

# **V-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, accessories and software. Right from the outset the d&b audiotechnik approach was to build integrated sound reinforcement systems that actually are more

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

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

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









The V-Series comprises both line array solutions and point source systems; both offer minimal size and weight in combination with outstanding control of dispersion behaviour and convincing high sound pressure levels. With its crystal clear and detailed audio performance, smooth and even frequency response over distance, high dynamic bandwidth and power and headroom capabilities all make the V-Series a good choice

for any medium to large sound reinforcement applications, for any sound genre. The line array system features an integrated rigging system ensuring speedy deployment providing a quick and easily configurable array solution for all intended applications. This flexible system can be used stand-alone, or is the ideal complement to the larger J-Series in terms of sound character, headroom, dispersion and arrayability for outfills, as a centre cluster or delays. The high output point source loudspeakers are the answer for any sound reinforcement system that demand high sound pressure levels from a single box solution. The V loudspeakers are designed for a wide range of applications with a clear perspective to provide mobile, flexible, configurable solutions to the most arduous sound reinforcement situations. The Vi loudspeakers differ only slightly in cabinet

construction and mounting hardware. They are intended for permanently installed performance spaces where the specification is rider driven. Both the Vi cabinets and mounting hardware can be properly colour matched to interior designs and are weather protected for climatically hostile environments.

## The V-Series

The 3-way passive **V7P** and **Vi7P** point source loudspeakers produce a constant directivity dispersion of 75° x 40° (h x v) with exceptional vertical constant directivity dispersion control nominally being maintained down to 350 Hz. This is achieved using a symmetrical dipolar driver arrangement for the two 10" LF neodymium drivers, with a centrally mounted horn-loaded 8" MF driver and a coaxial 1.4" exit HF compression driver mounted on a constant directivity horn. The V10P and Vi10P point source loudspeakers feature the same driver configuration, but produce a wider 110° horizontal dispersion pattern. Both loudspeakers feature a rotatable HF horn which enables deployment in either orientation. The advanced bass reflex and venting design combined with a large cabinet volume increases the LF performance of these compact cabinets, with a frequency response extending from 59 Hz to 18 kHz.

The V-GSUB and Vi-GSUB are actively driven cardioid subwoofers that require only one amplifier channel. These subwoofers share the same acoustical and visual design as the V-SUB and Vi-SUB, but are intended for ground stacked applications only.

The **V8** and **Vi8** line array loudspeakers produce an 80° constant directivity dispersion pattern in the horizontal plane. They utilize a passive 3-way design featuring two 10" neodymium LF drivers, one hornloaded 8" MF driver, two 1.4" exit HF compression drivers with 2.5" voicecoils mounted to a dedicated wave shaping device and a passive crossover network. The V12 and Vi12 line array modules, which are acoustically and mechanically compatible with the V8 and Vi8 respectively, differ only in the 120° horizontal coverage. All components are arranged symmetrically around the centre axis of the cabinet to produce a perfect symmetrical dispersion pattern. Due to the dipolar arrangement of the LF drivers, a broadband, horizontal dispersion control is maintained down to approximately 250 Hz.

The **V** and **Vi-SUB** are compact high performance cardioid subwoofers powered by a single amplifier channel. They share the same width as the V8/Vi8 and V12/Vi12 loudspeakers and are equipped with compatible flying fittings. The V and Vi-SUB house two long excursion neodymium drivers in an integrated cardioid setup to avoid unwanted energy behind the system.



V7P, V10P loudspeaker



Vi7P, Vi10P loudspeaker









V8, V12 loudspeaker

Vi8, Vi12 loudspeaker





Vi subwoofer

All V loudspeakers are finished with a PCP (Polyurea Cabinet Protection) coating that provides mobile systems with protection against impact and resistance to the adverse effects on cabinets caused by changing ambient outdoor conditions. The Vi cabinets feature an impact resistant paint finish; Weather Resistant and Special Colour options are available. A selection of transport solutions are available for the V loudspeakers.

The d&b software offering aides the entire system setup process, from the simulation and planning of the loudspeaker systems, to the remote control and monitoring of the system functions during the event, followed by service functionality to verify system performance prior to de-rigging. The **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 complete system configuration simulated in ArrayCalc is assimilated by the R1 Remote control software into an intuitive graphical user interface to manage the amplifiers, and loudspeakers, from anywhere in the venue. Service functions enable firmware updates of the amplifiers as and when these are available.

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 four channel **D80** amplifier is intended for both mobile and installation applications requiring the highest Sound Pressure Levels. The installation specific four channel **30D** amplifier is intended for permanent integration within venues which require medium to high Sound Pressure Levels. These amplifiers all 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.





8 d&b V-Series d&b V-Series

# The V7P and Vi7P loudspeakers

# The V10P and Vi10P loudspeakers

## **V7P and Vi7P loudspeakers**

The 3-way passive V7P and Vi7P loudspeakers feature two 10" drivers in a dipole arrangement with a horn loaded 8" MF driver and a 1.4" exit compression driver mounted onto a rotatable CD horn. The Vi7P is the installation version of the V7P loudspeaker and differs only in cabinet construction, finish and mounting hardware. The innovative horn design for the centrally mounted 8" MF driver produces a remarkable sensitivity resulting in an exceptional performance in the vocal range. An advanced bass-reflex and venting design delivers an extended LF output with full bandwidth capabilities.

These high performance point source loudspeakers provide a broad variety of deployment possibilities, especially when used as a stand-alone full range system, or combined with other elements from the V-Series, either ground stacked or flown. The HF horn can be rotated by 90° to enable horizontal orientation. The loudspeaker cabinets are constructed from marine plywood, the V7P has an impact and weather protected PCP (Polyurea Cabinet Protection) finish, while the Vi7P has an impact resistant paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill. The V7P cabinet incorporates a pair of handles. M10 threaded inserts are provided for attaching d&b rigging hardware.

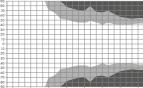
## System data

Frequency response (-5 dB CUT mode)	Frequency response (-3 dB standard)	. 39 Hz - 18 kHz
with D12/30D/D20       139 dB         with D80       142 dB	Frequency response (-5 dB CUT mode)	100 Hz - 18 kHz
with D80142 dB	Max. sound pressure (1 m, free field)	
	with D12/30D/D20	139 dB
Input level (100 dB SPL/1 m)17 dBu	with D80	142 dB
	Input level (100 dB SPL/1 m)	17 dBu

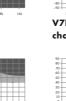
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#### Loudspeaker data

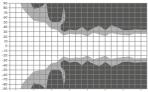
Louispeaker dara
Nominal impedance8 ohms
Power handling capacity (RMS/peak 10 ms)500/2000 W
Nominal dispersion angle (h x v)75 $^{\circ}$ x 40 $^{\circ}$
Components2 x 10" driver with neodymium magnet
1 x 8" driver with neodymium magnet
1 x 1.4" exit compression driver
passive crossover network
Connections V7P
optional 2 x NL4 or 2 x EP5
Connections Vi7P 2 x NL4 and screw terminal block
Weight V7P / Vi7P



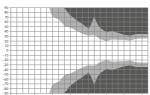
V7P and Vi7P horizontal dispersion characteristics<sup>2</sup>



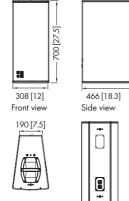
V7P and Vi7P horizontal dispersion characteristics/ horizontal setup, horn rotated<sup>2</sup>



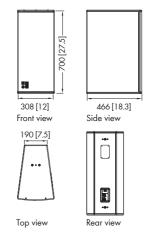
V7P and Vi7P vertical dispersion



V7P and Vi7P vertical dispersion characteristics/horizontal setup, horn rotated<sup>2</sup>



Rear view V7P cabinet dimensions in mm [inch]



Vi7P cabinet dimensions in mm [inch]

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

### **V10P** and Vi10P loudspeakers

The 3-way passive V10P and Vi10P loudspeakers feature two 10" drivers in a dipole arrangement with a horn loaded 8" MF driver and a 1.4" exit compression driver mounted onto a rotatable CD horn. The Vi10P is the installation version of the V10P loudspeaker and differs only in cabinet construction, finish and mounting hardware. The innovative horn design for the centrally mounted 8" MF driver produces a remarkable sensitivity resulting in an exceptional performance in the vocal range. An advanced bass-reflex and venting design delivers an extended LF output with full bandwidth capabilities.

These high performance point source loudspeakers provide a broad variety of deployment possibilities, especially when used as a stand-alone full range system, or combined with other elements from the V-Series, either ground stacked or flown. The HF horn can be rotated by 90° to enable horizontal orientation. The loudspeaker cabinets are constructed from marine plywood, the V10P has an impact and weather protected PCP (Polyurea Cabinet Protection) finish, while the VilOP has an impact resistant paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill. The V10P cabinet incorporates a pair of handles. M10 threaded inserts are provided for attaching d&b rigging hardware.

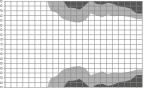
## System data

Frequency response (-5 dB standard)59 Hz	- 18	kHz
Frequency response (-5 dB CUT mode)100 Hz	- 18	kHz
Max. sound pressure (1 m, free field) <sup>1</sup>		
with D12/30D/D20	.138	dB
with D80	.141	dB
Input level (100 dB SPL/1 m)	-17	dBu

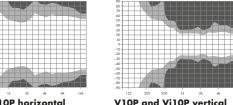
## Loudspeaker data

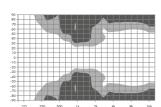
Nominal impedance8 ohm
Power handling capacity (RMS/peak 10 ms)500/2000 W
Nominal dispersion angle (h x v)110° x 40°
Components2 x 10" driver with neodymium magne
1 x 8" driver with neodymium magne
1 x 1.4" exit compression drive
passive crossover network
Connections V10P2 x NLT4 F/N
optional 2 x NL4 or 2 x EPS
Connections Vi10P2 x NL4 and screw terminal block
Weight V10P / Vi10P33 kg (75 lb

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

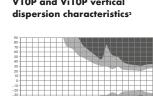


V10P and Vi10P horizontal dispersion characteristics<sup>2</sup>

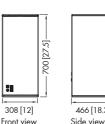




V10P and Vi10P horizontal dispersion characteristics/ horizontal setup, horn rotated<sup>2</sup>



V10P and Vi10P vertical dispersion characteristics/ horizontal setup, horn rotated<sup>2</sup>

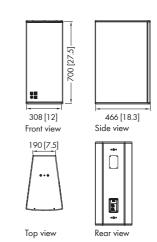


Front view



V10P cabinet dimensions in mm [inch]

466 [18.3]



Vi10P cabinet dimensions in mm [inch]

# The V7P, V10P and V-GSUB transport accessories

#### **V-GSUB** and Vi-GSUB

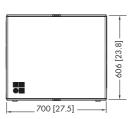
The V-GSUB and Vi-GSUB are actively driven high performance cardioid subwoofers powered by a single amplifier channel. The V-GSUB and Vi-GSUB are intended for ground stacked applications only, and share the same acoustical and visual design as the V-SUB and Vi-SUB, which feature integrated rigging equipment. The Vi-GSUB is the installation version of the V-GSUB. They house two long excursion neodymium drivers, an 18" 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 cardioid dispersion pattern resulting from this arrangement avoids unwanted energy behind the system that reduces the excitation of the reverberant field at low frequencies and provides the greatest accuracy of low frequency reproduction. The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The V-GSUB top panel has a recess in the form of the footprint of a V7P/ V10P enclosure to prevent cabinet movement when stacking one TOP loudspeaker. The enclosure features two runners to protect the bottom panel from scratching. Two correspondingly shaped recesses are incorporated into the top panel of each V-GSUB cabinet to accept these runners, preventing cabinet movement when stacked. Each side of the V-GSUB panel incorporates two handles whilst the top panel has an M20 high stand flange inserted.

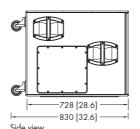
#### System data Eranicanai ( vaananaa 1 5 al Datamalanal )

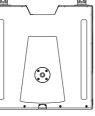
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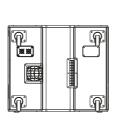
## Loudspeaker data

Nominal impedance8 ohms
Power handling capacity (RMS/peak 10 msec) 800/3200 W
Components
Connections V-GSUB
optional 2 x NL4 or 2 x EP5
Connections Vi-GSUB 2 x NL4 and screw terminal block
Weight V-GSUB/Vi-GSUB61/58 kg (135/128 lb)

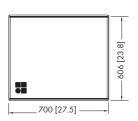


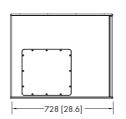






V-GSUB cabinet dimensions in mm [inch]



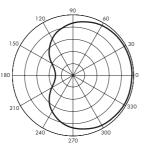


Front view





Vi-GSUB cabinet dimensions in mm [inch]

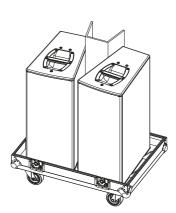


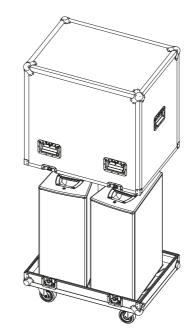
Cardioid polar pattern



Touring case 2 x V7P/V10P Dimensions (H x W x D):

970 x 800 x 600 mm 38.2 x 31.5 x 23.6 inch Net weight: 43 kg (94.8 lb)







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

# The V8 and Vi8 loudspeakers

# The V12 and Vi12 loudspeakers

## **V8 and Vi8 loudspeakers**

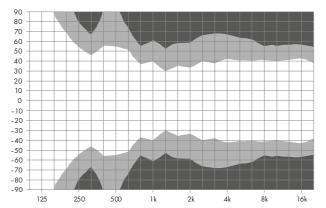
The V8 and Vi8 are line array loudspeakers, the Vi8 is the installation version of the V8 loudspeaker. They are 3-way passive designs featuring two 10" LF drivers, one hornloaded 8" MF driver and two 1.4" exit HF compression drivers with 2.5" voicecoils mounted to a dedicated waveshaping device. The symmetrical dipolar arrangement of the neodymium LF drivers around the centrally mounted coaxial MF and HF components allows a smooth overlap of the adjacent frequency bands in the crossover design. This results in an exceptional 80° horizontal constant directivity dispersion control nominally being maintained down to 250 Hz.

The mechanical and acoustical design enables flown vertical arrays of up to twenty four loudspeakers to be suspended using vertical splay angles between 0° to 14° with a 1° resolution. It can be used in columns of purely V8 or Vi8 loudspeakers or combined with V12/Vi12s and/or with V-SUB/Vi-SUBs. The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. Each side panel of the V8 cabinet incorporates a handle while two additional recessed grips are provided at the rear bottom of both the V8 and Vi8.

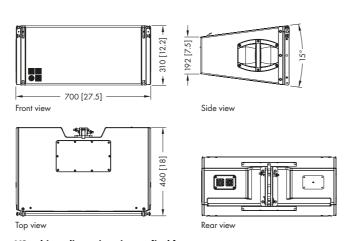
## System data

Frequency response (-5 dB standard) 67 Hz - 18 kHz
Frequency response (-5 dB CUT mode)100 Hz - 18 kHz
Max. sound pressure (1 m, free field) <sup>1</sup>
with D12/30D/D20139 dB
with D80142 dB

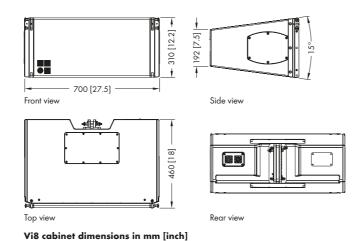
Loudspeaker data
Nominal impedance8 ohms
Power handling capacity (RMS/peak 10 msec) $\dots$ 500/2000 W
Nominal dispersion angle (horizontal)80°
Splay angle settings0° - 14°
1° increment
Components 2 x 10" driver
1 x 8" driver
2 x 1.4" exit compression driver
passive crossover network
Connections V8
optional 2 x NL4 or 2 x EP5
Connections Vi8
Weight34 kg (75 lb)



V8 and Vi8 horizontal dispersion characteristics



V8 cabinet dimensions in mm [inch]



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

### V12 and Vi12 loudspeakers

The V12 and Vi12 are line array loudspeakers, the Vi12 is the installation version of the V12 loudspeaker. They are 3-way passive designs featuring two 10" LF drivers, one hornloaded 8" MF driver and two 1.4" exit HF compression drivers with 2.5" voicecoils mounted to a dedicated waveshaping device. The symmetrical dipolar arrangement of the neodymium LF drivers around the centrally mounted coaxial MF and HF components allows a smooth overlap of the adjacent frequency bands in the crossover design. This results in an exceptional 120° horizontal constant directivity dispersion control nominally being maintained down to 250 Hz.

The mechanical and acoustical design enables flown vertical arrays of up to twenty four loudspeakers to be suspended using vertical splay angles between them of 0° to 14° with a 1° resolution. It can be used in columns of purely V12 or Vi12 loudspeakers or combined with V8/Vi8s and/or with V-SUB/ Vi-SUBs.

The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. Each side panel of the V12 cabinet incorporates a handle while two additional recessed grips are provided at the rear bottom of both the V12 and Vi12.

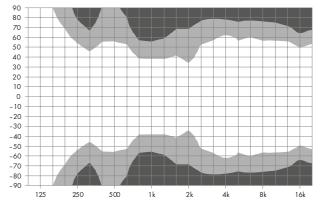
## System data

Frequency response (-5 dB standard)	67 Hz - 18 kHz
Frequency response (-5 dB CUT mode)	100 Hz - 18 kHz
Max. sound pressure (1 m, free field) <sup>1</sup>	
with D12/30D/D20	139 dB
with D80	142 dB

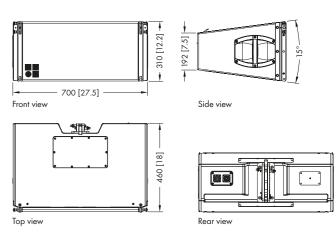
## Loudspeaker data

•	
Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 mse	c)500/2000 W
Nominal dispersion angle (horizontal)	120°
Splay angle settings	0° - 14°
	1° increment
Components	2 x 10" driver
	1 x 8" driver
2 x 1.4" exi	t compression driver
passiv	e crossover network
Connections V12	2 x NLT4 F/M
optional	2 x NL4 or 2 x EP5
Connections Vi12	2 x NL4
Weight	34 kg (75 lb)

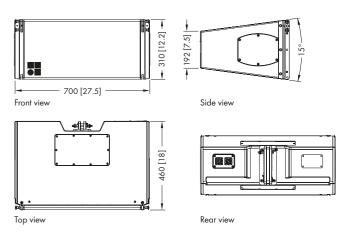
Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars)



V12 and Vi12 horizontal dispersion characteristics<sup>2</sup>



V12 cabinet dimensions in mm [inch]



Vi12 cabinet dimensions in mm [inch]

at -6 dB and -12 dB

## The V and Vi subwoofers

#### V and Vi subwoofers

The V-SUB and Vi-SUB are actively driven high performance cardioid subwoofers powered by a single amplifier channel. The V-SUB and Vi-SUB feature integrated rigging equipment, and share the same acoustical and visual design as the V-GSUB and Vi-GSUB, which are intended for ground stacked applications only. The Vi-SUB is the installation version of the V subwoofer. They house two long excursion neodymium drivers, an 18" 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 cardioid dispersion pattern resulting from this arrangement avoids unwanted energy behind the system that reduces the excitation of the reverberant field at low frequencies and provides the greatest accuracy of low frequency reproduction.

The V and Vi subwoofers can be used to supplement V8/Vi8 and V12/Vi12 loudspeakers in various combinations, ground stacked or flown, either integrated on top of a V8/V12 or Vi8/Vi12 array or as a separate column.

The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. Each side of the V-SUB panel incorporates two handles whilst the top panel has an M20 high stand flange inserted.

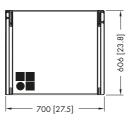
## System data

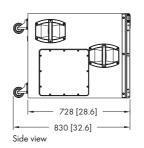
Frequency response (-5 dB standard)	37 - 120 Hz
Frequency response (-5 dB 100 Hz mode)	37 - 95 Hz
Max. sound pressure (1 m, free field) <sup>1</sup>	
with D12/30D/D20	133 dB
with D80	137 dB

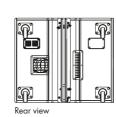
#### Loudspeaker data

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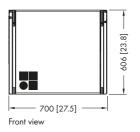
zoouspeaker aara	
Nominal impedance	8 ohms
Power handling capacity (RMS/pec	ık 10 msec)800/3200 W
Splay angle settings	0° and 2.5°
Components	1 x 18" driver
	1 x 12" driver
Connections V-SUB	2 x NLT4 F/M
	optional 2 x NL4 or 2 x EP5
Connections Vi-SUB	2 x NL4
Weight V-SUB/Vi-SUB	64/62 kg (141/137 lb)

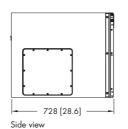




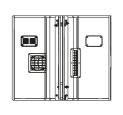


V-SUB cabinet dimensions in mm [inch]

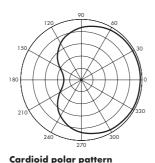








Vi-SUB cabinet dimensions in mm [inch]





The Vi Weather Resistant and Special Colour options

The Vi cabinets and appropriate accessories are also available with a Weather Resistant or Special Colour option. Both options can be combined.

## Weather Resistant (WR) option

The WR option enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. Cabinets being used outdoors even with the WR option should always be aimed either horizontally or with a downward tilt. An additional cover should be positioned over the loudspeakers. Vi loudspeakers with the Weather Resistant option are supplied with a fixed cable. PG cable type H-07-RN-F 2 x 2.5 mm²/ AWG 13 with a length of 5.5 m (18 ft) as standard or length as required.

## Special Colour (SC) option

The paint finish of all loudspeaker cabinets and most accessories can be executed in almost all RAL colours in accordance with the RAL colour table. 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 RAL colour.

SPLmax peak, pink noise test signal with crest factor of 4

# The V7P/Vi7P, V10P/Vi10P and V-GSUB/Vi-GSUB mounting accessories

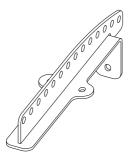
# The V7P/Vi7P, V10P/Vi10P and V-GSUB/Vi-GSUB mounting examples

## Safety approval

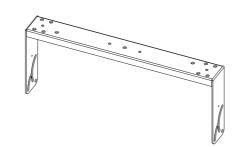
d&b loudspeakers and accessories are designed for setup and use within situations requiring compliance with the provisions and directives of the DGUV regulation 17 (formerly BGV C1).



Z5383 VP Mounting bracket



Z5384 VP Flying adapter



Z5388 VP Horizontal bracket



Z5550 M20 Stand adapter



Z5012 Pipe clamp



Z5049 Flying pin 8mm



Z5024 Loudspeaker stand adapter



Z5010 TV spigot with fixing plate



Z5551 VP Flying adapter link



V7P/V10P with Z5383 VP Mounting bracket Z5010 TV spigot with fixing plate Z5012 Pipe clamp



V7P/V10P<sup>1</sup> with Z5012 Flying pin 8mm



V7P/V10P with Z5383 VP Mounting bracket Z5010 TV spigot with fixing plate Z5024 Loudspeaker stand adapter



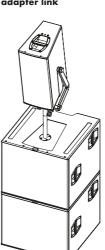
V7P/V10P with Z5384 VP Flying adapter Z5015 TV spigot for Flying adapter 02 Z5012 Pipe clamp



V7P/V10P with
Z5388 VP Horizontal bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp



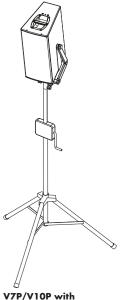
V7P/V10P with
Z5384 VP Flying adapter
Z5015 TV spigot for
Flying adapter 02
Z5012 Pipe clamp
Z5551 VP Flying
adapter link



V7P/V10P with Z5550 M20 Stand adapter



V7P/V10P with
Z5383 VP Mounting
bracket
Z5010 TV spigot with
fixing plate
Z5024 Loudspeaker stand
adapter
Z5013 Loudspeaker stand
winder M20



V7P/V10P with
Z5383 VP Mounting
bracket
Z5010 TV spigot with
fixing plate
Z5024 Loudspeaker stand
adapter
Z5009 Loudspeaker stand
with winder

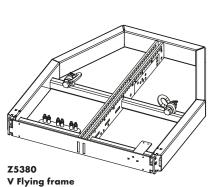
V7P/V10P with V-GSUB

# The V8, V12 and V-SUB rigging system

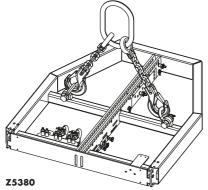
# The V8, V12 and V-SUB rigging examples

## 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).



For a maximum of twenty four V8/V12 loudspeakers or fourteen V subwoofers



**V** Flying frame

- 1 x 5382 V Safety chainset
- 2 x V Load adapter
- 1 x V Load adapter for Rota clamp
- 2 x Front links



Z5385 V Flying adapter For a maximum of four V8/V12 loudspeakers; supplied with 1t Shackle



Z5382

V Safety chainset

V Hoist connector chain



Z5386

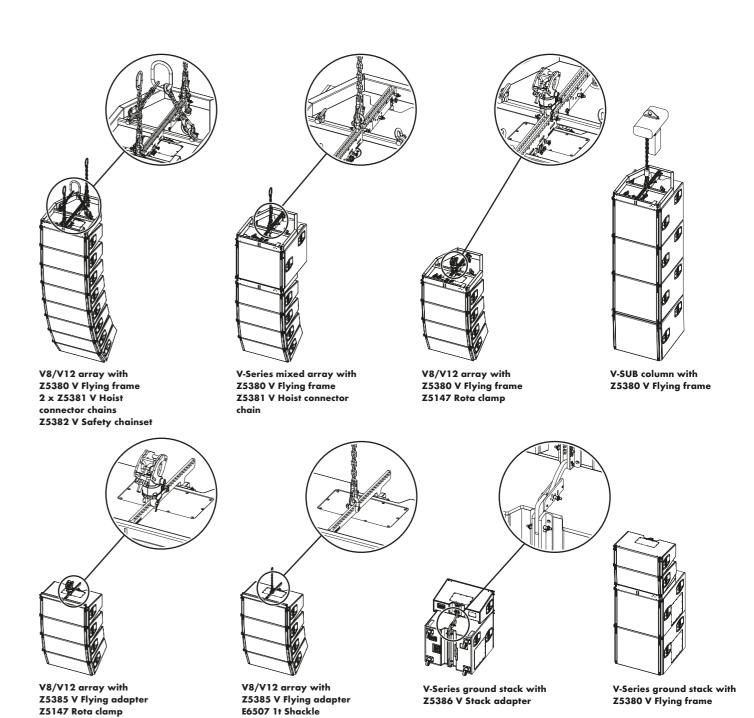


Z5147 Rota clamp WLL: 500 kg/1100 lb; for a tube diameter up to 51 mm/2"



V Stack adapter

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 V-Series Rigging manual, both of which are available for download at www.dbaudio.com.



# The Vi8, Vi12 and Vi-SUB rigging accessories and examples

# The V8, V12 and V Flying frame cases and carts

## 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).



Z5387.000 Vi Mounting frame top

to four Vi8/Vi12 loudspeakers (136 kg/400 lbs)

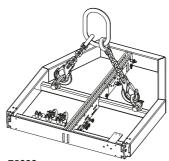


Vi Mounting frame bottom

Z5380

**V** Flying frame

For a maximum of twenty four V8/V12/Vi8/Vi12 loudspeakers or fourteen V/Vi subwoofers



Z5380

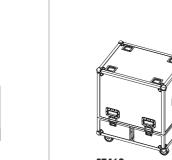
**V** Flying frame

Supplied with 1 x 5382 V Safety chainset

2 x V Load adapter

1 x V Load adapter for Rota clamp

2 x Front links



E7462

Touring case 2 x V8/V12

Dimensions (H x W x D): 900 x 800 x 600 mm 35.4 x 31.5 x 23.6 inch Net weight: 40 kg (88 lb)



Touring case 2 x V Flying frame

Dimensions (H x W x D): 970 x 800 x 600 mm 38.2 x 31.5 x 23.6 inch Net weight: 52 kg (120 lb)



V Hoist connector chain



Z5382 V Safety chainset

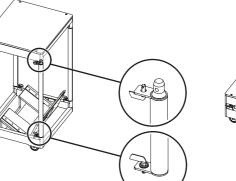


E6507 1t Shackle



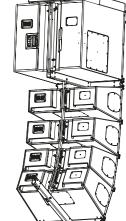
E7463 Touring cart 4 x V8/V12

Dimensions (H x W x D): 1420 x 700 x 800 mm 56 x 27.5 x 31.5 inch Total weight: 190 kg (420 lb) Maximum top load: 100 kg (220 lb)









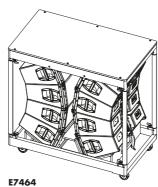
Vi array with Z5380 **V** Flying frame Z5387.001 Vi Mounting frame bottom (2 pcs)



Vi8/Vi12 array with Z5387.000 Vi Mounting frame top

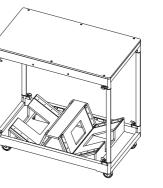


Vi-SUB column with Z5387.000 Vi Mounting frame top



Touring cart 8 x V8/V12

Dimensions (H x W x D): 1420 x 1400 x 800 mm  $56 \times 55 \times 31.5$  inch Total weight: 360 kg (800 lb) Maximum top load: 200 kg (440 lb)







22 d&b V-Series d&b V-Series 23

## The d&b ArrayCalc simulation software

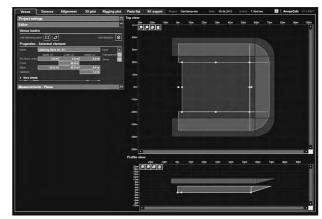
The d&b ArrayCalc simulation software is the simulation tool for d&b line arrays, column and point source loudspeakers as well as subwoofers. This is a comprehensive toolbox for all tasks associated with acoustic design, performance prediction, alignment, rigging and safety parameters. For safety reasons d&b line arrays must be designed using the d&b ArrayCalc simulation software. d&b ArrayCalc is available as a native stand-alone application for both Microsoft Windows<sup>1</sup> (Win7 or higher) and Mac OS X<sup>2</sup> (10.6 or higher) operating systems. 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, additionally the phase response of a flown system and a ground stacked SUB array can be calculated at a definable reference point. The level distribution resulting from the interaction of all active sources can be mapped onto the previously defined audience areas in a three-dimensional view, which can also be zoomed, rotated and

exported as a graphics file. The Remote ID for all devices can be

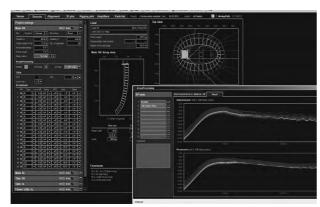
managed in the amplifier tab. EASE and DXF data export

capabilities are also available.

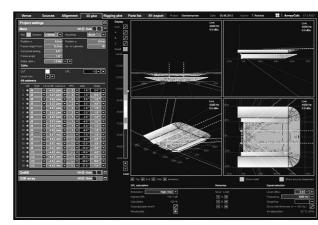
The ArrayProcessing function applies powerful filter algorithms to optimize the tonal (spectral) and level (spatial) performance of a line array column over the audience area defined by its mechanical vertical coverage angle. Within the d&b ArrayCalc simulation software, spectral and level performance 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 tonality. This provides consistent sonic results regardless of array length or splay settings. The resulting 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. The R1 Remote control software uses the data defined in ArrayCalc to generate an intuitive graphical user interface including complete details of the simulated system, including 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.



Venue editor



ArrayProcessing



3D Plot quad

## The d&b Remote network

The remote control capability of the d&b Remote network enables central control and monitoring of a complete d&b loudspeaker system from anywhere in the network, be it from a computer in the control room, at the mix position, or on a wireless tablet in the auditorium. This central access to all functions through the d&b Remote network, to controls as well as detailed system and device diagnostics information, unlocks the full potential of the d&b system approach. In 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.

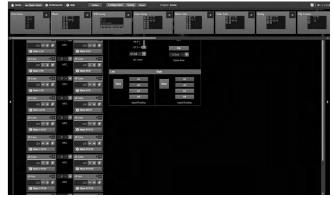
R1 Remote control software enables d&b amplifiers to be remotely controlled using both Ethernet and CAN-Bus in parallel. The software is optimized for use with touch screen, mouse and keyboard and runs on both Microsoft Windows<sup>1</sup> (Win7 or higher) and Mac OS X<sup>2</sup> (10.6 or higher) operating 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



Open views

24 d&b V-Series 25

Age OS is a trademark of Apple Inc., registered in the U.S. and other countries d&b V-Series 25

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

	D80	30D	D20	D12
User interface	Encoder/colour TFT touchscreen	LED indicators	Encoder/colour TFT touchscreen	Encoder/LC display
Output channels	4	4	4	2
Input channels	4 x AES or 4 x analog or 2 x AES and 2 x analog	4 x AES and 4 x analog	4 x AES or 4 x analog or 2 x AES and 2 x analog	2 x AES or 2 x analog
Latency	0.3 msec	0.3 msec	0.3 msec	0.3 msec
User equalizers (per channel)	2 x 16-band	2 x 16-band	2 x 16-band	4-band
Delay	10 sec/3440 m	10 sec/3440 m	10 sec/3440 m	340 msec/116.9 m
Maximum output power	4 x 2000 W into 8 ohms	4 x 800 W into 8 ohms	4 x 800 W into 8 ohms	2 x 800 W into 8 ohms
(THD+N < 0.5%, 12 dB crest factor)	4 x 4000 W into 4 ohms	4 x 1600 W into 4 ohms	4 x 1600 W into 4 ohms	2 x 1600 W into 4 ohms
	Dual Channel, Mix TOP/SUB	Dual Channel, Mix TOP/SUB	Dual Channel, Mix TOP/SUB	Dual Channel, Mix TOP/SUB
Output routing	2-Way Active	2-Way Active	2-Way Active	2-Way Active
Output connectors	NL4/EP5 plus central NL8	Phoenix Euroblock	NL4 plus central NL8	NL4/EP5/NL8
GPIO connector, 5 ports	No	Phoenix Euroblock	No	No
Cable compensation	LoadMatch	LoadMatch	LoadMatch	SenseDrive
Power supply	Autosensing switched mode power supply with active PFC	Universal range switched mode power supply with active PFC	Universal range switched mode power supply with active PFC	Autosensing switched mode power supply
Mains voltage	100 - 127/208 - 240 V, 50 - 60 Hz	100 - 240 V, 50 - 60 Hz	100 - 240 V, 50 - 60 Hz	115/230 V or 100/200 V, 50 - 60 Hz
Weight (kg/lb)	19/42	10.6 / 23.4	10.8/23.8	13/28.7
Dimensions	2 RU x 19" x 530 mm	2 RU x 19" x 435 mm	2 RU x 19" x 460 mm	3 RU x 19" x 353 mm
Remote	OCA via Ethernet/CAN	OCA via Ethernet/CAN	OCA via Ethernet/CAN	CAN

Airflow









# The operation with d&b amplifiers

# The V-Series frequency responses

### **Amplifier controller setups**

#### Arc and Line mode

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

#### **CUT** mode

Set to CUT, the cabinet low frequency level is reduced and it is now configured for use with the d&b V or J subwoofers.

#### **HFC** mode

Selecting the HFC (High Frequency Compensation) mode compensates for loss of high frequency energy due to absorption in air when loudspeakers are used to cover far field listening positions. HFC has two settings which should be used selectively, HFC1 for cabinets covering distances larger than 30 m (100 ft) and HFC2 for those covering distances larger than 60 m (200 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.

#### **HFA** mode

In HFA mode (High Frequency Attenuation), the HF response of the system is rolled off. HFA provides a natural, balanced frequency response when a unit is placed close to listeners in near field or delay use. HFA begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

## **CPL** function

The CPL (Coupling) function compensates for coupling effects between the cabinets of an array. CPL begins gradually around 2 kHz, with the maximum attenuation below 100 Hz. As coupling effects increase with the length of the line array, the CPL circuit can be set to dB attenuation values between 0 and -9.

#### 100 Hz mode

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

## Recommended amplifiers for mobile applications

	V7P	V10P	V-GSUB	V8	V12	V-SUB
D80	х	х	x	х	х	х

#### Recommended amplifiers for installation applications

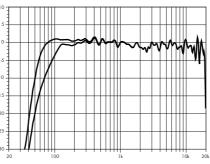
	Vi7P	Vi10P	Vi-GSUB	Vi8	Vi12	Vi-SUB
D80	х	х	х	х	х	x
30D	х	х	х	х	х	х

#### Maximum loudspeakers per amplifier channel

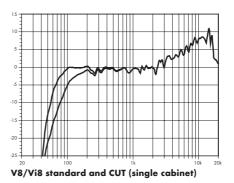
			V-GSUB Vi-GSUB			
	2	2	2	2	2	2

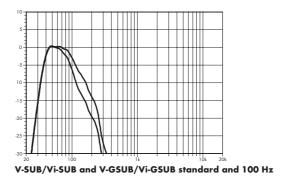
## **Available controller settings**

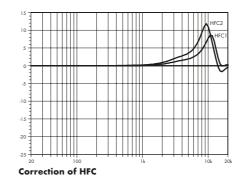
	V7P Vi7P	V10P Vi10P	V-GSUB Vi-GSUB	V8 Vi8	V12 Vi12	V-SUB Vi-SUB
Arc/Line				х	х	
CUT	х	х		х	х	
HFC				х	x	
HFA	х	х				
CPL	х	х		х	х	
100 Hz			х			х

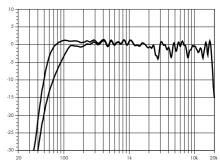


V7/Vi7P standard and CUT (single cabinet)

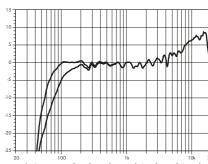




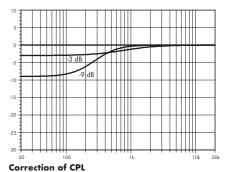




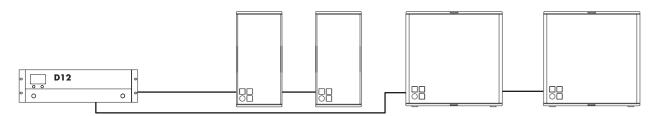
V10/Vi10P standard and CUT (single cabinet)



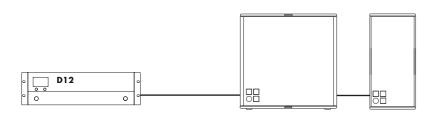
V12/Vi12 standard and CUT (single cabinet)



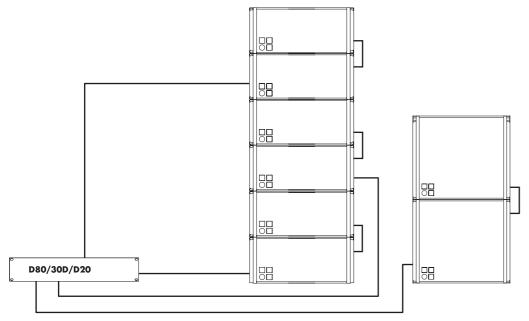
# The d&b amplifier output modes



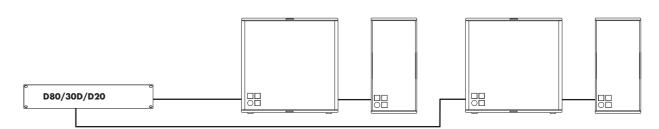
D12 amplifier in Dual Channel mode for V7P, V10P, Vi7P, Vi10P, V8, V12, Vi8, Vi12 as well as V-GSUB, Vi-GSUB, V-SUB and Vi-SUB



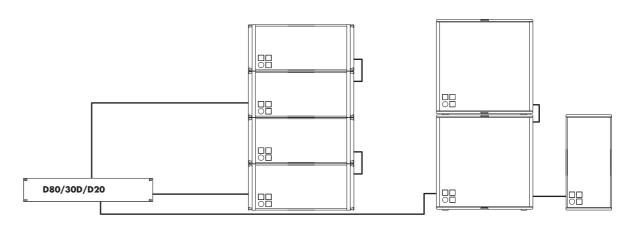
D12 amplifier in Mix TOP/SUB mode for V7P, V10P, Vi7P, Vi10P, V8, V12, Vi8, Vi12 as well as V-GSUB, Vi-GSUB, V-SUB and Vi-SUB



D80/30D/D20 amplifier in Dual Channel mode for V7P, V10P, Vi7P, Vi10P, V8, Vi8, V12, Vi12 as well as V-GSUB, Vi-GSUB, V-SUB and Vi-SUB

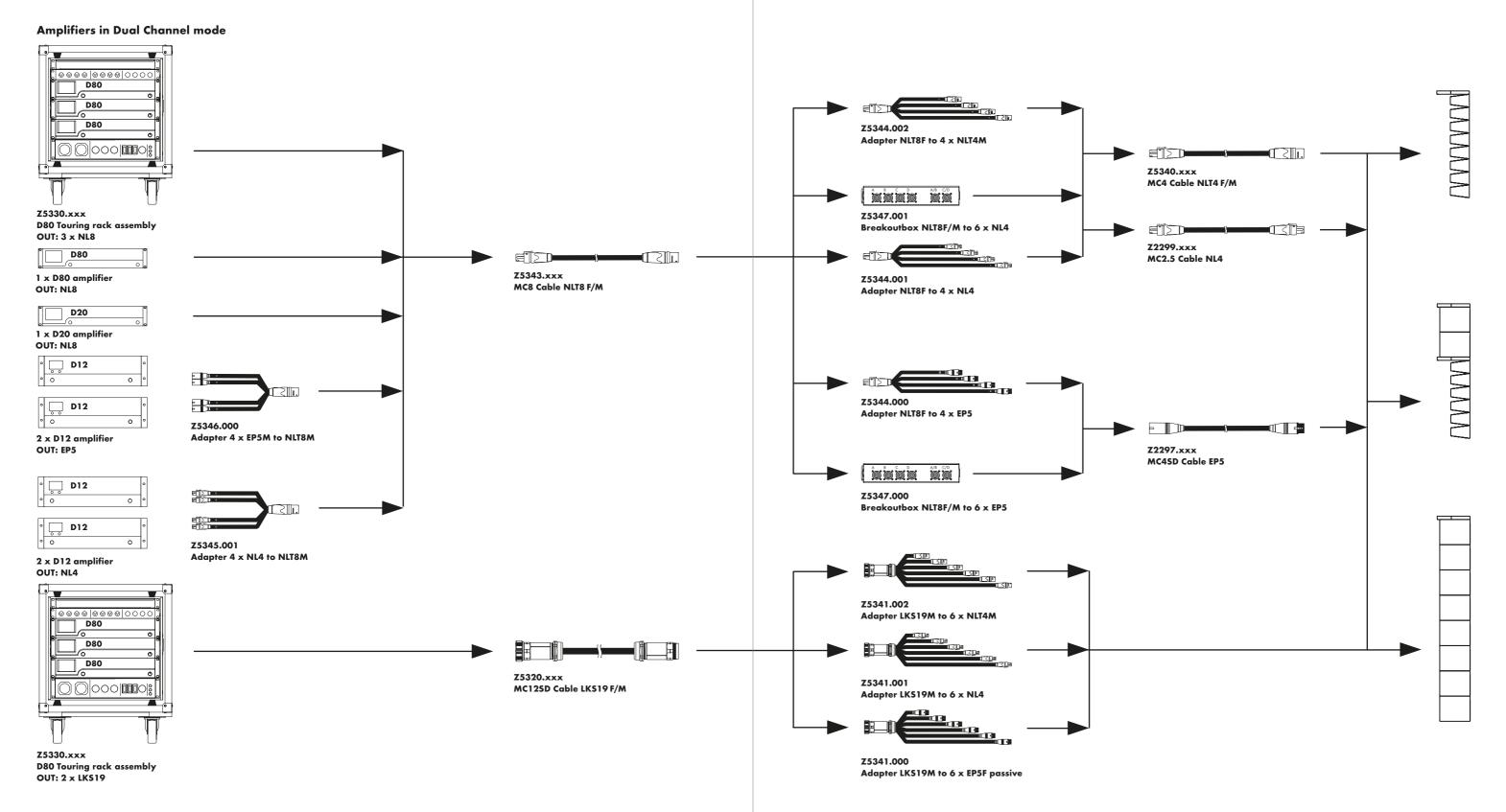


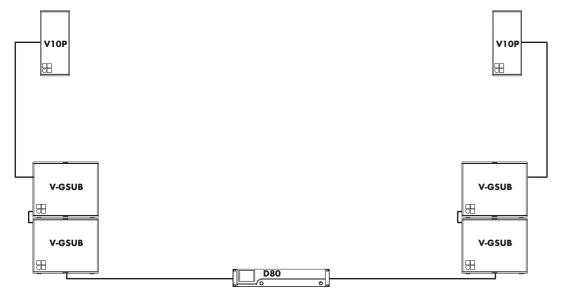
D80/30D/D20 amplifier in Mix TOP/SUB mode for V7P, V10P, Vi7P, Vi10P, V8, V12, Vi8, Vi12 as well as V-GSUB, Vi-GSUB, V-SUB and Vi-SUB



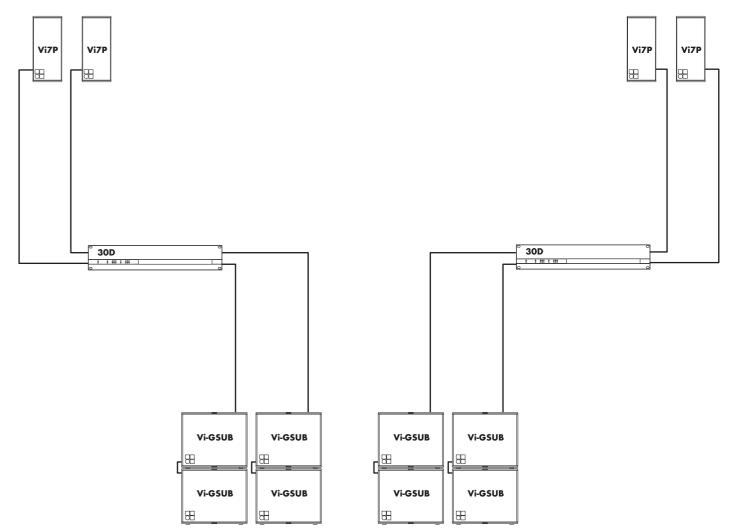
D80/30D/D20 amplifier in a mixed configuration of Dual Channel and Mix TOP/SUB mode for V7P, V10P, Vi7P, Vi10P, V8, V12, Vi8, Vi12 as well as V-GSUB, Vi-GSUB, V-SUB and Vi-SUB

# The V-Series cables and adapters

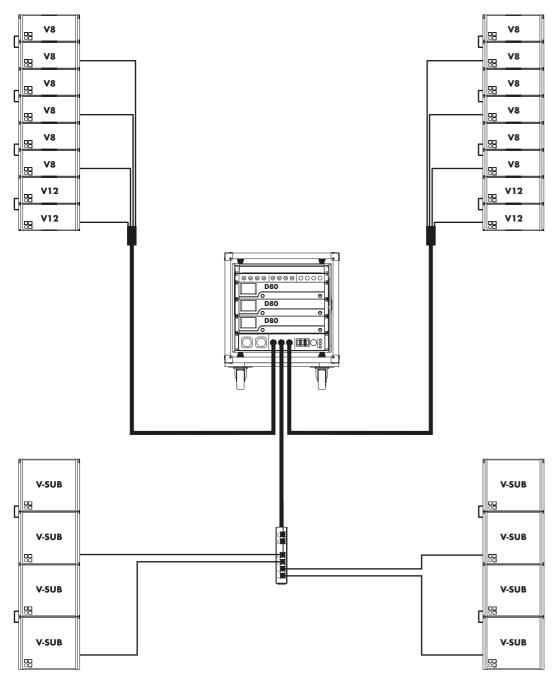




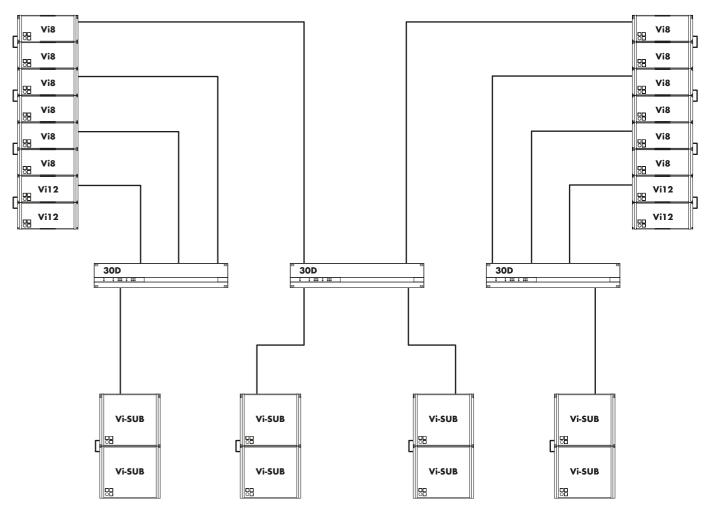
V-Series L/R configuration comprising V10Ps and V-GSUBs with a D80 amplifier in Mix TOP/SUB mode



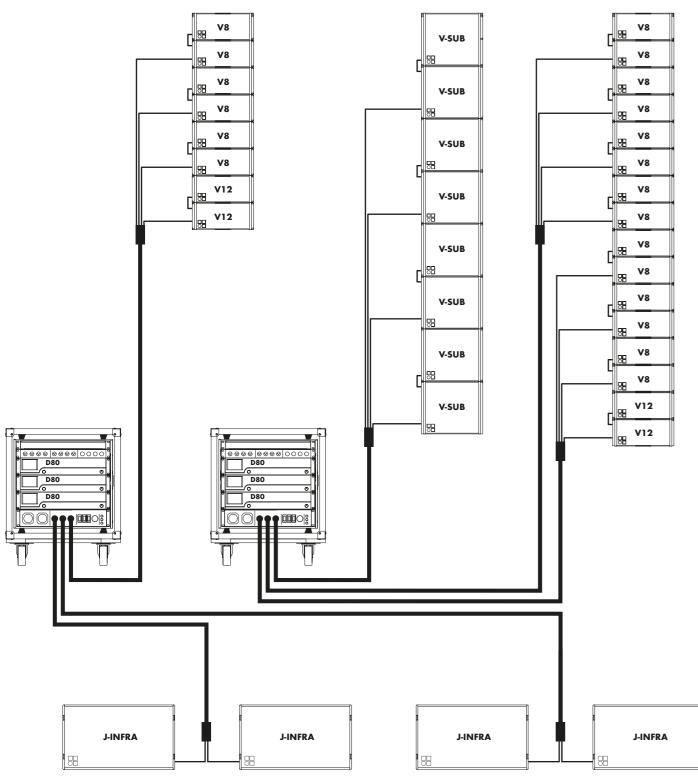
Vi7P loudspeakers in a distributed point source system and ground stacked Vi-GSUBs, with 30D amplifiers in Dual Channel mode



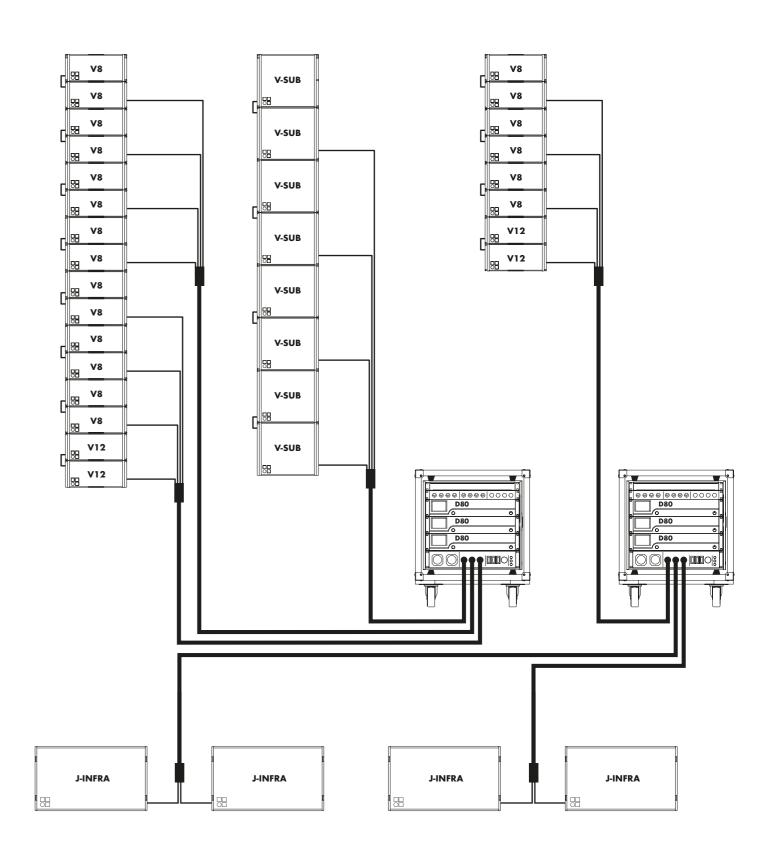
V-Series L/R configuration with V8/V12 flown line array and ground stacked V-SUBs with D80 Touring rack



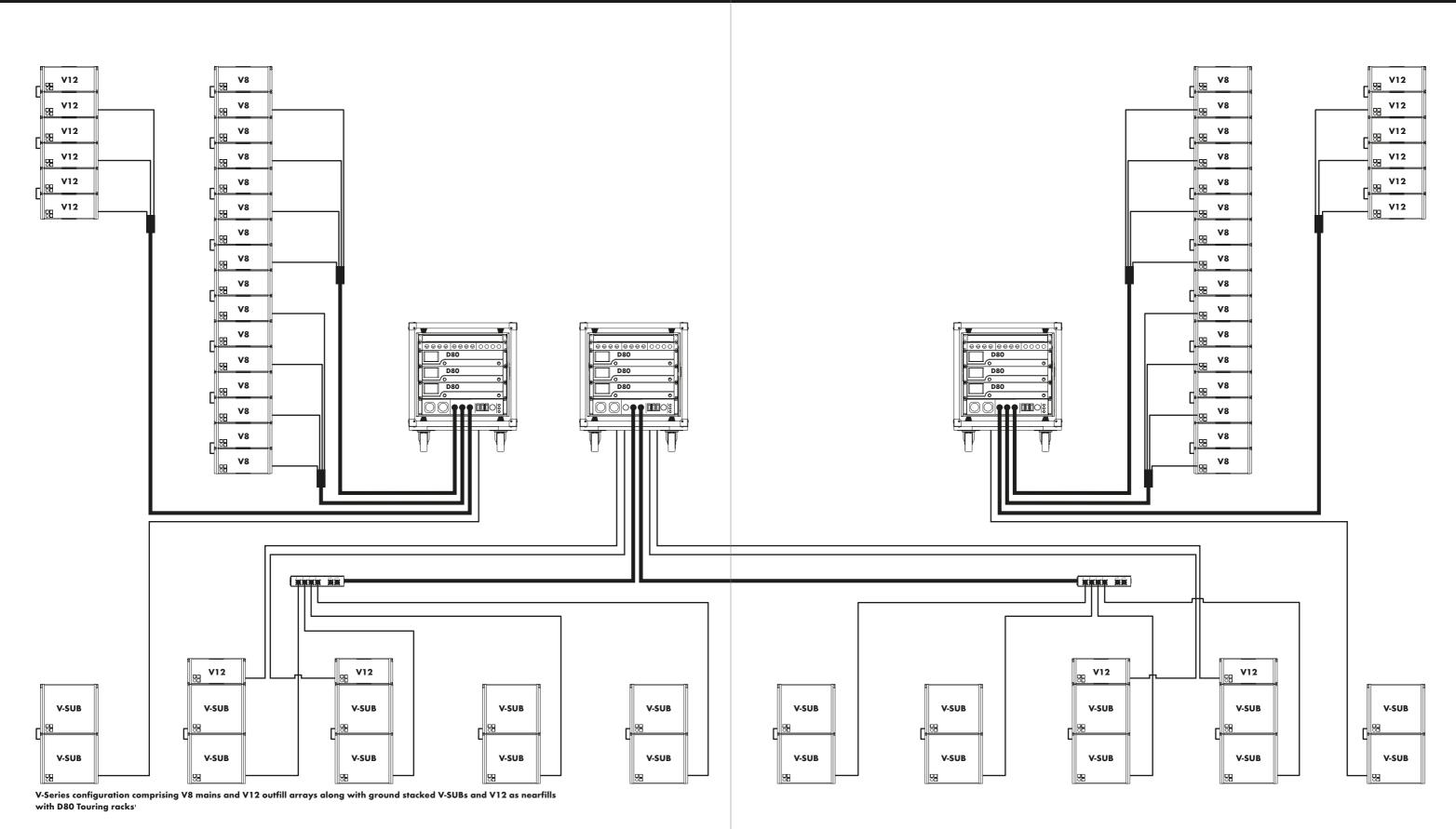
Vi line array in L/R configuration with flown Vi8/Vi12s with ground stacked Vi-SUBs with 30D amplifiers in Dual Channel mode



V8/V12 and V-SUB main arrays, V8/V12 outfills and ground stacked J-INFRAs with D80 Touring racks<sup>1</sup>



38 d&b V-Series These configuration examples are also valid for Vi loudspeakers



40 d&b V-Series These configuration examples are also valid for Vi loudspeakers

# The V-Series product overview

	70704	
V loudspeakers	Z0704.xxx	V7P Loudspeaker
	Z0705.xxx	V10P Loudspeaker
	Z0515.xxx	V8 Loudspeaker
	Z0516.xxx	V12 Loudspeaker
	Z0518.xxx	V Subwoofer
	Z0519.xxx	V-GSUB
Loudspeaker	Zxxxx.000	EP5 connector
connector options	Zxxxx.001	NL4 connector
от оргоно	Zxxxx.002	NLT4 F/M connector
	2,000.002	Tier Try in commodion
Vi loudspeakers	Z0724.001	Vi7P Loudspeaker NL4 connector
	Z0725.001	Vi10P Loudspeaker NL4 connector
	Z0535.001	Vi8 Loudspeaker NL4 connector
	Z0536.001	Vi12 Loudspeaker NL4 connector
	Z0538.001	Vi Subwoofer NL4 connector
	Z0520.001	Vi-GSUB NL4 connector
		WR Weather Resistant option
		SC Special Colour option <sup>2</sup>
		or openial colors opinion
Cases	E7462.000	Touring case 2 x V8/V12
	E7465.000	Touring case 2 x V Flying frame
	E7466.000	Touring case 2 x V7P/V10P
		,
Carts	E7463.000	Touring cart 4 x V8/V12
	E7464.000	Touring cart 8 x V8/V12
Lids	E7923.000	V-SUB Wooden lid
	E7926.000	V-GSUB Wooden lid
V/Vi accessories	Z5380.000	<b>V Flying frame</b> <sup>3</sup> (supplied with Z5382 V Safety chainset)
	Z5381.000	V Hoist connector chain
	Z5382.000	V Safety chainset
V accessories	Z5385.000	V Flying adapter
v accessories		
	Z5386.000	V Stack adapter Rota clamp
	Z5147.000	kora ciamp
Vi accessories	Z5387.000	Vi Mounting frame top <sup>3</sup>
	Z5387.001	Vi Mounting frame bottom <sup>3</sup>
	E6507.000	1t Shackle
VP accessories	Z5383.000	VP Mounting bracket <sup>3</sup>
	Z5384.000	VP Flying adapter <sup>3</sup>
	Z5388.000	VP Horizontal bracket <sup>3</sup>
	Z5551.000	VP Flying adapter link
		7 • • • • • • • • • • • • • • • • • • •

<sup>1</sup> WR only for Vi loudspeakers, on request

	Z5550.000	M20 Stand adapter
	Z5010.000	TV spigot with fixing plate
	Z5012.500	Pipe clamp for TV spigot
	Z5049.000	Flying pin 8mm
	Z5013.000	Loudspeaker stand winder M20
	Z5009.000	Loudspeaker stand with winder
	Z5024.000	Loudspeaker stand adapter
Remote network	Z3010.000	R1 Remote control software <sup>4</sup>
	Z6118.000	R60 USB to CAN interface
	Z6124.000	R70 Ethernet to CAN interface
	Z6116.000	RJ 45 M Terminator
	Z6122.000	Bopla mounting clamp
	Z6123.000	Bopla mounting clamp upright
Amplifiers	Z2710.xxx	D80 Amplifier <sup>5</sup>
	Z2770.xxx	30D Amplifier <sup>6</sup>
	Z2600.xxx	D12 Amplifier <sup>5</sup>
	Z2750.xxx	D20 Amplifier NL4 <sup>5</sup>
Amplifier rack assemblies	Z5310.000	D12 Touring rack assembly EP5 <sup>7</sup>
	Z5310.001	D12 Touring rack assembly NL4 <sup>7</sup>
	Z5330.001	D80 Touring rack assembly, CEE 32A 5P <sup>7</sup>
	Z5330.xxx	<b>D80 Touring rack assembly, Nema L21-30 (120V devices)</b> on request <sup>7</sup>
Amplifier racks	E7480.000	D20 Touring rack 2 RU 19" SD, shock mounted, handles
	E7468.000	D80 Touring rack 2 RU, 19" SD, shock mounted, handles
	E7419.000	Touring rack 3 RU, 19" DD, shock mounted, handles, window
	E7420.000	Touring rack 6 RU, 19" DD, shock mounted, handles, window, wheels
Cables and adapters	Z5343.xxx	MC8 Cable NLT8 F/M
	Z5346.000	Adapter 4 x EP5M to NLT8M
	Z5345.001	Adapter 4 x NL4 to NLT8M
	Z5320.xxx	MC12SD Cable LKS19 F/M
	Z5344.002	Adapter NLT8F to 4 x NLT4M
	Z5344.001	Adapter NLT8F to 4 x NL4
	Z5344.000	Adapter NLT8F to 4 x EP5
	Z5347.001	Breakoutbox NLT8 F/M to 6 x NL4
	Z5347.000	Breakoutbox NLT8 F/M to 6 x EP5
	Z5340.xxx	MC4 Cable NLT4 F/M
	Z2299.xxx	MC2.5 Cable NL4
	Z2297.xxx	MC4SD Cable EP5
	Z5341.002	Adapter LKS19 M to 6 x NLT4M
	Z5341.001	Adapter LKS19 M to 6 x NL4
	Z5341.000	Adapter LKS19M to 6 x EP5

<sup>5</sup> the complete list of mobile amplifier versions is available in the D Amplifier and Software brochure

<sup>&</sup>lt;sup>2</sup> SC only for Vi loudspeakers, on request

<sup>3</sup> SC on request

<sup>4</sup> available as a download at www.dbaudio.com

<sup>6</sup> the complete list of installation amplifier versions is available in the xD Installation Amplifier and Software brochure

<sup>7</sup> further information is available in the D Amplifier and Software brochure