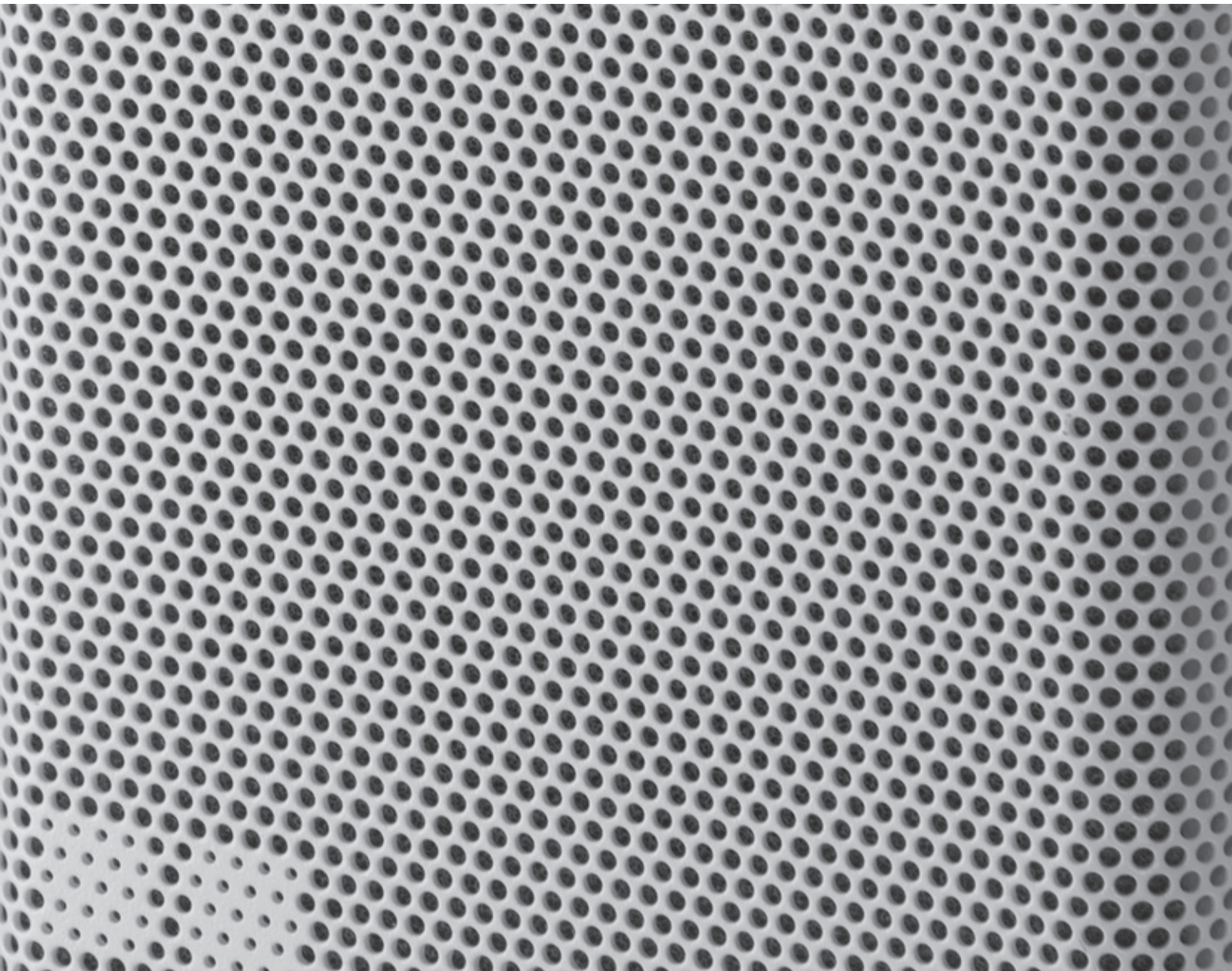


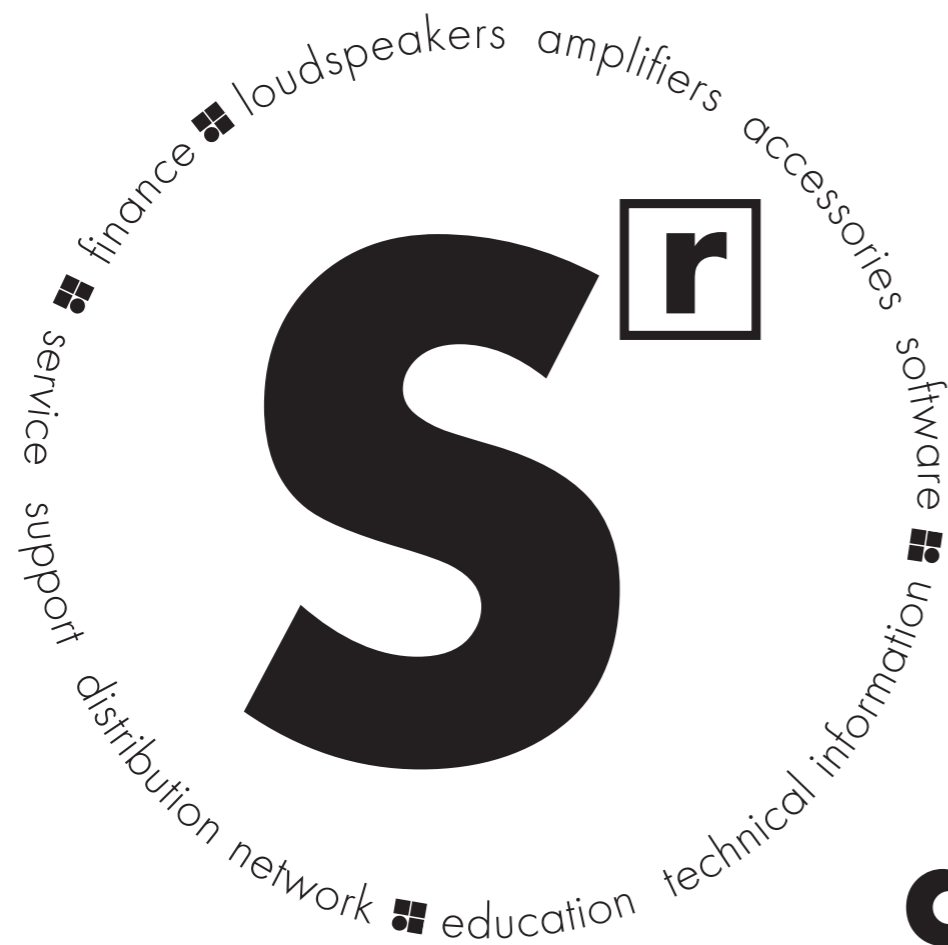
xS

xS-Series





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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, signal processors, networking, software and accessories. 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 matched to achieve maximum efficiency. For ease of use, all the user-definable parameters are incorporated, allowing the possibility of adjustment, either

directly, via remote control surfaces, or integrated within wider networks. Neutral sound characteristics leave the user all the freedom needed to realize whatever the brief. At the same time d&b offers 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 **xS-Series** point source loudspeakers are designed for visual, physical, acoustical and electrical integration into permanently installed applications and are intended for environments that go beyond rider specified performance spaces.

The loudspeakers encompass a broad range of sizes and output powers and share the same clean and unobtrusive industrial design for use in stand-alone applications. Each has specialized fittings with capped recessed threads to which discreet mounting

hardware is attached. Rotatable horns deliver additional flexibility in terms of mounting options. Both the cabinets and available accessories can be properly colour matched to interior designs. Intended applications include town halls, conference

and meeting facilities, theatres and opera houses, ball rooms, houses of worship, restaurants, bars, lounges and night clubs, lecture theatres and assembly halls.

The xS-Series

The ultra compact **4S** and compact **5S** loudspeakers are designed for installed sound applications where the sonic performance to size ratio is most critical. Both offer a constant and wide coverage even at close listening positions. The compact **8S** houses a 8"/1" coaxial driver combination in a bass-reflex enclosure.

The 2-way passive **10S/10S-D** and **12S/12S-D** loudspeakers house a single 10" and 12" driver respectively, and are designed with a complete set of acoustical and mechanical options to realize any challenge. The 10S-D and 12S-D are the wide dispersion options of the 10S and 12S. The point source biaxial designs of 10S/10S-D and 12S/12S-D have physically symmetrical horn flanges enabling rotation of the entire horn assembly by 90°.

The 2-way passive high performance **24S** and **24S-D** are true full range, stand-alone loudspeakers. They employ two 12" drivers in a dipolar driver arrangement in a larger cabinet volume for increased LF reproduction.

The xS-Series loudspeakers are supported by a range of compact bass-reflex subwoofers. The compact **12S-SUB** is an ideal low end extension in small and medium sized venues or where space is restricted. The **18S-SUB** and **21S-SUB** house a single 18" driver and a single 21" driver respectively to produce all program material with that deep, round, warm and musical low end of today's performance expectations. The 21S-SUB can also be used in INFRA mode to supplement other d&b subwoofers. The **27S-SUB**'s patented cardioid dispersion avoids unwanted energy behind the system and greatly reduce the excitation of the reverberant field at low frequencies providing highest accuracy in low frequency reproduction. The special passive cardioid design of the 27S-SUB allows the system to be powered by a single amplifier channel.

All xS-Series cabinets and accessories are available in black whilst the 4S, 5S, 8S and 12S-SUB including their respective accessories are also available in white as standard.

Additionally all the xS cabinets and accessories can be ordered with a Weather Resistant (WR) and Special Colour (SC) option. The WR option provides an IP34 rating, and enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. The Weather Resistant cabinet is supplied with a fixed cable with a PG cable gland, coated with PCP (Polyurea Cabinet Protection) and is available in black only.



The WR option is not available for 4S and 5S cabinets, as the standard versions are already rated IP34. The SC option for all loudspeaker cabinets and most accessories can be executed in all RAL colours.

The d&b software offering aids the entire system setup process. The **d&b ArrayCalc simulation software** allows the virtual optimization of loudspeaker line arrays, point source and column loudspeakers as well as subwoofers and their adjustment to venue conditions. The configuration simulated in ArrayCalc is assimilated by the **d&b R1 Remote control software** into an intuitive graphical user interface to manage the whole system from anywhere in the venue.

d&b amplifiers are specifically designed for use with d&b loudspeakers, and are at the heart of the d&b system approach. These devices containing extensive Digital Signal Processing capabilities to provide comprehensive loudspeaker management and specific switchable filter functions to precisely target the system response for a wide variety of applications. The **10D** amplifier and **30D** amplifier both provide four channels and are intended for integration within permanent installations. The 10D is designed to drive smaller d&b loudspeakers and applications requiring lower Sound Pressure Levels whereas the high powered 30D is designed to drive all d&b loudspeakers at medium to high SPLs. The dual channel **D6** amplifier is designed to provide low Sound Pressure Levels in either mobile or installed applications. These amplifiers all provide extensive user-definable equalization and delay capabilities to fine tune the system for artistic taste.

The **DS10 Audio network bridge** provides 16 AES3 outputs and interfaces between the Dante audio transport protocol and the d&b amplifiers.

The **DS100 Signal Engine** is based on a specialized rack mount 3 RU audio processor with Audinate Dante networking. It provides a 64 x 64 audio matrix with level and delay adjustments at all cross points. Additional software modules provide dynamic source positioning and emulated acoustics functions.



10D amplifier



30D amplifier



D6 amplifier



DS10 Audio network bridge



DS100 Signal Engine

The 4S loudspeaker

4S loudspeaker

The 4S is a lightweight 2-way passive loudspeaker using a neodymium LF driver and a coaxially mounted wide dispersion dome tweeter. The coaxial designed 4S employs a 4" driver in a highly compact sealed enclosure and offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.

It can be used stand-alone or supplemented by different subwoofers from the xS-Series.

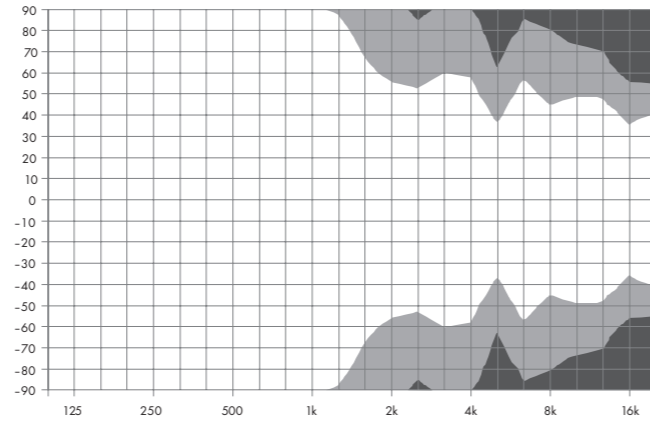
The enclosure is injection moulded with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam and incorporated into the rear panel are two M8 threaded inserts.

System data

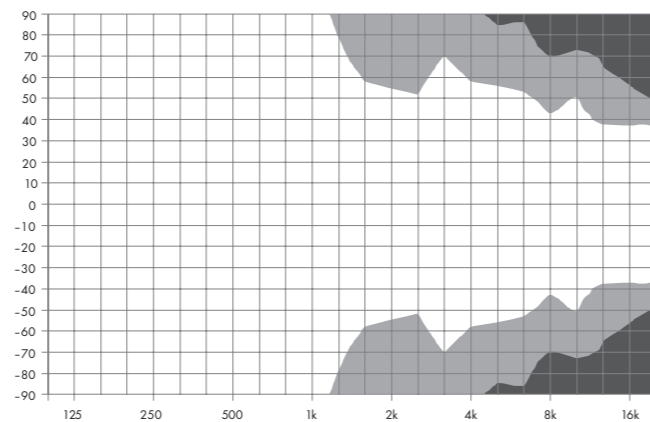
Frequency response (-5 dB standard)	130 Hz - 20 kHz
Frequency response (-5 dB CUT mode)	180 Hz - 20 kHz
Max. sound pressure (1 m, free field) ¹	
with D6/10D	114 dB
with 30D/D20	115 dB
with D80	115 dB
Input level (100 dB SPL/1 m)	-4 dBu

Loudspeaker data

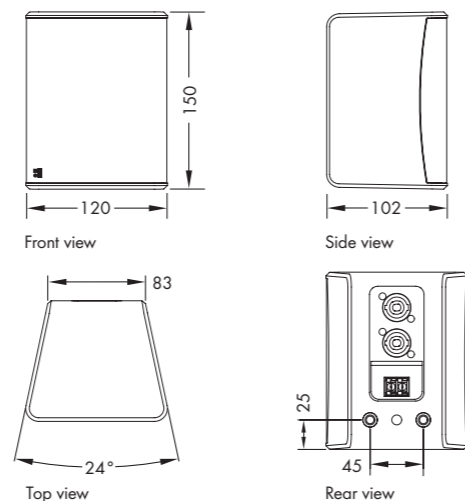
Nominal impedance	16 ohms
Power handling capacity (RMS/peak 10 msec)	60/400 W
Nominal dispersion angle	100° conical
Components	4" driver with neodymium magnet
	0.75" dome tweeter coaxially mounted
	passive crossover network
Connections	2 x NL4
	screw terminal block
Weight	1 kg (2 lb)



4S horizontal dispersion characteristics²



4S vertical dispersion characteristics²



4S 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 5S loudspeaker

5S loudspeaker

The 5S is a lightweight 2-way passive loudspeaker using an LF driver and a coaxially mounted wide dispersion dome tweeter. The coaxial designed 5S employs a 5" driver in a compact bass-reflex enclosure and offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.

It can be used stand-alone or supplemented by different subwoofers of the xS-Series.

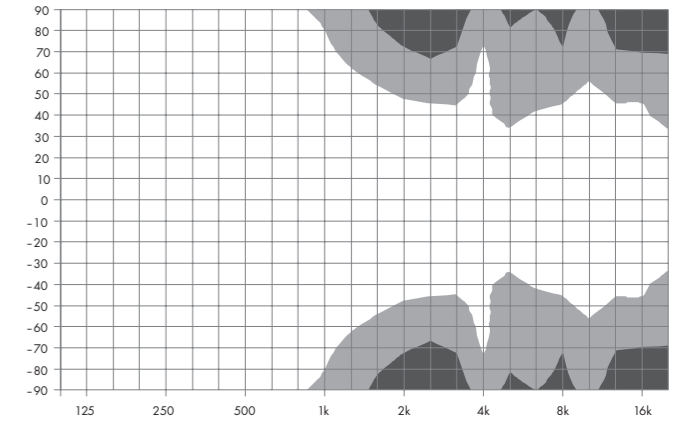
The enclosure is injection moulded with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam and incorporated into the rear panel are two M8 threaded inserts.

System data

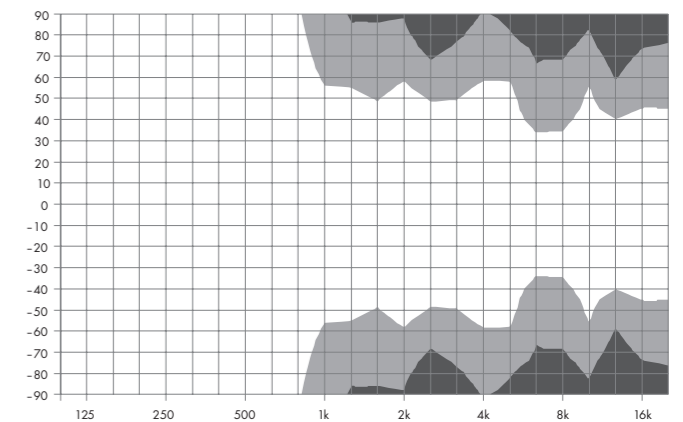
Frequency response (-5 dB standard)	80 Hz - 20 kHz
Frequency response (-5 dB CUT mode)	130 Hz - 20 kHz
Max. sound pressure (1 m, free field) ¹	
with D6/10D	117 dB
with 30D/D20	118 dB
with D80	118 dB
Input level (100 dB SPL/1 m)	-6 dBu

Loudspeaker data

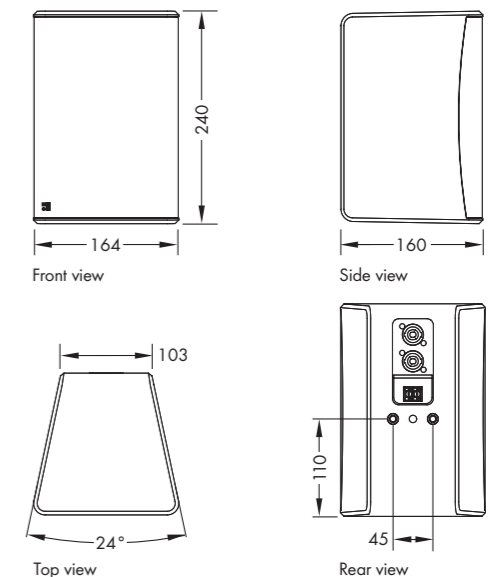
Nominal impedance	16 ohms
Power handling capacity (RMS/peak 10 msec)	60/400 W
Nominal dispersion angle	100° conical
Components	5" driver
	1" dome tweeter coaxially mounted
	passive crossover network
Connections	2 x NL4
	screw terminal block
Weight	2.5 kg (5.5 lb)



5S horizontal dispersion characteristics²



5S vertical dispersion characteristics²



5S 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 8S loudspeaker

8S loudspeaker

The 8S is a full range, 2-way loudspeaker in a bass-reflex enclosure, utilizing an 8"/1" coaxial driver combination with a passive crossover. The coaxial design offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.

With its frequency response from 70 Hz to 20 kHz the 8S can be used as a full range system or can be supplemented by different subwoofers from the xS-Series.

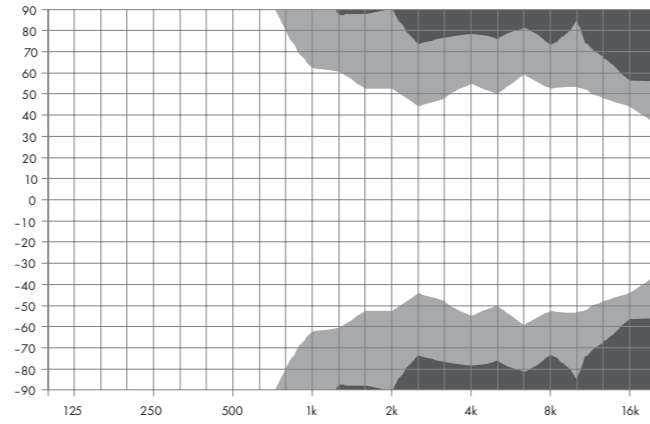
The loudspeaker cabinet is constructed from marine plywood with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate an M8 threaded insert, whilst the rear panel incorporates two.

System data

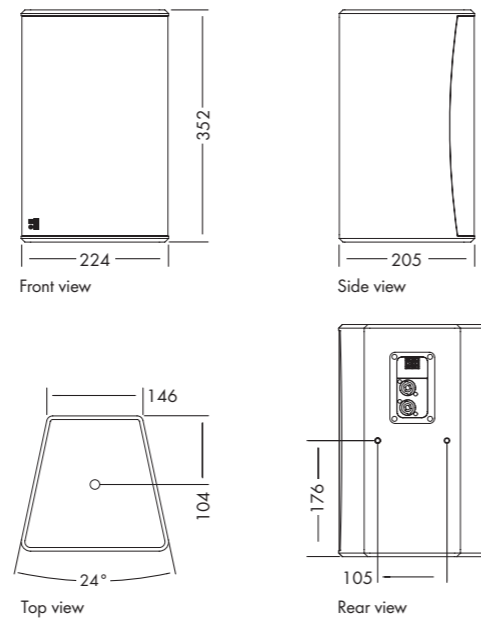
Frequency response (-5 dB standard)	70 Hz - 20 kHz
Frequency response (-5 dB CUT mode)	110 Hz - 20 kHz
Max. sound pressure (1 m, free field) ¹	
with D6/10D	124 dB
with 30D/D20	127 dB
with D80	127 dB
Input level (100 dB SPL/1 m)	-10 dBu

Loudspeaker data

Nominal impedance	16 ohms
Power handling capacity (RMS/peak 10 msec)	150/800 W
Nominal dispersion angle	100° conical
Components	8" driver with neodymium magnet
	1" compression driver coaxially mounted
	passive crossover network
Connections	2 x NL4
	screw terminal block
Weight	7.4 kg (16 lb)



8S horizontal and vertical dispersion characteristics²



8S 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 10S/10S-D loudspeakers

10S/10S-D loudspeaker

The biaxial 10S/10S-D are high performance 2-way loudspeakers employing a single 10" driver in a bass-reflex enclosure and different HF sections for a wide range of installed sound applications. All models are lightweight passive designs using neodymium drivers and large constant directivity horns for accurate pattern control. The 10S/10S-D are single box solutions providing rotatable dispersion characteristics of 75° x 50° and 110° x 55° respectively.

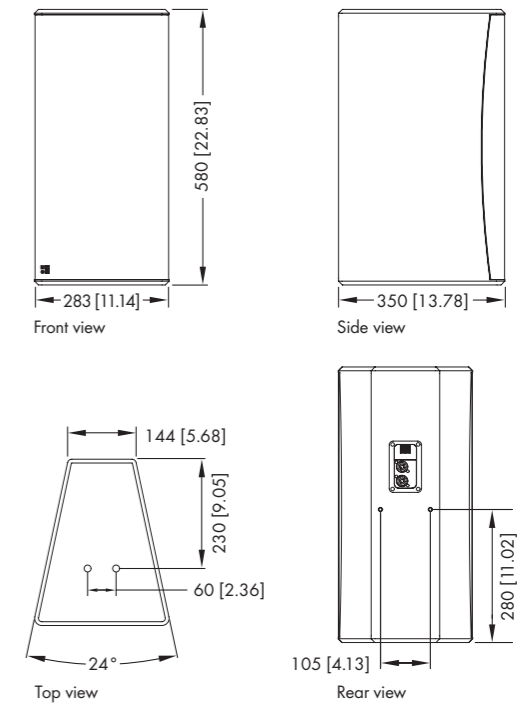
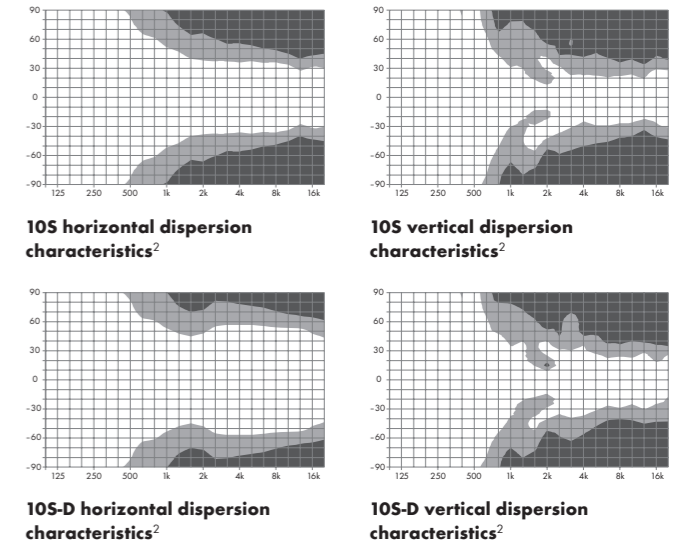
With their frequency response from 60 Hz to 18 kHz both versions can be used as full range systems and can also be supplemented by different subwoofers from the xS-Series. The loudspeaker cabinets are constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate a pair of M10 threaded inserts, whilst the rear panel incorporates two M8 threaded inserts. The loudspeakers are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data 10S/10S-D

Frequency response (-5 dB standard)	60 Hz - 18 kHz
Frequency response (-5 dB CUT mode)	100 Hz - 18 kHz
Max. sound pressure (1 m, free field) ¹	
with D6/10D	127 dB
with 30D/D20	130 dB
with D80	130 dB
Input level (100 dB SPL/1 m)	-12 dBu

Loudspeaker data

Nominal impedance	12 ohms
Power handling capacity (RMS/peak 10 msec)	200/1200 W
Nominal dispersion angle 10S/10S-D (h x v)	75° x 50°/110° x 55° rotatable
Components	10" driver with neodymium magnet
	1.4" compression driver with CD horn
	Passive crossover network
Connections	2 x NL4
	screw terminal block
Weight	13 kg (29 lb)



10S/10S-D 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 12S/12S-D loudspeakers

12S/12S-D loudspeaker

The biaxial 12S/12S-D are high performance 2-way loudspeakers employing a single 12" driver in a bass-reflex enclosure and different HF sections for a wide range of installed sound applications. Both versions are lightweight passive designs using neodymium drivers and large constant directivity horns for accurate pattern control. The 12S/12S-D are single box solutions providing rotatable dispersion characteristics of 75° x 50° and 110° x 55° respectively.

With their extended frequency response from 48 Hz to 18 kHz both versions can be used as full range systems and can also be supplemented by different subwoofers of the xS-Series.

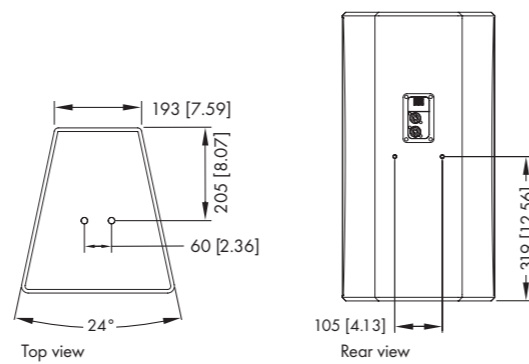
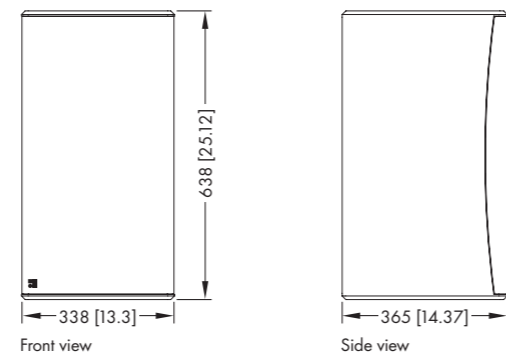
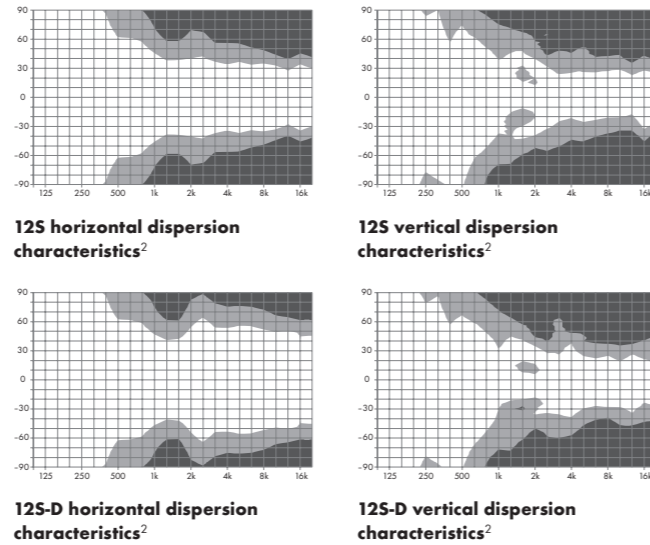
The loudspeaker cabinets are constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate a pair of M10 threaded inserts, whilst the rear panel incorporates two M8 threaded inserts. The loudspeakers are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data 12S/12S-D

Frequency response (-5 dB standard).....	48 Hz - 18 kHz
Frequency response (-5 dB CUT mode).....	100 Hz - 18 kHz
Max. sound pressure (1 m, free field) ¹	
with D6/10D	130 dB
with 30D/D20.....	133 dB
with D80.....	133 dB
Input level (100 dB SPL/1 m).....	-14 dBu

Loudspeaker data

Nominal impedance.....	8 ohms
Power handling capacity (RMS/peak 10 msec)	300/1600 W
Nominal dispersion angle 12S/12S-D (h x v).....	75° x 50°/110° x 55° rotatable
Components.....	12" driver with neodymium magnet
.....	1.4" compression driver with CD horn
.....	passive crossover network
Connections	2 x NL4
.....	screw terminal block
Weight.....	17 kg (37 lb)



12S/12S-D cabinet dimensions in mm [inch]

The 24S/24S-D loudspeakers

24S/24S-D loudspeaker

The 24S/24S-D are high performance full range 2-way passive loudspeakers housing two 12" drivers in a bass-reflex enclosure with a 1.4" exit compression driver mounted onto a large rotatable CD horn. The 24S and 24S-D differ in dispersion characteristics due to different HF sections, providing 75° x 45° and 110° x 45° (h x v) respectively, and are suitable for a wide range of permanently installed applications. The dipolar arrangement of the 12" drivers results in directivity control down to approximately 500 Hz in the same plane as the dipole. The specially designed ports with optimized flow characteristics and a large cabinet volume provide a significant low frequency reproduction.

With a frequency response extending from 55 Hz to 18 kHz, the 24S and 24S-D can be used as a stand-alone, full range system, or supplemented with d&b subwoofers. They can be ground stacked, flown individually, or flown in a cluster. The HF horn can be rotated by 90° to enable horizontal orientation.

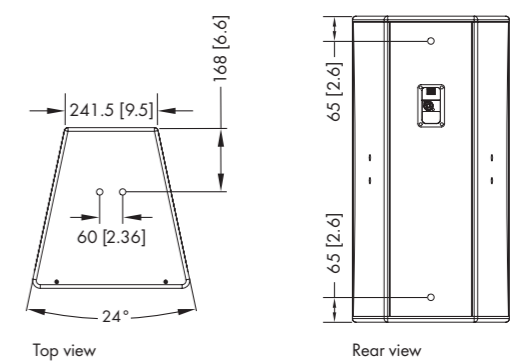
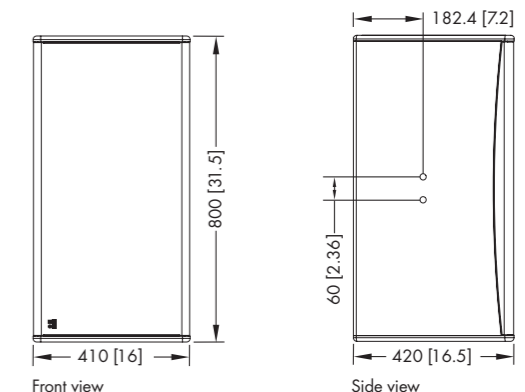
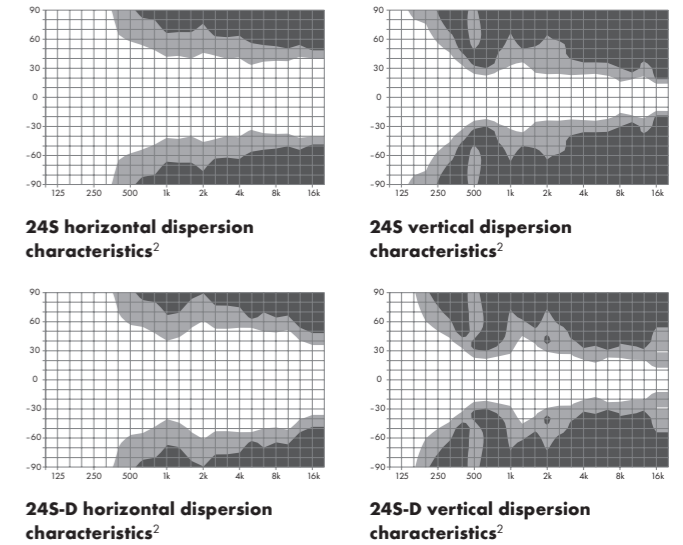
The loudspeaker cabinets are constructed from marine plywood, and have an impact resistant paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill. The top, bottom and both side panels each incorporate a pair of M10 threaded inserts for attaching d&b rigging hardware. The loudspeakers are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data 24S/24S-D

Frequency response (-5 dB standard).....	55 Hz - 18 kHz
Frequency response (-5 dB CUT mode).....	90 Hz - 18 kHz
Max. sound pressure (1 m, free field) ¹	
with D20/30D.....	138/137 dB
with D80.....	138/137 dB

Loudspeaker data

Nominal impedance.....	4 ohms
Power handling capacity (RMS/peak 10 msec)	500/2000 W
Nominal dispersion angle 24S/24S-D (h x v).....	75° x 45°/110° x 45° rotatable
Components.....	2 x 12" driver with neodymium magnet
.....	1.4" exit compression driver
.....	passive crossover network
Connections	1 x NL4
.....	screw terminal block
Weight.....	33 kg (73 lb)



24S/24S-D 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

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 12S subwoofer

12S subwoofer

The 12S-SUB is a compact subwoofer for use with the xS-Series loudspeakers. The cabinet houses a long excursion 12" neodymium driver in a bass-reflex design and it can be used stand-alone, ground stacked or individually flown.

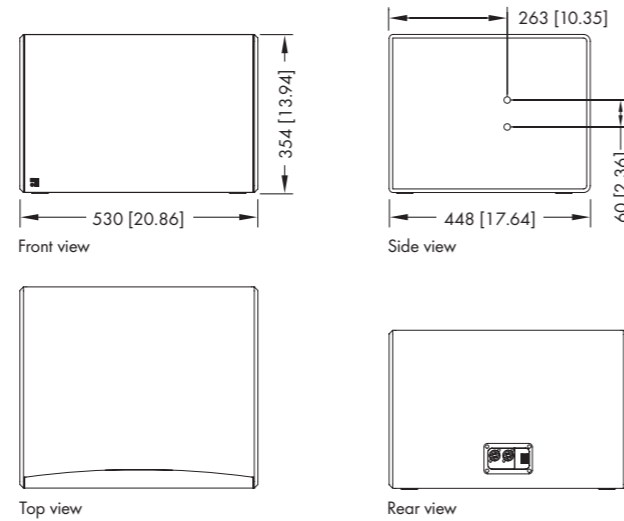
The cabinet is constructed from marine plywood with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

Frequency response (-5 dB standard)	45 - 130 Hz
Frequency response (-5 dB 100 Hz mode)	45 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field) ¹	
with D6/10D	124 dB
with 30D/D20	127 dB
with D80	127 dB

Loudspeaker data

Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 msec)	300/1600 W
Components	12" driver with neodymium magnet
Connections	2 x NL4
	screw terminal block
Weight	16 kg (35 lb)



12S-SUB cabinet dimensions in mm [inch]

The 18S subwoofer

18S subwoofer

The 18S-SUB is a compact high performance subwoofer for use with the xS-Series and xA-Series loudspeakers. The cabinet houses a long excursion 18" neodymium driver in a bass-reflex design and it can be used stand-alone, stacked or individually flown.

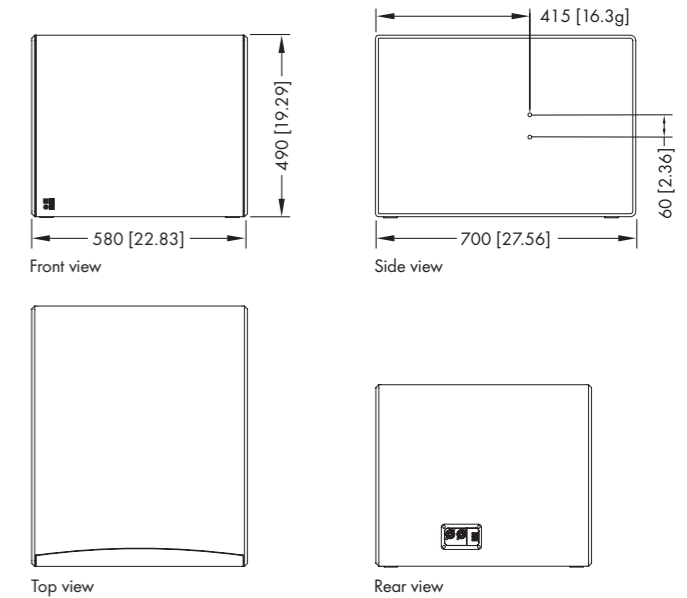
The cabinet is constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

Frequency response (-5 dB standard)	37 - 140 Hz
Frequency response (-5 dB 100 Hz mode)	37 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field) ¹	
with D6/10D	129 dB
with 30D/D20	132 dB
with D80	132 dB

Loudspeaker data

Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 msec)	400/1600 W
Components	18" driver with neodymium magnet
Connections	2 x NL4
	screw terminal block
Weight	32 kg (71 lb)



18S-SUB cabinet dimensions in mm [inch]

The 21S subwoofer

21S subwoofer

The 21S-SUB is a high performance subwoofer for use with the xS-Series and xA-Series loudspeakers. The cabinet houses a single long excursion 21" driver in a bass-reflex design. The large, specially shaped reflex port enables the 21S-SUB to achieve high Sound Pressure Levels from a cabinet with a small footprint. When operated in INFRA mode, the 21S-SUB can be used to complement other d&b subwoofers by extending the frequency response of the system down to 33 Hz. The 21S-SUB can ground stacked or flown in either orientation. It can be flown individually or in a cluster of two cabinets.

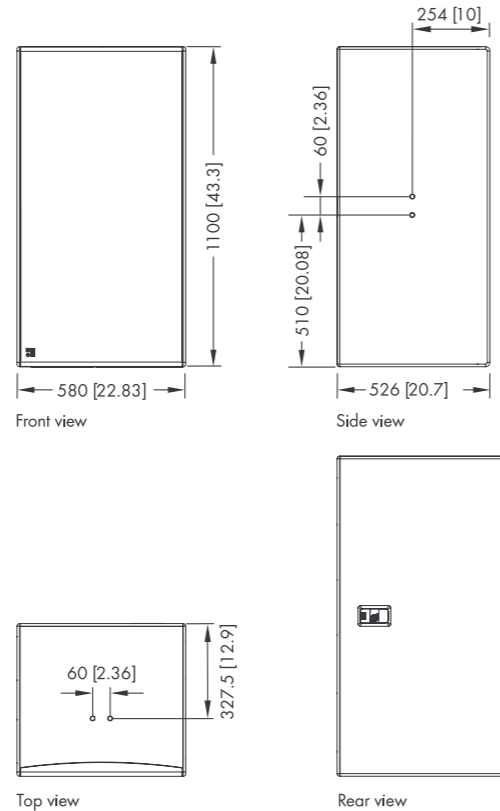
The enclosure is constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The top, bottom and rear panels each incorporate a pair of M10 threaded inserts for attaching d&b rigging hardware.

System data

Frequency response (-5 dB standard) 35 Hz - 105 Hz
 Frequency response (-5 dB INFRA mode) 33 Hz - 85 Hz
 Max. sound pressure (1 m, free field)¹
 with D20/30D 134 dB
 with D80 135 dB

Loudspeaker data

Nominal impedance 4 ohms
 Power handling capacity (RMS/peak 10 msec) 650/2600 W
 Components 1 x 21" driver
 Connections 1 x NL4
 screw terminal block
 Weight 54 kg (119 lb)



21S-SUB cabinet dimensions in mm [inch]

The 27S subwoofer

27S subwoofer

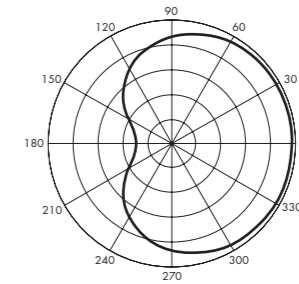
The 27S-SUB is a compact high performance cardioid subwoofer for use with the xS-Series and xA-Series loudspeakers. The cabinet houses two long excursion neodymium drivers in an integrated cardioid setup: a 15" driver in a bass-reflex design facing to the front and a 12" driver in a two chamber bandpass design radiating to the rear. The arrangement and tuning provide a cardioid dispersion pattern using a single amplifier channel. It can be used stand-alone, ground stacked or individually flown. The enclosure is constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

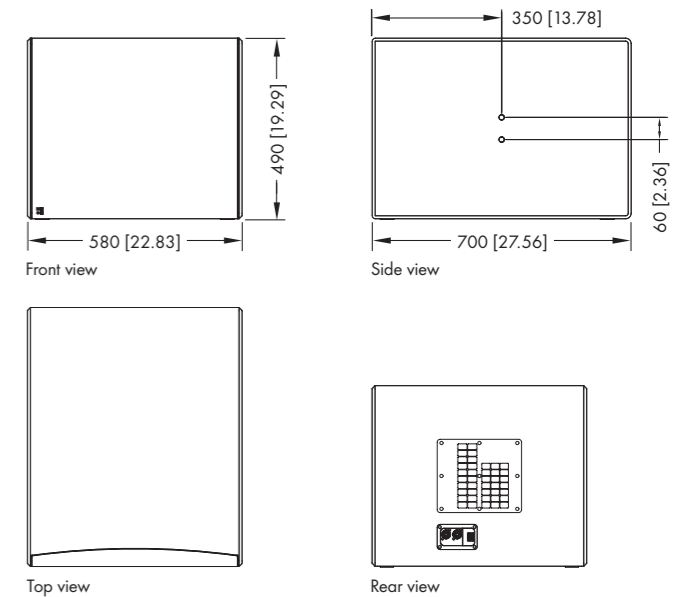
Frequency response (-5 dB standard) 40 - 140 Hz
 Frequency response (-5 dB 100 Hz mode) 40 - 100 Hz
 Max. sound pressure (single cabinet, 1 m, free field)¹
 with D6/10D 128 dB
 with 30D/D20 131 dB
 with D80 131 dB

Loudspeaker data

Nominal impedance 6 ohms
 Power handling capacity (RMS/peak 10 msec) 500/2000 W
 Components front/rear 15"/12" driver with neodymium magnet
 Connections 2 x NL4
 screw terminal block
 Weight 41 kg (90 lb)



Cardioid polar pattern



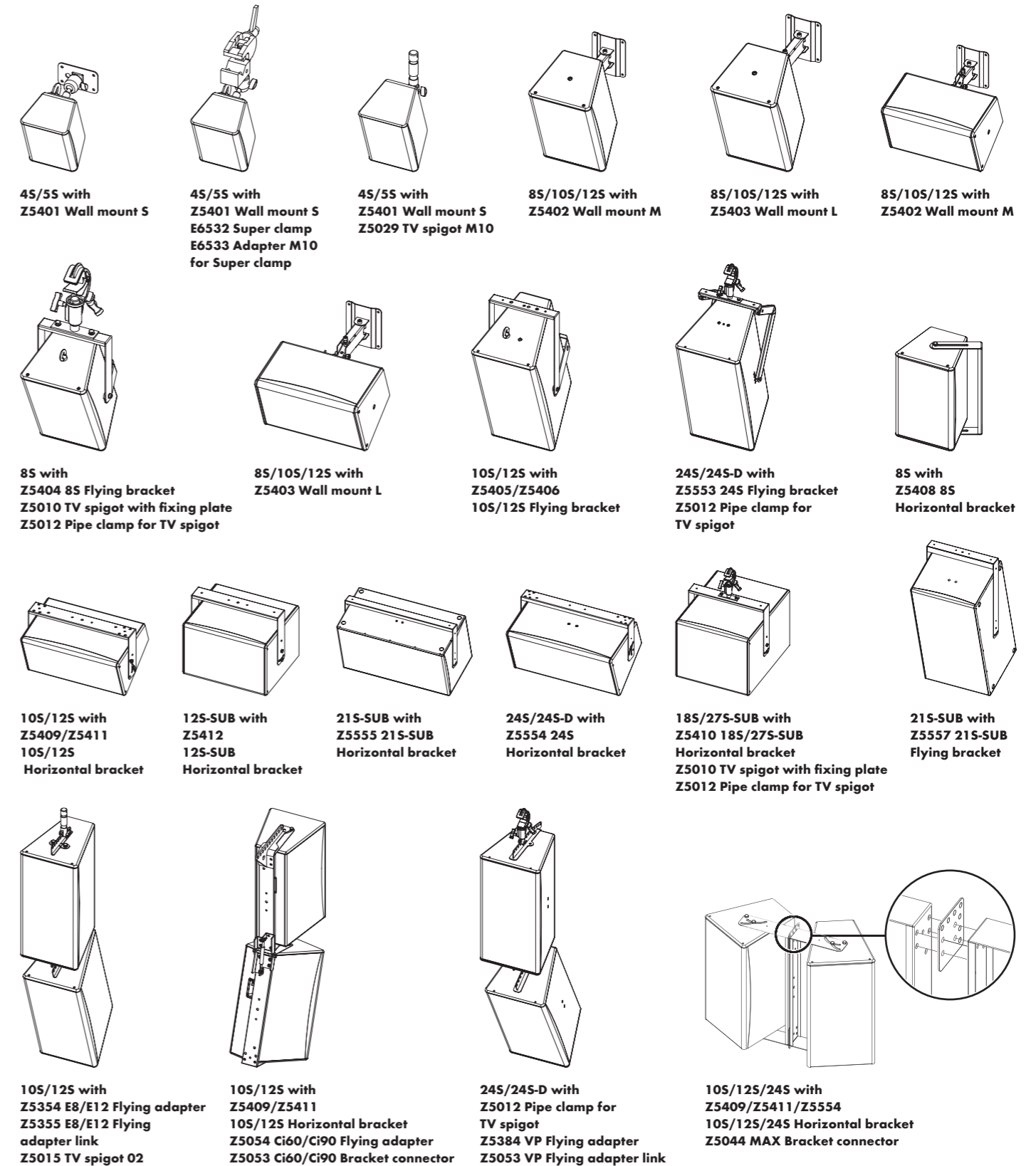
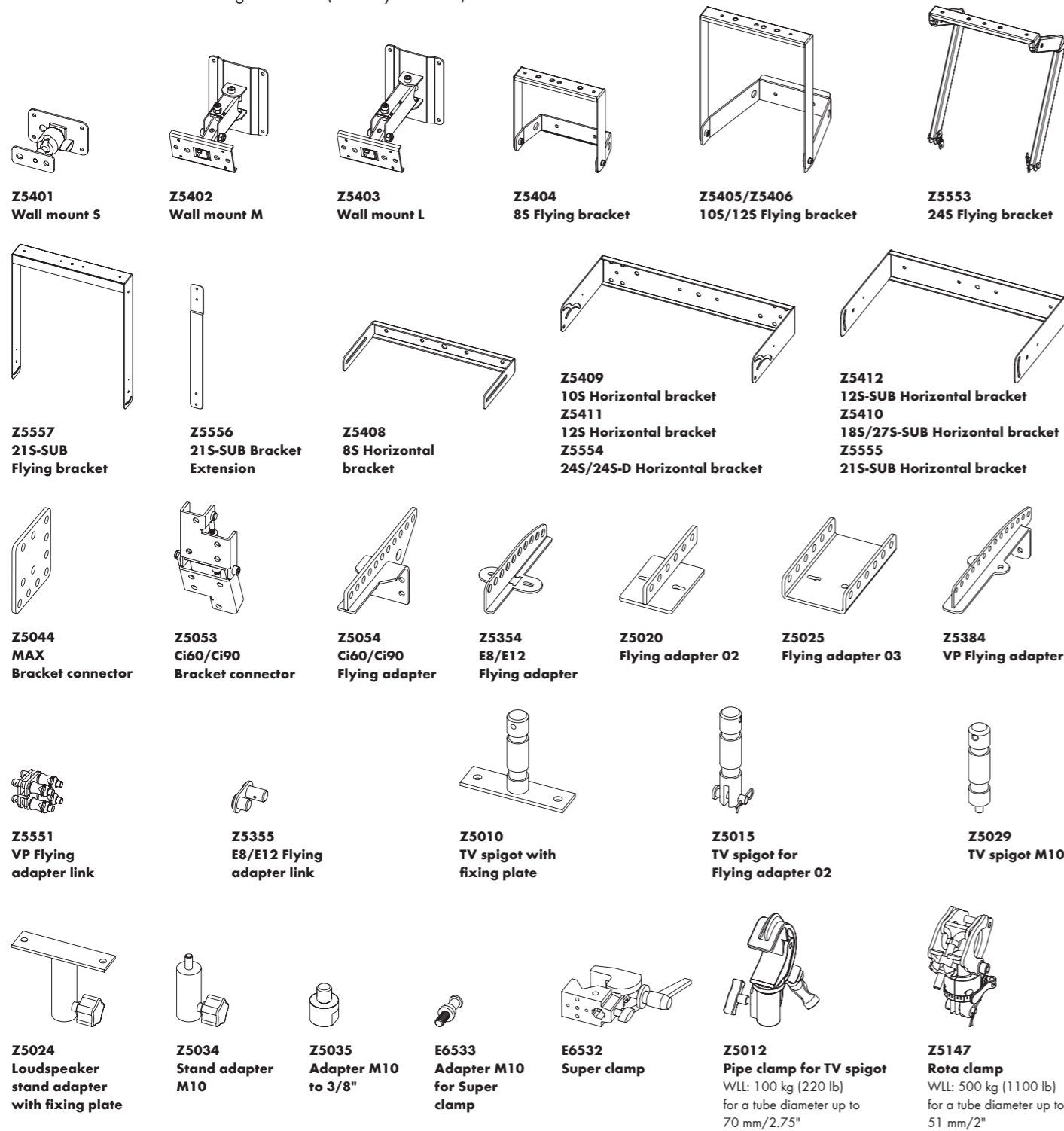
27S-SUB cabinet dimensions in mm [inch]

The xS-Series mounting accessories

The xS-Series 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 the DGUV regulation 17 (formerly BGV C1).

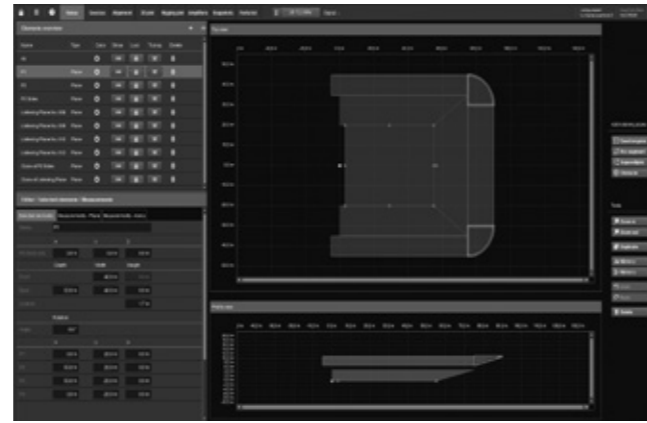


The d&b ArrayCalc simulation software

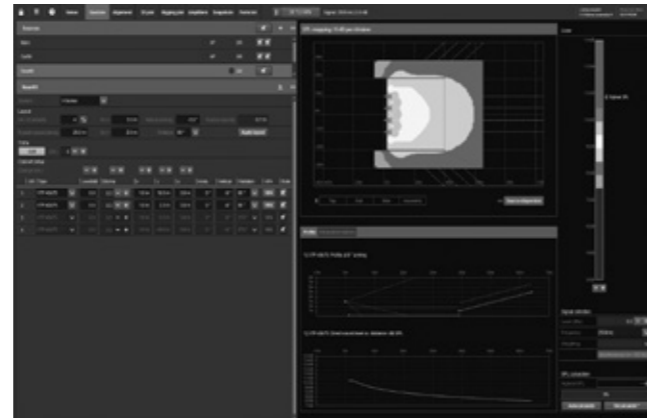
The d&b ArrayCalc simulation software is the simulation tool for d&b line arrays, column and point source loudspeakers as well as subwoofers. This is a comprehensive toolbox for all tasks associated with acoustic design, performance prediction, alignment, rigging and safety parameters. d&b ArrayCalc is available as a native stand-alone application for both Microsoft Windows¹ and Mac OS X² operating systems. In combination with the d&b Remote network, this can significantly reduce setup and tuning time and allows for precise initial simulations when planning installations. Listening planes can be defined in the venue tab, creating a three dimensional representation of any audience area in a given venue. All sources can be time aligned, and the phase response of a flown system and a ground stacked SUB array can be aligned at a definable reference point.

The comprehensive simulation precisely models the actual performance of the system, taking into account input level, all system configuration options (such as CUT, CPL, HFC or INFRA), limiter headroom and air absorption. Acoustic obstacles, such as video screens, can be added to a model. Acoustic shadowing, whether by these obstacles, or a balcony overhang, is taken into consideration. The level distribution resulting from the interaction of all active sources can be mapped onto the audience areas in a three-dimensional view. The Remote ID for all devices can be managed in the amplifier tab. EASE and DXF data export capabilities are also available.

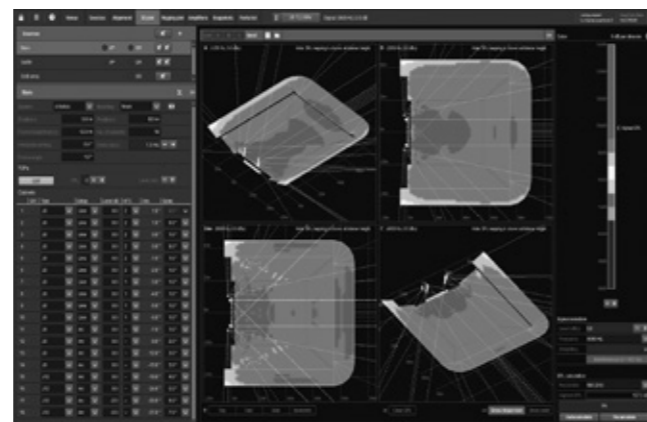
The R1 Remote control software uses the data defined in ArrayCalc to generate an intuitive graphical user interface including the complete setup of the simulated system and all configuration information. This workflow removes the need to manually transfer data from one software program to the other. Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Venue



Sources, point sources



3D Plot quad

The d&b R1 Remote control software

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 a 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 importation of settings from ArrayCalc allows the system configuration to be quickly accomplished, providing more time for verification and fine tuning.

All features, functions and controls available on the front panel of d&b amplifiers may be remotely controlled and/or monitored using R1 Remote control software. This allows each channel of the amplifier to be controlled 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 preparation in advance of an event, without the amplifiers being present or connected.

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. Project files can be easily adjusted for use with a different set of equipment at another location.

In installation projects system integrators can configure the d&b Remote network to offer access to different levels of control, tailored to the operational demands. For example, power ON/OFF for daily use, or more complex functionality for detailed control. Password protection is available to restrict access. Input and Load monitoring allow installation operators to ensure 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, mouse and keyboard and runs on both Microsoft Windows¹ (Win7 or higher) and Mac OS X² (10.7 or higher) operating systems. Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Home



Remote in Configuration mode



16-band equalizer

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

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

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

The d&b amplifiers

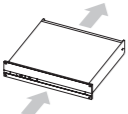
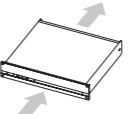
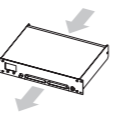
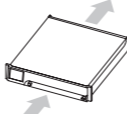
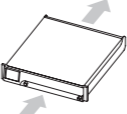
The d&b amplifiers are designed specifically to power d&b loudspeakers and are the beating heart of the d&b System reality. As such, they incorporate Digital Signal Processing for comprehensive loudspeaker management, switchable filter functions, remote capabilities and user-definable controls, to fulfil the exact needs of each application. Every loudspeaker configuration combines comprehensive system limiting, and equalization and crossover settings to ensure consistent results and optimal performance. d&b amplifiers offer

different output configurations for different loudspeaker setups, including Dual Channel mode, for passive setups, Mix TOP/SUB mode, in which two channels are driven through a single output connector, and 2-Way Active mode, which also sends the output of two channels down one connector to drive appropriate loudspeakers actively. The d&b switch functions provide selected filters to precisely tailor a wide variety of setups to their applications. Examples of these switch functions are the CSA (Cardioid Subwoofer Array)

and HFC (High Frequency Compensation) modes. CSA increases low frequency directivity control by minimising energy transmission towards the rear while HFC compensates for air absorption for loudspeakers covering far field listening positions. In addition to these functions, d&b amplifiers offer a comprehensive set of specific filters such as CUT, a cut mode for TOP loudspeakers when used with d&b subwoofers; CPL, to compensate for the coupling effect between loudspeakers in close proximity to other loudspeakers or hard objects and HFA

mode, to attenuate the high frequencies of a loudspeaker to mimic the effect of far field listening. These devices offer extended, user-definable equalization and delay capabilities, eliminating the need for external processing devices in the signal chain. All d&b amplifiers integrate with the d&b Remote network to enable the remote control and management of systems from anywhere within a network. Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.

Comparison of the d&b amplifiers

	10D	30D	D6	D20	D80
User interface	LED indicators	LED indicators	Encoder/LC display	Encoder/colour TFT touchscreen	Encoder/colour TFT touchscreen
Output channels	4	4	2	4	4
Input channels	4 x AES3 and 4 x analog	4 x AES3 and 4 x analog	2 x AES3 or 2 x analog	4 x AES3 or 4 x analog or 2 x AES3 and 2 x analog	4 x AES3 or 4 x analog or 2 x AES3 and 2 x analog
Latency	0.3 msec	0.3 msec	0.3 msec	0.3 msec	0.3 msec
User equalizers (per channel)	2 x 16-band	2 x 16-band	4-band	2 x 16-band	2 x 16-band
Delay	10 sec/3440 m	10 sec/3440 m	340 msec/116.9 m	10 sec/3440 m	10 sec/3440 m
Maximum output power (THD+N < 0.5%, 12 dB crest factor)	4 x 350 W into 8 ohms 4 x 700 W into 4 ohms	4 x 800 W into 8 ohms 4 x 1600 W into 4 ohms	2 x 350 W into 8 ohms 2 x 600 W into 4 ohms	4 x 800 W into 8 ohms 4 x 1600 W into 4 ohms	4 x 2000 W into 8 ohms 4 x 4000 W into 4 ohms
Output routing	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel, Mix TOP/SUB 2-Way Active
Output connectors	Phoenix Euroblock	Phoenix Euroblock	NL4	NL4 plus central NL8	NL4/EP5 plus central NL8
GPIO connector, 5 ports	Phoenix Euroblock	Phoenix Euroblock	No	No	No
Cable compensation	LoadMatch	LoadMatch	No	LoadMatch	LoadMatch
Power supply	Universal range switched mode power supply with active PFC	Universal range switched mode power supply with active PFC	Autosensing switched mode power supply with active PFC	Universal range switched mode power supply with active PFC	Autosensing switched mode power supply with active PFC
Mains voltage	100 - 240 V, 50 - 60 Hz	100 - 240 V, 50 - 60 Hz	100 - 120/220 - 240, 50 - 60 Hz	100 - 240 V, 50 - 60 Hz	100 - 127/208 - 240 V, 50 - 60 Hz
Weight (kg/lb)	10.6/23.4	10.6/23.4	8/17.6	10.8/23.8	19/42
Dimensions	2 RU x 19" x 435 mm	2 RU x 19" x 435 mm	2 RU x 19" x 353 mm	2 RU x 19" x 460 mm	2 RU x 19" x 530 mm
Remote	OCA via Ethernet/CAN	OCA via Ethernet/CAN	CAN	OCA via Ethernet/CAN	OCA via Ethernet/CAN
Airflow					

The operation with d&b amplifiers

Amplifier controller setups

CUT mode

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

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. 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.

INFRA mode

With the INFRA mode selected, the upper operating frequency of

the system is reduced from 105 Hz to 85 Hz. The 21S-SUB can now be used to supplement applicable d&b loudspeaker systems operated in full range mode.

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 around 1 kHz, with the maximum attenuation below 200 Hz. 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 (0 to +5 dB) and can be set when the system is used in full-range mode without subwoofers.

100 Hz mode

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

Recommended amplifiers for installation applications

	45	55	85	105/105-D	245/245-D	125/125-D	125-SUB	185-SUB	215-SUB	275-SUB
10D	x	x								
30D			x	x	x	x	x	x	x	x
D6	x	x								

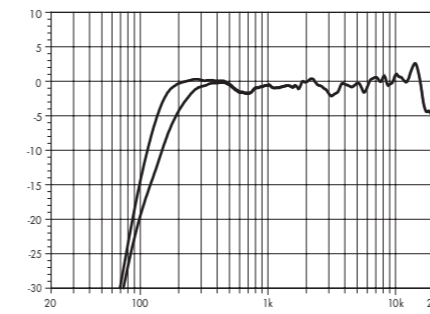
Maximum loudspeakers per amplifier channel

	45	55	85	105/105-D	245/245-D	125/125-D	125-SUB	185-SUB	215-SUB	275-SUB
	4	4	4	3	1	2	2	2	1	2

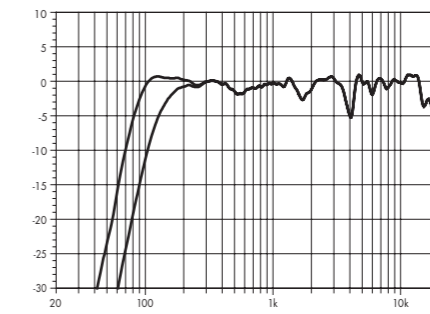
Available controller settings

	45	55	85	105/105-D	245/245-D	125/125-D	125-SUB	185-SUB	215-SUB	275-SUB
CUT	x	x	x	x	x	x				
HFA	x	x	x	x	x	x				
CPL	x	x	x	x	x	x				
100 Hz							x	x		x
INFRA									x	

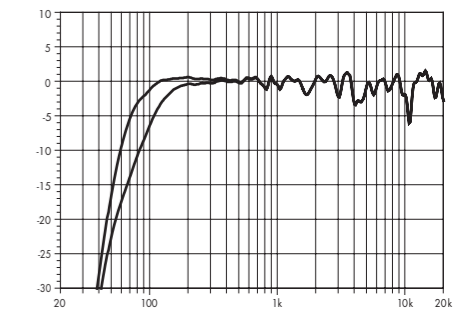
The xS-Series frequency responses



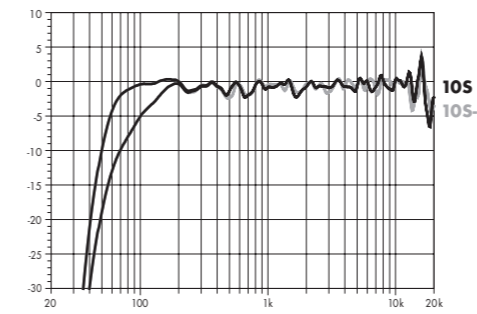
45 standard and CUT



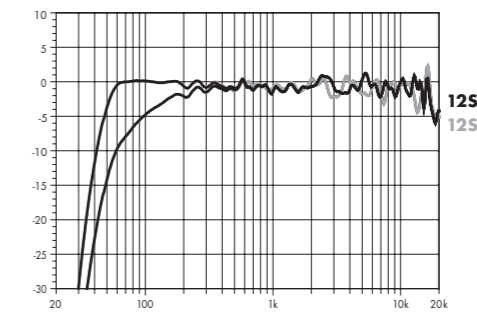
55 standard and CUT



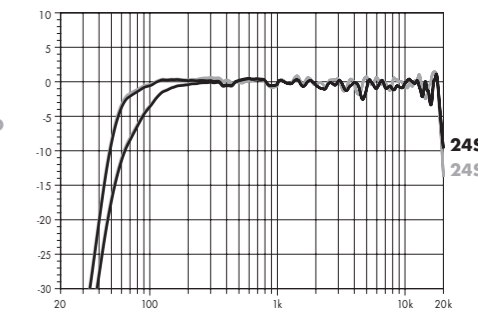
85 standard and CUT



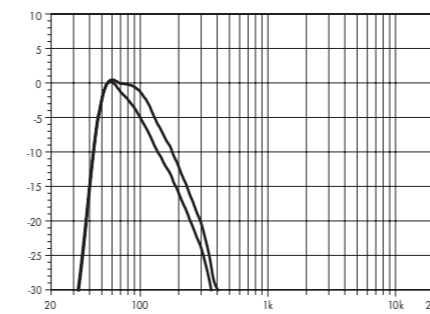
105/105-D standard and CUT



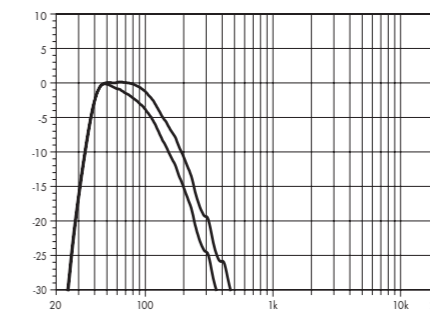
125/125-D standard and CUT



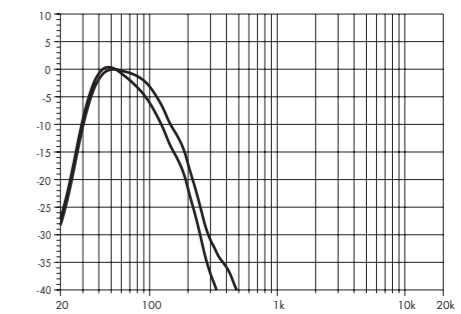
245/245-D standard and CUT



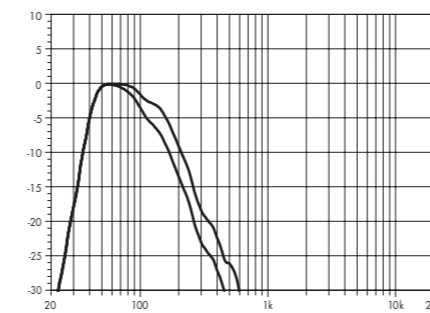
125-SUB standard and 100 Hz



185-SUB standard and 100 Hz

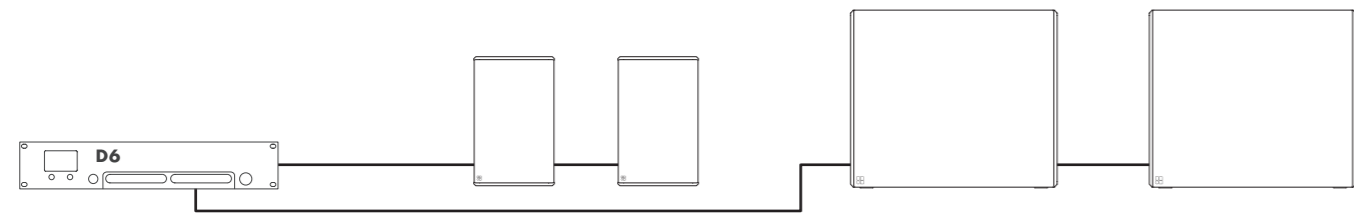


215-SUB standard and INFRA

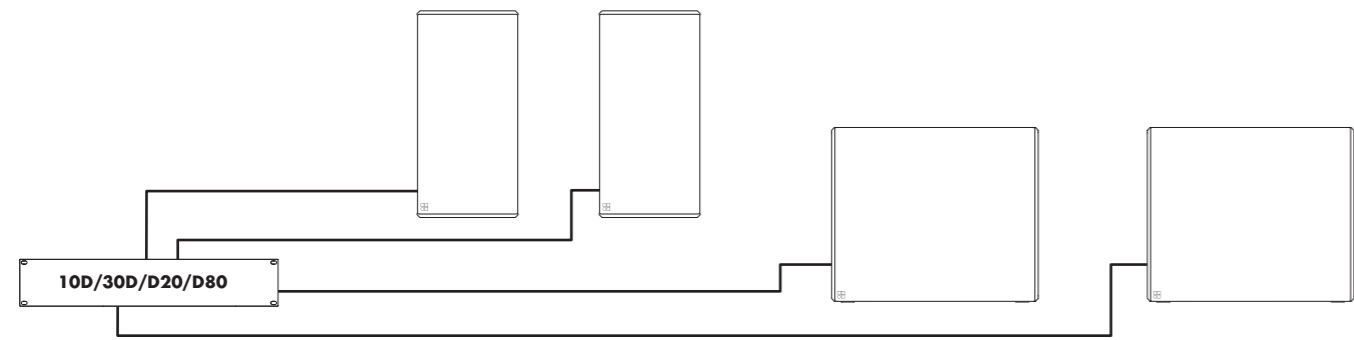


275-SUB standard and 100 Hz

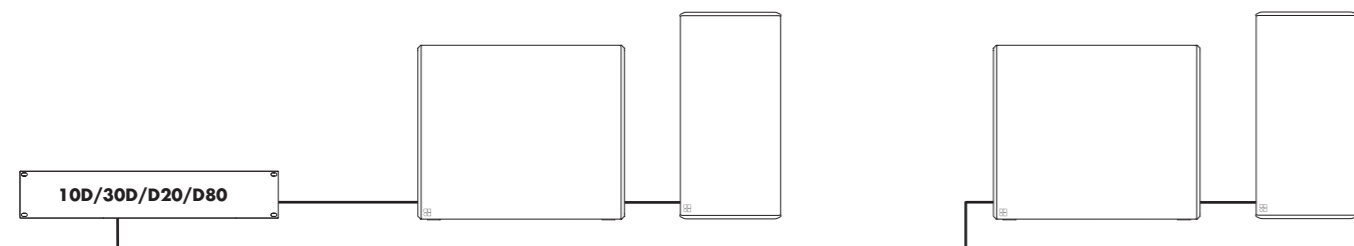
The d&b amplifier output modes



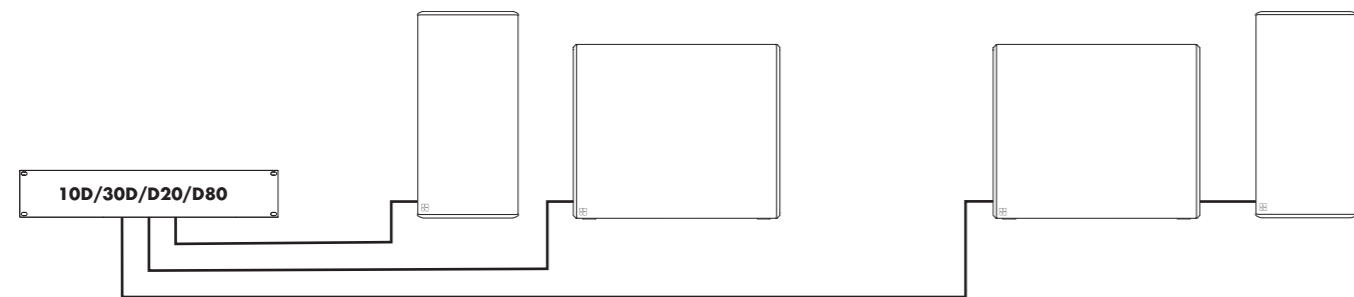
D6 amplifier in Dual Channel mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB



10D/30D/D20/D80 amplifier in Dual Channel mode for 4S, 5S, 8S, 10D, 10S-D, 12S, 12S-D, 24S or 24S-D and 12S-SUB, 18S-SUB, 21S-SUB or 27S-SUB¹



10D/30D/D20/D80 amplifier in Mix TOP/SUB mode for 4S, 5S, 8S, 10D, 10S-D, 12S, 12S-D, 24S or 24S-D and 12S-SUB, 18S-SUB, 21S-SUB or 27S-SUB¹



10D/30D/D20/D80 amplifier in a mixed configuration of Dual Channel and Mix TOP/SUB modes for 4S, 5S, 8S, 10D, 10S-D, 12S, 12S-D, 24S or 24S-D and 12S-SUB, 18S-SUB, 21S-SUB or 27S-SUB¹

The DS10 Audio network bridge The DS100 Signal Engine

DS10 Audio network bridge

The DS10 Audio network bridge interfaces between Dante networks and AES3 digital audio signals, while also providing distribution of Ethernet control data. Positioned within the signal chain in front of the amplifiers, this 1 RU device expands the d&b system approach. Each unit can deliver up to sixteen Dante network channels via AES3 digital signal outputs. Additionally, four AES3 input channels provide access to the Dante audio network for applications such as a break-in from a Front of House console.

The DS10 incorporates an integrated 5-port switch, offering a primary and redundant network for the Dante protocol, as well as advanced functions such as Multicast Filtering and VLAN modes. Using the DS10 Audio network bridge, audio signals and remote control data can be combined using a single Ethernet cable.

DS100 Signal Engine

The DS100 Signal Engine is the platform underneath the Soundscape, based on a specialized rack mount 3 RU audio processor with Audinate Dante networking. It provides a 64 x 64 audio matrix with level and delay adjustments at all cross points. Additional software modules provide dynamic source positioning and emulated acoustics functions.

The DS100 is a versatile tool for use within complex audio systems to route and distribute multiple audio channels to numerous amplifiers driving loudspeaker positions and zones, show relay and break out rooms. The networking capabilities with a Dante enabled processor are significant, particularly for busy, multi-room complexes.

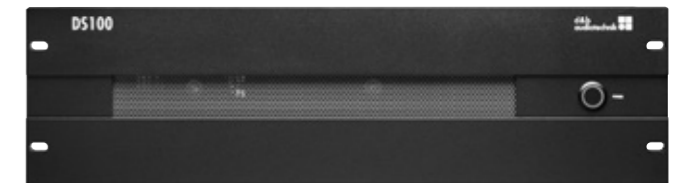
The DS100 completely integrates with the overall d&b system approach, including loudspeakers, amplifiers, rigging, transport and networking accessories and the DS10 Audio network bridge. The complete system is designed and optimized in the d&b ArrayCalc simulation software, and controlled via the d&b R1 Remote control software.



The DS10 Audio network bridge front view

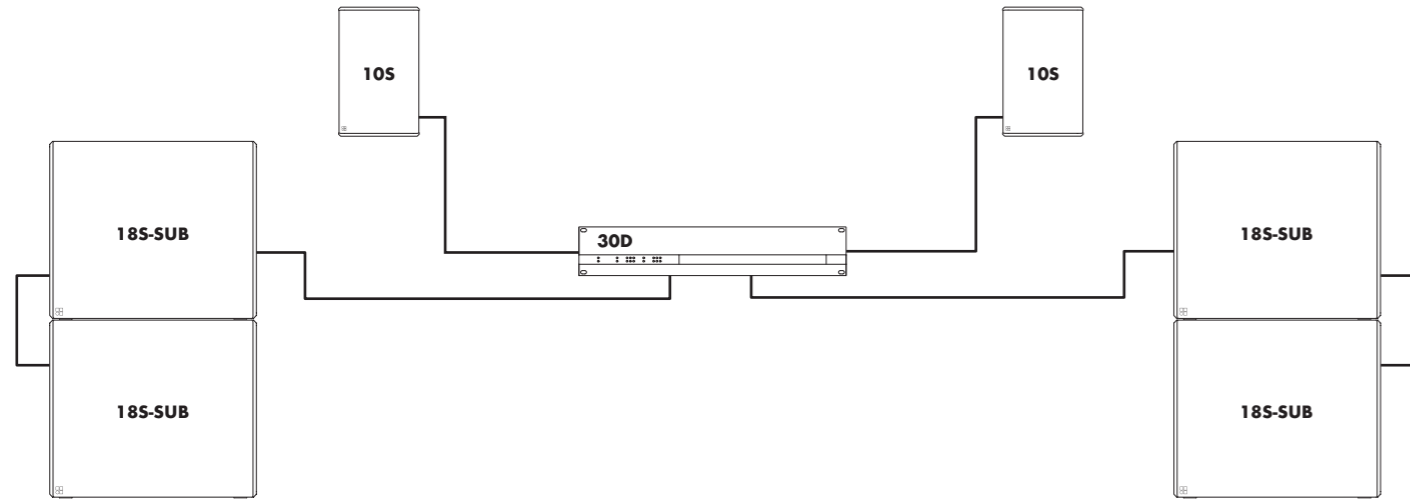


The DS10 Audio network bridge rear view

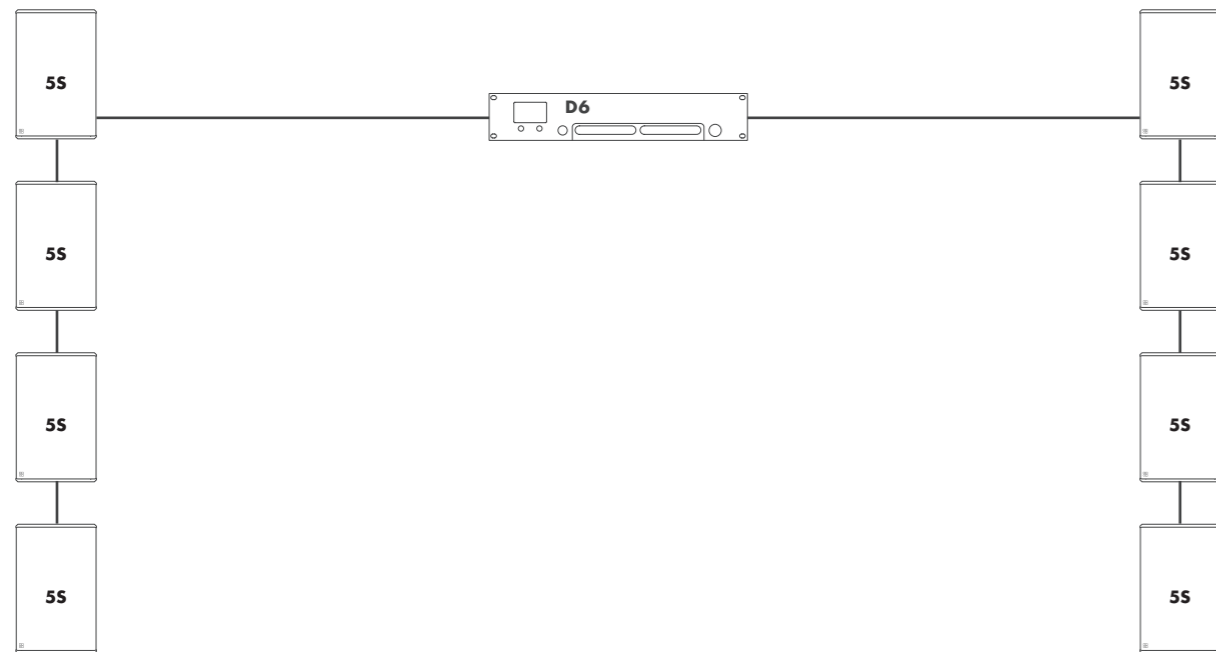


The DS100 Signal Engine front view

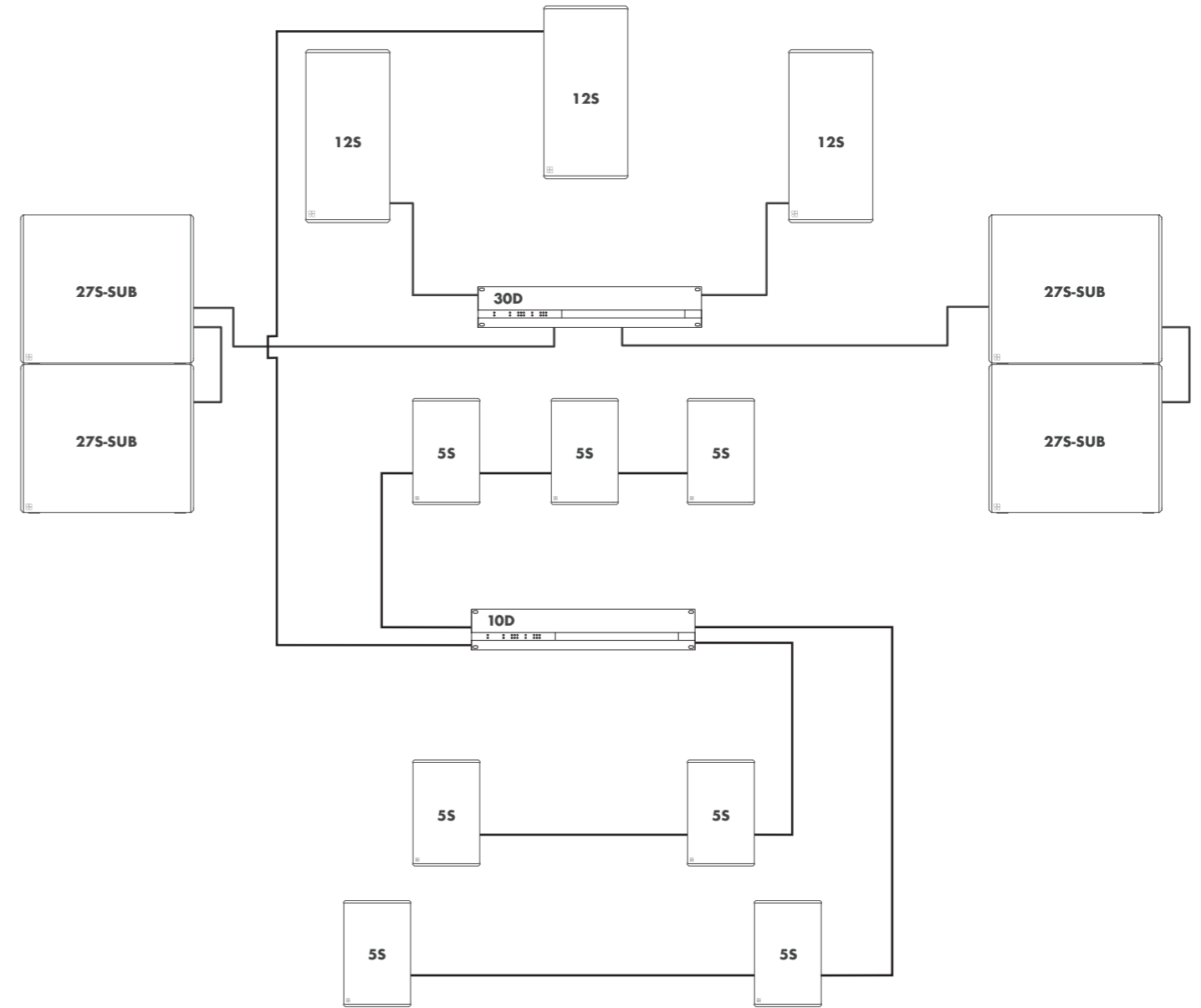
The xS-Series configuration examples



30D amplifier in Dual Channel mode with 105 loudspeakers and 185-SUBs

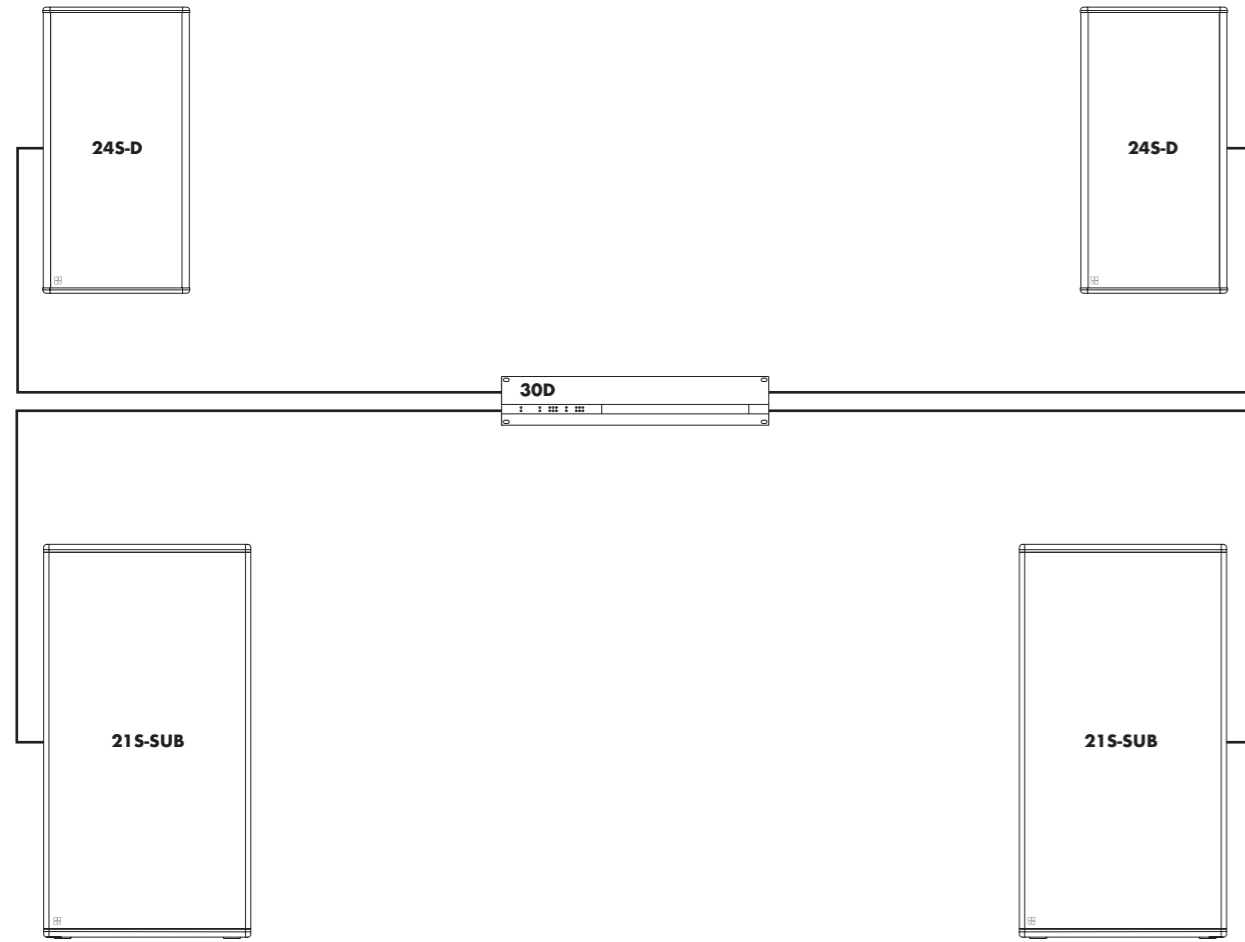


D6 amplifier in Dual Channel mode with 55 loudspeakers

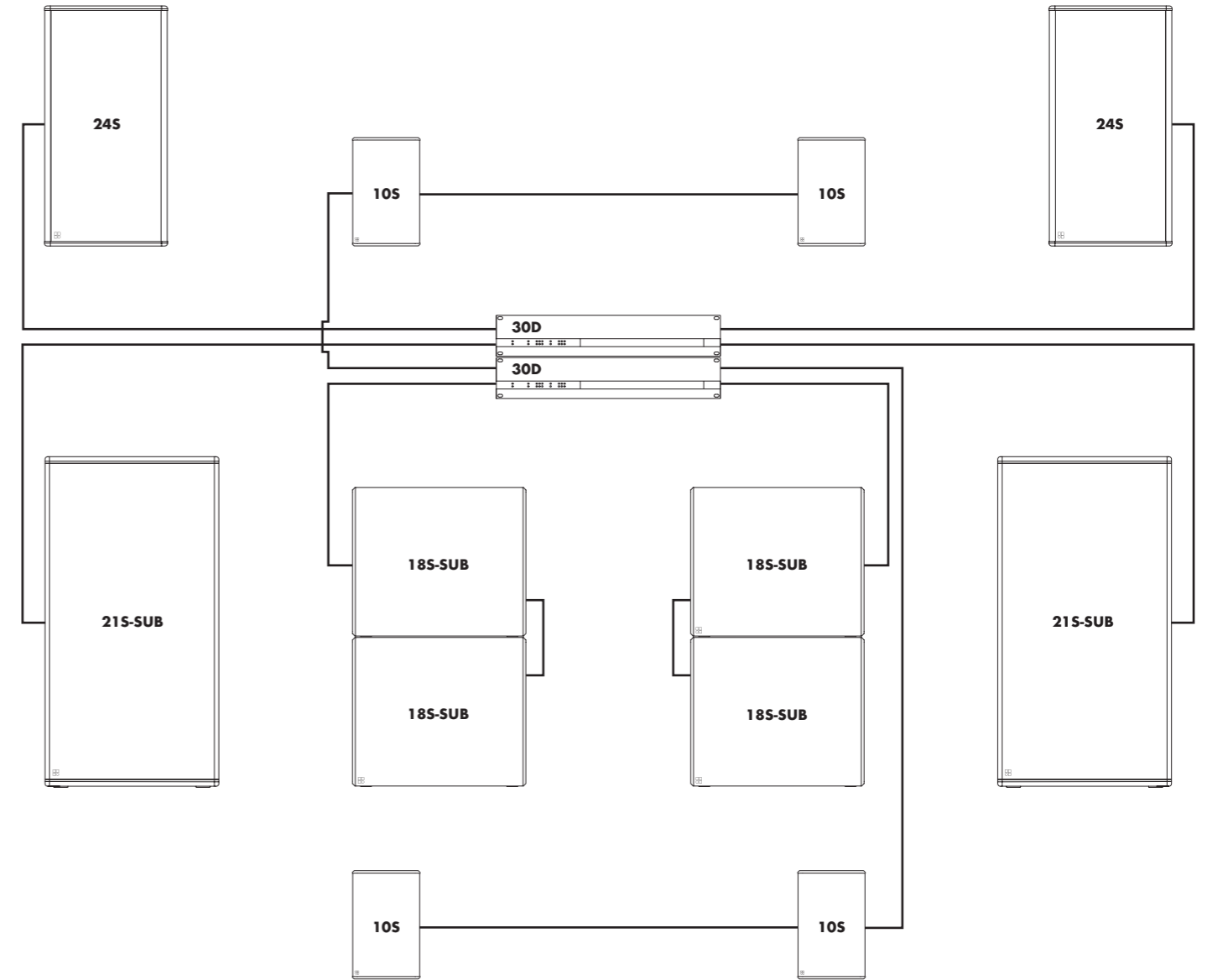


10D and 30D amplifiers in Dual Channel mode with 125 loudspeakers in L/C/R configuration and 275-SUBs with 55 loudspeakers as frontfill and delay

The xS-Series configuration examples



30D amplifier in Dual Channel mode with 245-D loudspeakers and 215-SUBs in L/R configuration



xS-Series configuration with 30D amplifiers in Dual Channel mode with 245 loudspeakers and 185-SUBs with 215-SUBs in INFRA mode and 105 loudspeakers as frontfill and delay

