



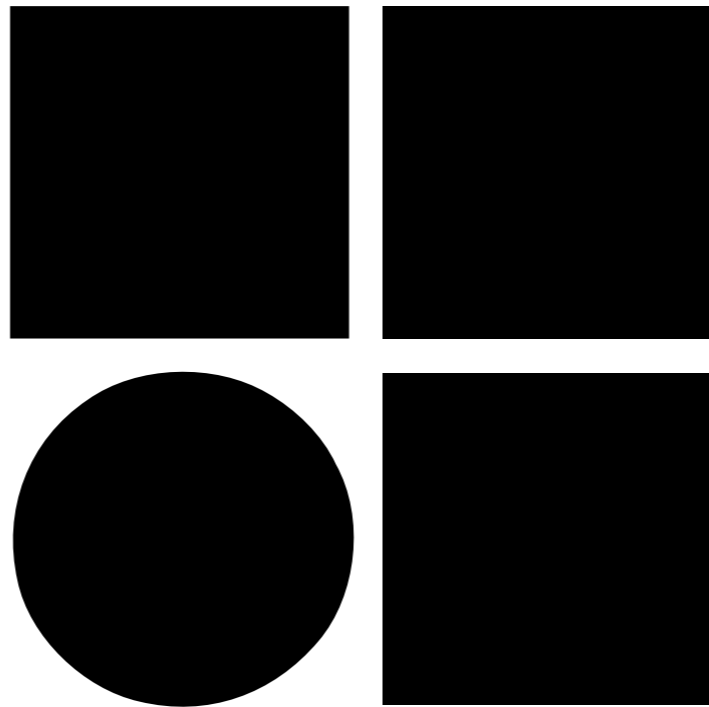
**White.**  
**Sound products.**

## Typical d&b.

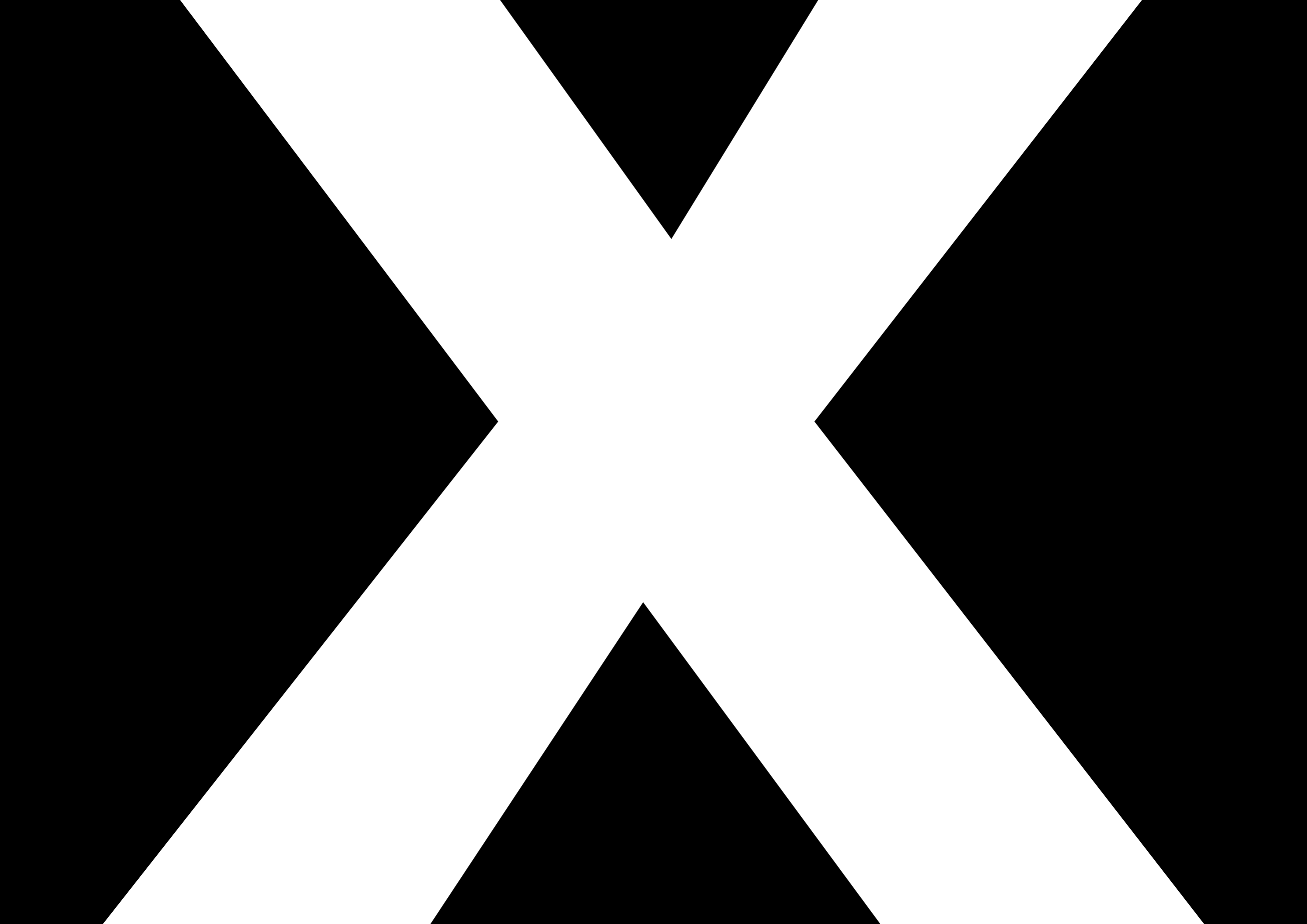


The xS and xA-Series are real installation systems. They are designed for visual, physical, acoustical and electrical integration into permanently installed applications and are targeted towards environments that go beyond rider specified performance spaces. They are compact, spread over a broad range of sizes and output powers and have a clean unobtrusive appearance that can be colour matched to interior designs. Along with rotatable horns, discreet rigging as well as a weather resistant option these systems maximize the deployment possibilities whether indoors or outdoors. Both Series can be driven by either the d&b D6 or D12 amplifiers that along with the d&b Remote network enable control and monitoring of a large number of system functions with the R1 Remote control software or integration into other media environments. So strictly speaking the xS and xA-Series are even more than installation systems, they are real integration systems. Or just typical d&b.

# d&b System reality.



As the name implies a d&b system is not just a loudspeaker. Nor is it merely a sum of the components: loudspeakers, control electronics, mechanical accessories and remote control. Right from the outset the d&b audioteknik approach was to build integrated sound reinforcement systems that were more than the sum of their parts. Each element is tightly specified, precisely aligned and carefully integrated to achieve maximum possible performance, along with neutral sound characteristics. At the same time d&b offers integrated training, technical information, expert service and support, as well as a knowledgeable distribution network, so that the same optimal acoustic result is achieved by every system anywhere, at any time.



## xS-Series / xA-Series.



The xS-Series comprises seven standalone loudspeakers with three matching subwoofers and the xA-Series offers two point source and two line source loudspeakers with two subwoofers. Each Series provides a passive cardioid subwoofer that utilizes the d&b patented PSP (Plywood Signal Processing) technology which avoids unwanted energy behind the system using only a single amplifier channel. Both these integration Series are intended for applications that include town halls, conference and meeting facilities, theatres, multifunctional venues, small to medium sized

sports venues, clubs and discotheques, auditoriums or assembly halls. The cabinets and accessories are offered in all RAL colours whilst a weather resistant option providing an IP34 rating is available for each loudspeaker except the 4S and 5S which have polyamide casings that meet IP34. All the enclosures apart from the 4S, 5S and 8S are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls. The d&b D6 and D12 dual channel amplifiers have digital and analog inputs, incorporate loudspeaker specific configurations and have comprehensive remote

control monitoring and protection. The high impedance of many loudspeakers allows not only the connection of multiple cabinets to one amplifier channel, but permits long cable runs between the cabinets and their respective amplifier racks. Finally to assist with the acoustic design and safe deployment of loudspeaker arrays the d&b ArrayCalc calculator enables a precise simulation for the planning of installations. d&b integration systems: delivering a natural, intelligible sound character that provides efficient, effortless tools for the consultant, integrator, installer or engineer alike.

1:1



Exact size: the 4S, the smallest loudspeaker of the White range.



xS-Series	4S	5S	8S	10S • 10S-D	12S • 12S-D	12S-SUB	18S-SUB	27S-SUB
<b>Configuration</b>	2-way loudspeaker	2-way loudspeaker	2-way loudspeaker	2-way loudspeaker	2-way loudspeaker	direct radiating subwoofer	direct radiating subwoofer	passive cardioid subwoofer
<b>Components</b>	4" / 0.75" coaxial	5" / 1" coaxial	8" / 1" coaxial	10" / 1.4"	12" / 1.4"	12"	18"	front 15" / rear 12"
<b>Output (1m)<sup>1</sup> with D6</b>	114 dB SPL	117 dB SPL	124 dB SPL	127 dB SPL	130 dB SPL	124 dB	129 dB	128 dB
<b>Output (1m)<sup>1</sup> with D12</b>	115 dB SPL	118 dB SPL	127 dB SPL	130 dB SPL	133 dB SPL	127 dB	132 dB	131 dB
<b>Power rating<sup>2</sup></b>	60 / 400 W	60 / 400 W	150 / 800 W	200 / 1200 W	300 / 1600 W	300 / 1600 W	400 / 1600 W	500 / 2000 W
<b>Frequency response (-5 dB)</b>	130 Hz-20 kHz	80 Hz-20 kHz	70 Hz-20 kHz	60 Hz-18 kHz	48 Hz-18 kHz	45 Hz-130 Hz	37 Hz-140 Hz	40 Hz-140 Hz
<b>Dispersion (H x V)</b>	100° conical	100° conical	100° conical	75° x 50° <sup>3</sup> • 110° x 55° <sup>3</sup>	75° x 50° <sup>3</sup> • 110° x 55° <sup>3</sup>			cardioid
<b>Nominal impedance</b>	16 Ω	16 Ω	16 Ω	12 Ω	8 Ω	8 Ω	8 Ω	6 Ω
<b>Cabinet/channel D6</b>	4	4	4	3	2	2	2	2
<b>Cabinet/channel D12</b>	4	4	4	3	2	2	2	2
<b>Connectors</b>	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal
<b>Dimensions mm (H x W x D)</b>	150 x 120 x 102	240 x 164 x 160	352 x 224 x 205	580 x 283 x 350	638 x 338 x 365	354 x 530 x 448	490 x 580 x 700	490 x 580 x 700
<b>Weight kg</b>	1	2	7.4	13	17	16	32	41
<b>Dimension inch (H x W x D)</b>	5.9 x 4.7 x 4.0	9.4 x 6.5 x 6.3	13.9 x 8.8 x 8.1	22.8 x 11.1 x 13.8	25.1 x 13.3 x 14.4	13.9 x 20.9 x 17.6	19.3 x 22.8 x 27.6	19.3 x 22.8 x 27.6
<b>Weight lb</b>	2	4.5	16	29	37	35	71	90
<b>Option Special Colour (SC)</b>	yes	yes	yes	yes	yes	yes	yes	yes
<b>Option Weather Res. (WR)</b>			yes	yes	yes	yes	yes	yes

We reserve the right to make any necessary changes to the products and the published specifications. As a part of our ongoing product development program we try to maintain the highest degree of product compatibility.

<sup>1</sup>SPL<sub>max</sub> peak, test signal: pink noise with crest factor 4 <sup>2</sup>RMS/peak <sup>3</sup>Horn 90° rotatable



<b>xA-Series</b>	<b>10A • 10A-D</b>	<b>10AL • 10AL-D</b>	<b>18A-SUB</b>	<b>27A-SUB</b>
<b>Configuration</b>	2-way loudspeaker	2-way line source loudspeaker	direct radiating subwoofer	passive cardioid subwoofer
<b>Components</b>	10" / 1.4"	10" / 2 x 1"	18"	front 15" / rear 12"
<b>Output (1m)<sup>1</sup> with D6</b>	127 dB SPL	130 • 129 dB SPL	129 dB SPL	128 dB SPL
<b>Output (1m)<sup>1</sup> with D12</b>	130 dB SPL	133 • 132 dB SPL	132 dB SPL	131 dB SPL
<b>Power rating<sup>2</sup></b>	200 / 1200 W	200 / 1200 W	400 / 1600 W	500 / 2000 W
<b>Frequency response (-5 dB)</b>	60 Hz - 18 kHz	60 Hz - 18 kHz	37 Hz - 140 Hz	40 Hz - 140 Hz
<b>Dispersion (H x V)</b>	75° x 50° <sup>3</sup> • 110° x 55° <sup>3</sup>	75° x (0° - 15°) • 105° x (0° - 15°)		cardioid
<b>Nominal impedance</b>	12 Ω	12 Ω	8 Ω	6 Ω
<b>Cabinet/channel D6</b>	3	3	2	2
<b>Cabinet/channel D12</b>	3	3	2	2
<b>Connectors</b>	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal	2 x NL4, screw terminal
<b>Dimensions mm (H x W x D)</b>	283 x 580 x 350	283 x 580 x 350	488 x 580 x 700	488 x 580 x 700
<b>Weight kg</b>	14	14	32	41
<b>Dimensions inch (H x W x D)</b>	11.1 x 22.8 x 13.8	11.1 x 22.8 x 13.8	19.2 x 22.8 x 27.6	19.2 x 22.8 x 27.6
<b>Weight lb</b>	31	31	71	90
<b>Option Special Colour (SC)</b>	yes	yes	yes	yes
<b>Option Weather Resistant (WR)</b>	yes	yes	yes	yes

We reserve the right to make any necessary changes to the products and the published specifications. As a part of our ongoing product development program we try to maintain the highest degree of product compatibility.

<sup>1</sup>SPL<sub>max</sub> peak, test signal: pink noise with crest factor 4 <sup>2</sup>RMS/peak <sup>3</sup>Horn 90° rotatable



# xS-Series.

4S/5S <b>Z5401</b> Wall mount S	8S/10S/12S <b>Z5402</b> Wall mount M	8S/10S/12S <b>Z5403</b> Wall mount L	8S <b>Z5404</b> Flying bracket 8S	10S/10S-D <b>Z5405</b> Flying bracket 10S	12S/12S-D <b>Z5406</b> Flying bracket 12S	8S <b>Z5408</b> Horizontal bracket 8S	10S/10S-D <b>Z5409</b> Horizontal bracket 10S	12S/12S-D <b>Z5411</b> Horizontal bracket 12S	12S-SUB <b>Z5412</b> Horizontal bracket 12S-SUB

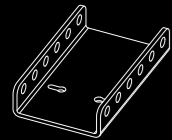
18S-SUB/27S-SUB <b>Z5410</b> Horizontal bracket 18S/27S	4S/5S <b>E6532</b> Super Clamp	4S/5S <b>E6533</b> M10 adapter for Super Clamp	4S/5S <b>Z5029</b> TV spigot M10	4S/5S <b>Z5034</b> Stand adapter	4S/5S <b>Z5035</b> M10 to 3/8" adapter	8S/10S/12S/xS-SUB <b>Z5010</b> TV spigot with fixing plate	10S/12S <b>Z5015</b> TV spigot for Flying adapter 02	8S/10S/12S <b>Z5024</b> Stand adapter	10S/12S <b>Z5020</b> Flying adapter 02

## xS-Series.

10S/12S

**Z5025**

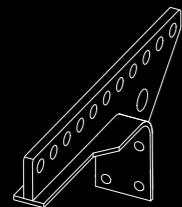
Flying adapter 03



10S/12S

**Z5054**

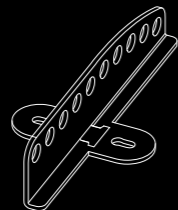
Ci60/Ci90  
Flying adapter



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

**Z5354**

Flying adapter



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

**Z5355**

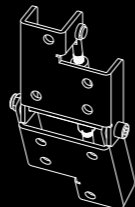
Flying adapter link



10S/12S

**Z5053**

Ci60/Ci90  
Bracket connector



10S/12S

**Z5044**

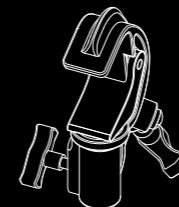
MAX Bracket connector



8S/10S/12S/xS-SUB

**Z5012**

Pipe clamp for TV spigot



10S/12S/xS-SUB

**Z5147**

Rota Clamp

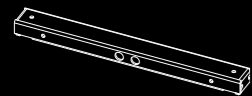


## xA-Series.

xA

**Z5414**

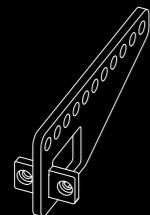
Flying bar xA



xA

**Z5415**

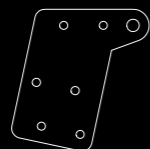
Flying bar adapter xA



xA

**Z5413**

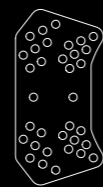
Flying bar  
connector plate xA



10A/10A-D

**Z5416**

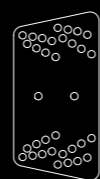
Connector plate 10A



10AL/10AL-D

**Z5417**

Connector plate 10AL



18A-SUB/27A-SUB

**Z5418**

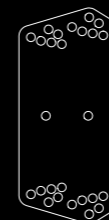
Connector plate  
xA-SUB



10AL/10AL-D/xA-SUB

**Z5421**

Connector plate xA  
negative splay



10A/10A-D/  
10AL/10AL-D

**Z5419**

Load bar xA



xA

**Z5420**

Load eyebolt



xA

**Z5147**

Rota Clamp



# Electronics.



Archetypal d&b: dedicated electronics which not only power, but also control the d&b loudspeakers. The D6 and D12 dual channel amplifiers that produce 2 x 600 W into 4 ohms and 2 x 1200 W into 4 ohms respectively and incorporate the d&b loudspeaker specific configurations. They have analog and digital (AES/EBU) signal inputs as well as link outputs, utilize digital signal processing and include switchable loudspeaker specific functions for precisely tailoring system response for a wide variety of applications. Both channels of the amplifiers incorporate user definable 4-band parametric equalizers, have delay capabilities of up to 340 msec and a signal generator offering pink noise or sine wave program for test and alignment purposes.

The d&b Remote network allows extensive and comfortable control and monitoring of d&b systems from a virtual centre within a complete application. Running on a PC, the d&b R1 Remote control software uses either an R60 USB to CAN or R70 Ethernet to CAN interface to integrate the amplifiers into the d&b Remote network. Equipped as such, controls and functions can be grouped together in whichever way the user requires allowing settings and specific adjustments for individual rooms or applications to be stored and recalled at any time. d&b Load monitoring and System check are incorporated to monitor driver condition. The continuous Load monitoring and Input monitoring functions are designed for use in systems specified to the requirements stated in IEC 60849 "Sound systems for emergency purposes". It is possible to recall various alarm or configuration presets or to combine different features individually to create an easy to operate user interface. By applying the R70 interface d&b loudspeaker systems can also be integrated into media control applications using various media control modules.

# d&b ArrayCalc calculator.



For acoustic and safety reasons d&b line arrays must be designed using the d&b ArrayCalc calculator. It is a comprehensive toolbox for all tasks regarding acoustic design, performance prediction, alignment, rigging and safety parameters of d&b line array systems and subwoofers. Used with the d&b Remote network, it significantly reduces setup and tuning time and allows precise initial simulations when planning installations. EASE and DXF data export capabilities make for easy data transfer. In a quick and intuitive process, audience areas can be defined, including sloped seating, balconies and arena-shaped venues, then all relevant performance parameters of the d&b loudspeaker arrays can be predicted. Multiple arrays can be placed into the virtual environment so that several different options can be examined and compared easily within a single ArrayCalc project file. The simulation precisely models the actual performance of the system, taking account of input level, all system configuration options, limiter activity and air absorption. The load status of all rigging components is also constantly monitored and displayed. The 3D plot function maps the combined SPL of multiple arrays onto the listening planes in a three-dimensional view. Cooperation with other planners and design stages is also easily facilitated through export functions into 3D-CAD and acoustic simulation formats.

# Power and cables.



**Power consumption, power loss and heat loss:** d&b reinforcement systems deliver high sound pressure levels and yet remain very efficient by virtue of drawing relatively low power to drive them. The power required from the mains supply and the waste heat produced by the amplifier power loss varies depending on the load impedance, levels and signal type. In particular, the peak to rms voltage ratio of the program material, also known as its crest factor, determines how much continuous power is drawn by the amplifiers with a given load. Even with heavily compressed program material, a typical 230V/16A mains outlet is sufficient for four D6s or two D12s driven at full power. Accordingly, a 115 V or 110V/15A outlet can power two D6s or one D12 amplifier. In installations, where the amplifiers are often built into closed racks or cabinets, thermal conditions and ventilation must also be carefully addressed to prevent a reduction in output power or a triggering of the amplifier's thermal overload protection circuit.

**Loudspeaker cable dimensions:** most of the d&b xS and xA-Series' top loudspeakers have high impedance and consequently permit long cable runs. Nevertheless, in order to minimize possible negative effects through cable loss it is recommended to ensure that the total cable resistance does not exceed 10% of the load impedance. The following formula allows the calculation of the maximum cable length for any given cable cross section and load impedance.

$$L_{\max} = 3 Z_L \times A$$

$L_{\max}$ : maximum (single) length of cable [m]

$Z_L$ : load impedance [Ohm]

A: cross section [mm<sup>2</sup>]

# Amplifier features.



**Digital audio signal processing:** both the D6 and D12 accept an AES/EBU digital audio signal. Continuous digital audio signal paths ensure consistently high audio quality and low latency.

**Topology of AES/EBU cabling:** electrically, the AES/EBU interface uses a three wire balanced connection through 3 pin XLR connectors with standard pinouts. The amplifiers also have buffered AES/EBU output links in order to supply additional devices with the digital signal. This is necessary because an AES/EBU interface only allows a pure point-to-point connection, a signal distribution by Y-cables is not possible and a simple daisy chain would cause impedance mismatches. In case of a fault in the amplifiers mains supply voltage a bypass relay ensures that the signal flow is not interrupted.

**Sampling rates and latency:** d&b D6 and D12 amplifiers accept digital signals with a sampling rate of 48 or 96 kHz up to a resolution of 24 bits. It is advisable to keep the complete signal path digital in order to minimize the overall latency of the audio system, preferably with a uniform sampling rate. d&b does not use asynchronous sampling rate converters because they not only reduce audio quality, but they also cause an unnecessary increase in the system latency. d&b amplifiers, have a system latency of only 0.3 msec.

**Protection and safety functions:** d&b amplifiers are suitable for applications specified to the requirements stated in the International standard IEC 60849 "Sound systems for emergency purposes" or the European standard EN 60849 "Electroacoustic monitoring for emergency warning systems". In these applications the d&b amplifiers' Input monitoring function detects incoming Pilot signals and produces an error message when it is missing. d&b Load Monitoring on the other hand continuously checks the load impedance separately for high and low frequencies (or HF and LF drivers), detecting any changes in loudspeaker impedance and reporting an error if the limits are exceeded.

**CAN-Bus remote network, topology and cable:** d&b D6 and D12 amplifiers are provided with a CAN-Bus interface, a robust industry standard that facilitates access to all functions, controls and detailed system information via the d&b Remote network. A PC with the d&b R1 Remote control software can be connected via either a d&b R60 USB to CAN or R70 Ethernet to CAN interface. The CAN-Bus is a parallel bus system that has to be terminated at both ends. The theoretical maximum bus length without any repeaters is limited to 600 metres and the maximum number of Nodes is 100. By using CAN-Bus repeaters, the topology can be extended into multiple segments and the maximum number of Nodes increased to 504. CAT 5 shielded twisted pair cable with an impedance of 100 to 120 ohms should be used.

## System integration.



**Media control macros:** d&b has developed the R70 Ethernet to CAN interface in order to physically integrate a media control into the d&b Remote network. The integration support is provided by the respective media control manufacturer. d&b audiotechnik is a certified Crestron Integrated Partner and an AMX In Concert Partner, silver level. The modules can be downloaded at [dbaudio.com](http://dbaudio.com).

**Simple control system using d&b R1 Remote control software:** an easy to operate control interface for d&b systems can be created using a touch screen PC together with the d&b R1 Remote control software. Even users without any technical knowledge can switch on the loudspeaker system, adjust the volume or set the room for different user modes, for speech, video, presentations or concert type settings, either for the entire space or segmented. A single press on the touch screen will recall the respective settings.

**Applications specified to IEC 60849 „Sound Systems for Emergency Purposes“:** for remote control of this standard a Programmable Logic Controller (PLC) can be integrated into the d&b Remote network. It reports faults to the central emergency control unit and sets the d&b system into a defined alarm status.

**Integration of other devices:** because of the open d&b Remote network protocol it is possible to integrate other third party control devices. d&b Distributors and Partners can provide further detailed information.

# Examples.

Venue type: auditorium  
Application: multimedia  
Audience: 80 approximately

Main system:  
2 x 8S and 2 x 12S-SUB

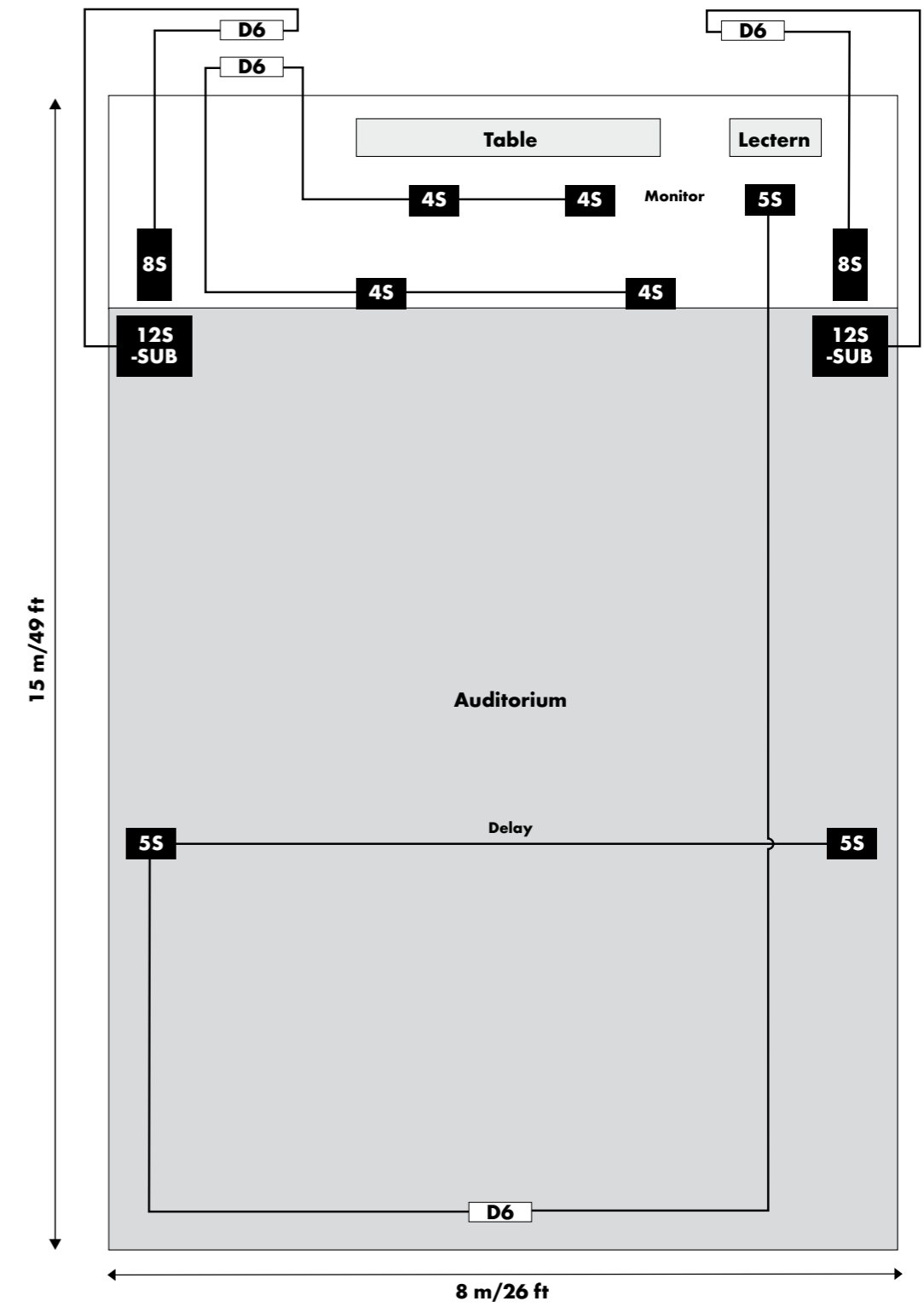
Nearfill:  
2 x 4S

Delay:  
2 x 5S

Monitor table:  
2 x 4S

Monitor lectern:  
1 x 5S

Amplifiers:  
4 x D6



Auditorium



Venue type: school  
or community hall  
Audience: 300-400

Main system:  
2 x 12S and 4 x 18S-SUB

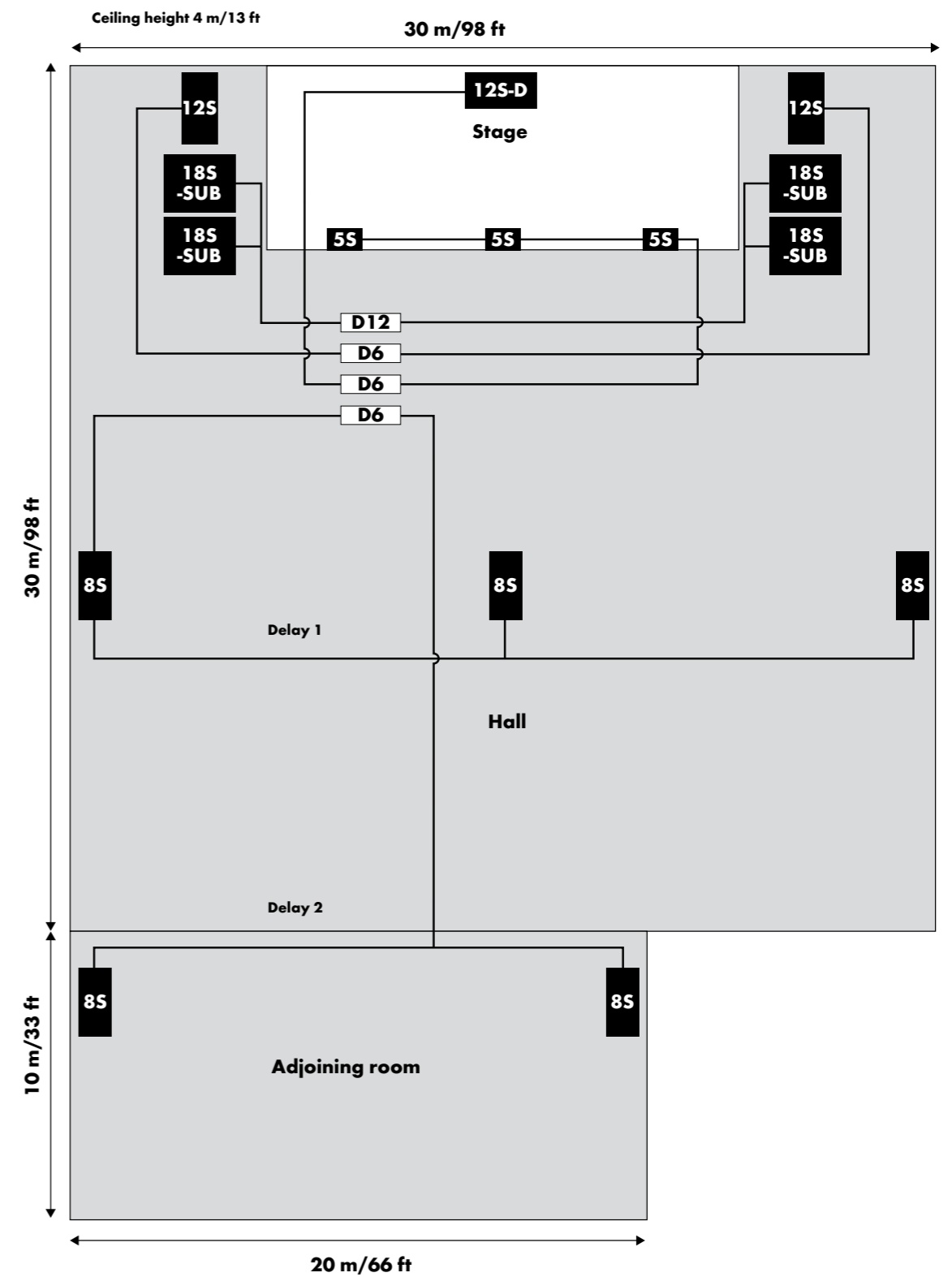
Centre:  
1 x 12S-D

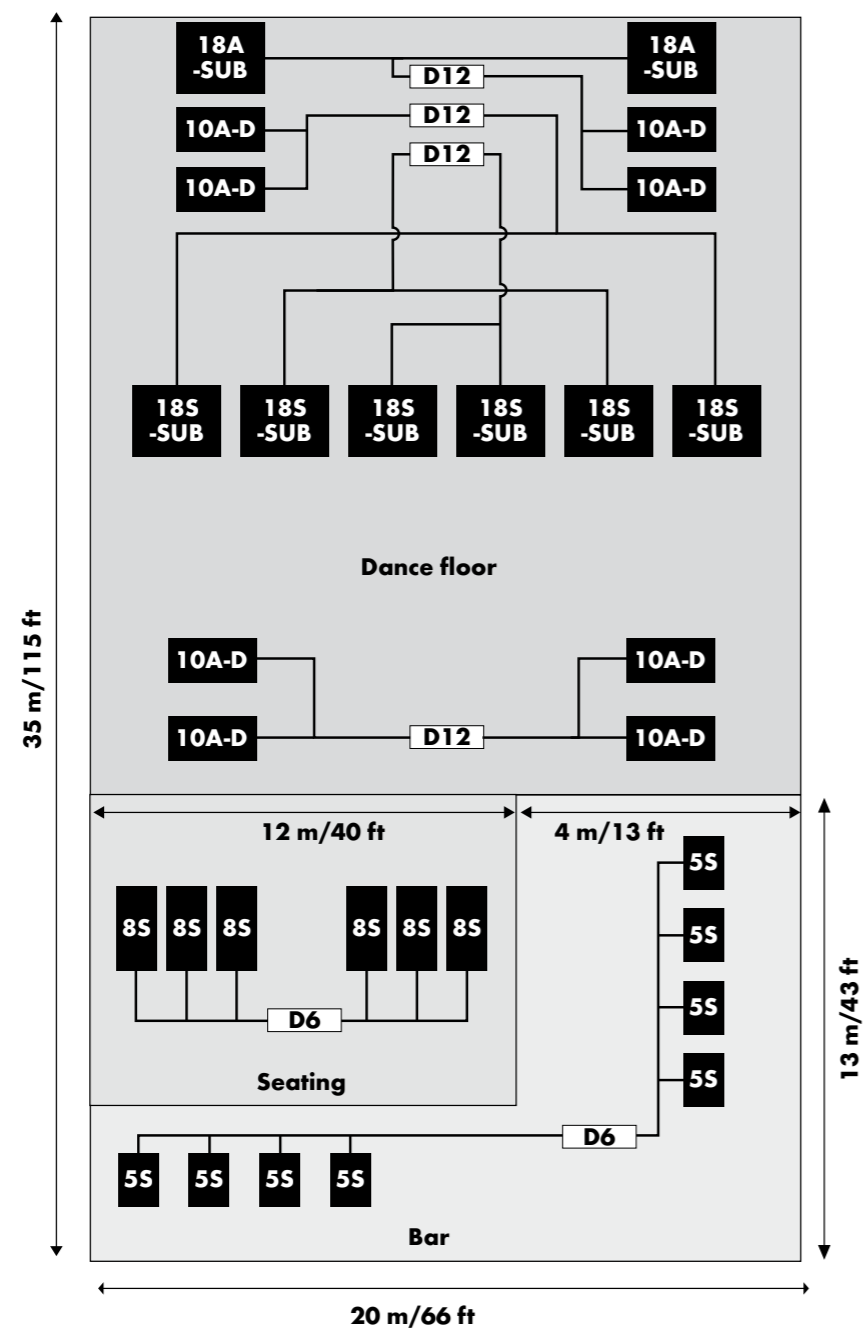
Nearfill stage rim:  
3 x 5S

Delay 1 hall:  
3 x 8S

Delay 2 adjoining room:  
2 x 8S

Amplifiers:  
3 x D6  
1 x D12





Venue type:  
discotheque or club  
Audience:  
350 approximately

Surround dance floor  
on four points:  
2 x 10A-D and  
1 x 18A-SUB for two points  
2 x 10A-D for two points

Subwoofer array:  
6 x 18S-SUB

Seating:  
6 x 8S

Bar:  
8 x 5S

Amplifiers:  
2 x D6  
4 x D12

Venue type: theatre  
Audience: 500-600

Proscenium l/r:  
2 x 12S-D and 1 x 12S each

Centre:  
2 x 10A  
1 x 10A-D

Nearfill stage rim:  
4 x 8S

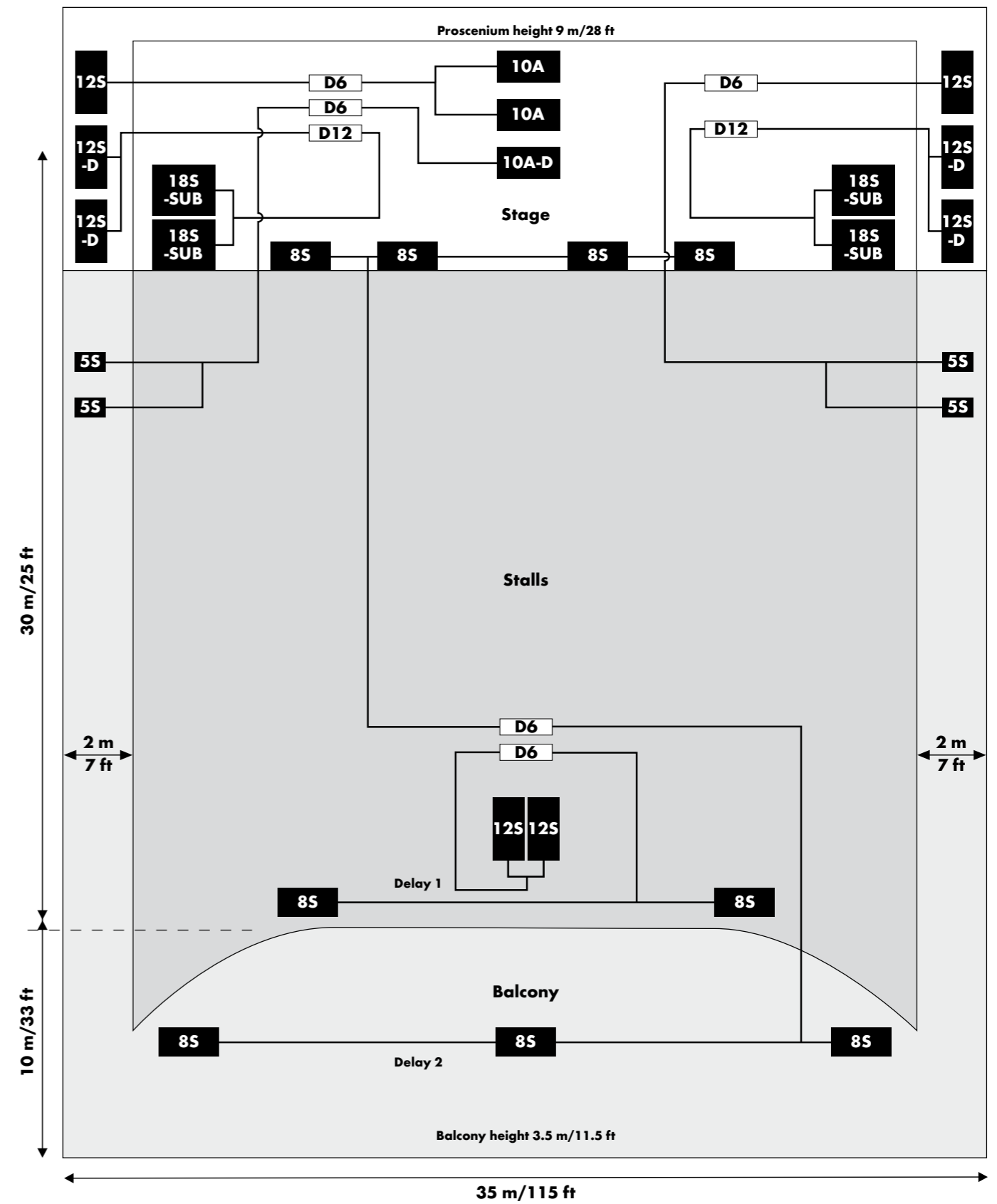
Subwoofers l/r:  
2 x 18S-SUB each

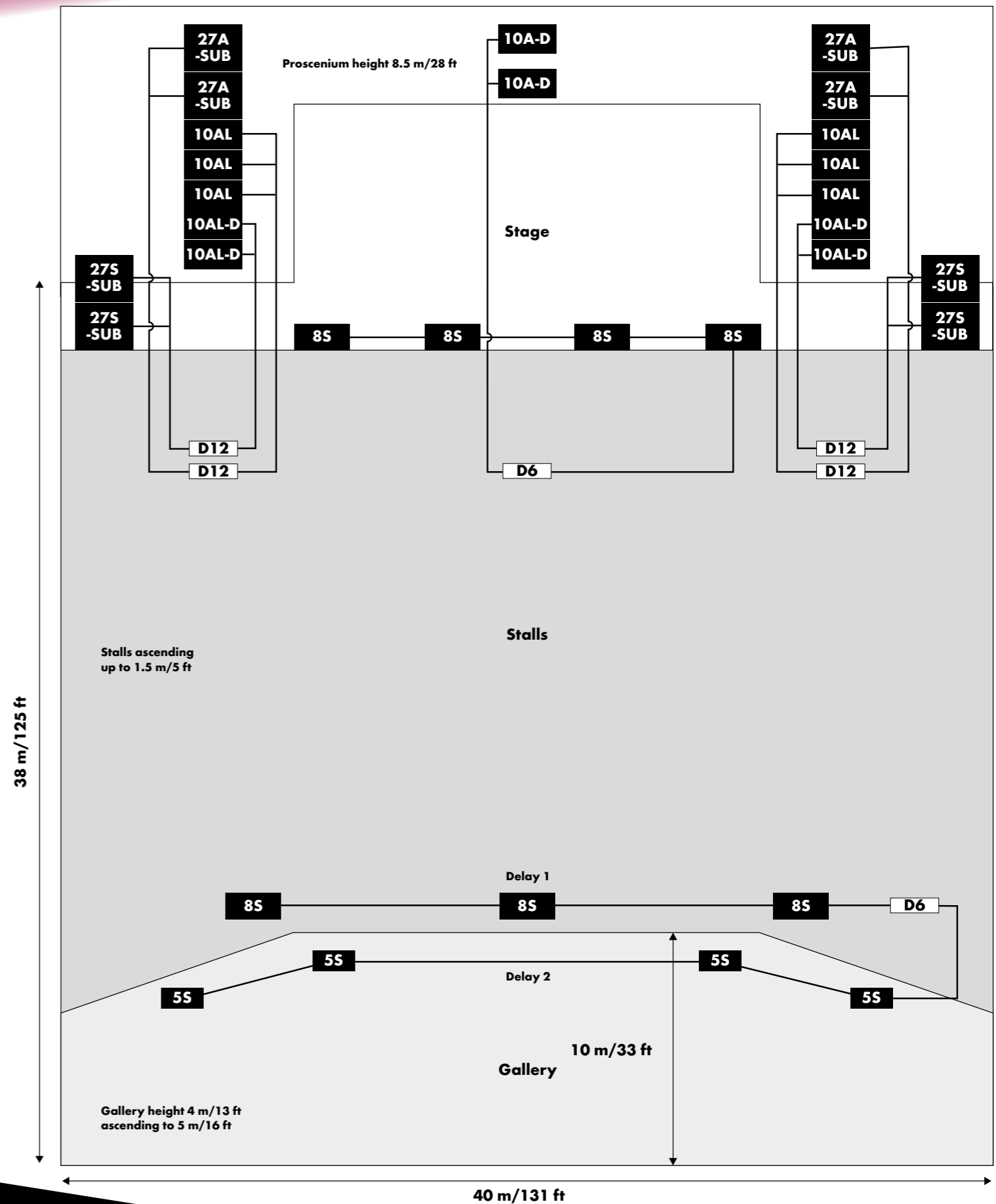
Side balcony l/r:  
2 x 5S each

Delay 1 balcony:  
2 x 12S and 2 x 8S

Delay 2 below balcony:  
3 x 8S

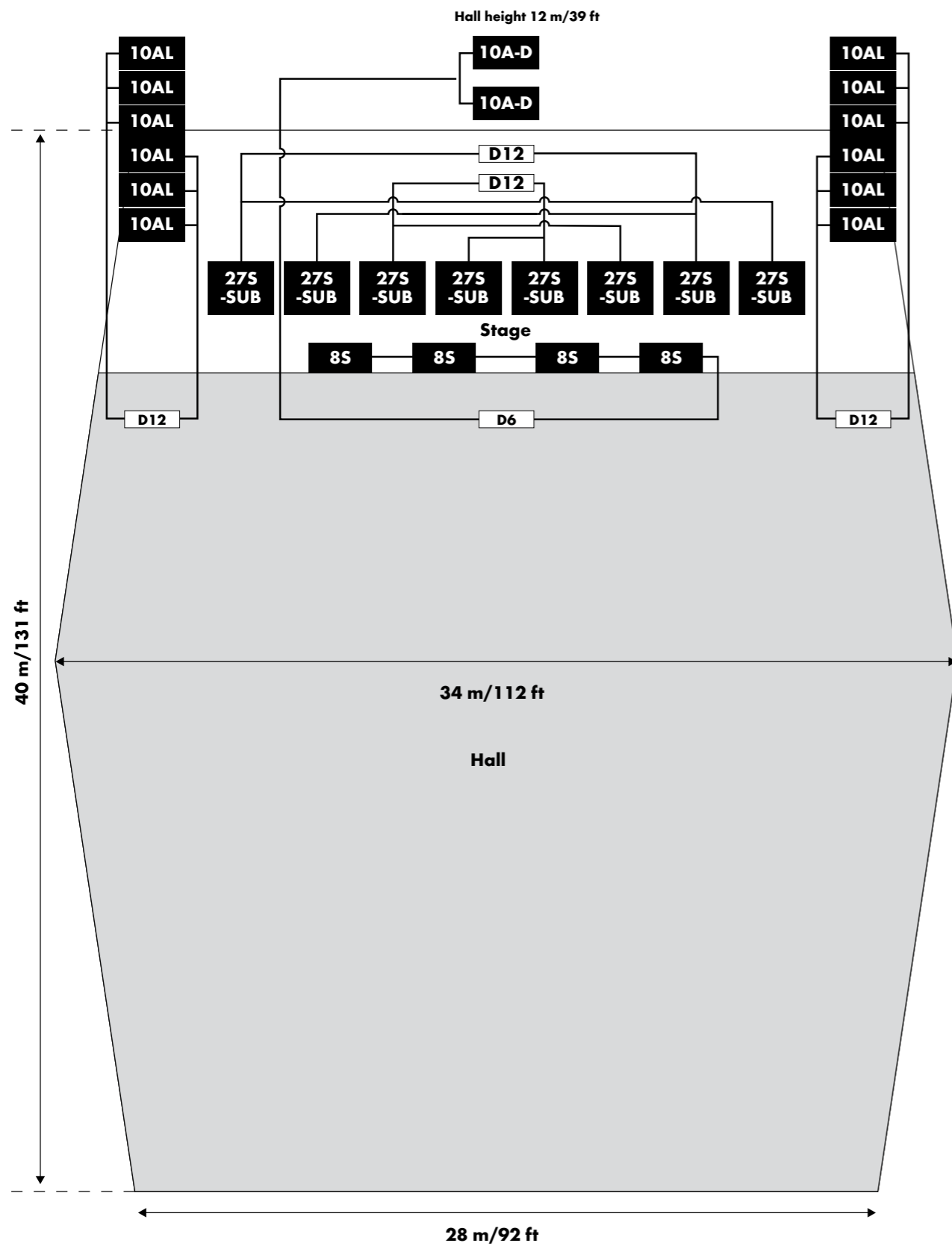
Amplifiers:  
5 x D6  
2 x D12





Venue type: theatre. Application: musicals. Audience: 600-800.  
 Main l/r: 3 x 10AL, 2 x 10AL-D and 2 x 27A-SUB each line array.  
 Subwoofers l/r 2 x 27S-SUB each. Centre: 2 x 10A-D. Nearfill stage rim: 4 x 8S.  
 Delay 1 gallery: 3 x 8S. Delay 2 below gallery: 4 x 5S. Amplifiers: 2 x D6, 4 x D12.

**Musical**



Venue type: town hall  
 Application: concert  
 Audience: 600-800

Main l/r:  
 6 x 10AL line array each

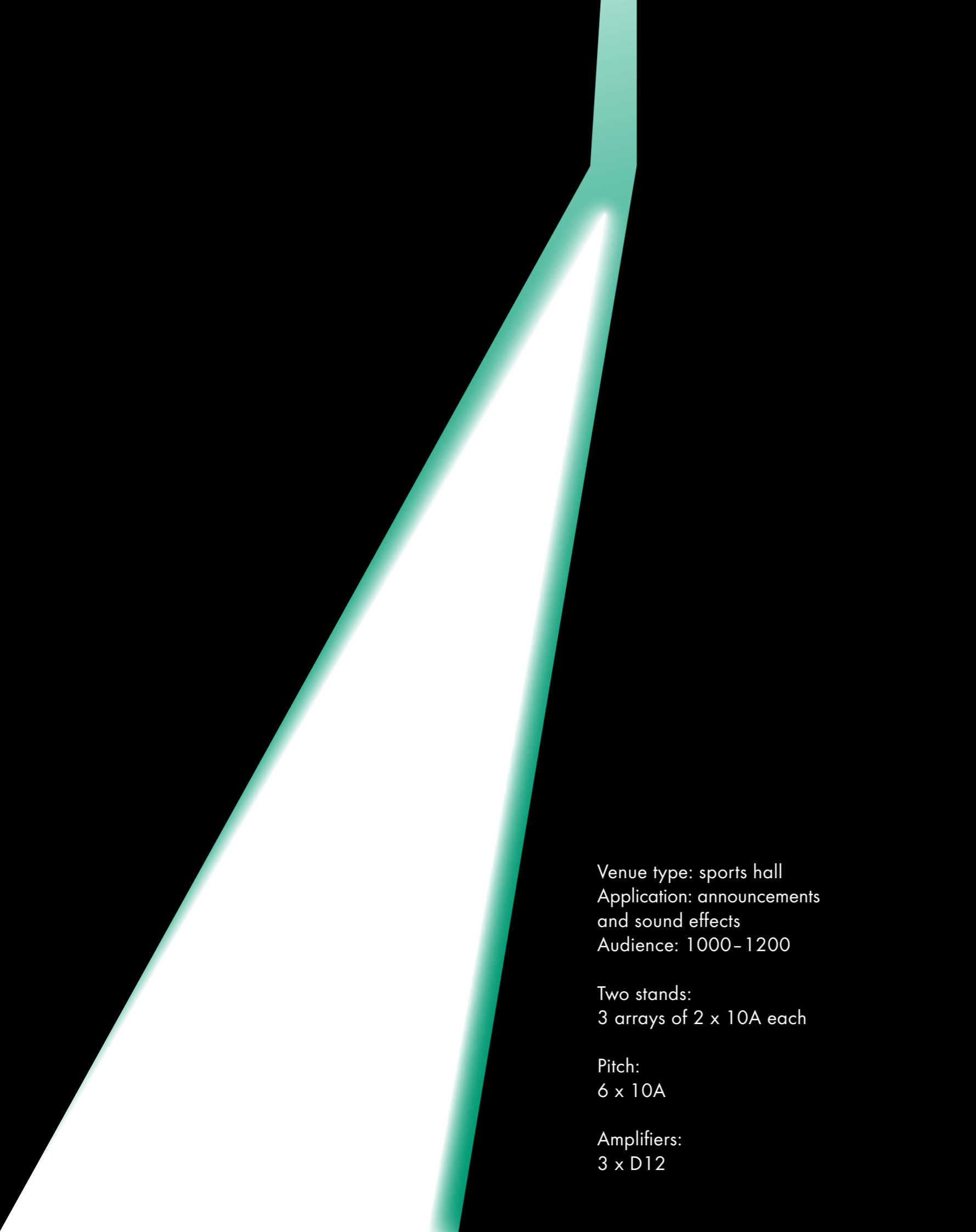
Centre:  
 2 x 10A-D

Nearfill stage rim:  
 4 x 8S

Subwoofer array:  
 8 x 27S-SUB

Amplifiers:  
 1 x D6  
 4 x D12

Town hall

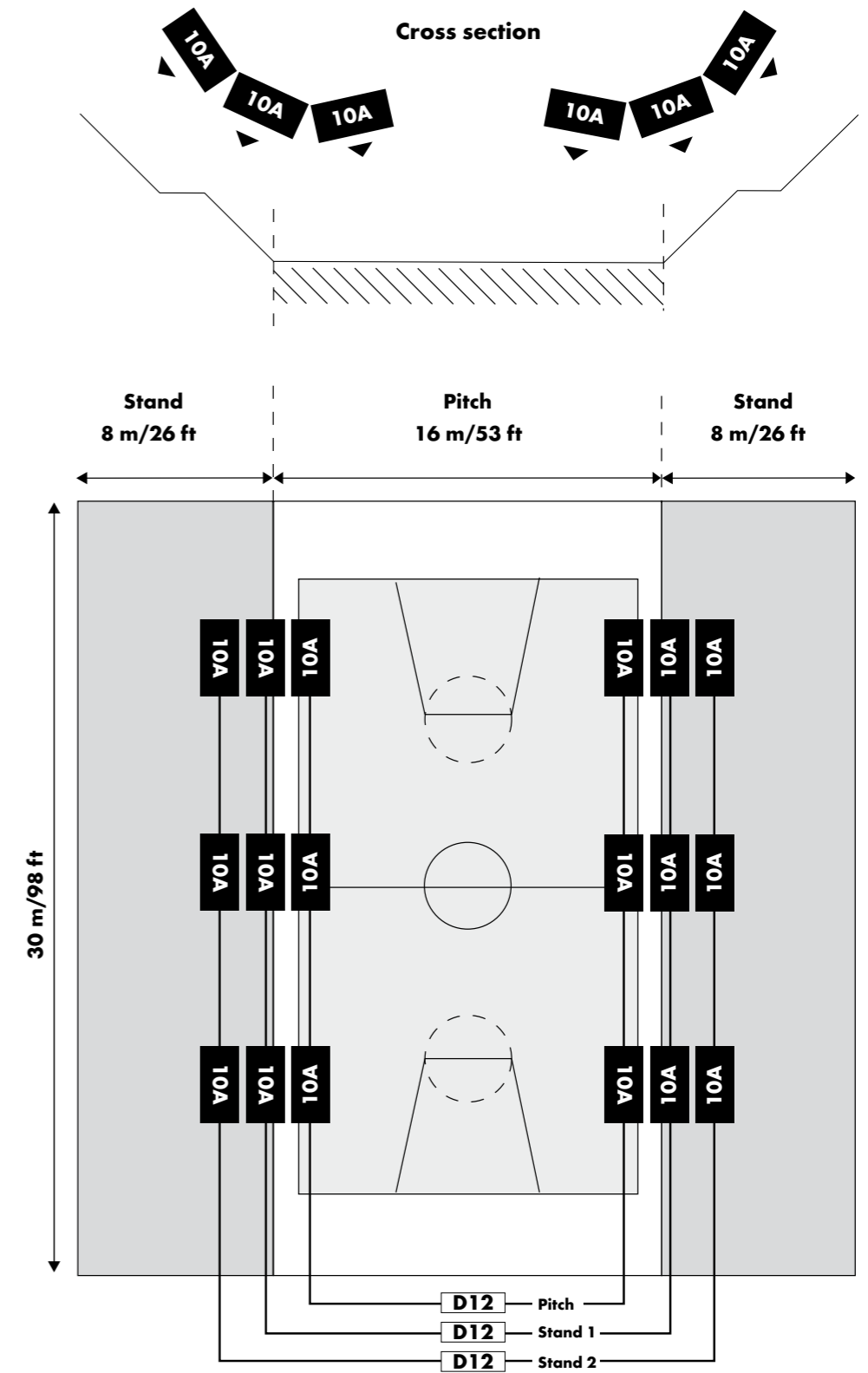


Venue type: sports hall  
Application: announcements  
and sound effects  
Audience: 1000-1200

Two stands:  
3 arrays of 2 x 10A each

Pitch:  
6 x 10A

Amplifiers:  
3 x D12





Further information on the White range of integration products as well as details on the established d&b Black product range and services can be found on the d&b website. There is an Applications section that contains editorial references categorized by application type, a calendar detailing dates and locations for the educational workshops and seminars that d&b holds covering a variety of topics, as well as a separate download section. The latter includes a search function as part of the extensive d&b documentation and software database that ensures quick and easy access to all available data.

