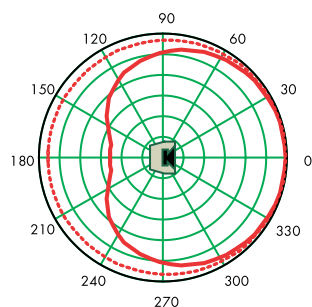
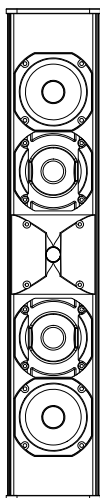
Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over 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 16C is a passive 2-way column loudspeaker housing four 4" neodymium drivers and a 0.75" compression driver mounted on a CD horn.

In the vertical plane, the cabinet provides directivity control down to 500 Hz.

The HF horn has a nominal dispersion of  $90^\circ \times 40^\circ$  (h x v).

The 4" drivers are arranged in a unique cardioid setup radiating through waveguide elements at the front and damped ports at the rear of the cabinet. This design provides a cardioid dispersion pattern with an average broadband attenuation to the rear of approx. 18 dB.

The loudspeaker cabinets are based on an extruded aluminum profile with a metal grill protecting the front of the loudspeaker. Two continuous rails (8 mm, T-slot profiles) are provided at the rear for attaching a wall mount bracket.

#### 2.1.1 Cardioid dispersion

Due to their dimensions, conventional column loudspeakers provide no significant horizontal directivity below 2 kHz.

At low and mid frequencies, the resulting polar pattern is almost omni-directional (dotted line).

The cardioid patterns of the 16C show a much higher directivity resulting in much less energy radiated into the room (continuous line).

Typically, column loudspeakers are mounted onto walls or other hard plane surfaces. Hard surfaces act as an acoustic mirror. That means, the room is not only covered by the sound of the actual column loudspeaker but also by the sound produced by its virtual mirror source from "behind".

In the case of conventional column loudspeakers with their low horizontal directivity, the mirror source radiates at a similar level as the loudspeaker itself.

The combination of both sources results in a dipolar characteristic where the main energy is radiated along the walls (dotted line). The 16C, however, with its cardioid dispersion pattern provides an even dispersion characteristic and a useful directivity when mounted onto a wall.

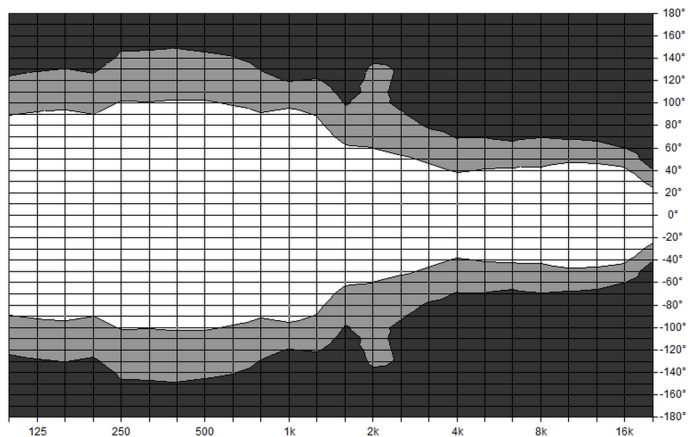
##### 2.1.1.1 Flush mounting

If architecturally required, xC-Series cabinets may be partially flush mounted.

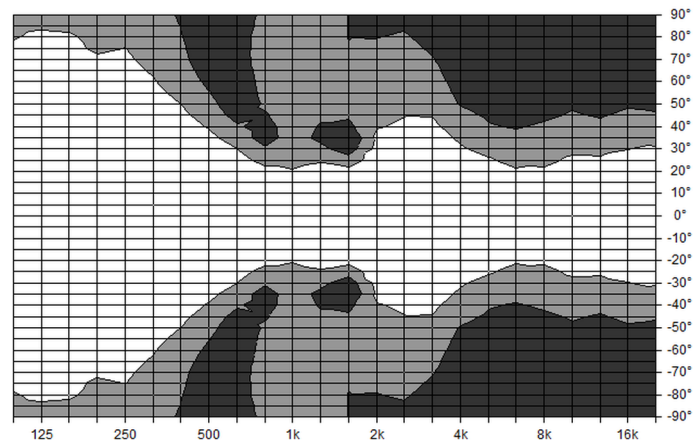
Please note that this will render the cardioid ports ineffective and as a result, may change the dispersion pattern.

### 2.1.2 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.

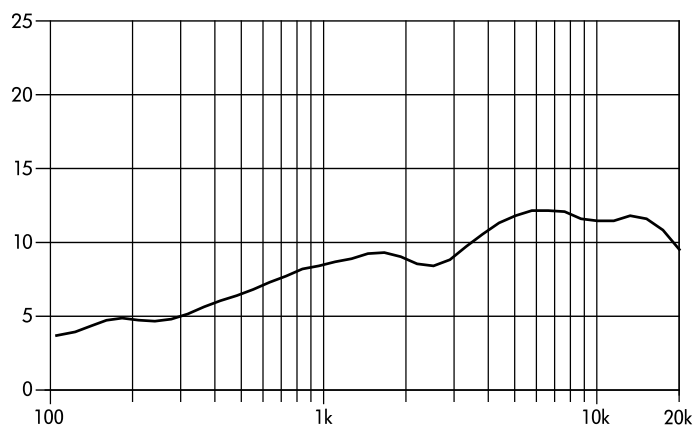


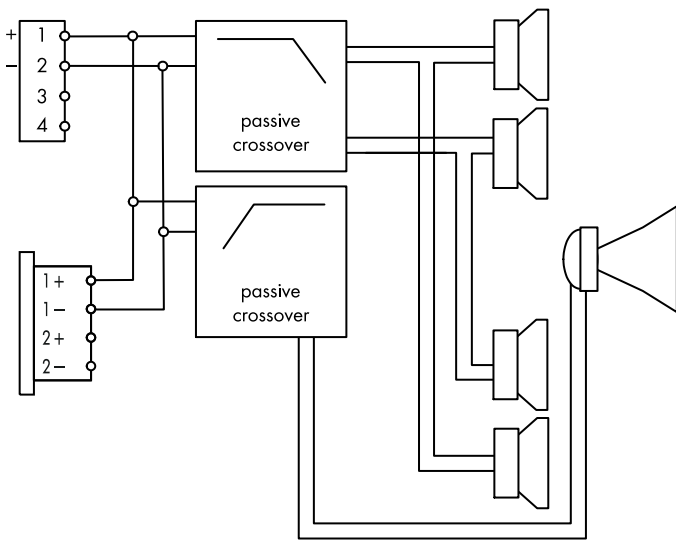
Isobar diagram 16C horizontal



Isobar diagram 16C vertical

### 2.1.3 Directivity index (dB)

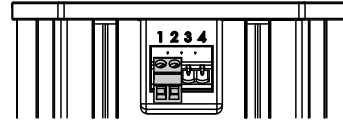




Connector wiring

## 2.2 Connections

**16C** cabinets are fitted with a 4-pole Phoenix Euroblock connector block accepting a 2-pole Phoenix Euroblock screw terminal connector (Phoenix plug type: MSTB 2,5/ 2-ST-5,08 , cross-section up to 2.5 mm<sup>2</sup>/AWG 13). The connector uses the pin assignments 1: + and 2: -. Pins 3 and 4 are not connected.



In addition, an NL4 M connector is provided using the pin assignment 1+/1-.

## 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:

40D | 30D | 10D | 5D.

Application	Setup	Cabinets per channel
<b>16C</b>	16C	3

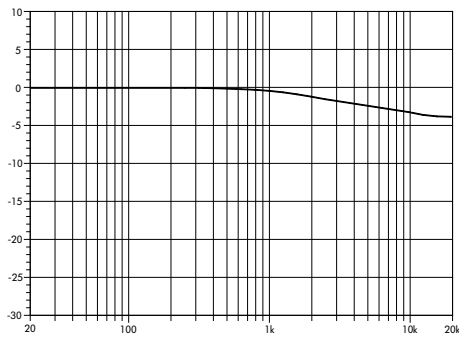
For applicable amplifiers, the controller setup is available in Dual Channel and Mix TOP/SUB mode.

### 2.3.1 Controller settings

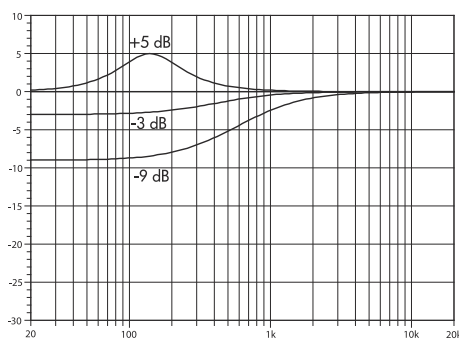
For acoustic adjustment the functions CUT, HFA and CPL can be selected.

#### CUT circuit

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



**Frequency response correction of HFA circuit**



**Frequency response correction of CPL circuit**

### 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.

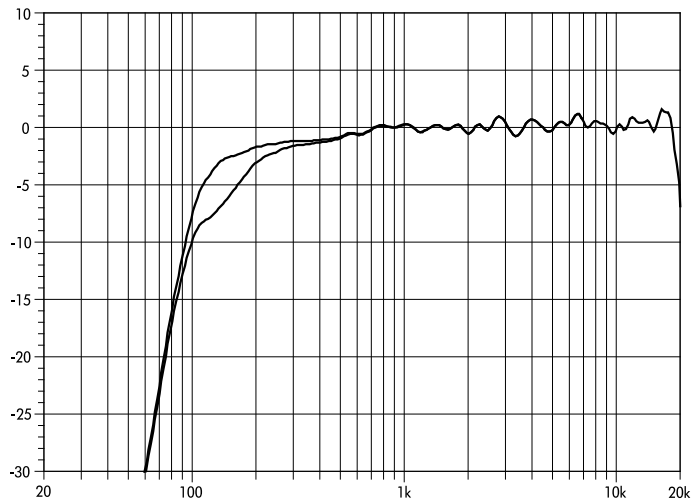
High Frequency Attenuation begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

### CPL circuit

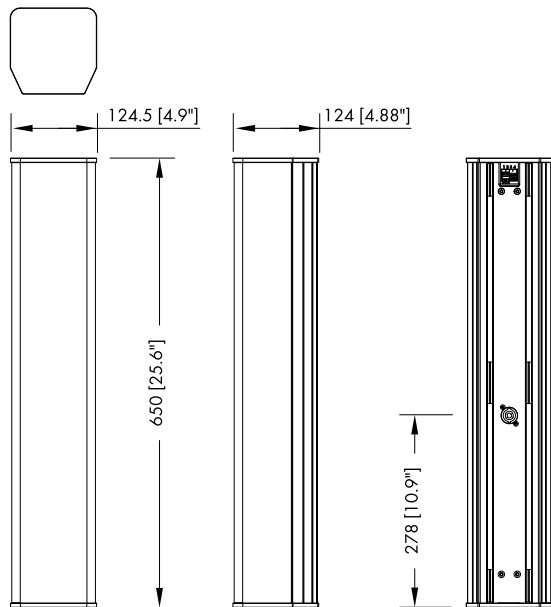
The CPL (Coupling) circuit compensates for different acoustic properties of the venue. CPL begins gradually around 1 kHz, with the maximum attenuation below 250 Hz. To achieve a balanced frequency response, the CPL circuit can be set to dB attenuation values between 0 and -9.

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.





**16C frequency response, standard and CUT modes**



**16C cabinet dimensions in mm [inch]**

## 2.4 Technical specifications

### 16C system data

Frequency response (-5 dB standard) .....	110 Hz - 18 kHz
Frequency response (-5 dB CUT mode) .....	150 Hz - 18 kHz
Max. sound pressure (1 m, free field) .....	
16C with 5D/10D/30D/40D/D6/D12/D20/D40/D80 .....	122 dB
..... (SPLmax peak, pink noise test signal with crest factor of 4)	

### 16C loudspeaker

Nominal impedance .....	12 ohms
Power handling capacity (RMS/peak 10 ms) .....	100/500 W
Dispersion angle (h x v) .....	90° x 40°
Components .....	4 x 4" driver with neodymium magnet
.....	1 x 0.75" compression driver mounted on CD horn
.....	Passive crossover network
Connections .....	4-pin Phoenix Euroblock and 1 x NL4 M
.....	Phoenix plug type: MSTB 2,5/ 2-ST-5,08
Pin assignment .....	Phoenix: 1: + / 2: - (3/4: n.c.)
.....	NL4 M: 1+/1-
Enclosure .....	Extruded aluminum, metal baffle and front grill
Weight .....	5 kg (11 lb)
Mounting .....	Dual rail 8 mm T-slot profile at the rear



#### 3.1 Conformity of loudspeakers

This declaration applies to:

##### **d&b Z1720 16C 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**



