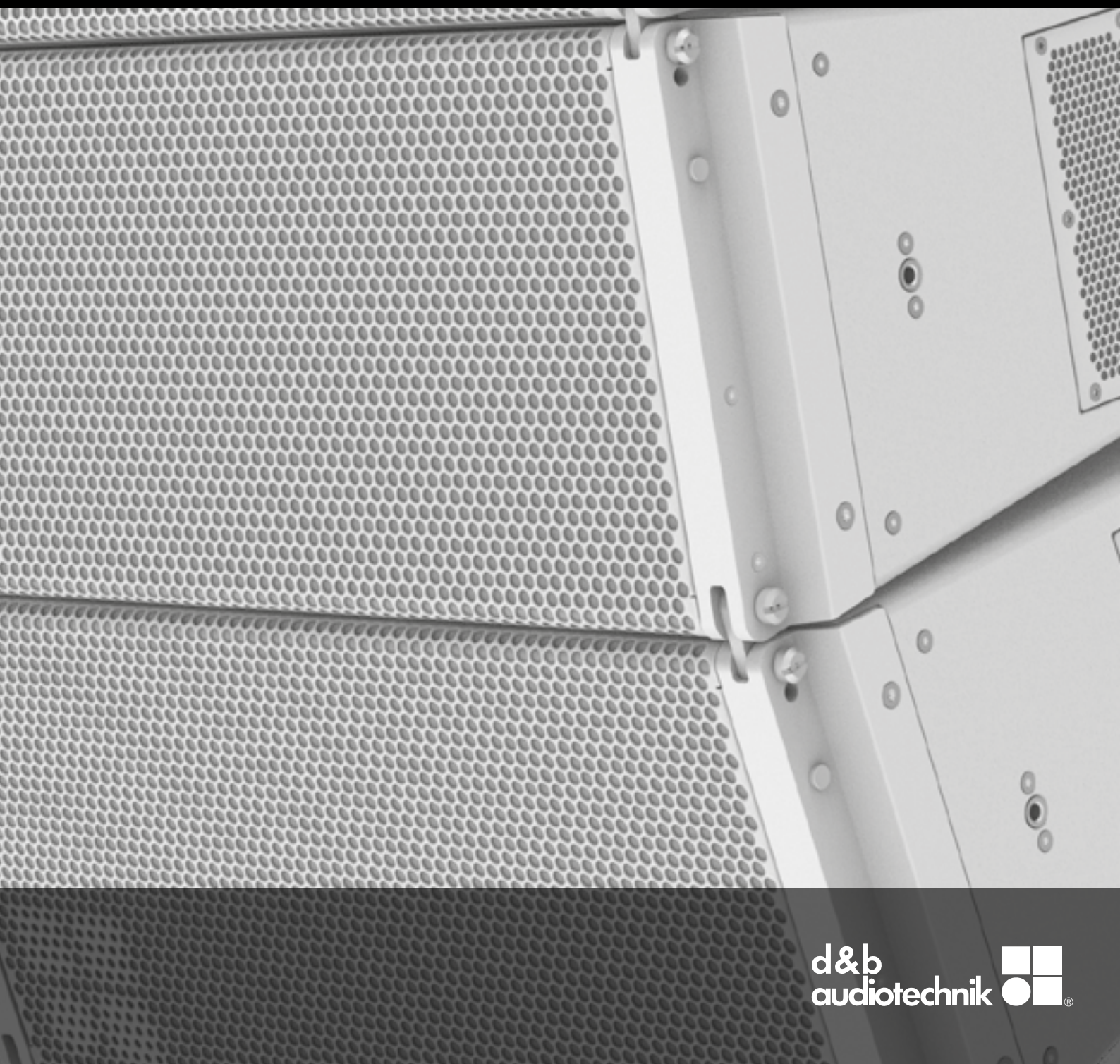


XSLi

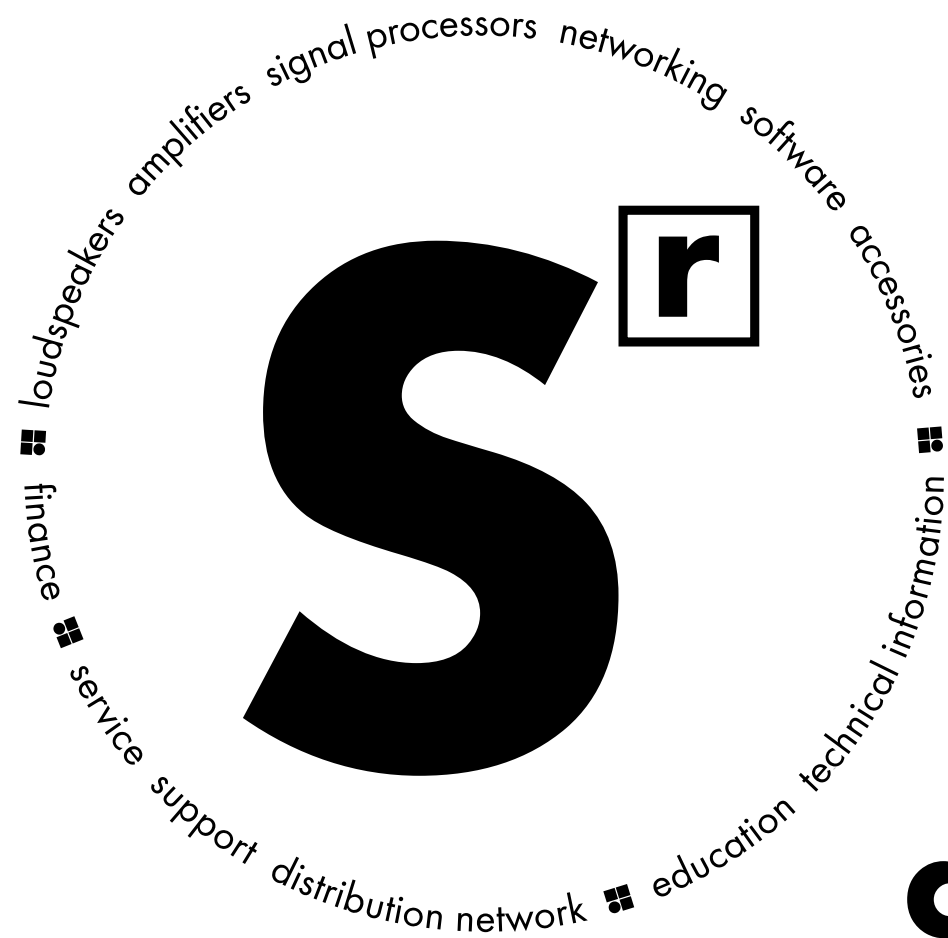
SL-Series



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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.



A complete dedicated installation solution with broadband directivity embedded in its DNA. The SL-Series' GSL, KSL(i) and XSL(i) Systems are complete packages carefully honed for mobile and installation needs. Independent but sonically compatible, XSL, KSL and GSL are specifically designed to accurately convey messages across all performance styles and musical genres,

in theaters, corporate events, houses of worship, concert halls, stadiums and arenas, festivals and more. The systems deliver unprecedented directivity control and headroom over the entire audio spectrum and significant low frequency extension. For projects on the go, comprehensive rigging, cabling and transportation solutions enable the highest speed of deployment.

Precise broadband directivity control curtails energy radiating to the rear of the loudspeakers, right down to the lowest frequencies. This reduces the level radiating back to the stage, creating more comfortable performance environments and diminishing lower frequency spill on open mics. Indoors, accurate directivity control significantly decreases stimulation of the reverberant field, while

outdoors it keeps energy focused on the audience, substantially reducing unwanted immissions. As with all d&b systems, XSLi neatly aligns with every element of the tried and tested d&b Workflow, including system design, deployment, optimization and control, for consistently unparalleled audio performance and maximum efficiency, everytime.

XSLi loudspeakers and their accessories come in black as standard.

The XSLi System

The **XSLi System** is a complete dedicated installation solution designed to address the broadest range of applications, wherever high quality sound reinforcement and reproduction are a prerequisite. As the installation variant of the XSL System, XSLi differs only in cabinet construction and mounting hardware. All XSLi cabinets and accessories can be custom color matched to interiors and/or weather protected as standard.

The **XSLi8** and **XSLi12** line array modules are specifically designed for small to medium scale sound reinforcement. Sharing the same vertical directivity, size, footprint, weight, rigging and driver complement, up to twenty-four XSL loudspeakers can be flown in vertical columns using the XSL Flying frame, or up to twelve loudspeakers in vertical columns using the XSLi Mounting frame. The 2-Way active design combines ingenious cabinet geometry with forward and side firing low frequency drivers, these couple towards the front, cancel towards the rear and increase low frequency headroom. The driver compliment is completed by a hornloaded mid range and two high frequency drivers mounted to a waveshaping device. The 80° horizontal directivity pattern of the XSLi8 is seamlessly maintained down to the lowest frequencies the loudspeaker produces, while the high output capability can cover a distance range of over 100 m (330 ft), depending on the climatic conditions. The XSLi12 has a wider horizontal dispersion pattern of 120° which is also maintained over the entire operating range.

The **XSLi-SUB** and **XSLi-GSUB** extend the bandwidth of a XSLi System down to 37 Hz (35 Hz in INFRA mode) as well as increasing its headroom. The bass-reflex design uses a 18" front facing and 12" rear facing high excursion drivers, producing a cardioid subwoofer performance to avoid unwanted energy behind the system. The XSLi-SUB is equipped with flying fittings, while the XSLi-GSUB is intended for ground stacked use only.

The XSLi-SUB and XSLi-GSUB can be configured in conventional left and right ground stacked setups as well as in distributed SUB arrays to achieve an even venue specific coverage pattern. The XSLi-SUB cabinet incorporates front and rear rigging strands while the XSLi-GSUB has no rigging components. Custom rigging solutions are available by request to meet individual project requirements.



XSLi8 loudspeaker



XSLi12 loudspeaker



XSLi-SUB



XSLi-GSUB

The d&b **ArrayCalc** simulation software allows the virtual optimization of line arrays, point source and column loudspeakers as well as subwoofers and their adjustment to venue conditions. The d&b **NoizCalc** immission modelling software uses international standards to model noise immission from d&b loudspeaker systems. NoizCalc takes data from ArrayCalc and calculates the sound propagation towards the far field. The complete system configuration simulated in ArrayCalc is assimilated by the d&b **R1** Remote control software into an intuitive graphical user interface to manage the system from anywhere in the venue.

A wide range of tools and data files are available to support the planning process using external tools. 2D and 3D CAD data is usable in most common planning tools. Venue data created by SketchUp can be imported to ArrayCalc using the d&b sketchup plug-in to facilitate system design.

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 contain 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 installation specific four channel **30D** and **40D** amplifiers are intended for permanent integration within venues which require medium to high Sound Pressure Levels. The amplifiers provide extensive user-definable equalization containing two 16-band equalizers with parametric, notch, shelving and asymmetric filters as well as delay capabilities of up to 10 seconds.

The d&b Audio network bridges interface between audio transport networks and AES3 digital audio signals while also providing distribution of Ethernet control data. The **DS10** supports Dante networks, while the **DS20** is used for the open standards-based Milan protocol.

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



30D amplifier



40D amplifier



DS10 Audio network bridge



DS20 Audio network bridge



DS100 Signal Engine

The XSLi8 loudspeaker

XSLi8 loudspeaker

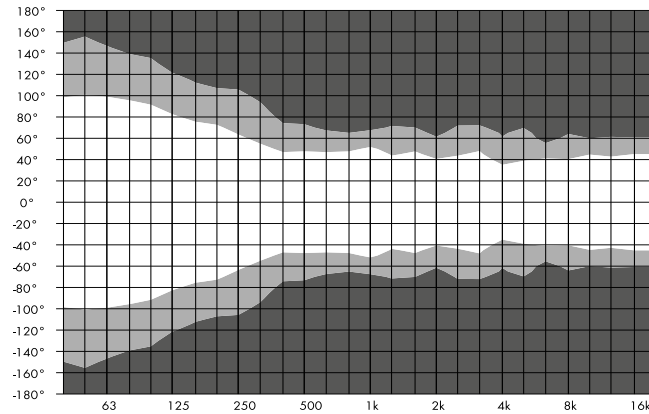
The XSLi8 is a line array loudspeaker for medium-scale sound reinforcement applications. It also serves as a supplement to other SL-Series systems for fill and/or delay purposes. The XSLi8 line array module produces a 80° constant directivity dispersion pattern in the horizontal plane over the entire operating bandwidth. The cabinet houses 2 x 8" neodymium forward LF drivers, 2 x 6.5" neodymium side firing LF drivers, one horn-loaded 6.5" MF driver and 2 x 1" exit HF compression drivers with 2" coils mounted to a dedicated wave shaping device. Splay angles between adjacent cabinets can be set in the range from 0° to 14° in 1° increments. All components are arranged symmetrically around the center axis of the cabinet to produce a perfectly symmetrical dispersion pattern. This setup allows for a very smooth crossover design with a well-defined overlap of adjacent frequency bands resulting in a very consistent and accurate horizontal dispersion. The frequency response extends from 60 Hz to above 18 kHz. The cabinet enclosure is injection moulded (ABS polycarbonate) and has an impact and weather protected 2K finish. The front and side panels of the cabinet incorporate a rigid metal grille backed by an acoustically transparent and water repellent fabric. Each side panel incorporates a slot that accepts dedicated lifting pins (T-handles). During setup, these pins serve as a temporary lifting aid and can be inserted and locked when needed.

System data

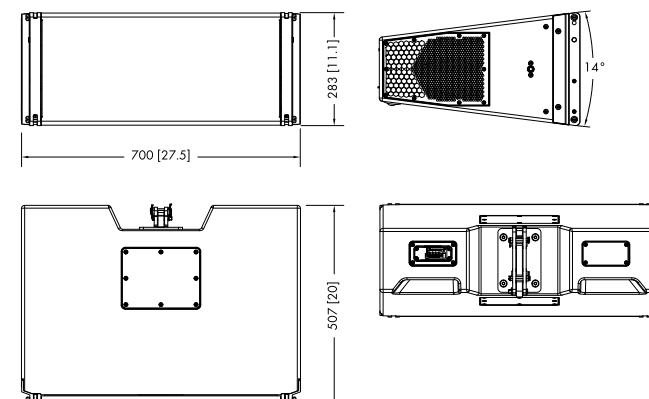
Frequency response (-5 dB standard) 60 Hz - 18 kHz
 Frequency response (-5 dB CUT mode) 90 Hz - 18 kHz
 Max. sound pressure (1 m, free field)
 with 30D 138 dB¹
 with 40D 141 dB¹

Loudspeaker data

Nominal impedance front LF 8 ohms
 Nominal impedance side LF/MF/HF 8 ohms
 Power handling capacity front LF (RMS/peak 10 ms)
 450/1200 W
 Power handling capacity side LF/MF/HF (RMS/peak 10 ms)
 300/850 W
 Nominal dispersion angle (horizontal) 80°
 Splay angle settings 0 - 14° (1° increment)
 Components 2 x 8" front LF driver
 2 x 6,5" side LF driver
 1 x 6,5" MF driver
 2 x 1" exit compression driver with 2" voice coil
 Passive crossover network
 Connections NLT4 F/M
 Pin assignment 1+: Front LF+/1 -: Front LF-
 2+: Side LF/MF/HF+/2 -: Side LF/MF/HF-
 Phoenix option Phoenix socket (Type: DFK PC 4/4 GF)
 Phoenix plug (Type: SPC 5/4)
 Weight 39 kg (86 lb)



XSLi8 horizontal dispersion characteristics²



XSLi8 cabinet dimensions in mm [inch]

¹ SPLmax: Broadband signal IEC 60268
² Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

The XSLi12 loudspeaker

XSLi12 loudspeakers

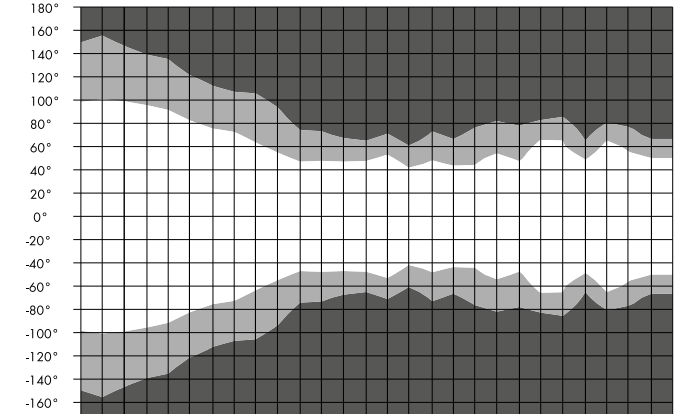
The XSLi12 is a line array loudspeaker for medium-scale sound reinforcement applications. It also serves as a supplement to other SL-Series systems for fill and/or delay purposes. The XSLi12 line array module produces a 120° constant directivity dispersion pattern in the horizontal plane over the entire operating bandwidth. The cabinet houses 2 x 8" neodymium forward LF drivers, 2 x 6.5" neodymium side firing LF drivers, one horn-loaded 6.5" MF driver and 2 x 1" exit HF compression drivers with 2" coils mounted to a dedicated wave shaping device. Splay angles between adjacent cabinets can be set in the range from 0° to 14° in 1° increments. All components are arranged symmetrically around the center axis of the cabinet to produce a perfectly symmetrical dispersion pattern. This setup allows for a very smooth crossover design with a well-defined overlap of adjacent frequency bands resulting in a very consistent and accurate horizontal dispersion. The frequency response extends from 60 Hz to above 18 kHz. The cabinet enclosure is injection moulded (ABS polycarbonate) and has an impact and weather protected 2K finish. The front and side panels of the cabinet incorporate a rigid metal grille backed by an acoustically transparent and water repellent fabric. Each side panel incorporates a slot that accepts dedicated lifting pins (T-handles). During setup, these pins serve as a temporary lifting aid and can be inserted and locked when needed.

System data

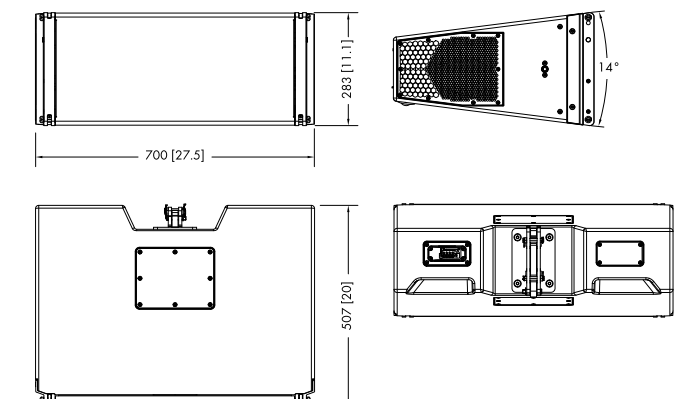
Frequency response (-5 dB standard) 60 Hz - 18 kHz
 Frequency response (-5 dB CUT mode) 90 Hz - 18 kHz
 Max. sound pressure (1 m, free field)
 with 30D 137 dB¹
 with 40D 140 dB¹

Loudspeaker data

Nominal impedance front LF 8 ohms
 Nominal impedance side LF/MF/HF 8 ohms
 Power handling capacity front LF (RMS/peak 10 ms) 450/1800 W
 Power handling capacity side LF/MF/HF (RMS/peak 10 ms)
 2300/850 W
 Nominal dispersion angle (horizontal) 120°
 Splay angle settings 0 - 14° (1° increment)
 Components 2 x 8" front LF driver
 2 x 6,5" side LF driver
 1 x 6,5" MF driver
 2 x 1" exit compression driver with 2" voice coil
 Passive crossover network
 Connections NLT4 F/M
 Pin assignment 1+: Front LF+/1 -: Front LF-
 2+: Side LF/MF/HF+/2 -: Side LF/MF/HF-
 Phoenix option Phoenix socket (Type: DFK PC 4/4 GF)
 Phoenix plug (Type: SPC 5/4)
 Weight 39 kg (86 lb)



XSLi12 horizontal dispersion characteristics²



XSLi12 cabinet dimensions in mm [inch]

¹ SPLmax: Broadband signal IEC 60268
² Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

The XSLi-SUB and XSLi-GSUB

XSLi-SUB and XSLi-GSUB

The XSLi-SUB and XSLi-GSUB are cardioid subwoofers designed to complement the XSLi8 and XSLi12 loudspeakers; they offer a frequency response extending from 37 Hz to 110 Hz. Both subwoofers are actively driven, 2-Way bass-reflex designs housing two long excursion neodymium drivers; an 18" driver faces to the front of the cabinet, and a 12" driver radiates to the rear. The front and rear facing drivers operate in independent bass-reflex chambers and are driven from separate amplifier channels. Their cardioid dispersion pattern reduces unwanted energy behind the system, resulting in less excitation of the reverberant field for highly accurate low frequency reproduction. The XSLi-SUB rigging hardware allows columns of up to six cabinets using the XSLi SUB Mounting frame, or up to fourteen cabinets using the XSL Flying frame, while the XSLi-GSUB is intended for ground stacked applications only. The XSLi-SUB shares the same width as the XSLi loudspeakers enabling them to be easily flown in combination as a mixed array by using the XSL-SUB Adapter frames. The XSLi-SUB cabinet incorporates front rear rigging strands while the XSLi-GSUB has no rigging components.

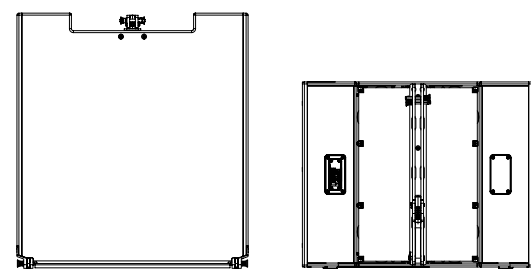
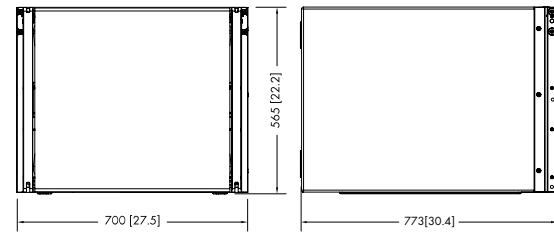
The cabinets are constructed from marine plywood with an impact and weather protected PCP finish. The front and rear of the subwoofers are protected by a rigid metal grille backed by an acoustically transparent and water repellent fabric. Each side panel incorporates a slot that accepts dedicated lifting pins (T-handles). During setup, these pins serve as a temporary lifting aid and can be inserted and locked when needed.

System data

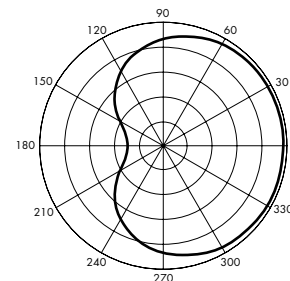
Frequency response (-5 dB standard)37 Hz - 110 Hz
 Frequency response (-5 dB INFRA mode) 35 Hz - 85 Hz
 Max. sound pressure (1 m, free field).....
 with 30D134dB¹
 with 40D 137 dB¹

Loudspeaker data

Nominal impedance front/rear8/16 ohms
 Power handling capacity front (RMS/peak 10 ms).....700/1500
 Power handling capacity rear (RMS/peak 10 ms) ...400/800 W
 Components 1 x 18" front driver
1 x 12" rear driver
 Connections.....NLT4 F/M
 Phoenix option Phoenix socket (Type: DFK PC 4/4 GF)
 Phoenix plug (Type: SPC 5/4)
 Weight XSLi-SUB65 kg (145 lb)
 Weight XSLi-GSUB 61 kg (135 lb)



XSLi-SUB/XSLi-GSUB cabinet dimensions in mm [inch]



Cardioid polar pattern

The XSLi Weather Resistant, Special Colour and Custom solutions options

Weather Resistant (WR)

The WR option provides an IP54 rating, and enables operation of loudspeakers in changing ambient conditions, with some loudspeakers able to achieve an IP55 rating. However it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. Cabinets used outdoors even with the WR option should always be aimed either horizontally or with a downward tilt. All WR speakers will be delivered without a cable.

Special Colour (SC) option

XSLi loudspeakers and their accessories come in black as standard. The paint finish of all loudspeaker cabinets and most accessories can be executed in almost any custom colour in accordance with common colour tables. All rigging fittings at the rear of the cabinet, Front links and Locking pins remain in black. Other paint finishes such as metallic are available on request. The acoustically transparent foam fitted behind the rigid metal grill is also painted with the requested special colour.

Custom solutions (SVS and SWR) option

SVS (Variants For Stadiums) loudspeakers have no integral rigging components, but instead, have threaded inserts in their side panels. The cabinets will be mechanically supported by metal brackets specifically designed for the respective application by Custom solutions.

SWR (Sea Water Resistant) loudspeaker models are based on WR or SVS variants where available, and withstand outdoor operation in wet and acid or salty environments like on cruise ships or coastal locations. Other custom solutions are available upon request.



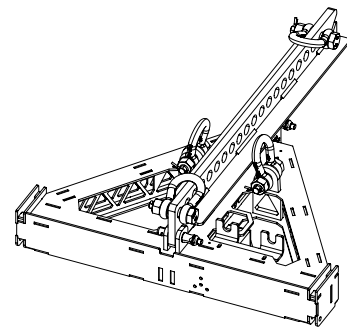
XSLi SVS loudspeaker

The XSLi rigging system

The XSLi rigging examples

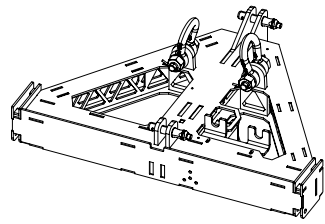
Safety approval

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).

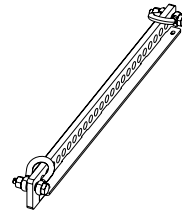


Z5785
XSLi Flying frame set

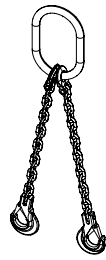
Z5785 Flying frame set consists of:



Z5771
XSL Flying frame
SWL: 1000kg (2204 lb)

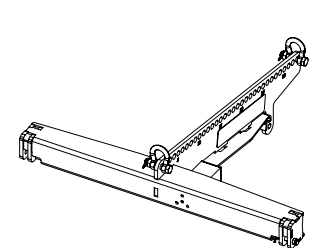


Z5772
XSL Load beam

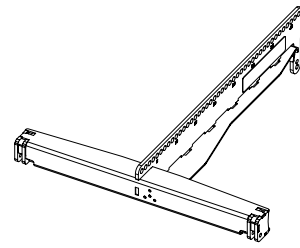


Z5775
Safety chain set 2t

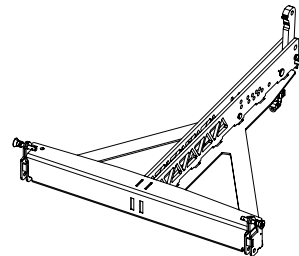
Single accessories:



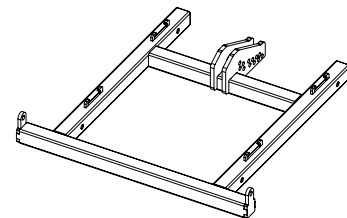
Z5787
XSLi TOP Mounting frame
SWL: 500kg (1100 lb)



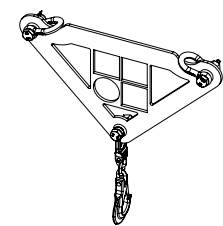
Z5788
XSLi SUB Mounting frame



Z5780
XSLi-SUB Adapter frame



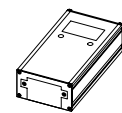
Z5790
XSLi Stacking frame



Z5707
SL Aiming plate



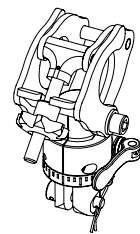
Z5776
Hoist chain 2t



Z5762
ArraySight meter unit

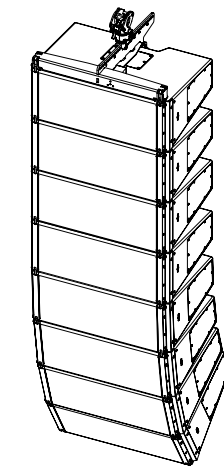


Z5761
ArraySight sender unit

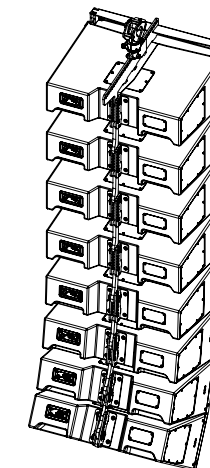


Z5147
Rota clamp
WLL: 500 kg (1100 lb)
for a tube diameter up to 50 mm/2"

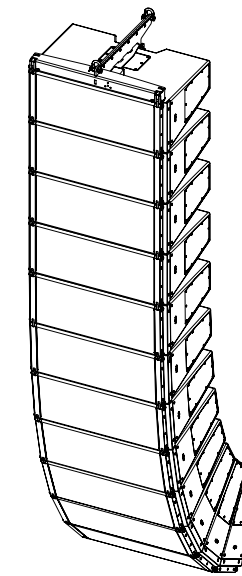
These rigging examples are for illustration only. For further information please refer to the TI 385 d&b Line array design as well as the XSLi-System Rigging manual, both of which are available for download at www.dbaudio.com.



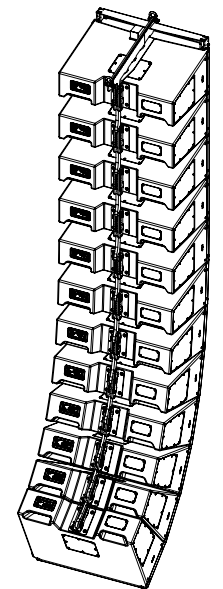
XSLi8/12 Line array 8-deep
Tension mode - Front
with Z5787 XSLi TOP Mounting frame and Z5147 Rota clamp



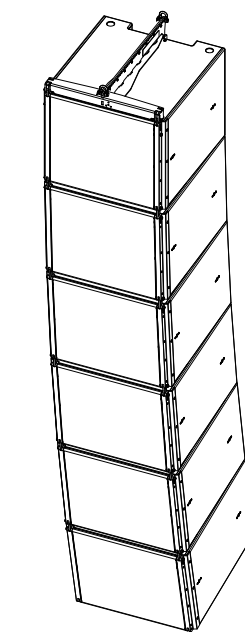
XSLi8/12 Line array 8-deep
Tension mode - Rear
with Z5787 XSLi TOP Mounting frame and Z5147 Rota clamp



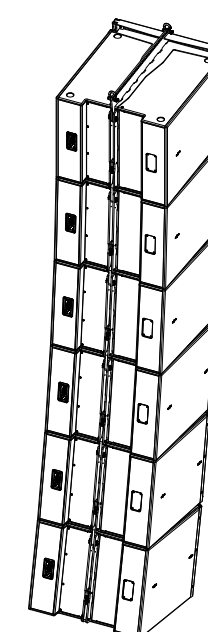
XSLi8/12 Line array 12-deep,
Tension mode - Front
with Z5787 XSLi TOP Mounting frame



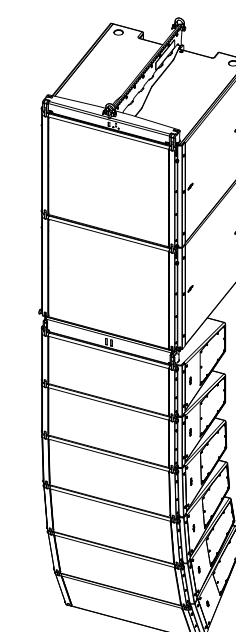
XSLi8/12 Line array 12-deep,
Tension mode - Rear
with Z5787 XSLi TOP Mounting frame



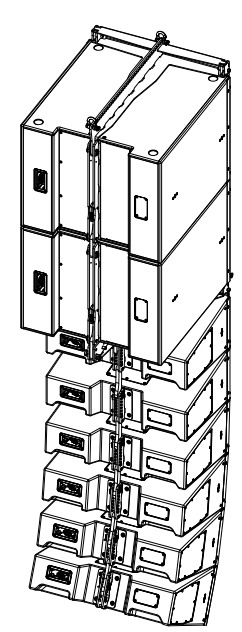
XSLi-SUB column 6-deep
2,5° splay - Front
with Z5788 XSLi SUB Mounting frame



XSLi-SUB column 6-deep
2,5° splay - Rear
with Z5788 XSLi SUB Mounting frame



XSLi-SUB / XSLi8/12 Mixed array
Tension mode - Front



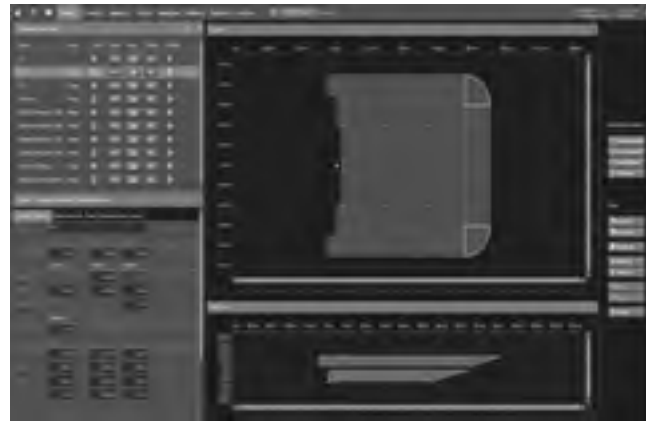
XSLi-SUB / XSLi8/12 Mixed array
Tension mode - Rear

The d&b ArrayCalc simulation software

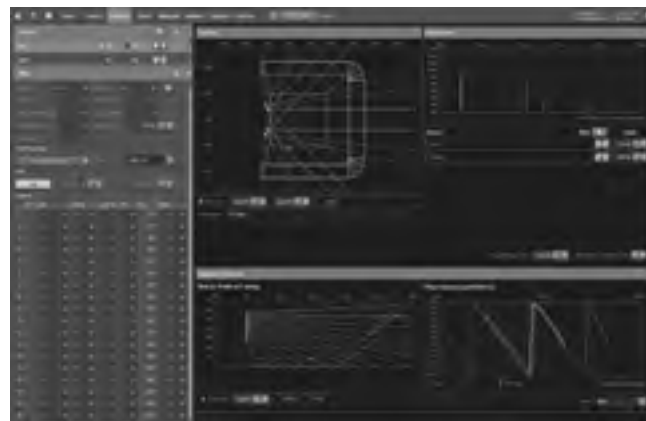
The d&b ArrayCalc simulation software is the prediction tool for d&b line arrays, column and point source loudspeakers as well as subwoofers. This is a comprehensive toolbox for all tasks associated with acoustic design, performance prediction, alignment, rigging and safety parameters. For safety reasons d&b line arrays must be designed using the d&b ArrayCalc simulation software. ArrayCalc is available as a native stand-alone application for both Microsoft Windows¹ (Win7 64-bit or later) and Mac OS X² (10.12 or later) operating systems. In combination with the d&b Remote Network, this can significantly reduce setup and tuning time in mobile applications and allows for precise 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. This can also include balconies, side stalls, arenas, in the round scenarios or festivals. Special functions assist in obtaining accurate dimensions with laser distance finders and inclinometers.

Simulation

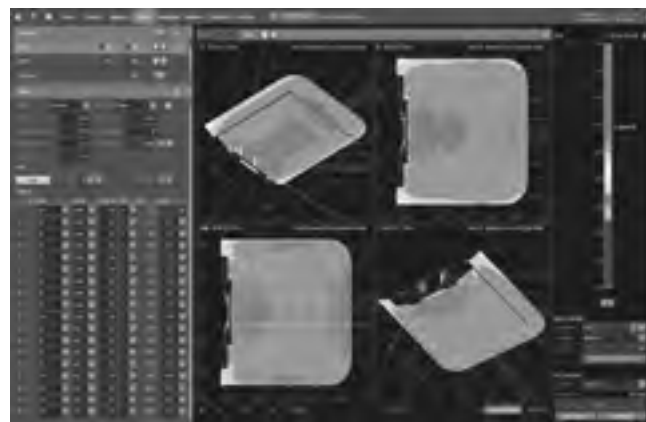
Up to forty flown arrays or subwoofer columns can be defined in a project file as single hangs or in pairs. A selection of d&b point source loudspeakers can also be fully integrated as well as a ground stacked SUB array consisting of up to eighty positions. All can be freely positioned according to their intended application, for example as main hang, outfill, nearfill or delay. Position, orientation, aiming and coverage details are displayed. Level over distance is calculated for each source with high resolution in real time, for either band limited or broadband input signals. 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 load status of all array rigging components is calculated accurately and displayed to determine whether a given array is within the load tolerance. Subwoofer array design is assisted by coverage and polar plot prediction. A specialized algorithm allows the user to specify subwoofer positions and a coverage angle, which is then converted into appropriate delay settings that result in the desired dispersion. The alignment tab enables different sources to be time aligned to one another, as well as showing arrival times and Sound Pressure Levels at a definable reference point on one of the audience areas. For alignment of the flown system with the ground stacked SUB array, the phase response of both the SUB array and a flown source is calculated at a definable reference point.



Venue



Alignment



3D Plot quad

Both simulations reflect changes in delay time to the single sources in real time. The d&b ArrayCalc simulation software is available at www.dbaudio.com.

Prediction

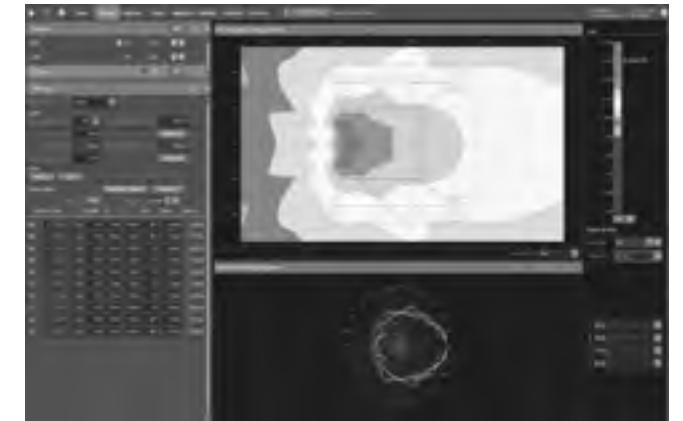
The level distribution resulting from the interaction of all active sources can be mapped onto the audience areas in a three-dimensional view, which can also be zoomed, rotated and exported as a graphics file. EASE and DXF data export capabilities are also available. A rigging plot with all necessary coordinates, dimensions and weights of arrays is generated for export and printing and a parts list, detailing all components required. The d&b ArrayCalc Viewer app presents this key information for positioning and flying a d&b audiotechnik loudspeaker system on a mobile device. Once the system has been designed, calculated and optimized, all relevant project information can be shared via email, AirDrop, or downloaded onto any iOS or Android device.

ArrayProcessing

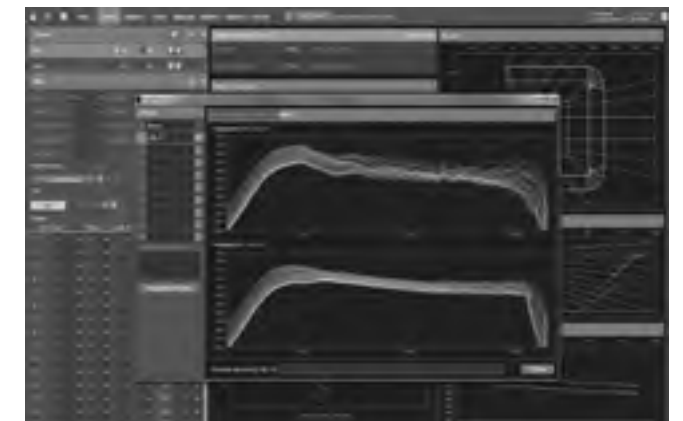
The optional ArrayProcessing function applies powerful filter algorithms to optimize the tonal (spectral) and level (spatial) performance of a line array column over the audience area defined by its mechanical vertical coverage angle. Temperature and Humidity Control (THC) for ArrayProcessing introduces a workflow that permits a system to adapt to changing atmospheric conditions in real time via R1. Within the d&b ArrayCalc simulation software, spectral and level performance targets over the listening areas can be defined while specific level drops or offsets can be applied to certain areas, to assign reduced level zones. ArrayProcessing applies a combination of FIR and IIR filters to each individual cabinet in an array to achieve the targeted performance, with an additional latency of only 5.9 ms. This significantly improves the linearity of the response over distance as well as seamlessly correcting for air absorption. In addition, ArrayProcessing employs the same frequency response targets for all d&b line arrays, to ensure all systems share a common coverage is enhanced with spectral consistency and defined level distribution, achieving more linear dispersion and total system directivity to cover longer distances or steep listening areas effectively.

R1 Remote Control Software

R1 uses the same project file created by ArrayCalc and generates an intuitive graphical user interface including complete details of the simulated system, loudspeakers, amplifiers, remote IDs, groups, ArrayProcessing data and all configuration information. This workflow removes the need to manually transfer data from one software program to the other.



Sources, SUB array



ArrayProcessing



Amplifiers

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

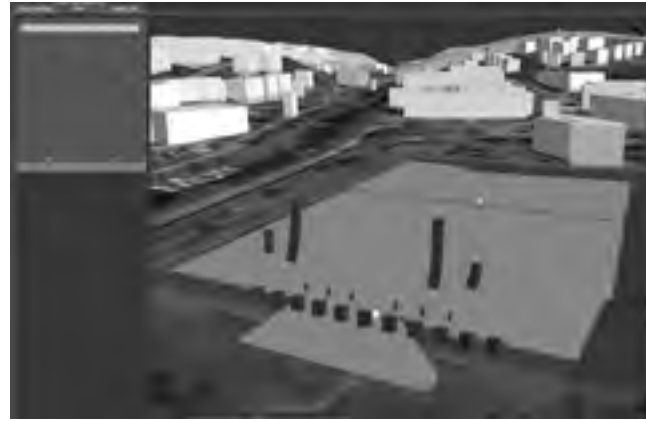
The d&b NoizCalc immission modelling software

The d&b software uses international standards to model the far field noise immission from multiple complex and coherently emitting sources such as line arrays and subwoofer arrays. More and more, gaining permission and licenses to stage live open air events requires an official statement with a prediction of how noise could impact on the surrounding area. NoizCalc takes all complex loudspeaker data and a reference point from the d&b ArrayCalc simulation software and calculates the sound propagation and relative attenuation values towards the far field for a certain scenario with particular meteorological conditions for one or more d&b loudspeaker systems.

A 3D terrain map imported from Google Maps or Street View displays the calculated immission on the areas surrounding the audience listening zones. This visual representation shows the actual system performance in the far field, enabling users to optimize for listeners while satisfying local noise restrictions and offsite regulations.

To ensure reliable results, NoizCalc includes all complex data concerning the addition and subtraction of sound waves, including phase information to describe the combination and interaction effects within a loudspeaker system consisting of multiple line arrays, subwoofer arrays and delay systems.

NoizCalc models immissions in the far field according to the internationally accepted ISO 9613-2, CNOSSOS or Nord2000 calculation standards. Ground characteristics can be set depending on the absorbency or reflectivity of surfaces, while areas with volume attenuating properties can be defined. Buildings can be included, and the maximum reflection order option adjusts how many reflections are calculated. Parameters for humidity, air pressure and temperature ensure that the correct air absorption figures are accounted. The ISO 9613-2 standard requires limited meteorological information and assumes a worst-case scenario. The more sophisticated propagation model, Nord2000 enables a more precise handling of meteorological conditions allowing the user to model with prevailing wind information. The d&b NoizCalc immission modelling software is available at www.dbaudio.com for registered download, along with further information and video tutorials. It was developed in collaboration with SoundPLAN, a specialist software developer for environmental noise prediction.



Editor



Graphic plot

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 throughout the d&b Remote Network 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 d&b ArrayCalc simulation software and applies these to all the amplifiers within the network.

All functions and controls available on the front panel of d&b amplifiers may be remotely controlled and/or monitored using the d&b 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.

d&b System check verifies that the system performs within a predefined condition, while the Array verification function automatically identifies the physical position of a loudspeaker in an array to check that the system is cabled correctly. Extensive facilities for storing and recalling system settings are provided allowing these to be repeated, as and when required. For mobile applications, project files can be easily adjusted for use with a different set of equipment at another location.

The R1 software is optimized for use with touch screen, mouse and keyboard and runs on both Microsoft Windows¹ (Win7 64-bit or later) and Mac OS X² (10.12 or later).

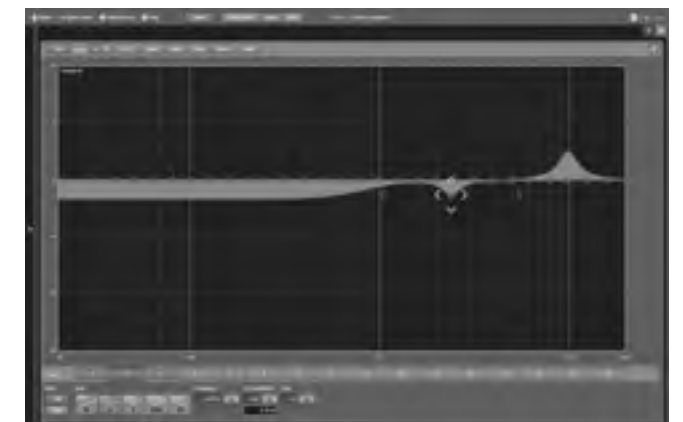
Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



R1 home screen



R1 in configuration mode



D20/D80 16-band equalizer in R1

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 DS10 and DS20 Audio network bridges

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.



The DS10 Audio network bridge front view



The DS10 Audio network bridge rear view

DS20 Audio network bridge

The DS20 Audio network bridge supports the open standards-based Milan protocol rather than Dante. Milan (Media integrated local area networking) is a high level interoperability solution based on Audio Video Bridging (AVB) technology. The main advantages are deterministic behaviour (zero network congestion); improved reliability; optimum synchronization and hassle free network setup, as no special settings, such as QoS, need to be set within the switches to ensure delivery.



The DS20 Audio network bridge front view



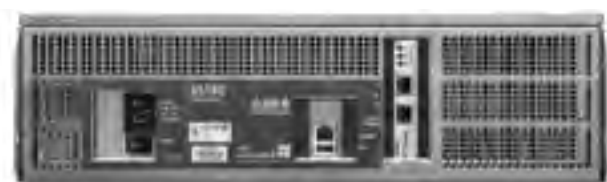
The DS20 Audio network bridge rear view

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 DS100 Signal Engine front view



The DS100 Signal Engine rear view

The d&b amplifiers

The 2 RU amplifiers provide the power density required for installation purposes while the powerful signal processing extends the level of functionality of the on-board features. The user interface of the 40D amplifier consists of a 4.3" color touchscreen providing comprehensive information of the device configuration and enhanced status monitoring, while the 30D provides LED indicators to display power, input, data and mute status. The user definable equalizer features two independent 16-band EQ groups within each channel. These provide parametric, notch, shelving and asymmetric filters as well as a graphic EQ (via the d&b R1 Remote control software). The delay capability covers a range of up to 10 s. All loudspeaker specific functions such as CUT, HFA, HFC, THC or CPL are available. The 30D amplifier has 5 freely assignable GPIO ports, while the

40D has 8 GPI and 4 GPO ports. This enables external control and detection functions. An additional 3-pin Phoenix Euroblock fault contact is provided allowing a general device error to be remotely indicated. For applicable loudspeakers, d&b LoadMatch enables the two amplifiers to electrically compensate for the properties of the cable used. The amplifiers use a switch mode power supply with active Power Factor Correction (PFC) to produce a clean current draw and ensure stable and efficient performance under adverse mains conditions. The high power capabilities provide increased power to fully drive all applicable d&b loudspeaker cabinets and sufficient headroom for any future systems.

| | 30D | 40D |
|--------------------------------------|--|--|
| User interface | Led indicators | Colour TFT touchscreen |
| Output channels | 4 | 4 |
| Input channels | 4 x AES3 and 4 x analog | 4 x AES3 and 4 x analog |
| Latency | 0.3 msec | 0.3 msec |
| User equalizers (per channel) | 2 x 16-band | 2 x 16-band |
| Delay | 10 sec/3440 m | 10 sec/3440 m |
| Maximum output power | 4 x 800 W into 8 ohms 4 x 1600 W into 4 ohms | 4 x 2000 W into 8 ohms 4 x 2000 W into 4 ohms |
| Output routing | Dual Channel, Mix TOP/SUB 2-Way Active | Dual Channel, Mix TOP/SUB 2-Way Active |
| Output connectors | Phoenix Euroblock | Phoenix Euroblock |
| Cable compensation | LoadMatch | LoadMatch |
| Power supply | 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 - 127/208 - 240 V, 50 - 60 Hz |
| Weight (kg/lb) | 10.6/23.4 | 13.3/29.3 |
| Dimensions | 2 RU x 19" x 435 mm | 2 RU x 19" x 465 mm |
| Remote | OCA via Ethernet/CAN | OCA/AES70 via Ethernet |

Airflow



The controller setups and operation with d&b amplifiers

Arc and Line setup

The Arc mode is used for line array loudspeakers when used in curved array sections with splay angles between 2° and 7°. The Line mode is used for long throw array sections with three or more consecutive splay settings between 0° and 1°. Compared to the Arc mode, the upper mid range is reduced to compensate for the extended near field.

AP setup

In connection with ArrayProcessing (AP), the AP setup contains the AP data that are generated in the ArrayCalc simulation software. These are transferred to the applicable amplifiers via the d&b Remote network (OCA/AES70) using R1.

CUT mode

Set to CUT, the cabinet low frequency level is reduced and it is now configured for use with the d&b SL subwoofer.

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 has two settings which should be used selectively, HFC1 for cabinets covering distances larger than 40 m (130 ft) and HFC2 for those covering distances larger than 80 m (260 ft). This can be used to achieve the correct sound balance between close and remote audience areas allowing all amplifiers driving the array to be fed from the same signal source. Thus the whole array performs with comparable headroom.

CPL function

The CPL (Coupling) function compensates for coupling effects between closely coupled cabinets by reducing the low and mid frequency level. SL-Series CPL has been enhanced and allows independent shaping of low and low-mid frequency responses using a dual-stage filter. This enables full use of the extended SL-Series LF headroom. The classic CPL function remains for J-, V-, Y- and T-Series arrays, and uses a single low shelving-like filter response.

INFRA mode

With the INFRA mode selected, the frequency response of the system extends from 35 Hz to 85 Hz. The XSLi-SUB/XSLi-GSUB can now be used to supplement applicable d&b loudspeaker systems operated in full range mode.

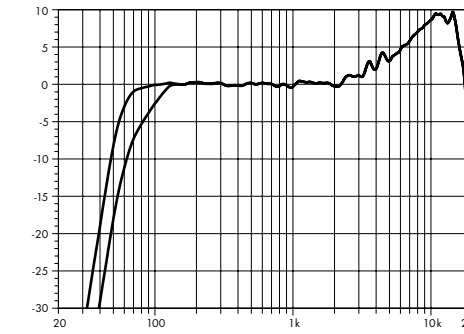
Maximum loudspeakers per amplifier

| | XSLi8 | XSLi12 | XSLi-SUB | XSLi-GSUB |
|---------------------------|-------|--------|----------|-----------|
| 30D/40D with AP | 2 | 2 | 2 | 2 |
| 30D/40D | 4 | 4 | 4 | 4 |

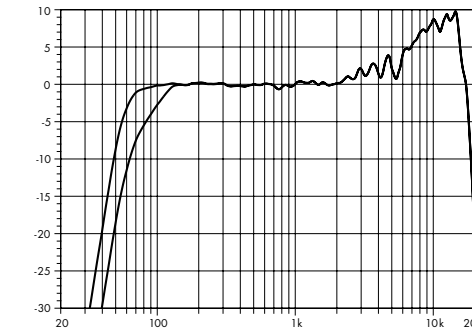
Available controller settings

| | XSLi8 | XSLi12 | XSLi-SUB | XSLi-GSUB |
|-----------------|-------|--------|----------|-----------|
| Arc/Line | x | x | | |
| AP | x | x | x | |
| CUT | x | x | | |
| HFC | x | x | | |
| CPL | x | x | | |
| INFRA | | | x | x |

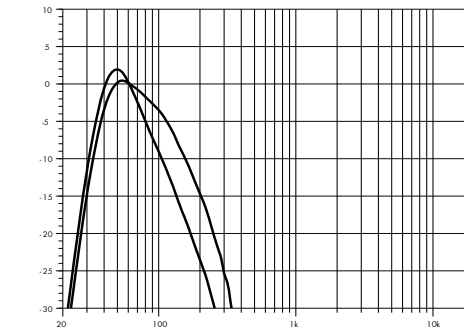
The XSLi System frequency responses



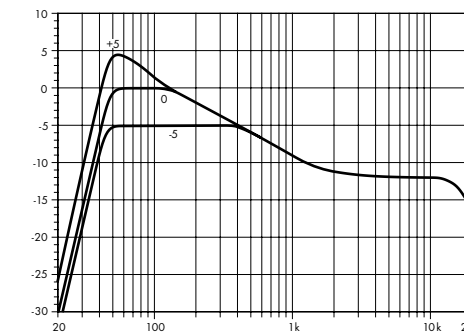
XSLi8 frequency response, standard and CUT modes¹



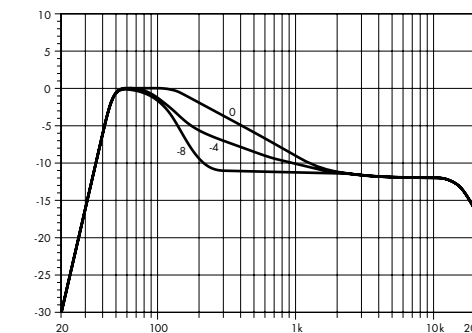
XSLi12 frequency response, standard and CUT modes¹



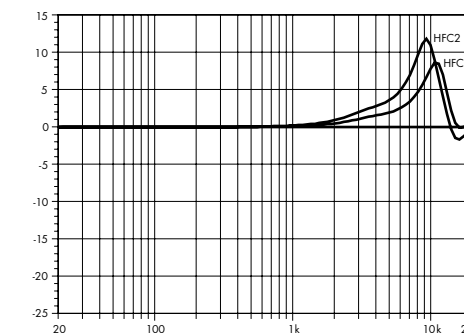
XSLi-SUB/XSLi-GSUB frequency response, standard and INFRA modes



SL-CPL Low²



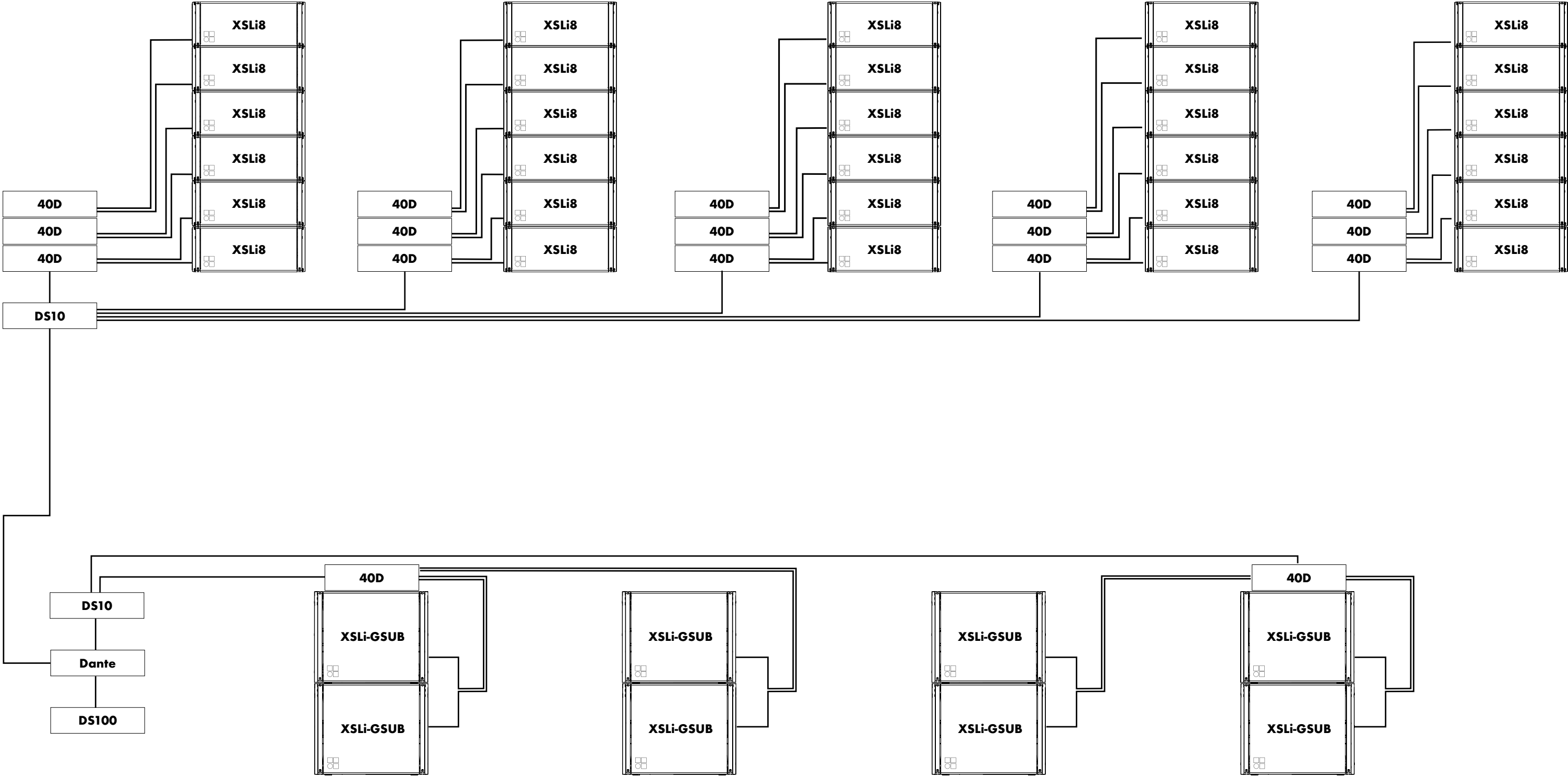
SL-CPL Mid²



Correction of HFC²

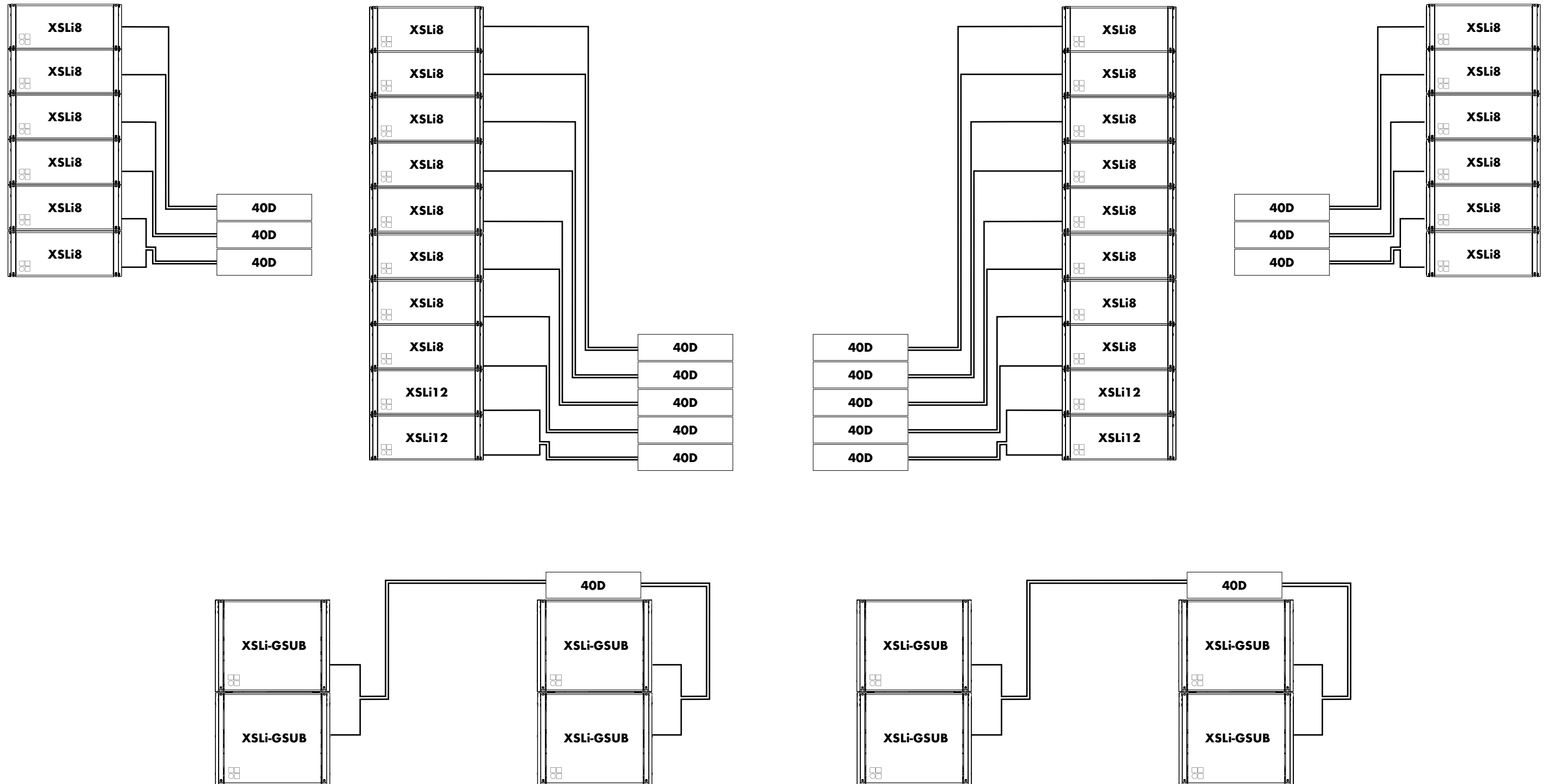
¹ Single cabinet within array
² Schematic diagram

The XSLi System configuration examples



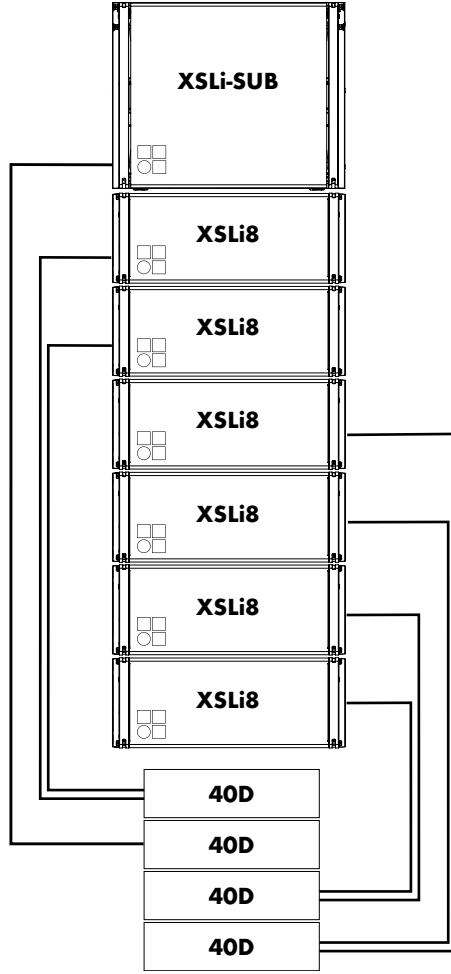
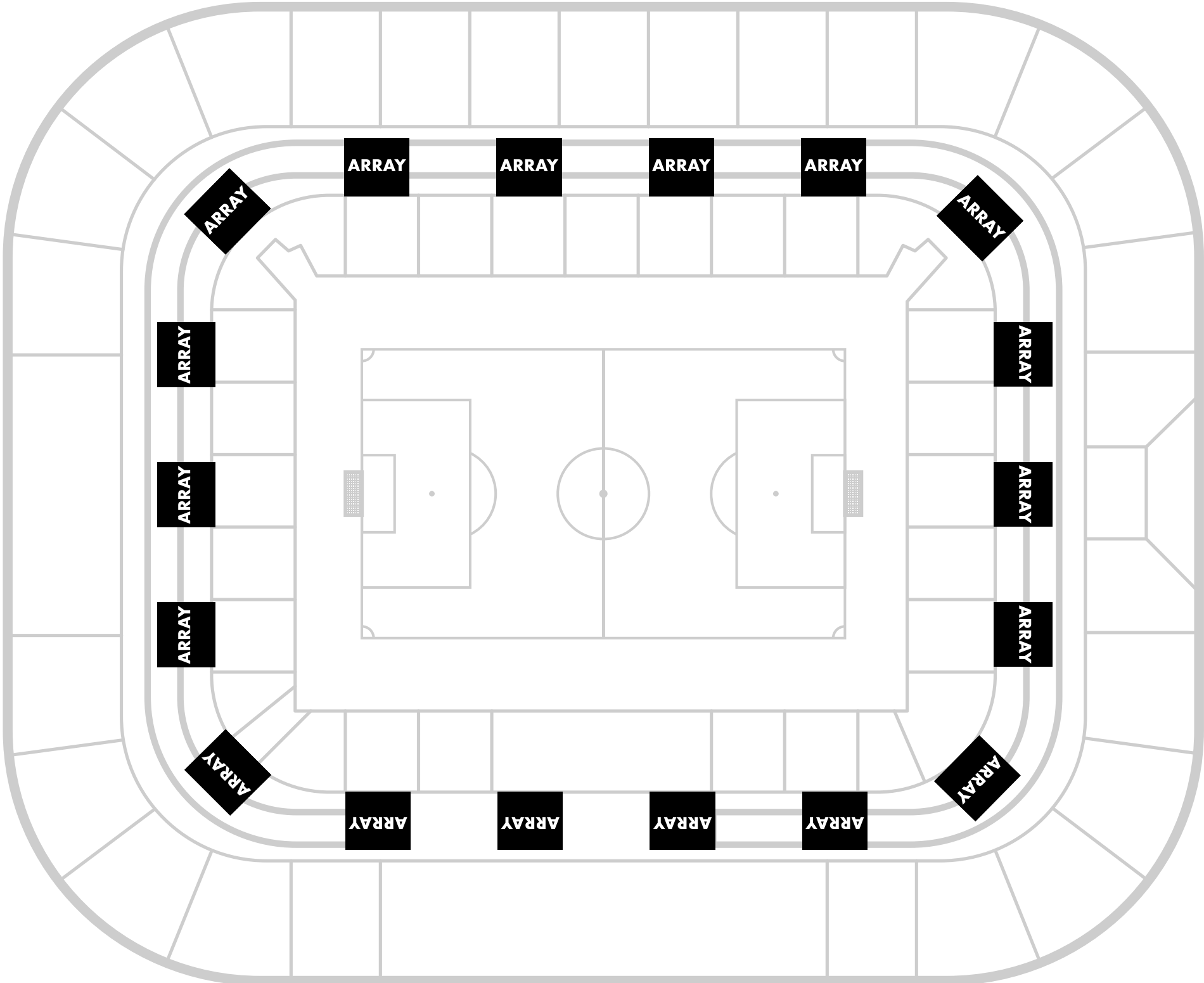
XSLi Soundscape configuration comprising 5 x XSLi8 Arrays, each powered with 3 x 40D amplifier and 5 x ground stacked XSLi-GSUBs, each powered with a 40D amplifier. Signal distribution via Dante network with a DS100 Signal Engine and two DS10 Audio network bridges

The XSLi System configuration examples



XSLi House of Worship configuration comprising XSLi8/12 mains and XSLi8 side fills along with 4 x ground stacked XSLi-GSUBs with 40D amplifiers

The XSLi System configuration examples



XSLi Stadium configuration comprising 18 x XSLi-SUB/XSLi8 mixed arrays in SVS, each powered by 4 x 40D amplifiers

The XSLi System product overview

| | | |
|------------------------------------|------------------------|---|
| XSLi loudspeakers | Z0776.000 | XSLi8 Loudspeaker^{1,2} |
| | Z0776.901 | XSLi8 Loudspeaker SC |
| | Z0776.100 | XSLi8 Loudspeaker WR |
| | Z0777.000 | XSLi12 Loudspeaker^{1,2} |
| | Z0777.901 | XSLi12 Loudspeaker SC |
| | Z0777.100 | XSLi12 Loudspeaker WR |
| | Z0778.000 | XSLi-SUB^{1,2} |
| | Z0778.100 | XSLi-SUB WR |
| | Z0778.901 | XSLi-SUB SC |
| | Z0779.000 | XSLi-GSUB^{1,2} |
| | Z0779.100 | XSLi-GSUB WR |
| Z0779.901 | XSLi-GSUB SC | |
| XSLi accessories | Z5785.000 | XSLi Flying frame set |
| | Z5785.901 | XSLi Flying frame set SC |
| | Z5787.000 | XSLi Top Mounting frame |
| | Z5787.901 | XSLi Top Mounting frame SC |
| | Z5788.000 | XSLi-SUB Mounting frame |
| | Z5788.901 | XSLi-SUB Mounting frame SC |
| | Z5780.000 | XSLi-SUB Adapter frame |
| | Z5780.901 | XSLi-SUB Adapter frame SC |
| | Z5790.000 | XSLi-SUB Stacking frame |
| | Z5790.901 | XSLi-SUB Stacking frame SC |
| Z5707.000 | SL Aiming plate | |
| Processing and distribution | Z4010.000 | DS10 Audio network bridge |
| | Z4011.000 | DS20 Audio network bridge |
| | Z4100.000 | DS100 Signal Engine |
| Amplifiers | Z2770.xxx | 30D Amplifier³ |
| | Z2830.xxx | 40D Amplifier³ |
| | Z2623.000 | Accessory kit for 40D Phoenix Euroblock connectors |
| Cables | K3111.000 | MC4 SD LS-Multicore 4x4 + 2x0,5 |
| | K3112.000 | MC4 SWR LS-Multicore 4x4 |

¹ SVS and SWR on request

² The complete list of installation amplifier versions is available in the d&b xD Installation Amplifier and Software brochure

