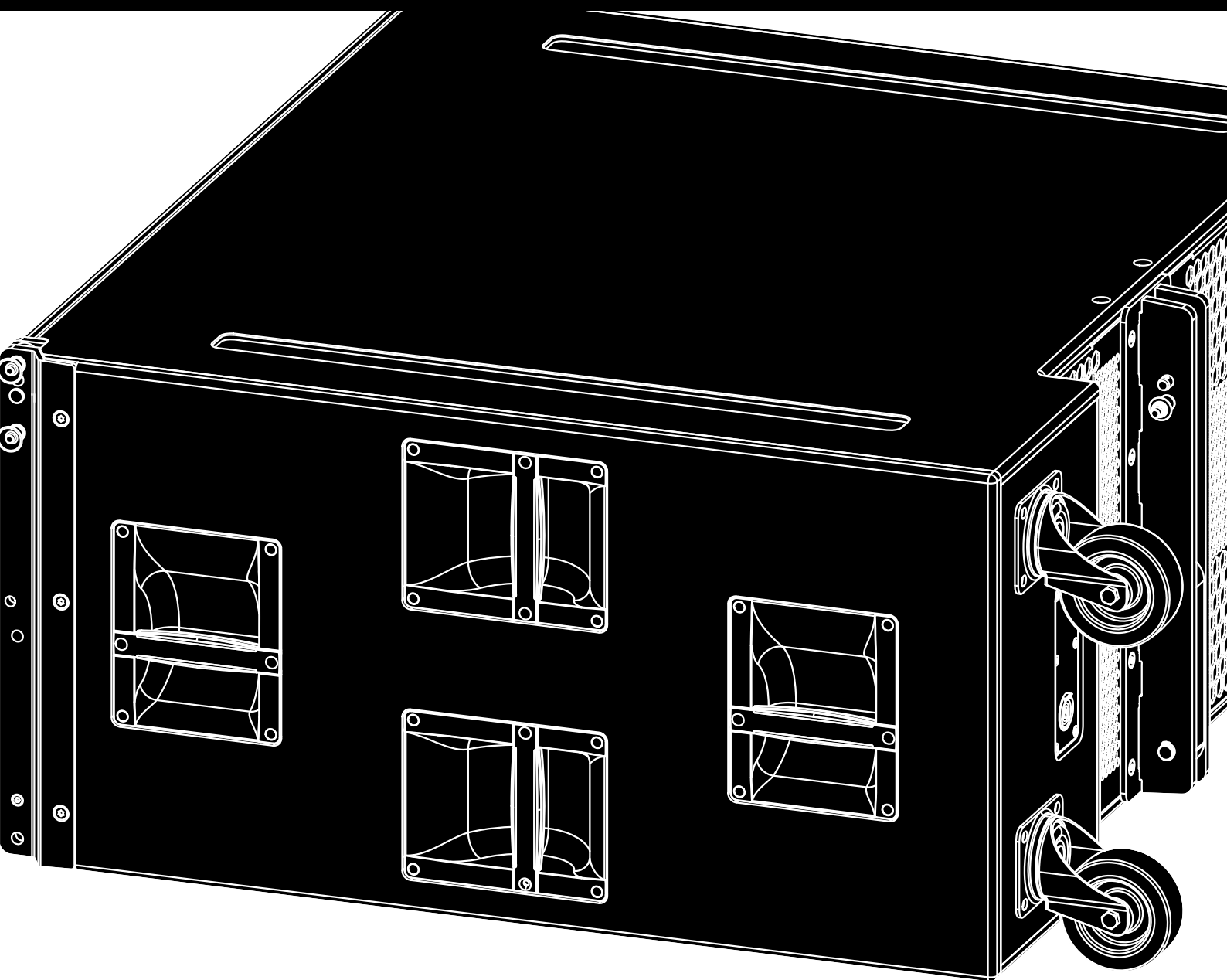


SL

KSL-SUB/KSL-GSUB
Manual 1.1 en



General information

KSL-SUB/KSL-GSUB Manual

Version: 1.1 en, 01/2020, D2733.EN .01

Copyright © 2020 by d&b audiotechnik GmbH & Co. KG; all rights reserved.

Keep this document with the product or in a safe place so that it is available for future reference.

We recommend you to regularly check the d&b website for the latest version of this document.

When reselling this product, hand over this document to the new owner.

If you supply d&b products, please draw the attention of your customers to this document. Enclose the relevant documents with the systems. If you require additional documents for this purpose, you can order them from d&b.

d&b audiotechnik GmbH & Co. KG
Eugen-Adolf-Str. 134, D-71522 Backnang, Germany
T +49-7191-9669-0, F +49-7191-95 00 00

1	Safety precautions	4
1.1	Information regarding the use of loudspeakers.....	4
1.2	d&b ArrayCalc.....	5
2	KSL-SUB/KSL-GSUB loudspeaker	6
2.1	Intended use.....	6
2.2	Connections.....	7
2.3	Operation.....	7
2.3.1	Controller settings.....	8
2.4	Technical specifications.....	8
3	Manufacturer's declarations	9
3.1	EU conformity of loudspeakers (CE symbol).....	9
3.1.1	WEEE Declaration (Disposal).....	9

1.1 Information regarding the use of loudspeakers

Potential risk of personal injury

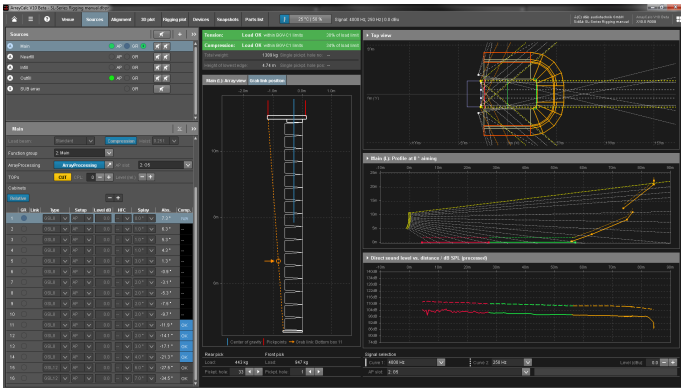
Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over a long period.

In order to prevent accidents when deploying loudspeakers on the ground or when flown, please take note of the following:

- When setting up the loudspeakers or loudspeaker stands, make sure they are standing on a firm surface. If you place several systems on top of one another, use straps to secure them against movement.
- Only use accessories which have been tested and approved by d&b for assembly and mobile deployment. Pay attention to the correct application and maximum load capacity of the accessories as detailed in our specific "Mounting instructions" or in our "Flying system and Rigging manuals".
- Ensure that all additional hardware, fixings and fasteners used for installation or mobile deployment are of an appropriate size and load safety factor. Pay attention to the manufacturers' instructions and to the relevant safety guidelines.
- Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.
- Regularly check all load bearing bolts in the mounting devices.

Potential risk of material damage


Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. Generally speaking, a distance of 0.5 m (1.5 ft) from magnetic data carriers (floppy disks, audio and video tapes, bank cards, etc.) is sufficient; a distance of more than 1 m (3 ft) may be necessary with computer and video monitors.



d&b ArrayCalc

1.2 d&b ArrayCalc

For both safety and acoustic reasons, d&b line arrays must be designed using the d&b ArrayCalc simulation software. The software is available as a native stand-alone application for both Microsoft Windows and Mac OS X operating systems and can be downloaded at www.dbaudio.com.

Detailed information on how to use and operate ArrayCalc is provided by the Help system of the software. To access the Help system, press F1 or select the Help button () from the ArrayCalc toolbar. This will launch the HelpViewer which provides an overview of the program as well as a search function and direct access to the related topics.

In addition, ArrayCalc will provide you with typical array configurations within the permitted load limits and will help you get familiar with the mechanical load conditions and limitations.

d&b TI 385

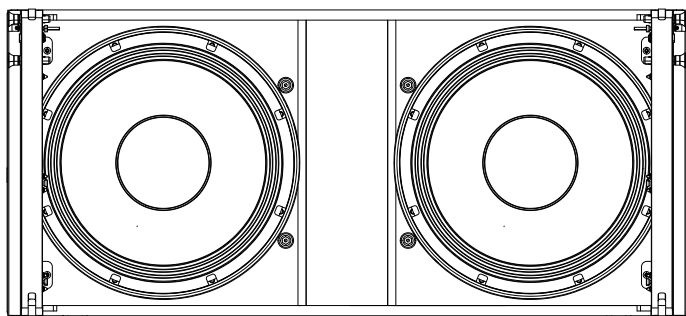
Further information on line array design can be found in "TI 385 d&b Line array design, ArrayCalc". The TI is supplied with the software or can be downloaded from the d&b website at www.dbaudio.com.

d&b Seminar

We also recommend you to attend the regularly hosted d&b Line array training seminars. Further information regarding the d&b seminars and a seminar schedule can also be found on the d&b website at www.dbaudio.com.

d&b Video tutorials

In addition d&b provides related video tutorials which can also be found on the d&b website at www.dbaudio.com or www.sl-series.com.



2.1 Intended use

NOTICE!

Only operate d&b SL-Series loudspeakers with the specified and correctly configured d&b amplifiers, otherwise there is a risk of damaging the loudspeaker components and the directional characteristics of the system cannot be achieved.

Applicable d&b amplifiers: D80

Product description

The KSL-SUB and KSL-GSUB are the cardioid subwoofers for the KSL system. They can be used to supplement KSL8 and KSL12 cabinets, either flown (KSL-SUB) or ground stacked (KSL-GSUB).

When the Z5742 Flying frame set is used, KSL-SUB cabinets can be flown as separate SUB columns or in mixed arrays together with KSL-TOP cabinets using the additional Z5747 KSL-SUB Adapter frame.

Both cabinets are actively driven, 2-way bass-reflex designs housing three long excursion neodymium 15" drivers. Two drivers face to the front while one driver radiates to the rear of the cabinet.

Front and rear drivers are driven by separate amplifier/processing channels and operate in independent bass reflex chambers. Through its cardioid dispersion pattern, this setup avoids unwanted energy behind the system and greatly reduces the reverberant field at low frequencies providing highest accuracy in low frequency reproduction. The frequency response extends from 36 Hz to 105 Hz (33 Hz to 75 Hz - INFRA mode).

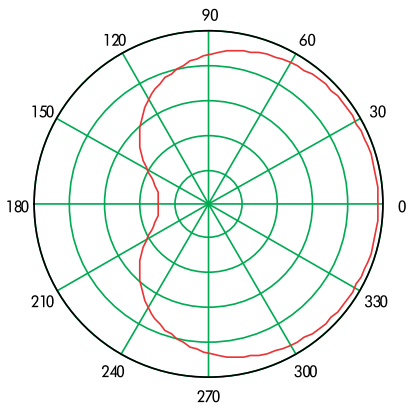
The cabinets are constructed from marine plywood and have an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front and rear of the cabinets are protected by rigid metal grills. Each side panel incorporates four handles and mounted on the rear panel are four heavy duty wheels. Two runners extend from the rear to the front panel of each cabinet protecting the bottom panel against scratching. Two correspondingly shaped recesses are incorporated in the top panel of each cabinet to accept these runners and prevent cabinet movement when stacking KSL-GSUBs or KSL-SUBs.

The KSL-SUB cabinet incorporates front and rear rigging strands while the KSL-GSUB comes without any rigging components and is intended for ground stacked purposes.

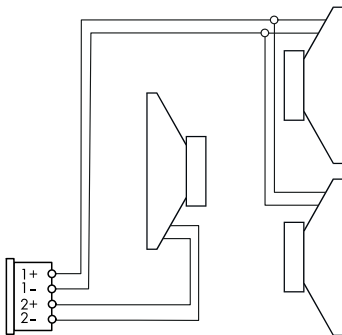
SL-Series rigging components and arrays

Cabinets are mechanically connected using the rigging strands on both sides of the cabinet front and a central strand at the rear of the cabinet. All necessary rigging components are mounted on the cabinet and fold out or slide out when needed.

A detailed description of the SL-Series rigging components is given in the SL-Series Rigging manual.



Cardioid dispersion pattern



NLT4 F Connector wiring

Cardioid dispersion

Cardioid dispersion avoids unwanted energy behind the system and greatly reduces the excitation of the reverberant field at low frequencies providing the greatest accuracy of low frequency reproduction. The subwoofers can be used as stand-alone solutions or in stacked combinations with a minimum distance of 60 cm (2 ft) between adjacent cabinets or between the subwoofers and a side wall. When positioned in front of walls, the minimum distance to rear walls is maintained by the wheels mounted at the rear of the cabinet.

2.2 Connections

The cabinets are fitted with a single NLT4 F connector using the pin assignment 1+/1- for the front drivers and pins 2+/2- for the rear driver.

d&b LoadMatch

With the d&b four channel amplifier platform, the LoadMatch function enables the amplifier to electrically compensate for the properties of the loudspeaker cable used without the need for an additional sense wire. For applicable loudspeakers, LoadMatch is therefore independent of the connector type used.

2.3 Operation

Amplifier output mode(s): 2-Way Active		
Application	Setup	Cabinets per pair of amplifier channels
KSL-SUB	KSL-SUB KSL-SUB AP	1 1
KSL-GSUB	KSL-SUB KSL-SUB AP	1 1

In its standard mode the KSL-SUB/KSL-GSUB can be used as subwoofer for applicable d&b loudspeaker systems operated in CUT mode. The two channels of the system are tuned to create a cardioid dispersion pattern thus providing maximum rejection to the rear. It can be used in flown or stacked combinations with a minimum distance of 60 cm (2 ft) between adjacent columns of cabinets.

AP setup

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

As soon as the data have been sent to the amplifiers, the AP setup will be automatically activated.

2.3.1 Controller settings

For acoustic adjustment the INFRA mode can be selected.

INFRA mode

With the INFRA mode selected, the frequency response of the system extends from 33 Hz to 75 Hz.

The KSL-SUB/KSL-GSUB can now be used to supplement applicable d&b loudspeaker systems operated in full range mode.

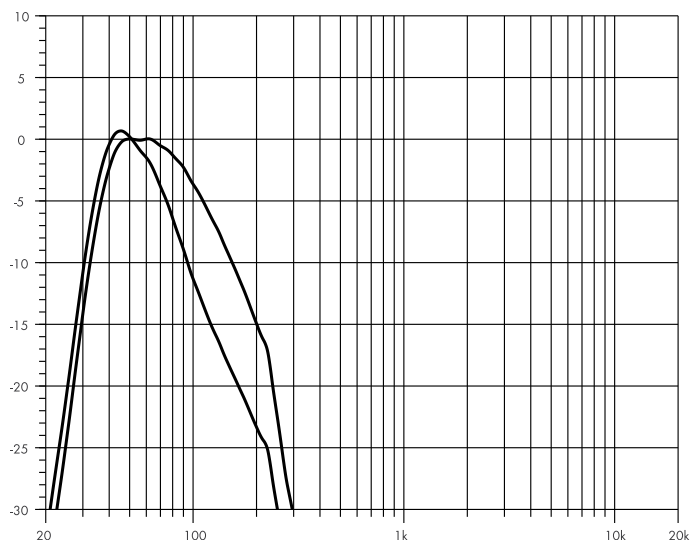
2.4 Technical specifications

System data

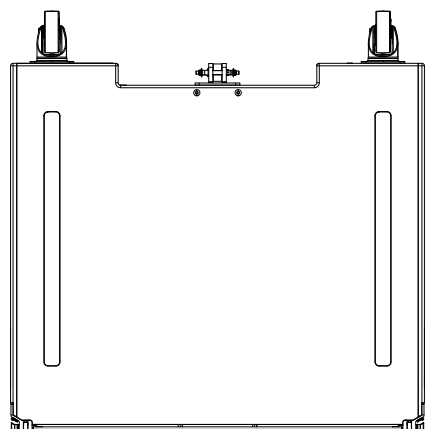
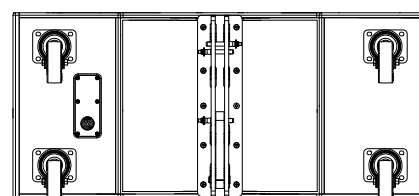
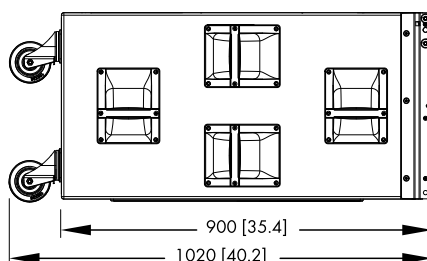
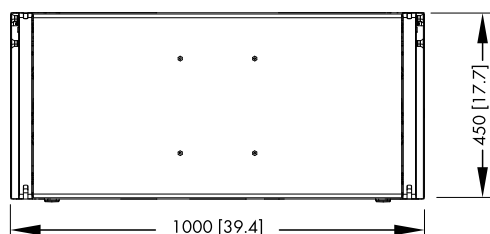
Frequency response (-5 dB standard)	36 Hz - 105 Hz
Frequency response (-5 dB INFRA)	33 Hz - 75 Hz
Max. sound pressure (1 m, free field) with D80	139 dB
	(SPLmax: Broadband signal IEC 60268)

Loudspeaker data

Nominal impedance front/rear	4/8 ohms
Power handling capacity front (RMS/peak 10 ms)	900/3500 W
Power handling capacity rear (RMS/peak 10 ms)	500/2000 W
Components	3 x 15" driver
Connections	1 x NLT4 F
Pin assignment	1+: Front+/1 -: Front- /2+: Rear+/2 -: Rear-
Optional front splay (KSL-SUB)	0° or 2°
Weight KSL-SUB	82 kg (181 lb)
Weight KSL-GSUB	78 kg (172 lb)



KSL-SUB frequency response, standard and INFRA mode



KSL-SUB cabinet dimensions in mm [inch]*

*The same dimensions apply to the KSL-GSUB



3.1 EU conformity of loudspeakers (CE symbol)

This declaration applies to:

d&b KSL-SUB loudspeaker, Z0785

d&b KSL-GSUB loudspeaker, Z0786

manufactured by d&b audiotechnik GmbH & Co. KG.

All production versions of these types are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective EC directives including all applicable amendments.

A detailed declaration is available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

3.1.1 WEEE Declaration (Disposal)

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product, please contact d&b audiotechnik.

