

The 12G loudspeaker



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The 12G is a high performance 2-way multipurpose loudspeaker employing an integrated 12" coaxial driver in a bass-reflex enclosure.

The 12G can be used for speech and music applications, as a stand-alone full range system or incorporated into larger distributed sound reinforcement situations; making it ideally suited for deployment in multifunctional venues, clubs, discotheques and karaoke rooms. With the addition of compact bass-reflex subwoofers from the xS-Series, the 12G can also easily reproduce high level music program. The 80° conical dispersion allows use either in a vertical or horizontal orientation, delivering additional flexibility and mounting options.

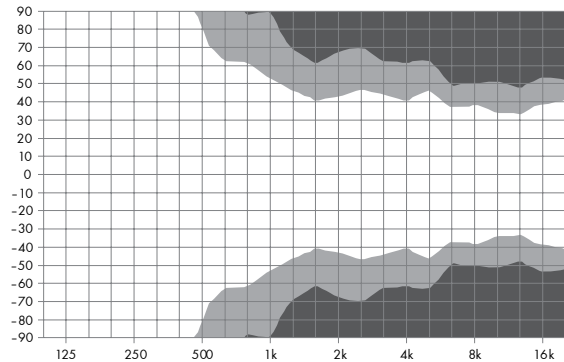
The enclosure is constructed from marine plywood with an impact resistant black paint finish. The front of the cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The 12G loudspeaker embodies the d&b holistic approach to sound reinforcement solutions; integrating loudspeakers, electronics, mechanical deployment assemblies and remote control functions.

System data

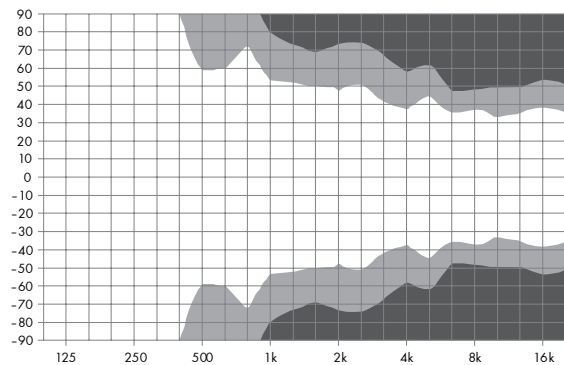
Frequency response (-5 dB standard)	48 Hz - 18 kHz
Frequency response (-5 dB CUT mode)	100 Hz - 18 kHz
Max. sound pressure (1 m, free field) ¹	130 dB
12G with D6	130 dB
12G with D12	133 dB
Input level (100 dB SPL/1 m)	-14 dBu

Loudspeaker data

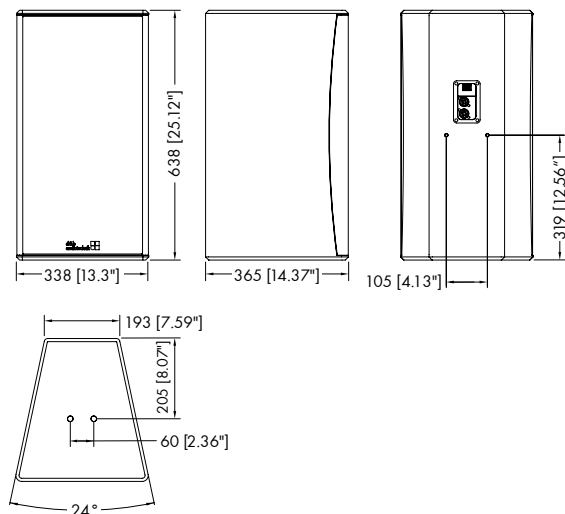
Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 ms)	300/1600 W
Nominal dispersion angle	80° conical
Components	12" driver
.....	1.4" compression driver, coaxially mounted
.....	passive crossover network
Connections	2 x NL4
.....	screw terminal block
Pin assignments NL4	1+/1-
Weight	17 kg (37 lb)



12G horizontal dispersion characteristics²



12G horizontal dispersion characteristics²



12G cabinet dimensions in mm (inch)

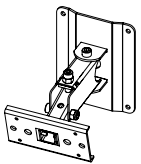
¹ Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

² Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at -6 dB and -12 dB

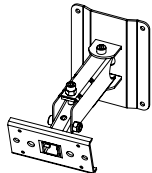
The 12G mounting accessories and examples

Safety approval

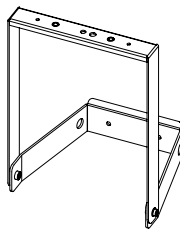
d&b loudspeakers and accessories are designed for set up and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.



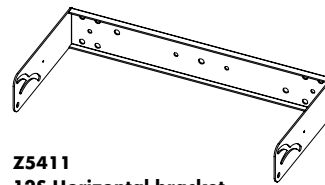
Z5402
Wall mount M



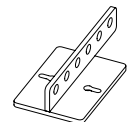
Z5403
Wall mount L



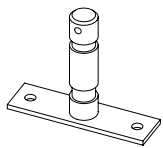
Z5406
12S Flying bracket



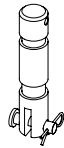
Z5411
12S Horizontal bracket



Z5020
Flying adapter 02



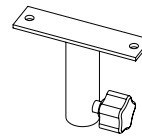
Z5010
TV spigot with fixing plate



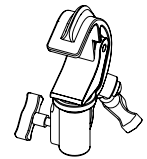
Z5015
TV spigot for
Flying adapter 02



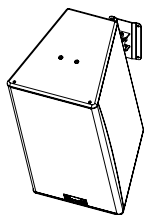
Z5029
TV spigot M10



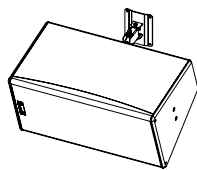
Z5024
Loudspeaker stand adapter



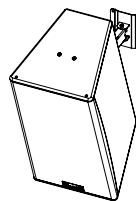
Z5012
Pipe clamp for TV spigot
WLL: 100 kg/220 lb;
for a tube diameter up to
70 mm/2.75"



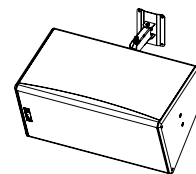
12G with
Z5402 Wall mount M



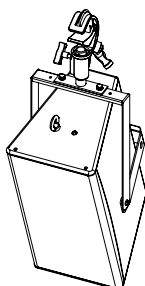
12G with
Z5402 Wall mount M



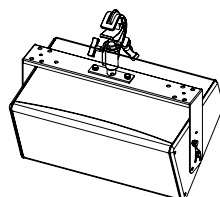
12G with
Z5403 Wall mount L



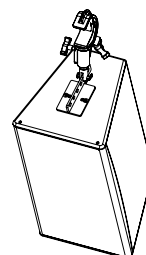
12G with
Z5403 Wall mount L



12G with
Z5406 12S Flying bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



12G with
Z5411 12S Horizontal bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



12G with
Z5020 Flying adapter 02
Z5015 TV spigot for Flying adapter 02
Z5012 Pipe clamp for TV spigot

The D6 and D12 amplifiers

The D6 and D12 are dual channel amplifiers developed and manufactured by d&b utilizing Digital Signal Processing (DSP) to incorporate loudspeaker specific configuration information and functions. These are designed for use with d&b loudspeakers, have both digital and analog signal inputs as well as link outputs, remote control and monitoring capabilities and switch mode power supplies. The level control incorporates a digital rotary encoder enabling selection of all operating modes in conjunction with a Liquid Crystal Display (LCD).

Loudspeaker specific configurations for current d&b loudspeakers and a linear mode are contained within them, the exception being that the D6 does not include 2-Way Active, V-Series and B2-SUB configurations.

The digital elements of the D6 and D12 are specified and constructed to achieve the best possible audio performance while maintaining a very low latency of 0.3 msec. The Digital Signal Processing is used to provide the loudspeaker specific configurations, sophisticated protection circuits modelling thermal and mechanical driver behaviour, and switch functions.

User definable equalization and delay functions are incorporated in each channel of the amplifiers and can be used for applications such as front fills or under balcony delays without the need for external processors. The signal delay capability allows delay settings of up to 340 msec. (= 100 m/328 ft) to be applied independently to each channel as can the 4-band parametric equalizer, providing optional Boost/Cut or Notch filtering. A signal generator offering pink noise or sine wave program is also incorporated for test and alignment purposes. Every unit can be given a unique Device Name to simplify identification and a password protected LOCK function is also incorporated to prevent unauthorized changes.

The D6 and D12 amplifiers also detect incoming Pilot signals at its input (Input monitoring) and can use Load monitoring and System check functions to determine the status of the loudspeaker impedance. d&b System check is designed to verify that the system performs within a predefined condition and can be used to report the system condition after a show.

d&b Load monitoring, on the other hand, enables automatic and continuous impedance monitoring and along with Input monitoring is designed for incorporation within applications specified to the requirements stated in the International Standard IEC 60849 'Sound Systems for Emergency Purposes'. Both can determine the status of an LF or HF driver in systems with multiple elements, even if these are crossed over passively.

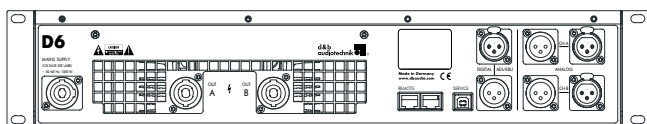
The D6 utilizes a switch mode power supply with PFC suitable for mains supply voltages 100 V/115 V/200 V/230 V, 50 - 60 Hz whilst the D12 utilizes an autosensing switch mode power supply for mains voltages 115/230 V, 50 - 60 Hz (optional 100/200 V). Both power supplies have overvoltage protection and each amplifier has a temperature and signal controlled fan to cool the internal assemblies.

The 2 RU lightweight D6 is specifically designed to deliver medium power into low impedance loads between 4 and 16 ohms. The 3 RU D12 is specifically designed to produce high power into low impedance loads, typically those between 4 and 16 ohms. Due to differences in impedance response against frequency, the maximum number of cabinets driven by each D12 channel varies depending on the loudspeaker type.

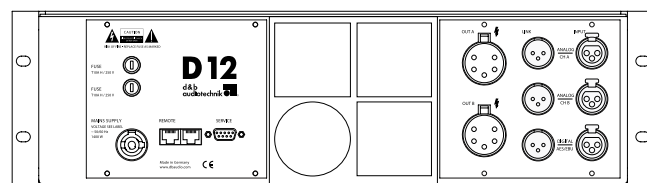
Apart from selectable output configurations for dual channel, Mix TOP/SUB and 2-Way Active mode, the D12 also provides d&b SenseDrive for use with the LF drivers in d&b active loudspeakers and subwoofers.

Both amplifiers house an I/O panel containing: analog signal inputs with link outputs for each channel, an AES/EBU digital input with a link output and NL4 loudspeaker outputs. The D12 I/O panel additionally offers the options of EP5 or NL8 loudspeaker outputs. The two RJ 45 REMOTE sockets at the rear of the D6 and the D12 amplifiers integrate them into the d&b Remote network via CAN-Bus, enabling remote control and/or monitoring.

A USB-B (D6) or a SUB-D9 (D12) SERVICE interface is provided to enable future firmware updates containing new loudspeaker configurations or additional functions to be loaded to the units.



D6 rear view



D12 rear view

The D6 and D12 amplifier data

D6 Display

ISP, GR, OVL A/B.....LED indicators
Liquid Crystal Display (LCD).....Graphic display/120 x 32 Pixel

D6 Controls

POWER, MUTE/LEVEL.....Switch, rotary encoder
Function switches.....Loudspeaker specific circuits
4-band equalizer.....Optional PEQ/Notch
Delay setting.....0.3 - 340 msec. with 0.1 msec. detents
Configurations.....Current d&b loudspeakers and linear mode
.....except 2-Way Active, V-Series and B2-SUB
Frequency generator.....Pink noise or Sine wave

D6 Connectors

INPUT/LINK ANALOG A/B.....3 pin XLR female/male¹
INPUT/LINK DIGITAL AES/EBU.....3 pin XLR female/male¹
Sampling rate.....48 kHz/96 kHz
OUT CHANNEL A/B.....NL4
REMOTE.....2 x RJ 45 parallel
SERVICE.....USB Type B

D6 Protection circuits

Mains inrush current limiter.....1.5 A RMS at 230 V
Loudspeaker switch on delay.....Approx. 2 sec.
Overvoltage protection.....Up to 400 VAC

D6 Data (linear setting with subsonic filter)

Rated output power (THD+N < 0.1%).....
.....2 x 350 W into 8 ohms, both channels are driven
.....2 x 600 W into 4 ohms, both channels are driven
S/N ratio (unweighted, RMS).....>110 dBr

D6 Digital Signal Processing

Sampling rate.....96 kHz/27 Bit ADC/24 Bit DAC
Basic delay/latency analog input.....0.3 msec.

D6 Power supply

Switch mode power supply for.....
.....100/115/200/230V, 50 - 60 Hz
Mains connector.....PowerCon® 2

D6 Remote network

Remote network.....CAN-Bus

D6 Dimensions, weight

Height x width x depth.....2 RU x 19" x 353 mm/13.9"
Weight.....8 kg/17.6 lb

D12 Display

ISP, GR, OVL A/B.....LED indicators
Liquid Crystal Display (LCD).....Graphic display/120 x 32 Pixel

D12 Controls

POWER, MUTE/LEVEL.....Switch, rotary encoder
Function switches.....Loudspeaker specific circuits
4-band equalizer.....Optional PEQ/Notch
Delay setting.....0.3 - 340 msec. with 0.1 msec. detents
Configurations.....Current d&b loudspeakers and linear mode
Frequency generator.....Pink noise or Sine wave

D12 Connectors

INPUT/LINK ANALOG A/B.....3 pin XLR female/male¹
INPUT/LINK DIGITAL AES/EBU.....3 pin XLR female/male¹
Sampling rate.....48 kHz/96 kHz
OUT CHANNEL A/B.....Optional EP5/NL4/NL8
REMOTE.....2 x RJ 45 parallel
SERVICE.....SUB-D9 female

D12 Protection circuits

Mains inrush current limiter.....5 A RMS at 230 V
Loudspeaker switch on delay.....Approx. 2 sec.
Overvoltage protection.....Up to 400 VAC

D12 Data (linear setting with subsonic filter)

Rated output power (THD+N < 0.1%).....
.....2 x 750 W into 8 ohms, both channels are driven
.....2 x 1200 W into 4 ohms, both channels are driven
S/N ratio (unweighted, RMS).....>110 dBr

D12 Digital Signal Processing

Sampling rate.....96 kHz/27 Bit ADC/24 Bit DAC
Basic delay/latency analog input.....0.3 msec.

D12 Power supply

Autosensing switch mode power supply for.....
.....115/230 V, 50 - 60 Hz
.....optional 100/200 V, 50 - 60 Hz
Mains connector.....PowerCon® 2

D12 Remote network

Remote network.....CAN-Bus

D12 Dimensions, weight

Height x width x depth.....3 RU x 19" x 353 mm/13.9"
Weight.....13 kg/29 lb

¹ XLR pin assignment analog, inputs and links: 1 = GND, 2 = pos. signal, 3 = neg. signal
XLR pin assignment digital, input and link: 1 = GND, 2 = signal, 3 = signal

² PowerCon® is a registered trademark of the Neutrik AG, Liechtenstein

The operation with D6 and D12 amplifiers

The 12G frequency response

Operation with D6 and D12

	12G
Max. LS per channel	2

Maximum loudspeakers per D6 or D12 channel

CUT mode

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

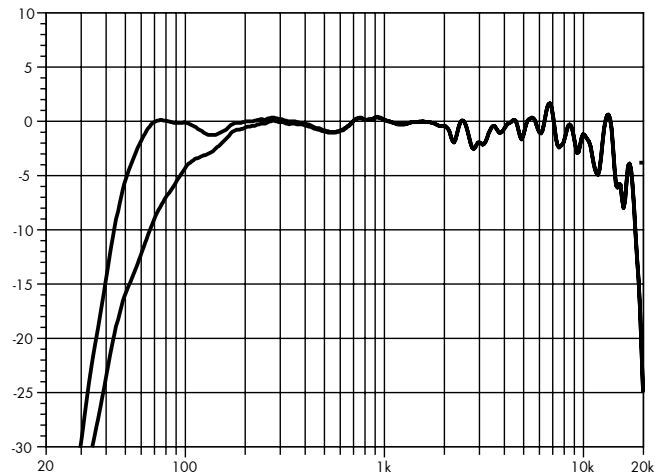
HFA mode

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

CPL function

The CPL (Coupling) function compensates for coupling effects between closely coupled cabinets by reducing the low and mid frequency level. CPL begins gradually around 1 kHz, with the maximum attenuation below 200 Hz. To achieve a balanced frequency response the CPL function can be set to dB attenuation values between 0 and -9. Positive CPL values create an adjustable low frequency boost (0 to +5 dB) and can be set when the system is used in full-range mode without subwoofers.

12G frequency response



12G standard and CUT

The 12S-CN product overview

	Code	Description
Loudspeakers	Z1350.400	12G Loudspeaker
Amplifiers	Z2700.400	D6 Amplifier CN NL4
	Z2600.401	D12 Amplifier CN NL4
Remote network	Z3000.000	R1 Remote control software¹
	Z3001.000	R10 Service software¹
	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
Accessories	Z5402.000	Wall mount M²
	Z5403.000	Wall mount L²
	Z5406.000	12S Flying bracket²
	Z5411.000	12S Horizontal bracket²
	Z5020.000	Flying adapter 02
	Z5015.000	TV spigot for Flying adapter 02
	Z5029.000	TV spigot M10
	Z5010.000	TV spigot with fixing plate
	Z5012.500	Pipe clamp for TV spigot
	Z5024.000	Loudspeaker stand adapter

¹ available as a download at www.dbaudio.com

² supplied in pairs

