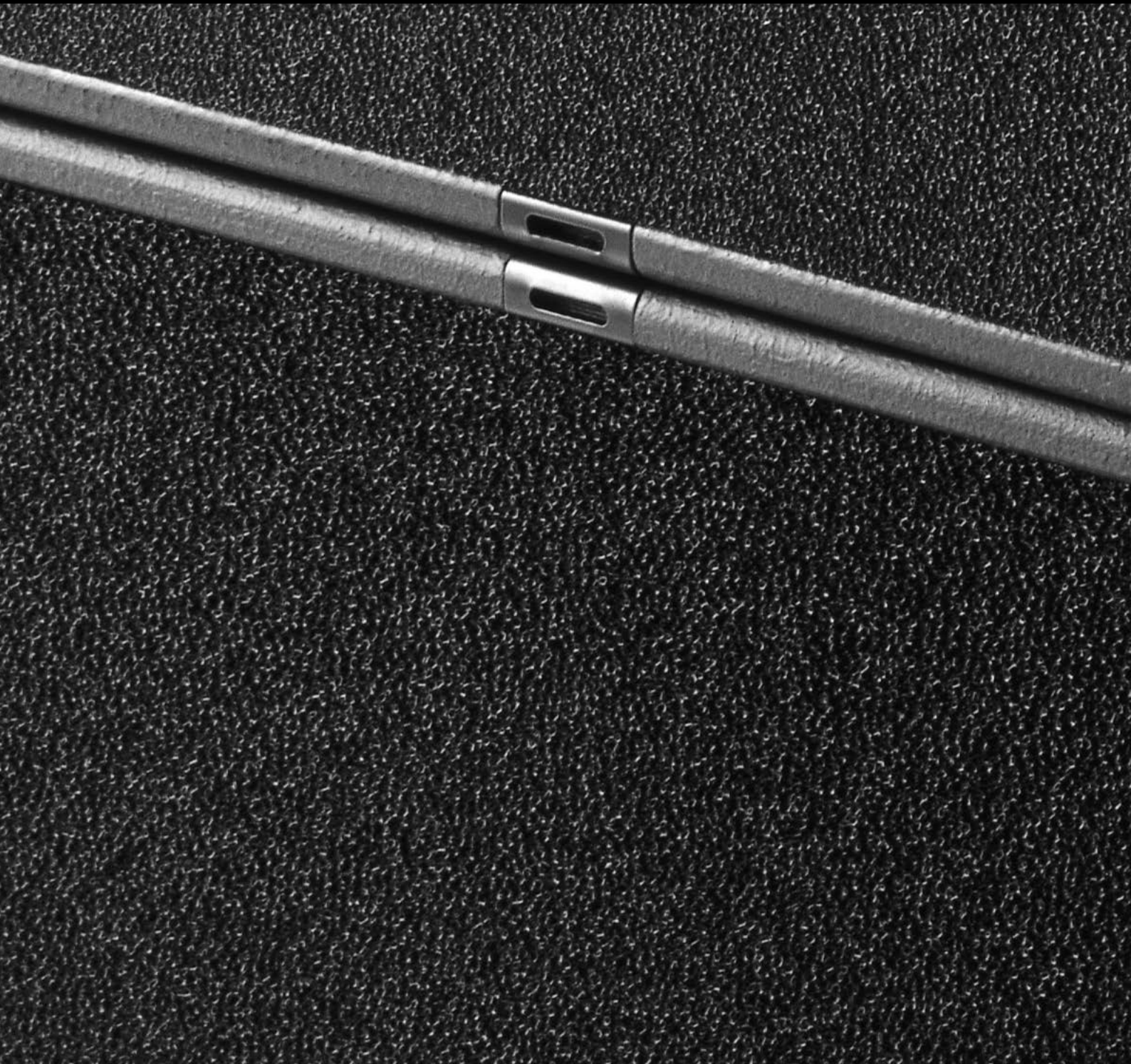


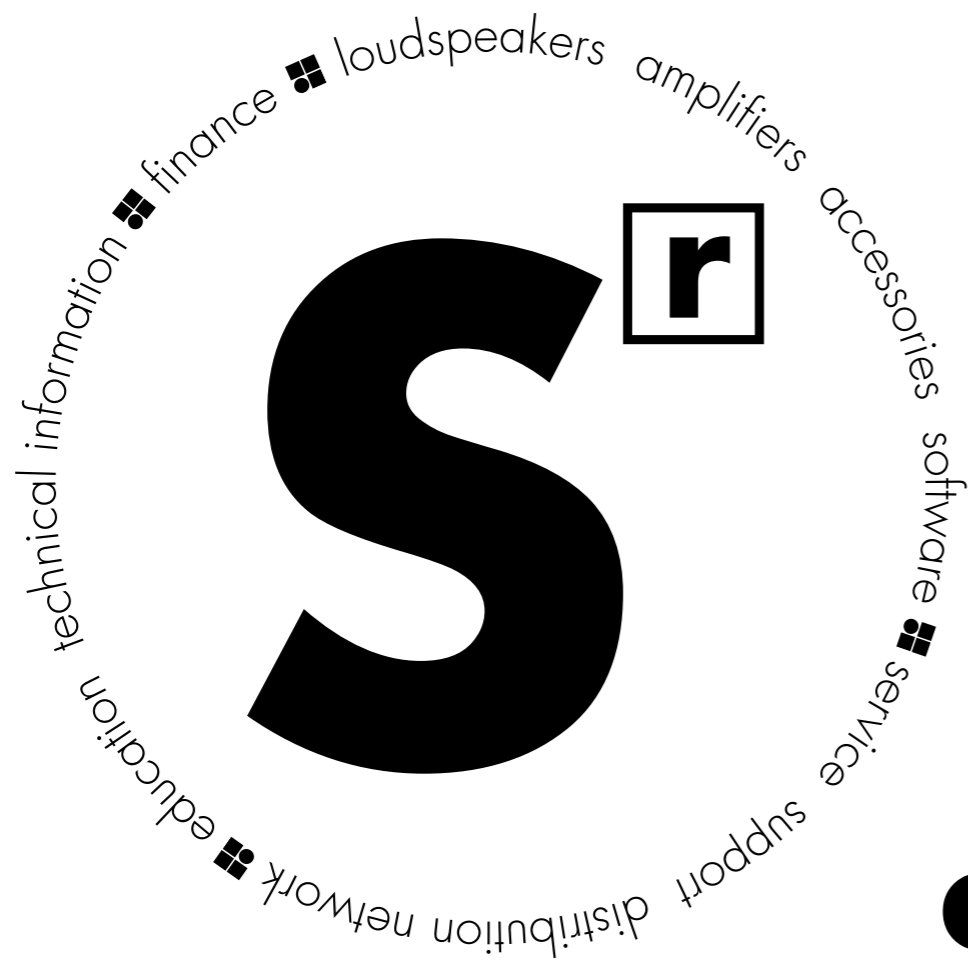
C-Series



Contents



The d&b System reality	4
The C-Series	8
The C7-TOP and Ci7-TOP loudspeakers.....	10
The C7 and Ci7 subwoofers.....	11
The Ci subwoofer.....	12
The C4-TOP loudspeaker	13
The C4 subwoofer	14
The C3 loudspeaker.....	15
The B2 subwoofer	16
The C7/C4/C3 rigging accessories and examples.....	17
The Ci7-TOP/SUB and Ci-SUB mounting accessories	18
The Ci7-TOP/SUB and Ci-SUB mounting examples...	19
The Ci7-TOP and Ci-SUB mounting system.....	20
The Ci loudspeakers Weather Resistant and Special Colour options	21
The d&b Remote network.....	22
The D6, D12 and D80 amplifiers	24
The operation with D6, D12 and D80 amplifiers.....	26
The C-Series frequency responses	28
The C4 system with C3 loudspeakers.....	29
The C-Series product overview	30



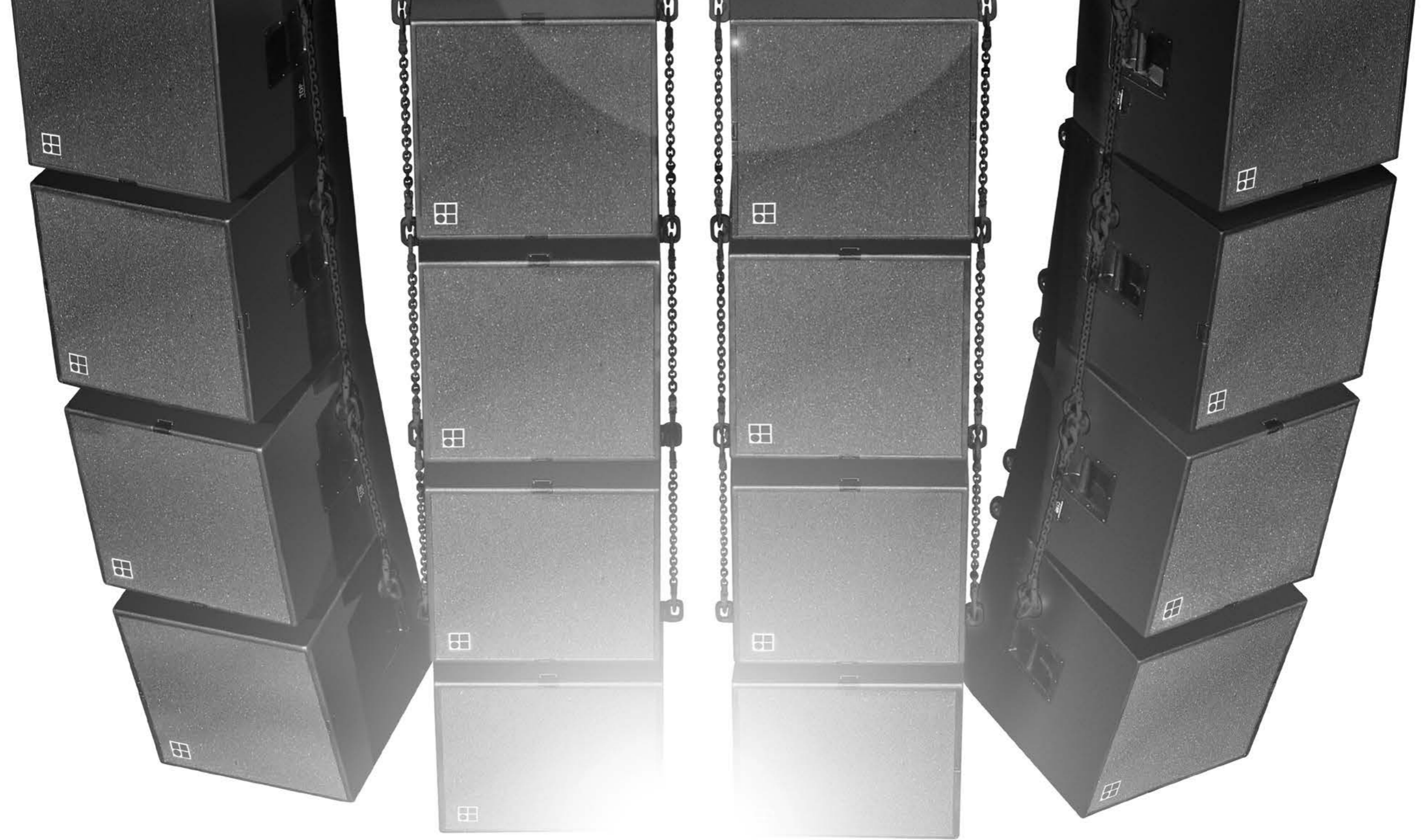
d&b System reality

As the name implies a d&b audiotechnik system is not just a loudspeaker. Nor is it merely a sum of the components: loudspeakers, amplifiers, accessories and software. Right from the outset the d&b audiotechnik approach was to build integrated sound reinforcement systems that actually are more

than the combination of parts: an entirety where each fits all. Every element is tightly specified, precisely aligned and carefully integrated to achieve maximum efficiency. For ease of use, all the user-definable parameters are integrated, allowing the possibility of adjustment, either via remote control surfaces or directly on the

amplifiers. Neutral sound characteristics leave the user all the freedom needed to realise whatever the brief. At the same time d&b offers integrated finance, service and support, a knowledgeable distribution network, education and training as well as technical information, so the same optimal acoustic result

is achieved consistently by every system anywhere, at any time. In reality: the d&b System reality.



The **C-Series** has been optimized for medium to large scale, flexible, modular array configurations and high sound pressure levels. The C-Series loudspeakers use horn loading and conventional point source techniques to create modular high power systems with different dispersion options. The cabinets share the same size, are arrayable and equipped with dedicated

rigging and transportation hardware. Light weight and compact sizes that take into account standard truck widths result in time, space and cost benefits when transporting and installing systems. Applications range from professional touring use and permanent installations down to single cabinet setups requiring narrow dispersion with minimum dimensions. The **C loudspeakers** are

designed for a wide range of applications with a clear perspective to provide mobile, flexible, configurable array solutions to the most arduous sound reinforcement situations. The d&b TransCalc calculator enables simple and accurate system planning. The **Ci loudspeakers** differ only in cabinet construction and mounting hardware. They are intended for

permanently installed performance spaces where the specification is rider driven by the artist or mix engineer's preferences. Both the Ci cabinets and mounting hardware can be colour matched to interior designs and can provide protection in climatically hostile environments.

The C-Series

C7-TOP and **Ci7-TOP** are coaxial, full range loudspeakers with a 75° x 40° constant directivity dispersion down to 600 Hz. Their horn loaded 15" low frequency driver, 1.5" exit HF driver and extended bass response allow use without a subwoofer.

C7-SUB and **Ci7-SUB** are bass-reflex subwoofers with a large port and a long excursion 18" driver. They have the same footprint as the C7 and Ci7-TOPs but are taller, allowing a frequency extension down to 44 Hz.

The **Ci-SUB** is a bass-reflex design with an 18" driver and it is the dedicated subwoofer for the Ci7-TOP loudspeaker for flown array situations.



C7-TOP loudspeaker



Ci7-TOP loudspeaker



C7 subwoofer



Ci7 subwoofer



Ci subwoofer



C3 loudspeaker



**C4-TOP loudspeaker
C4 subwoofer**



B2 subwoofer

The **C4 system** is primarily for use in medium to large-scale sound reinforcement applications and allows the construction of scalable arrays with precise horizontal and vertical coverage. The C3, C4-TOP and C4-SUB have an identical cabinet shape, size and rigging, and along with the B2 subwoofer, form the basis of an arrayable, modular system. The 35° horizontal dispersion behaviour of C3 and C4-TOP loudspeakers enable flawless coupling when array segments are combined.

The **C3** is a hornloaded line array module that can be arrayed both horizontally and vertically adding a long throw capability. The unique wave front adapter couples a total of three 1.3" exit drivers, which deliver a superbly controlled curved coherent wave front up to 16 kHz.

The unequalled coaxial horn-in-horn design of the **C4-TOP** loudspeaker features an exceptionally constant and narrow 35° x 35° dispersion down to 700 Hz.

The **C4-SUB** is the flown subwoofer for the C4 system extending the frequency response down to 50 Hz.

When deeper low frequency reproduction is required, the **B2-SUB** in infrabass mode can be added. As the low end of the frequency range is produced much more efficiently in a ground coupled configuration the B2 cabinet has no flying fittings.

d&b remote software creates a flexible workspace for the d&b user. The **R1** Remote control software provides all features, functions and controls available on the front of d&b amplifiers, which can be remotely controlled and monitored. Service functions enable firmware updates of the amplifiers as and when these are available, whilst monitoring tools such as System check verifies that the system performs within a predefined condition. R1 Remote control software incorporates the equalizer of each d&b amplifier channel within the software, to make adjustments at any position. The d&b **TransCalc** calculator enables simple and accurate system planning.

The d&b **D6** and **D12** dual channel as well as the **D80** four channel amplifiers realize the complete system and incorporate d&b loudspeaker specific configuration information. They provide three different power ranges and have analog and digital signal inputs and links. These devices are specially designed and manufactured by d&b utilizing Digital Signal Processing and include switchable functions for precisely tailoring system response for a wide variety of applications. Delay capabilities and equalization on each channel of every amplifier reduce the need for external processing devices, with user definable 4-band parametric EQ for the D6 and D12 compared to the two 16-band equalizers incorporated into the D80.



D6 amplifier



D12 amplifier



D80 amplifier

The C7-TOP and Ci7-TOP loudspeakers

C7-TOP and Ci7-TOP loudspeakers

The C7 and Ci7-TOP are full range loudspeakers. The Ci7-TOP is the installation version of the C7-TOP, it differs only in cabinet construction and mounting hardware.

The C7 and Ci7-TOP are two-way hornloaded loudspeakers, which provide full range coverage at very high SPLs. The coaxial constant directivity design maintains a nominal dispersion of 75° x 40° down to 600 Hz. The 15" LF driver is loaded with a vented enclosure and passively crossed over to a 1.5" exit HF compression driver. C7 and Ci7-TOP maintain a high efficiency from 18 kHz down to 68 Hz and consequently, for applications that do not demand very low frequencies additional subwoofers are not required.

Where higher SPLs with sufficient bass-headroom is needed, the C7-TOP can be supplemented with two C7-SUBs for a powerful PA, the Ci7-TOP can be supplemented with either the Ci7-SUB or Ci-SUB.

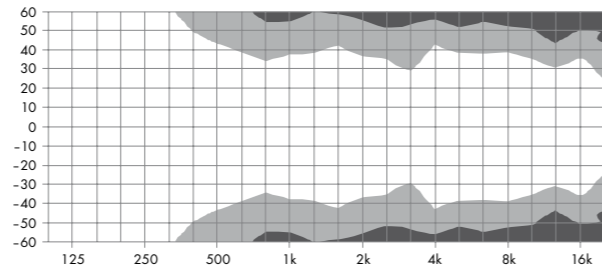
The C7 and Ci7-TOP cabinets are constructed from marine plywood and have an impact resistant paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill covered with a replaceable acoustically transparent foam. The C7-TOP is fitted with a pair of steel handles, MAN CF4 stud plate rigging points and catches at the top and bottom for securing an optional transport lid. Mounted on the C7-TOP rear panel are four heavy duty wheels. Whilst the Ci7-TOP has four M12 and four M16 threaded inserts for attaching the installation hardware.

System data

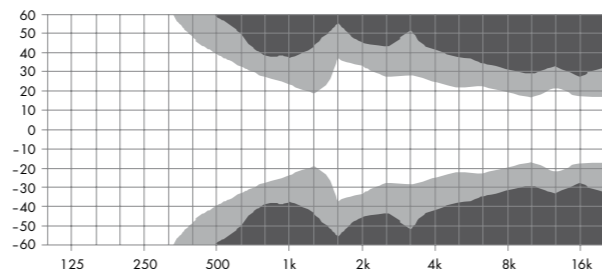
Frequency response (-5 dB)..... 68 Hz - 18 kHz
 Max. sound pressure (1 m, free field)¹
 with D6..... 134 dB
 with D12 138 dB
 with D80 138 dB
 Input level (100 dB SPL/1 m) -19 dBu

Loudspeaker data

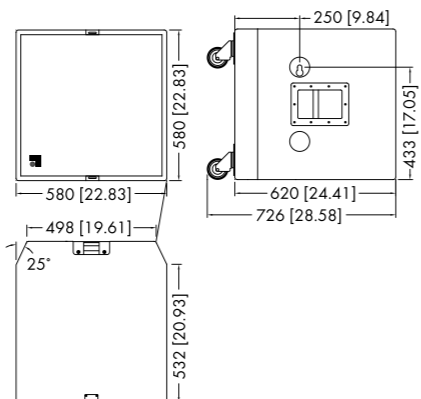
Nominal impedance..... 8 ohms
 Power handling capacity (RMS/peak 10 ms) 200/800 W
 Nominal dispersion angle (h x v) 75° x 40°
 Components 15" driver / 1.5" compression driver
 passive crossover network
 Connections
 C7-TOP 2 x EP5, optional 2 x NL4
 Ci7-TOP 1 x NL4
 Weight.....
 C7-TOP (incl. wheels) 52 kg (117 lb)
 Ci7-TOP 50 kg (110 lb)



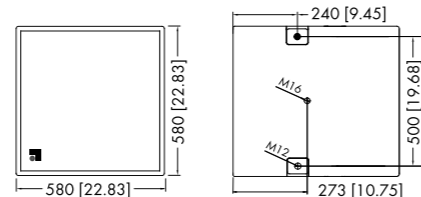
C7-TOP and Ci7-TOP horizontal dispersion characteristics²



C7-TOP and Ci7-TOP vertical dispersion characteristics²



C7-TOP cabinet dimensions in mm [inch]



Ci7-TOP cabinet dimensions in mm [inch]

¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
² Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

The C7 and Ci7 subwoofers

C7 and Ci7 subwoofers

C7 and Ci7-SUB are bass-reflex subwoofers. The Ci7-SUB is the installation version of the C7-SUB, it differs only in cabinet construction and mounting hardware.

They employ a long excursion 18" driver, whilst the large, specially shaped reflex port enables the subwoofers to achieve high sound pressure levels with minimal power compression and breathing effects.

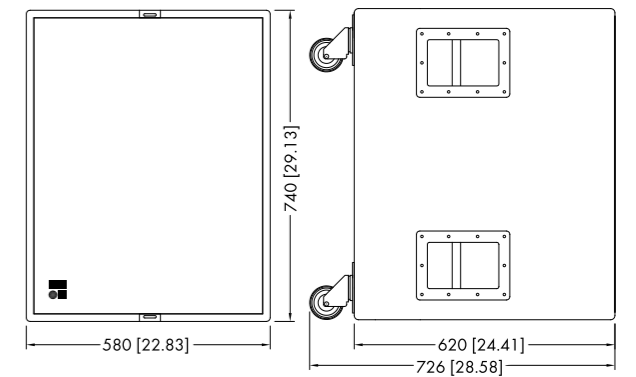
The C7 and Ci7-SUB cabinets are constructed from marine plywood and have an impact resistant paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill covered with a replaceable acoustically transparent foam. The C7-SUB is fitted with two pairs of steel handles and catches at the top and bottom for securing an optional transport lid and an M20 threaded flange in the top panel accepts the d&b Loudspeaker stand for the deployment of full range cabinets. Mounted on the C7-SUB rear panel are four heavy duty wheels. The Ci7-SUB has two M16 threaded inserts for attaching the installation hardware.

System data

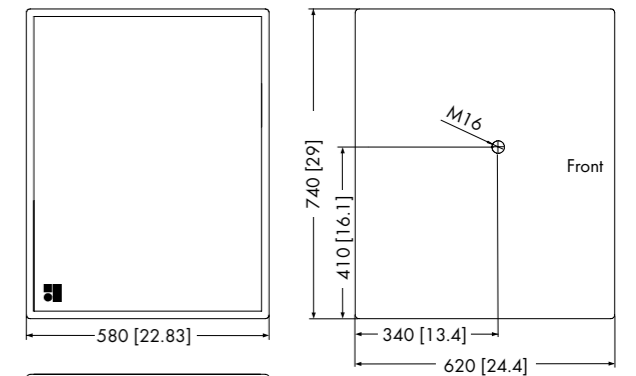
Frequency response (-5 dB)..... 44 Hz - 140/100 Hz
 Max. sound pressure (1 m, free field)¹
 with D6..... 131 dB
 with D12 135 dB
 with D80 135 dB

Loudspeaker data

Nominal impedance..... 8 ohms
 Power handling capacity (RMS/peak 10 ms) 400/1200 W
 Components 18" driver
 Connections
 C7-SUB 2 x EP5, optional 2 x NL4
 Ci7-SUB 1 x NL4
 Weight.....
 C7-SUB (incl. wheels) 49 kg (117 lb)
 Ci7-SUB 45 kg (110 lb)



C7-SUB cabinet dimensions in mm [inch]



Ci7-SUB cabinet dimensions in mm [inch]

¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The Ci subwoofer

Ci subwoofer

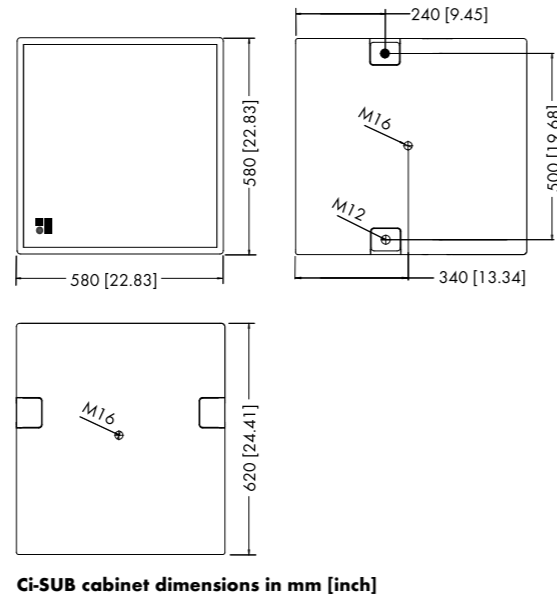
The Ci-SUB is the dedicated subwoofer for the Ci7-TOP loudspeaker for flown array situations as it shares the same size. The Ci-SUB employs a single 18" driver. The compact bass-reflex design extends the low frequency response down to 44 Hz. The Ci-SUB cabinet is constructed from marine plywood and has an impact resistant paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill, covered with a replaceable acoustically transparent foam. Four M12 and four M16 threaded inserts are provided for attaching installation hardware.

System data

Frequency response (-5 dB).....44 Hz - 140/100 Hz
 Max. sound pressure (1 m, free field)¹
 with D6..... 129 dB
 with D12 133 dB
 with D80 133 dB

Loudspeaker data

Nominal impedance.....8 ohms
 Power handling capacity (RMS/peak 10 ms)400/1200 W
 Components.....18" driver
 Connections 1 x NL4
 Weight..... 39 kg (86 lb)



The C4-TOP loudspeaker

C4-TOP loudspeaker

The C4-TOP is a two-way hornloaded loudspeaker, which provides mid to high range coverage at very high SPLs. The coaxial constant directivity design maintains a nominal dispersion of 35° x 35° down to 700 Hz. The 12" LF driver with a 4" voice coil and specially treated diaphragm is passively crossed over to a 2" exit HF compression driver.

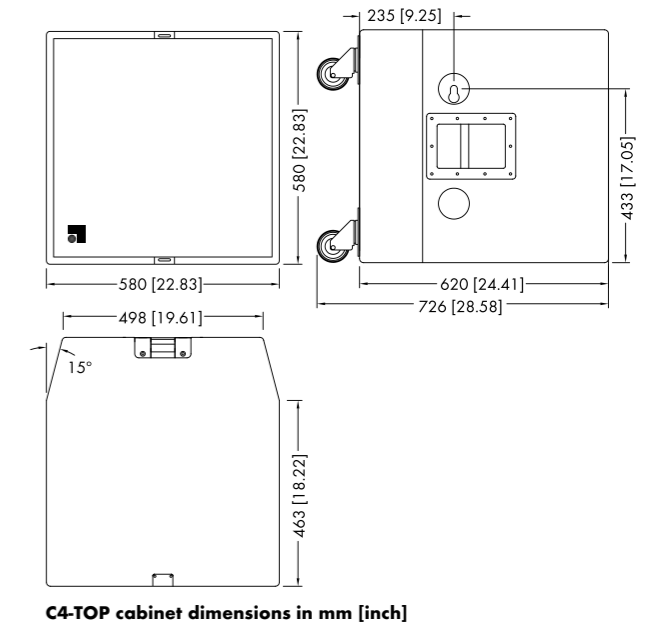
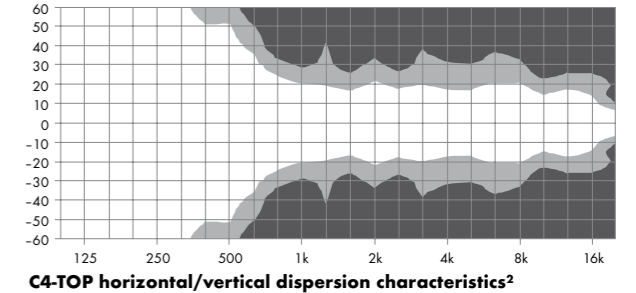
The C4-TOP cabinet is constructed from marine plywood, fitted with steel handles, MAN CF4 stud plate rigging points and has an impact resistant paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill, covered with a replaceable acoustically transparent foam and fitted with catches at the top and bottom for securing an optional transport lid. Mounted on the rear panel are ratchet strap guide plates (kelping bars), four M10 threaded inserts for attaching installation hardware and four heavy duty wheels.

System data

Frequency response (-5 dB)..... 150 Hz - 18 kHz
 Max. sound pressure (1 m, free field)¹
 with D6..... 136 dB
 with D12 140 dB
 with D80 140 dB
 Input level (100 dB SPL/1 m)..... -21 dBu

Loudspeaker data

Nominal impedance.....8 ohms
 Power handling capacity (RMS/peak 10 ms) 200/800 W
 Nominal dispersion angle (h x v)..... 35° x 35°
 Components.. 12" driver with 4" voicecoil /2" compression driver
 passive crossover network
 Connections 2 x EP5, optional NL4
 Weight (incl. wheels).....58 kg (128 lb)



¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
² Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

The C4 subwoofer

C4 subwoofer

The C4-SUB is a compact, double band pass subwoofer employing a single 18" driver. It is designed for use with the C3 and C4-TOP cabinets as part of the C4 system.

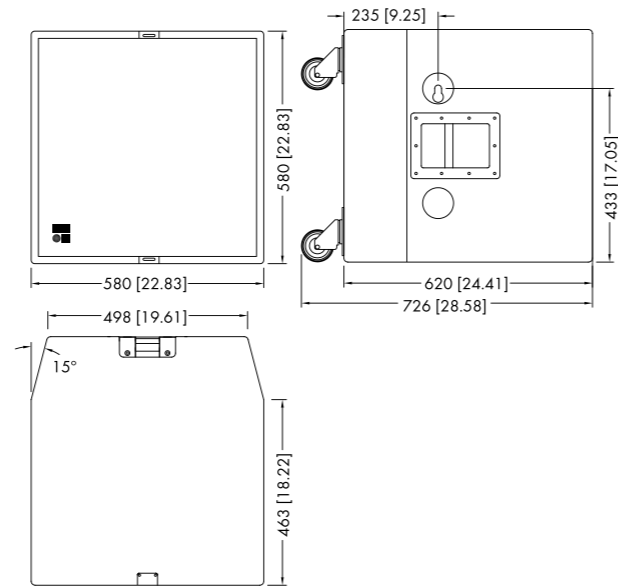
The C4-SUB cabinet is constructed from marine plywood, fitted with steel handles, MAN CF4 stud plate rigging points and has an impact resistant paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill, covered with a replaceable acoustically transparent foam and fitted with catches at the top and bottom for securing an optional transport lid. Mounted on the rear panel are ratchet strap guide plates (kelping bars) and four heavy duty wheels.

System data

Frequency response (-5 dB).....	50 Hz - 150 Hz
Max. sound pressure (1 m, free field) ¹	
with D6.....	131 dB
with D12	135 dB
with D80	135 dB

Loudspeaker data

Nominal impedance.....	8 ohms
Power handling capacity (RMS/peak 10 ms)	200/800 W
Components.....	18" driver
Connections	2 x EP5, optional 2 x NL4
Weight (incl. wheels).....	48 kg (106 lb)



C4-SUB cabinet dimensions in mm [inch]

The C3 loudspeaker

C3 loudspeaker

The C3 is the hornloaded line array module for the C4 system. The C3 cabinet houses 2 x 10" midrange drivers and 3 x 1.3" exit HF compression drivers with titanium diaphragms, producing a maximum sound pressure level of 144 dB SPL. Utilizing a horizontal dispersion of 35° (above 900 Hz) and with a 5° vertical HF dispersion per cabinet, the C3 is used to build vertical columns producing a curved coherent wavefront.

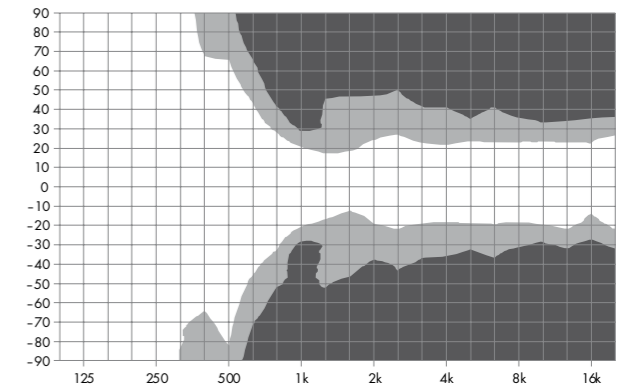
The C3 cabinet is constructed from marine plywood, fitted with steel handles, MAN CF4 stud plate rigging points and has an impact resistant paint finish. The front of the midrange section of the loudspeaker cabinet is protected by a rigid metal grill fitted with a replaceable acoustically transparent foam, and the HF section is fitted with a foam block in the horn throat. Catches are fitted at the top and bottom of the cabinet for securing an optional transport lid. Mounted on the rear panel are ratchet strap guide plates (kelping bars), two hinge plates and four heavy duty wheels.

System data

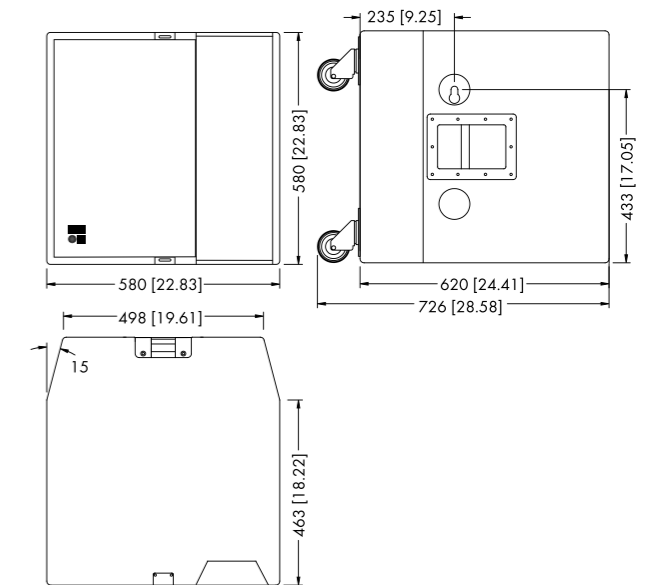
Frequency response (-5 dB standard)	130 Hz - 16 kHz ¹
Frequency response (-5 dB LFC mode).....	80 Hz - 16 kHz ¹
Max. sound pressure (1 m, free field) ²	
with D12	144 dB
with D80	144 dB

Loudspeaker data

Nominal impedance (MF/HF)	4 ohms / 5.3 ohms
Power handling capacity LF (RMS/peak 10 ms).....	500/2000 W
Power rating HF (RMS/peak 10 ms).....	150/600 W
Nominal dispersion angle (h x v)	35° x 5°
Components.....	2 x 10" drivers / 3 x 1.3" compression drivers
Connections	1 x EP5, optional 1 x NL4
Weight (incl. wheels).....	71 kg (156 lb)



C3 horizontal dispersion characteristics³



C3 cabinet dimensions in mm [inch]

¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

² Two cabinets

³ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

⁴ Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

The B2 subwoofer

B2 subwoofer

The B2-SUB is a dual mode 2 x 18" double band pass subwoofer, configurable either for infrabass with the C4 system or as a high output alternative subwoofer. When used with a C4 system, d&b recommend a ratio of four C4-SUBs to one B2-SUB.

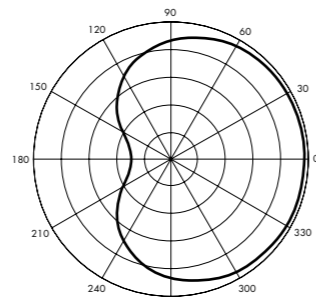
The B2-SUB cabinet is constructed from marine plywood and has an impact resistant paint finish. The front of the loudspeaker cabinet is fitted with a rigid metal grill, covered with a replaceable acoustically transparent foam and fitted with catches at the top and bottom for securing an optional transport lid. The cabinet incorporates eight steel handles and four heavy duty wheels.

System data (standard/INFRA)

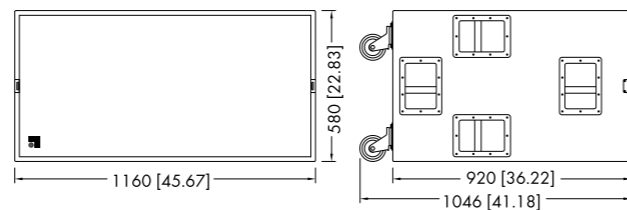
Frequency response (-5 dB)..... 37 Hz - 100 Hz / 32 Hz - 68 Hz
 Max. sound pressure (1 m, full space)¹
 with D12 139 dB / 136 dB
 with D80 139 dB / 136 dB

Loudspeaker data

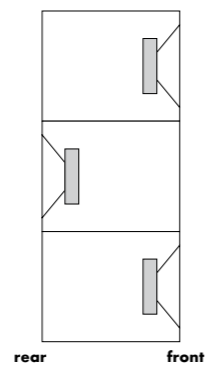
Nominal impedance.....4 ohms
 Power handling capacity (RMS/peak 10 ms)600/2400 W
 Components.....2 x 18" driver
 Connections1 x EP5, optional NL8
 Weight (incl. wheels)..... 102 kg (225 lb)



Cardioid polar pattern



B2-SUB cabinet dimensions in mm [inch]

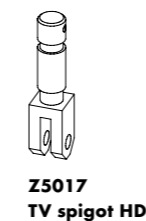


CSA configuration example

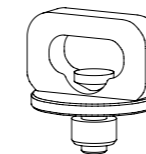
The C7/C4/C3 rigging accessories and examples

Safety approval

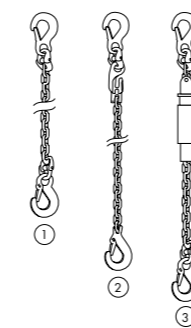
d&b loudspeakers and accessories are designed for setup and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



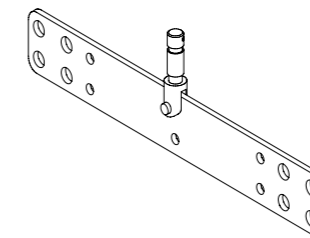
Z5017 TV spigot HD



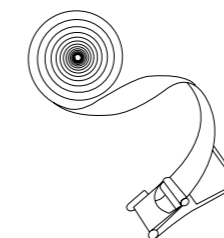
Z5040 Flying stud



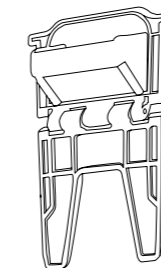
E652x 1t Chains various length (1)
 E6534 1t Shortening chain 47 links (2)
 E6524 Vari-chain (3)



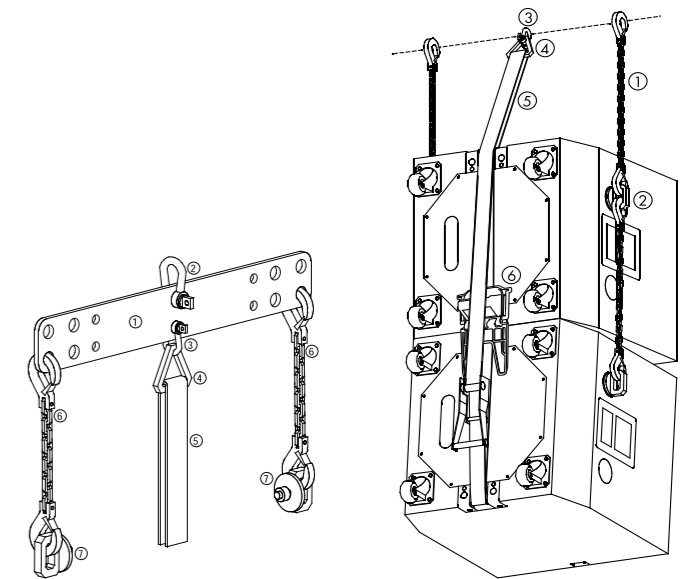
Z5090 Single bar assembly with Z5017 TV spigot HD



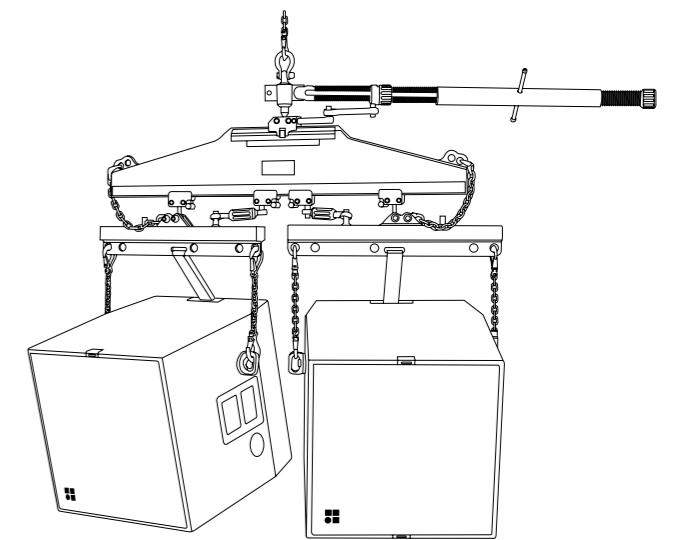
E6510 2t Ratchet strap black 12 m / 39.4 ft.



Z5110 Hinge



Z5090 Single bar (1) with E6512 2t Shackle (2) E6507 1t Shackle (3) E6511 Delta link (4) E6510 2t Ratchet strap (5) E652x 1t Chains (6) Z5040 Flying stud (7)



Z5073 d&b Transformer 2 wide with the Z5072 Spreader bar used to combine systems 4 wide or greater

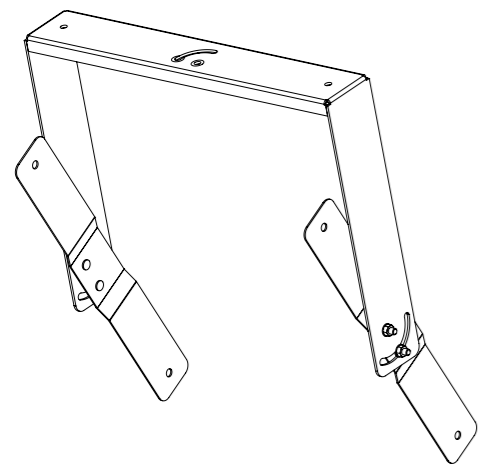
¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The Ci7-TOP/SUB and Ci-SUB mounting accessories

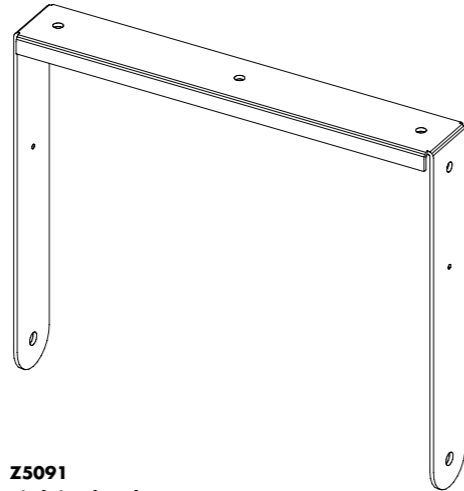
The Ci7-TOP/SUB and Ci-SUB mounting examples

Safety approval

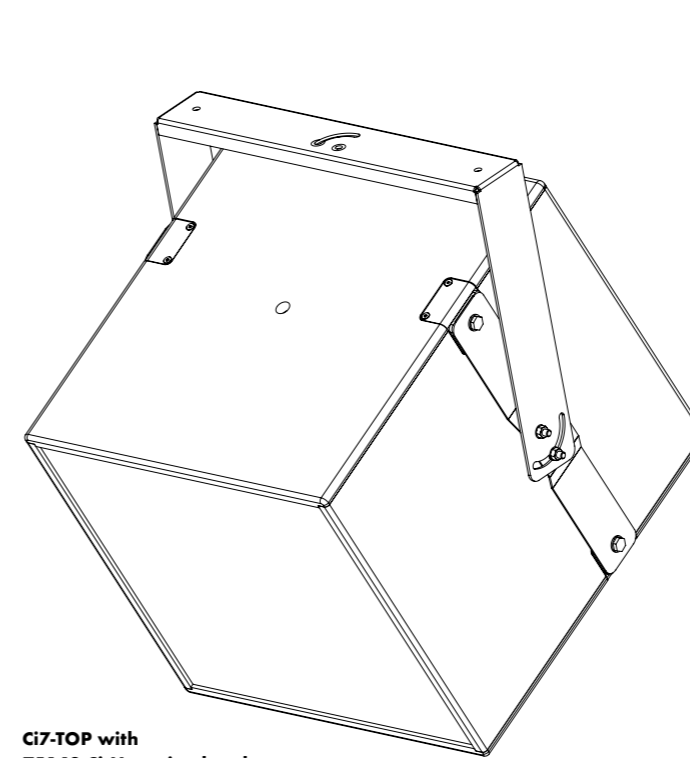
d&b loudspeakers and accessories are designed for setup and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



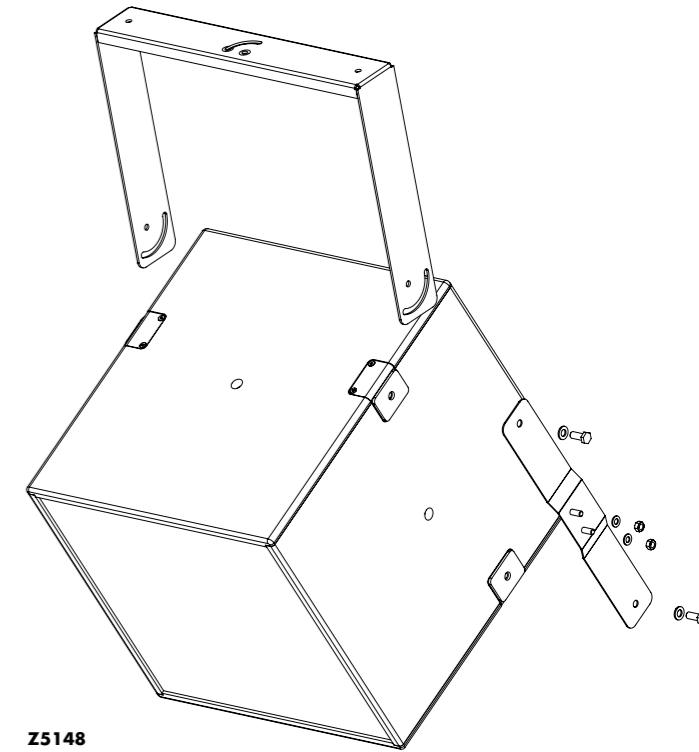
Z5148
Ci Mounting bracket



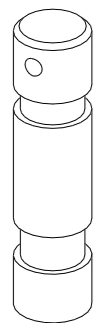
Z5091
Ci Flying bracket



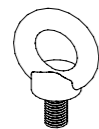
Ci7-TOP with
Z5148 Ci Mounting bracket



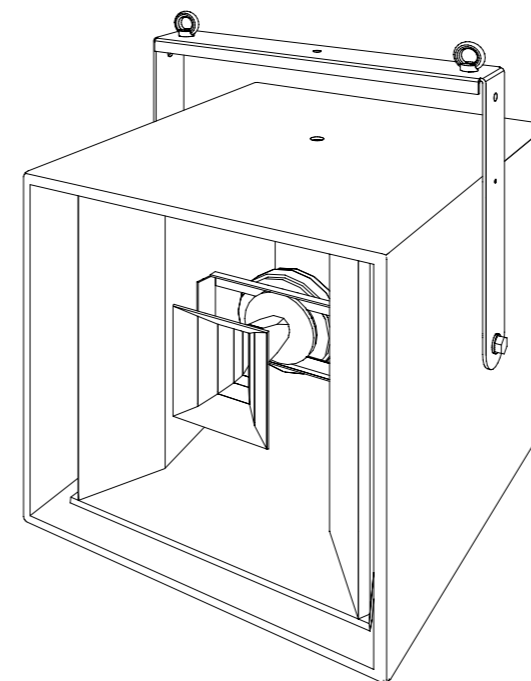
Z5148
Ci Mounting bracket assembly



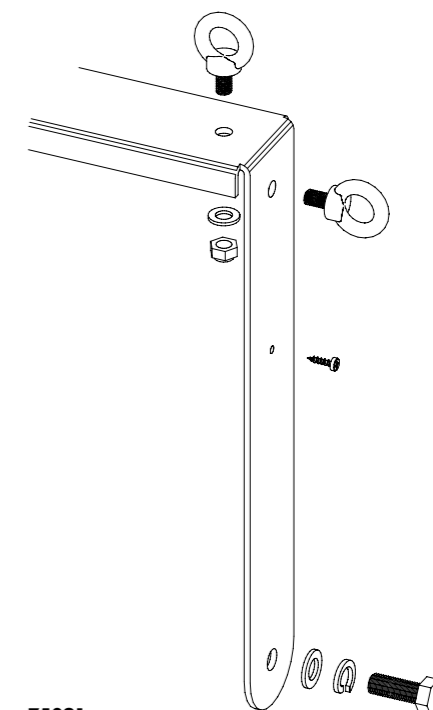
Z5018
TV spigot M12



Q9030
Safety eyebolt M12
Q9034
Safety eyebolt M16



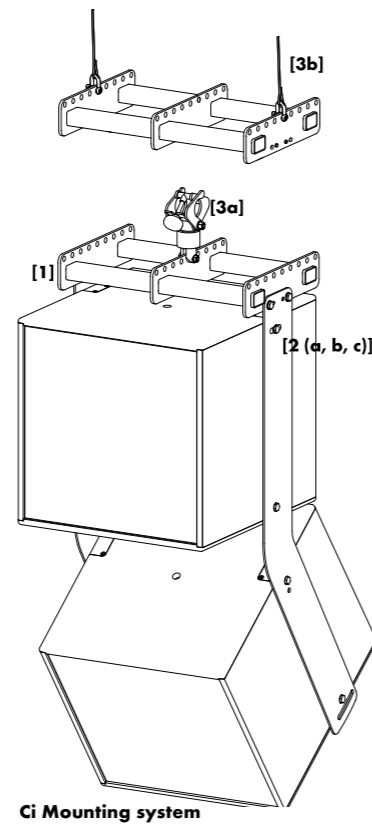
Ci7-TOP with
Z5091 Ci Flying bracket
Q9030 Safety eyebolt M12



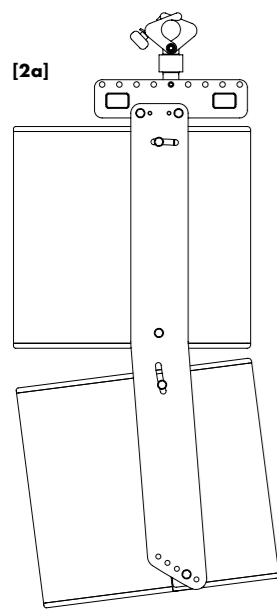
Z5091
Ci Flying bracket assembly

The Ci7-TOP and Ci-SUB mounting system

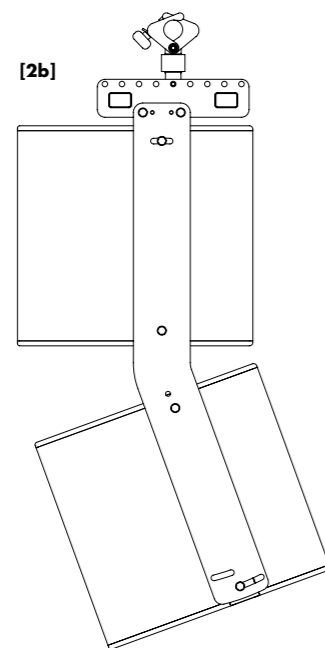
The d&b Ci Mounting system is specially designed for use with the d&b installation loudspeakers Ci7-TOP and Ci-SUB. A pair of mounting brackets [2] enable two cabinets to be vertically arrayed with a defined range of angles between them. There are three sets [2(a, b, c)], each set enabling a different range of angle settings between the cabinets. The Z5145 Ci Mounting frame [1] is used to suspend the cabinets either at the centre plate or left and right using the outer plates. The entire cluster can be vertically aligned, depending on which of the locating holes of the mounting frame is used. The Z5147 Rota clamp [3a] enables the horizontal alignment of the cluster by suspending it from a single flying point using the centre plate of the mounting frame. The Rota clamp can be attached to overhead bars or truss with a tube diameter up to 51 mm (2"). Alternatively the Z5145 Ci Mounting frame can be suspended at the outer plates using shackles and steel wire ropes [3b]. The Ci Mounting system is constructed from powder coated steel.



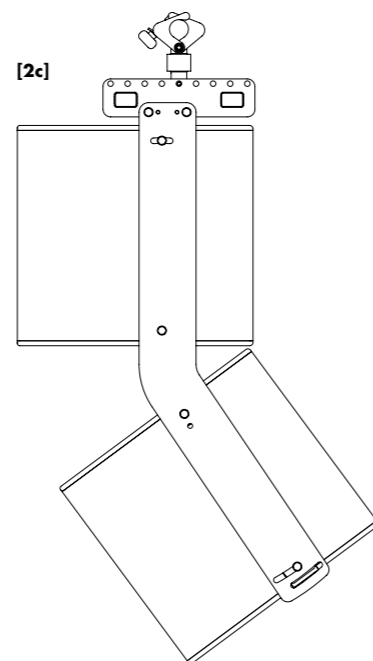
Ci Mounting system



Z5146.015 Ci Mounting brackets for vertical splay 0° to 15°



Z5146.030 Ci Mounting brackets for vertical splay 12° to 30°



Z5146.045 Ci Mounting brackets for vertical splay 28° to 45°

The Ci loudspeakers Weather Resistant and Special Colour options

The Weather Resistant and Special Colour options are only available to order with the Ci version cabinets and appropriate accessories.

Weather Resistant (WR) option

The WR option enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. Cabinets being used outdoors even with the WR option should always be aimed either horizontally or with a downward tilt. An additional cover should be positioned over the loudspeakers.

Ci loudspeakers cabinets with the Weather Resistant option are supplied with a fixed input cable. Cable type H-07-RN-F 2 x 2.5 mm²/AWG 13 with a length of 5.5 m (18 ft) as standard or length as required.

Special Colour (SC) RAL paint option

The paint finish of all loudspeaker cabinets and most accessories can be executed in almost all RAL colours in accordance with the RAL colour table. Items such as chains, fixing screws, shackles, eyebolts and screws are not painted. Other paint finishes such as metallic are available on request. The acoustically transparent foam is also painted with the requested RAL colour.

The d&b Remote network

d&b Remote network

The remote control capability of the d&b Remote network enables central control and monitoring of a complete d&b loudspeaker system from anywhere in the network, be it from a computer in the control room, at the mix position, or on a wireless tablet in the auditorium. This central access to all functions through the d&b Remote network, to controls as well as detailed system and device diagnostics information, unlocks the full potential of the d&b system approach. In the typical user workflow, the d&b Remote network takes settings optimized in the ArrayCalc simulation software and applies these to all the amplifiers within the network. The import of settings from ArrayCalc allows the system configuration to be quickly accomplished giving more time for verification and fine tuning.

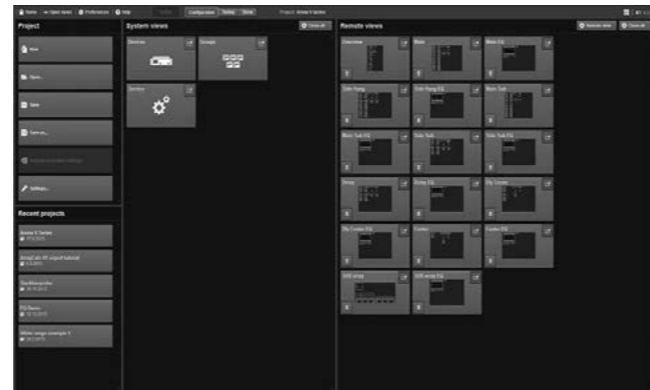
For mobile applications, d&b System check verifies that the system performs within a predefined condition. Extensive facilities for storing and recalling system settings are provided allowing these to be repeated, as and when required. It is easy to adjust project files for use with a different set of equipment at another location.

In installation projects system integrators can configure the remote network to offer access to different levels of control tailored to the operational demands. For example, simplified functionality like power ON/OFF for daily use and more complex functionality for detailed control in multiple system views. Password protection is available to restrict access. Input and Load monitoring allow installation operators to ensure the optimum performance at all times.

R1 Remote control software enables d&b amplifiers to be remotely controlled using both Ethernet and CAN-Bus in parallel. The software is optimized for use with touch screen as well as mouse and keyboard and runs on Microsoft Windows¹ (Win7 or higher) and Mac OS X² (10.6 or higher) operating systems.

R1 Remote control software

The R1 Remote control software provides a flexible workplace for the d&b user. All features, functions and controls available on the front panel of d&b amplifiers may be remotely controlled and/or monitored using R1. It allows control of each channel of the amplifier and enables the creation of groups of loudspeakers. When grouped together, a button or fader can control the overall system level, zone level, equalization and delay, power ON/OFF, MUTE, as well as loudspeaker specific function switches such as CUT/HFA/HFC and CPL. An offline mode is provided for



Home



Remote in Configuration mode



Open views

creation and simulation of the application in advance of an event without the amplifiers being present or connected. A home button is available in every view of the software, which leads the user back to the home view from where there is direct access to all views. Each user definable Remote view can be populated with control functions of the system and can be optimized for different screen resolutions, either for large monitors or for smaller tablet devices.

Equalizer

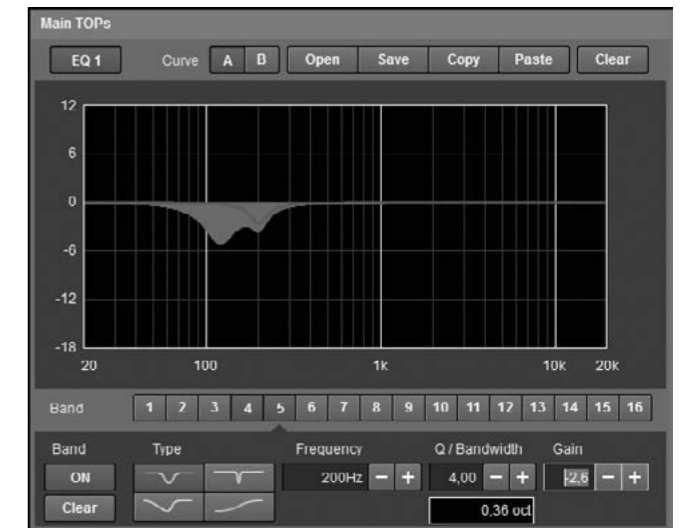
The software offers access to the 4-band equalizer in each channel of the D6 and D12 amplifiers as well as the two 16-band EQs in each D80 amplifier channel. The system technician can use one D80 16-band EQ, lock it, and offer the second EQ to the visiting sound engineer for artistic adjustments. The EQ in the D6 and D12 offers parametric and notch filter types while the D80 adds shelving and asymmetric filters. The R1 software allows an instant A/B comparison of two different equalizer curves.

Service functions

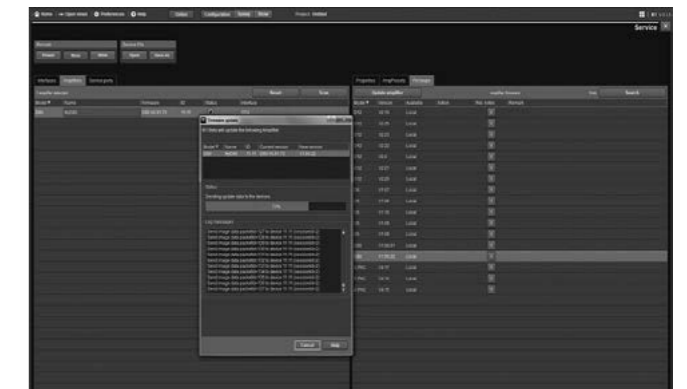
R1 enables the simultaneous firmware update of multiple amplifiers from a central location. The software will automatically search the d&b website and on demand downloads the latest available amplifier firmware versions and R1 Remote control software updates.

Defined settings may be created, saved on the computer and loaded into amplifiers, for example to ensure that configuration switches are set to a known status or the user definable equalization is set flat. Settings can be copied to additional or spare amplifiers. A Wink function is included to provide an effective method of locating specific amplifiers; this flashes the amplifier display. For service purposes, information may be read from an amplifier concerning its condition during operation and errors reported. When additional support is required, the error report can be saved and sent to the d&b service departments for further assessment and diagnosis.

The R1 Remote control software V2 and video tutorials are available at www.dbaudio.com.



D80 16-band equalizer



Service, Firmware update

¹ Microsoft Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries

² Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries

The D6, D12 and D80 amplifiers

Two decades have passed since d&b embarked on integrating Digital Signal Processing (DSP) into power amplifiers. It is over ten years since all d&b amplifiers used this technology and included analog and digital signal inputs, extensive loudspeaker control, configuration and protection functions, user definable equalization, delay and the all embracing remote control functionality as standard.

The d&b amplifiers sit right at the very heart of the d&b systems, providing sophisticated control capabilities as well as the power to efficiently drive d&b loudspeakers in whatever the particular application. The amplifiers are developed and manufactured by d&b and incorporate loudspeaker specific setups. Sophisticated protection circuits modelling thermal and mechanical driver behaviour are provided, resulting in the sustained reliability of d&b systems. Switchable functions for precisely tailoring system response in a wide variety of applications are also included, integrating complete loudspeaker system management into the amplifier. The digital elements are specified and constructed to achieve outstanding audio performance while maintaining a very low latency of 0.3 msec. The amplifiers are designed specifically for use with d&b loudspeakers, have remote control, monitoring capabilities and switch mode power supplies. To simplify configuration, the output mode of the amplifier can be configured as Dual Channel, Mix TOP/SUB or 2-Way Active modes depending on the application. The user definable equalization and delay functions incorporated in each channel of all d&b amplifiers are intended for tuning in applications such as infills, frontfills or under balcony delays, without the need for external processors. A signal generator offering pink noise or a sine wave program is also incorporated for test and alignment purposes.

d&b amplifiers¹ contain functions to allow system status monitoring and protection features, increasing the longevity of d&b systems. They provide the d&b System check function, which is designed to verify the system performs within a predefined condition; this can be used to report the system condition after a show. Input monitoring can detect incoming pilot tones to verify the integrity of the signal path to the amplifier, while the Load monitoring function determines the status of the loudspeaker impedance. Both d&b System check and Load monitoring can determine the status of an LF or HF driver in systems with multiple elements, even if these are crossed over passively. Automatic and continuous impedance monitoring, along with Input monitoring are designed for incorporation in applications specified to the

requirements of International Standard IEC 60849 'Sound Systems for Emergency Purposes'.

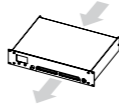
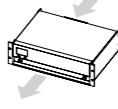
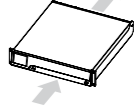
d&b amplifiers feature two control interfaces. Firstly, the front panel rotary encoder, combined with the display, provides full access to settings and functions. Secondly, by utilizing the d&b Remote network, the amplifiers can be remotely controlled and monitored from a virtual centre. Every amplifier channel can be assigned a unique channel and device name to simplify identification. The Wink function, which can be enabled remotely, flashes the display backlight to clearly identify specific amplifiers in a system. An integrated password protected LOCK function prevents unauthorized changes.

A powerCON² mains connector socket is fitted on the rear panel. The switch mode power supply of each amplifier incorporates mains overvoltage protection, inrush current limiting and loudspeaker protection at start up. Temperature and signal controlled fans cool the internal assemblies. d&b amplifiers offer analog and digital AES/EBU signal inputs, with link outputs for each channel. The AES/EBU link output carries a refreshed signal, while a power fail relay is incorporated to prevent interruption of the signal chain, in the event of a power failure.

The D12 amplifier incorporates d&b SenseDrive for accurate control of LF drivers in d&b loudspeakers driven 2-Way Active or in actively driven d&b subwoofers. When the D12 is fitted with EP5 connectors and appropriate 5-wire cabling, d&b SenseDrive can be used resulting in an extremely precise bass performance even at high levels. The LoadMatch function integrated within the D80 amplifier enables the electrical compensation of loudspeaker cable properties, without the need for an extra conductor. This results in an increased accuracy of audio reproduction over a bandwidth of up to 20 kHz preserving the tonal balance when cable lengths of up to 70 m (230 ft) are used.

Firmware updates containing new loudspeaker configurations or additional functions can be loaded to the amplifiers via the d&b Remote network.

Comparison of the D6, D12 and D80 amplifiers

	D6	D12	D80
User interface	Encoder/LC display	Encoder/LC display	Encoder/colour TFT touchscreen
Output channels	2	2	4
Input channels	2 AES or analog	2 AES or analog	4 AES or analog
Latency	0.3 msec	0.3 msec	0.3 msec
User equalizers (per channel)	4-band	4-band	2 x 16-band
Delay	340 msec/116.9 m	340 msec/116.9 m	10 sec/3440 m
Rated output power	2 x 300 W into 8 ohms 2 x 600 W into 4 ohms (THD+N < 0.1%)	2 x 750 W into 8 ohms 2 x 1200 W into 4 ohms (THD+N < 0.1%)	4 x 2000 W into 8 ohms 4 x 4000 W into 4 ohms (THD+N < 0.5%, 12 dB crest factor)
Output routing	Dual Channel w/o B1 and B2	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel, Mix TOP/SUB 2-Way Active
Output connectors	NL4	NL4/EP5/NL8	NL4/EP5 plus central NL8
Cable compensation	No	SenseDrive	LoadMatch
Mains voltage	Wide range switch mode power supply	100/200V or 120/230V	Wide range switch mode power supply
Weight (kg/lb)	8/17.6	13/28.7	19/42
Dimensions	2 RU x 19" x 353 mm	3 RU x 19" x 353 mm	2 RU x 19" x 530 mm
Remote	CAN	CAN	OCA via Ethernet/CAN
Airflow			

¹ At the time of print, certain functions required within applications specified to achieve compliance with IEC 60849 such as Input and Load monitoring are not implemented in the D80 amplifier, please contact your distributor for further information

² powerCON[®] is a registered trademark of the Neutrik AG, Liechtenstein

The operation with D6, D12 and D80 amplifiers

CUT mode

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

HFC mode

Selecting the HFC (High Frequency Compensation) mode compensates for loss of high frequency energy due to absorption in air when loudspeakers are used to cover far field listening positions. HFC should be used selectively, only for those cabinets covering distances of approximately 30 m (100 ft) for the C4-TOP and 50 m (160 ft) for the C3. This enables the correct sound balance between close and remote audience areas, whilst all amplifiers driving the array can be fed with the same signal.

HFA mode

In HFA mode (High Frequency Attenuation), the HF response of the 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. HFA 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 function

The CPL (Coupling) function compensates for coupling effects between closely coupled cabinets by reducing the low and mid frequency level. CPL begins gradually at 1 kHz, with maximum attenuation below 250 Hz (400 Hz for the C3), providing a balanced frequency response when cabinets are used in arrays of two or more. The CPL function can be set in dB attenuation values between -9 and 0, or in the case of the C7 and Ci7-TOP an optional boost between 0 and +5 around 65 Hz can be set.

100 Hz mode

The 100Hz mode limits the upper operating frequency of the subwoofer to 100Hz, complementing top cabinets in full range mode.

+B2 mode

The +B2 mode increases the headroom of the C4-SUBs when used with additional B2 subwoofers set to INFRA mode. This introduces a relatively narrow-band signal attenuation around 50 Hz raising the lower frequency limit of the C4-SUB to around

60 Hz. The C4-SUB's headroom is increased, while the combined system response will not change significantly.

LFC mode

In LFC mode (Low Frequency Compensation), the low frequency response is extended down to 80 Hz for speech reinforcement without subwoofers.

INFRA mode

Selecting the INFRA mode restricts the B2 frequency response to a narrow, 32 Hz - 68 Hz range (-5 dB). This transforms a B2 into an infrabass system for use with C or Q-Series loudspeakers.

CSA mode

CSA (Cardioid Subwoofer Array) mode enables the combination of three or multiples of three subwoofer cabinets into an array that produces exceptional low frequency directivity control. The amplifier channel for the centre subwoofer of the column, which is physically pointed to the rear, has CSA selected. The forward facing cabinets are driven with an amplifier channel set in the standard mode. The resulting cardioid behaviour of the array will significantly reduce the energy radiated to the rear. For further information please refer to the d&b T1 330 Cardioid Subwoofer Array, which is available for download at www.dbaudio.com.

Maximum loudspeakers per D6, D12 or D80 channel

	C7-TOP Ci7-TOP	C7-SUB Ci7-SUB	Ci-SUB	C4-TOP	C4-SUB	B2-SUB ¹
	2	2	2	2	2	1

Maximum loudspeakers per D12 or D80 channel in 2-Way Active mode

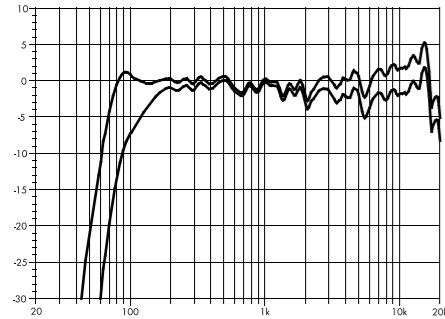
	C3
	2

D6, D12 and D80 controller settings

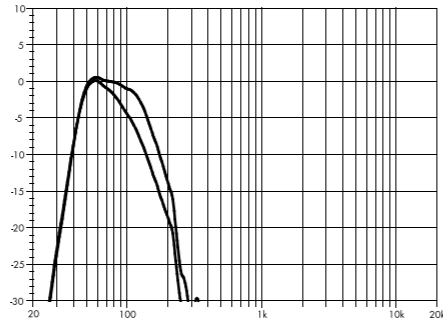
	C7-TOP Ci7-TOP	C7-SUB Ci7-SUB	Ci-SUB	C4-TOP	C4-SUB	C3	B2-SUB
CUT	x						
HFC				x		x	
HFA	x						
CPL	x			x		x	
100 Hz		x	x				
+B2					x		
LFC						x	
INFRA							x
CSA							x

¹ only D12 and D80

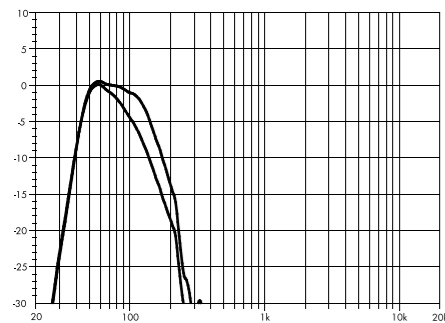
The C-Series frequency responses



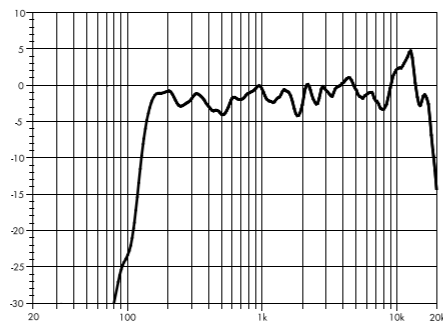
C7/Ci7-TOP standard, CUT and HFA



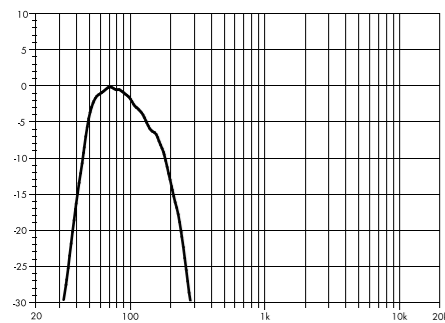
C7/Ci7-SUB standard and 100 Hz



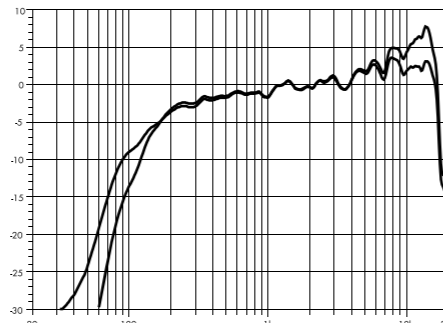
Ci-SUB standard and 100 Hz



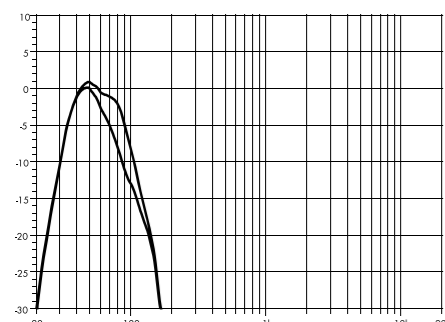
C4-TOP standard



C4-SUB standard



C3 standard, LFC and HFC (single cabinet)



B2-SUB standard and INFRA

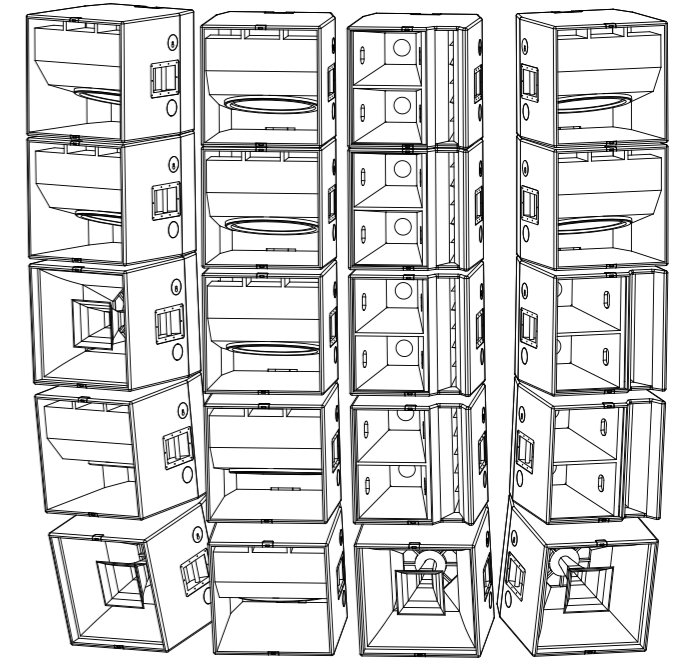
The C4 system with C3 loudspeakers

Vertical array of C4 and C3 cabinets

As their horizontal dispersion behaviour is identical, C4-TOP and C3 cabinets can be easily combined in one array. The larger vertical dispersion of a C4-TOP can be used efficiently to cover the near field in front of a C3 column. A vertical splay of 5° or 10° to the lowest C3 is useful, depending on the total height of the system.

Horizontal array of C4 and C3 cabinets

The horizontal angle between adjacent C4 and/or C3 cabinets in an array can be set to between 20° and 30°. The most even and widest energy distribution is achieved with 30°. Smaller angles between the cabinets will give a smaller horizontal coverage area but will produce higher sound pressure on the centre axis of the array. The configuration of any array should be thoroughly adapted to the actual venue room acoustics and requirements. In order to keep diffuse sound low, the total coverage angle should only be as wide as necessary to cover the audience area.

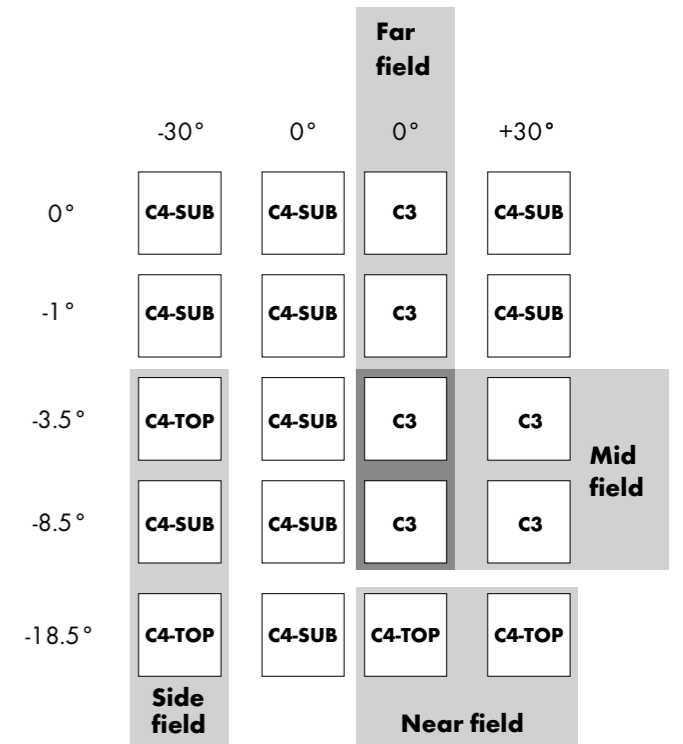


Operation with C4-SUB and B2-SUB

C4-SUBs should be used to extend the C4-TOP and C3 frequency response. Forming columns of SUB cabinets improves efficiency and vertical directivity at low frequencies. For a balanced sound at high levels a ratio of at least one C4-SUB per C3 or C4-TOP cabinet is required. For a further extension of bandwidth and headroom ground stacked B2 subwoofers are used (INFRA mode).

Example setup

The example opposite shows a C4/C3 setup arranged to provide the coverage and level distribution for a simple rectangular audience area. The central C3 column projects energy to the far field with a 40° horizontal coverage angle, the C4-TOP cabinets lower down in the cluster provide the wider horizontal coverage angle required in the near field. The C3s in the inner column cover the mid field and the mixing position, while the column of C4-SUBs maintains a consistent vertical directivity in the lower frequencies.



The C-Series product overview

C loudspeakers	Z2257.002	C7-TOP Loudspeaker EP5 connector
	Z2257.001	C7-TOP Loudspeaker NL4 connector
	Z2259.002	C7-SUB Subwoofer EP5 connector M20
	Z2259.001	C7-SUB Subwoofer NL4 connector M20
	Z2254.001	C4-TOP Loudspeaker EP5 aconnector
	Z2254.000	C4-TOP Loudspeaker NL4 connector
	Z2255.001	C4-SUB Subwoofer EP5 connector
	Z2255.000	C4-SUB Subwoofer NL4 connector
	Z2255.011	C4-SUB Subwoofer EP5 connector M20
	Z2255.010	C4-SUB Subwoofer NL4 connector M20
	Z2230.001	C3 Loudspeaker EP5 connector
	Z2230.000	C3 Loudspeaker NL4 connector
	Z0056.021	B2 Subwoofer EP5 connector
	Z0056.600	B2 Subwoofer NL8 connector
	Ci loudspeakers	Z2263.000
Z2266.000		Ci7-SUB Subwoofer NL4 connector
Z1404.000		Ci Subwoofer NL4 connector
		WR Weather Resistant option ¹ SC Special Colour option ²
Lids	E7908.000	C7-TOP/C4/C3 Wooden lid butterfly catches
	E7916.000	C7-SUB Wooden lid butterfly catches
	E7911.000	B2-SUB Wooden lid butterfly catches
C accessories	Z5073.000	d&b Transformer 2 wide ³
	Z5072.000	d&b Transformer spreader bar ³
	Z5079.000	d&b Transformer telescopic bar ³
	Z5090.000	Single bar
	Z5017.000	TV spigot HD
	E6520.000	1t Chain 11 links black 2 hooks
	E6521.000	1t Chain 23 links black 2 hooks
	E6523.000	1t Chain 1° black 2 hooks
	E6524.000	Vari-chain 0° - 5°
	E6534.000	1t Shortening chain 47 links black 2 hooks
	Z5040.000	Flying stud black ³
	E6510.002	2t Ratchet strap black 12 m/39.4 ft
	Z5110.100	Hinge
	E6511.000	Delta link
	E6507.000	1t Shackle
	E6512.000	2t Shackle

¹ WR only for Ci loudspeakers, on request
² SC only for Ci loudspeakers, on request
³ please check availability

The C-Series product overview

Ci accessories	Z5091.000	Ci Flying bracket ⁴
	Z5148.000	Ci Mounting bracket ⁴
	Z5145.000	Ci Mounting frame ⁴
	Z5146.015	Ci Mounting brackets 0° to 15° ⁴
	Z5146.030	Ci Mounting brackets 12° to 30° ⁴
	Z5146.045	Ci Mounting brackets 28° to 45° ⁴
	Z5018.100	TV spigot M12
	Z5147.001	Rota clamp
	Q9030.000	Safety eyebolt M12
	Q9034.000	Safety eyebolt M16
Remote network	Z3010.000	R1 Remote control software ⁵
	Z6118.000	R60 USB to CAN interface
	Z6124.000	R70 Ethernet to CAN interface
	Z6116.000	RJ 45 M Terminator
	Z6122.000	Bopla mounting clamp
	Z6123.000	Bopla mounting clamp upright
Amplifiers	Z2700.xxx	D6 Amplifier NL4
	Z2600.xxx	D12 Amplifier ⁶
	Z2710.xxx	D80 Amplifier ⁶
Amplifier rack assemblies	Z5310.000	D12 Touring rack assembly EP5 ⁷
	Z5310.001	D12 Touring rack assembly NL4 ⁷
	Z5330.001	D80 Touring rack assembly, CEE 32A 5P ⁷
	Z5330.xxx	D80 Touring rack assembly, Nema L21-30 (120V devices) on request ⁷
Amplifier racks	E7468.000	D80 Touring rack 2 RU, 19" SD, shock mounted, handles, window
	E7419.000	Touring rack 3 RU, 19" DD, shock mounted, handles, window
	E7420.000	Touring rack 6 RU, 19" DD, shock mounted, handles, window, wheels
Cables	Z2298.xxx	MC2.5SD Cable EP5 various length
	Z2299.xxx	MC2.5 Cable NL4 various length
	Z2296.000	Extension adapter NL4
	K3118.000	MC2.5SD Cable unterminated
Misc.	Z5060.000	Anti-slip coating 1 kg/2.2 lb
	Z5061.000	Standard cabinet paint 1 kg/2.2 lb

⁴ SC on request
⁵ available as a download at www.dbaudio.com
⁶ the complete list of amplifier versions is available in the d&b Amplifier and Software brochure
⁷ further information is available in the d&b Amplifier and Software brochure

