

Dodecahedron Speaker Set

Omnidirectional Sound Source



DS3 Dodecahedron Loudspeaker



PA3 Power Amplifier



Remote control for PA3

Comprised of the DS3 Dodecahedron Loudspeaker and the PA3 Power Amplifier, the set generates a Pink noise signal with an acoustically-flat frequency response.

NOTE Always wear an appropriate ear protection when using the speaker set.



Standard Operation

1. Connect the PA3 to the DS3 with the supplied Speakon cable
2. Connect the PA3 to AC mains power and switch it on => the Signal ON button glows red ● (amplifier is muted)
3. Attach the remote control antenna to the PA3
4. Press the Signal Source button to select the required test signal => the selected Signal Source LED glows green ●
5. Press the Signal ON button, or the button on the remote control to unmute / mute the PA3 => the Signal ON button glows green ● (unmuted) / red ● (muted)
6. Adjust the DS3 volume using the output level control

Signal Source Selection

- EQ Pink Internal equalized Pink noise for acoustically-flat frequency response (→ see page 3, footnote 3)
- EQ Line Enables Line IN socket. Any external input signal is processed with the default DS3 equalization
- Preset 3 Internal Pink noise without equalization (for maximum output power from the DS3)
- Preset 4 Enables Line IN socket without equalization
- Preset 5 unused (available on request for a customized signal)

Line IN Socket

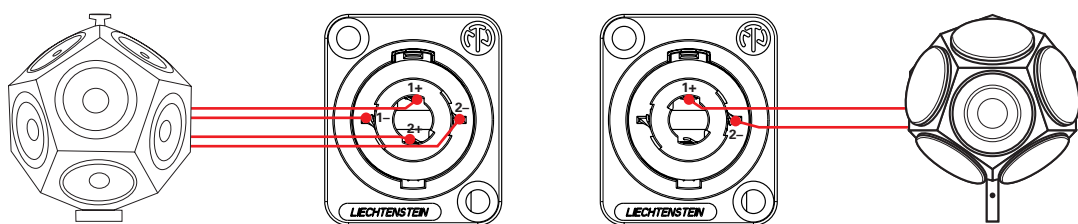
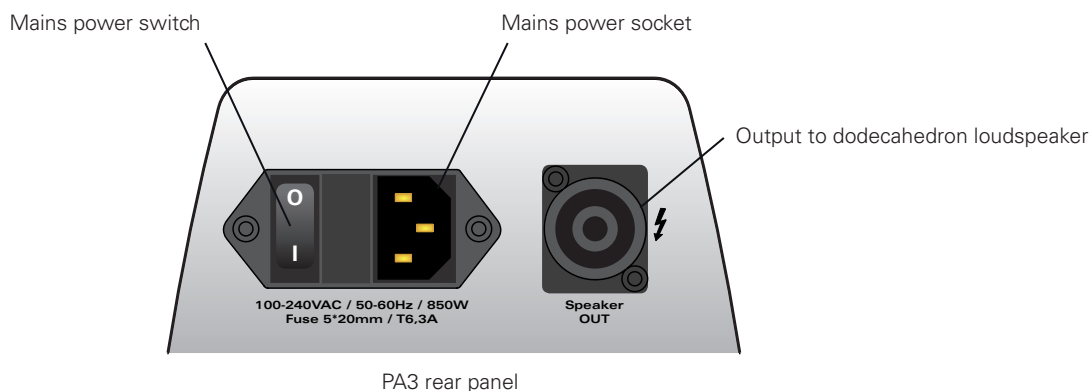
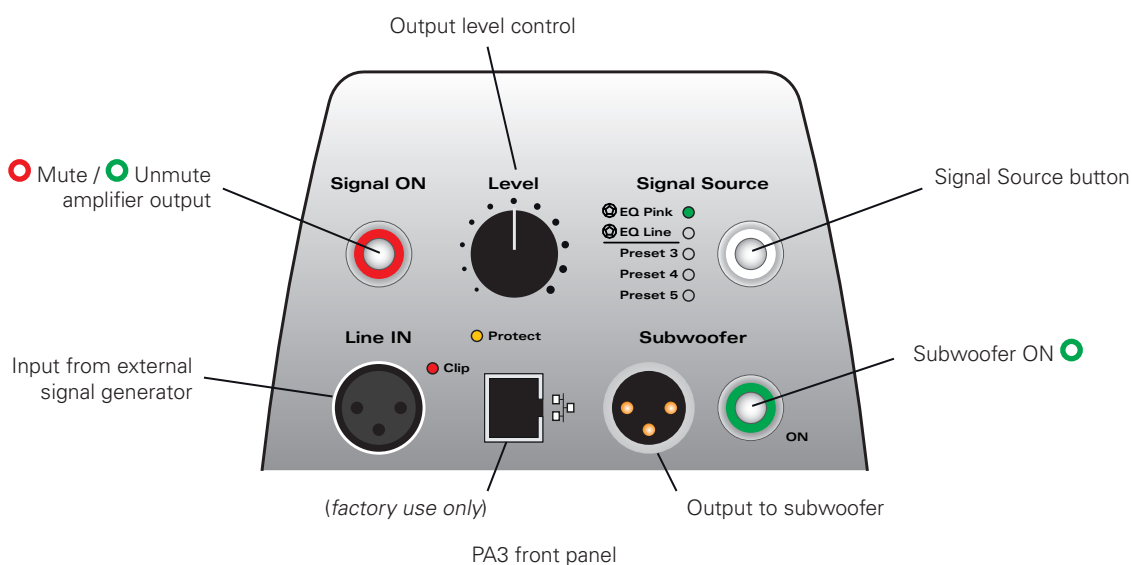
Connect an external signal generator to the PA3 with an XLR cable and select the Signal Source EQ Line or Preset 4.

Subwoofer Operation

Connect the PA3 to an active subwoofer with an XLR cable. Press the Subwoofer ON button => the Subwoofer ON button glows green ●.

Warning LEDs, Troubleshooting

Warning LED	Issue	Root cause	Countermeasure
● Protect	Amplifier output is muted	A. The output current of the amplifier is too high B. Temperature inside amplifier is too high C. The amplifier output is oscillating	A. Verify the connected cable / load. Switch OFF the amplifier for >20 sec. B. Let the amplifier cool down. Verify that the built-in fan is operating. C. Check the compatibility of the speaker (i.e. verify the load impedance).
● Clip	Distorted output signal	The input signal level is too high	Reduce the Line IN signal volume
(none)	Amplifier audibly reduces the output volume (<i>Note: this is a protection feature</i>)	D. The input signal is overloading the amplifier E. The impedance of the output load is too low (i.e. output power too high)	D. Select another test signal. Reduce the Line IN signal volume. E. Verify or modify the load. Check for external short circuit.



4-wire connection for DS3 loudspeaker

2-wire connection, e.g. with DS2 (PA3 in bridge mode)

Specifications PA3

Maximum short-period output power	2*260 W into 2*4 Ω (@ $\leq 1\%$ THD)
Maximum continuous output power ¹⁾	2*150 W into 2*4 Ω (with internal Pink noise @ maximum level)
Load impedance	$\geq 3 \Omega$ (4-wire connection) or $\geq 8 \Omega$ (2-wire connection / Bridge mode)
Protection	Dynamic compressor, temperature, overcurrent, DC, excessive clipping
Output connector	4-pin Speakon (chn1: 1+ 1- / chn2: 2+ 2- or Bridge mode: 1+ / 2-)
THD	typ. 0.017% @ 2*120 W into 2*4 Ω , 1 kHz
Level flatness	+0 / -3.3 dB ²⁾ @ 20 Hz to 20 kHz
Signal-to-noise ratio	≥ 86 dB, bandwidth 22 kHz
Damping factor	≥ 120 @ load $\geq 3 \Omega$ and $f < 2$ kHz
Voltage gain	Muted Level adjustable from -18 dB to 29.0 dB
Line IN Input connector Input sensitivity Maximum input level Input impedance	XLR symmetric 0 dBu for specified output power into 2*3 Ω / 2*4 Ω (max. gain) 20 dBu / ± 11 Vp 10 k Ω symmetric
Subwoofer OUT Output connector Voltage gain Maximum output level Output impedance Filter	XLR symmetric 3 dB 18 dBu / ± 8.72 Vp $\leq 600 \Omega$ symmetric Lowpass 120 Hz Butterworth 24 dB / Octave (4 th order); additional highpass at amplifier output will be automatically activated when the subwoofer is switched ON
Signals (selectable) EQ Pink ³⁾ EQ Line Pink Line User	Internal noise generator, equalized Pink noise with Cf = 3.05 (9.69 dB) External signal, equalized Internal noise generator, non-equalized Pink noise with Cf = 3.4 (10.63 dB) External signal, without equalization Custom specific (available on request)
Default equalization of Dodecahedron DS3 1/3 Octave 1/1 Octave	Flat acoustic frequency response from 100 Hz to 8 kHz 100 dB re 1 pW ± 3 dB 105 dB re 1 pW ± 3 dB
Warning LEDs Clip Protect	Line IN input Amplifier automatically switches the output OFF at high temperature, overcurrent etc.; with auto-retry function
Controls Signal ON Level Signal Source Subwoofer ON	ON/OFF switch with green/red LED Knob for gain control Switch for selection of output signal ON/OFF switch with green LED
Remote control Function Transmission power	Amplifier output ON/OFF 1 mW
Conformity	<ul style="list-style-type: none"> • EU; China: EMC 2014/30/EU, EN 61326-1:2013, EN 61000-3/4-x, EN 55011+A1:2009, R&TTE standard 1999/5/EG; State Radio Regulation of China • Japan: ARIB STD-T 67 • USA: FCC part 15
Weight	5 kg (11 lbs)
Dimensions (L x W x H)	358 x 173 x 245 mm (14.1" x 6.8" x 9.7")
Mains supply	100 to 240 VAC, 50/60 Hz, 850 W
Fuse	T6.3 A (5 x 20 mm)
Temperature, humidity	0° to +50°C (32° to 122°F) @ $\leq 90\%$ RH (non-condensing), active cooling with fan
Accessories (included)	<ul style="list-style-type: none"> • Remote control • Carrying bag
Order information NTi Audio #	600 000 506 (433 MHz) / 600 000 510 (315 MHz, USA) / 600 000 511 (426 MHz, JP)

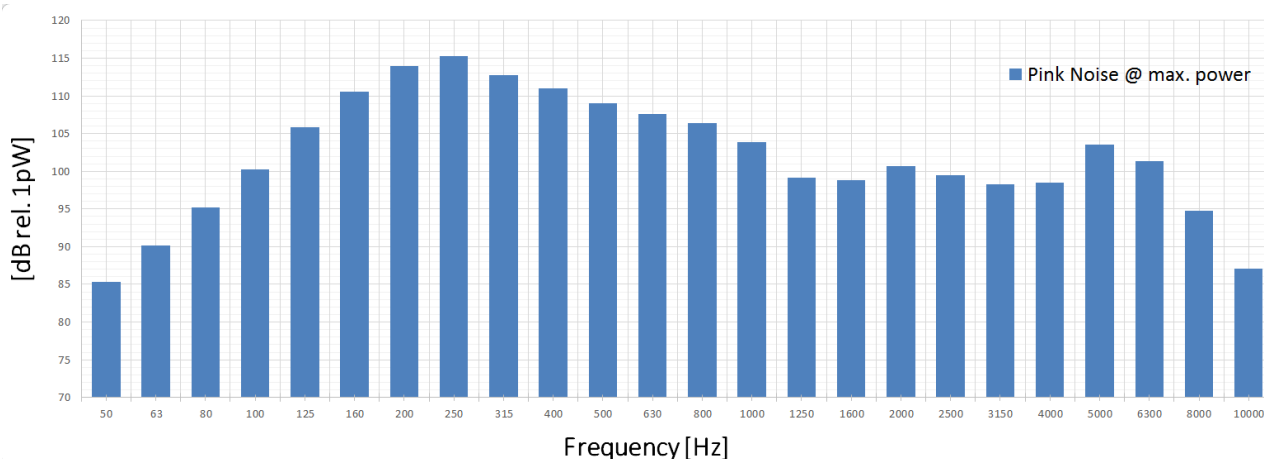
¹⁾: Without filtering

²⁾: Without equalization, with 20 kHz Butterworth high pass (24 dB damping factor)

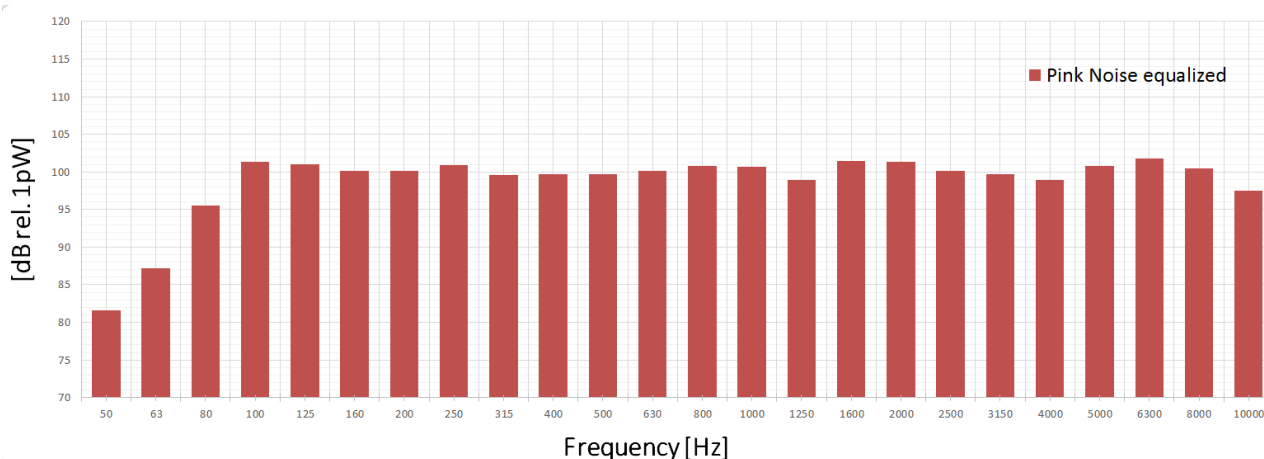
³⁾: The ISO16283-1:2014 standard requires a minimum energy-averaged sound pressure difference between contiguous 1/3rd octave bands. This difference shall not be more than 8 dB in the source room. The PA3 'EQ Pink' signal source is designed to deliver these minimum sound pressure level differences from the DS3. This is most suitable for room insulation measurements taken in accordance with the standard.

Specifications DS3

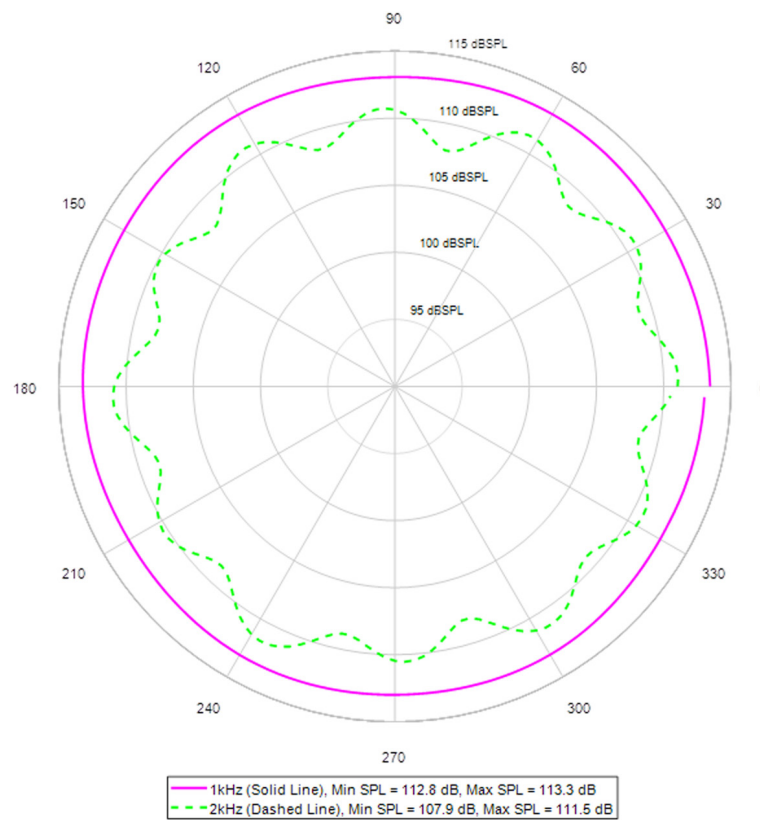
Standards	ISO140, ISO10140, ISO16283, ISO3382, ISO354, DIN52210, ASTM-E2235/-E336/-E90
Nominal impedance	2*4.2 Ω
Maximum input power RMS	320 W @ 1 hour Pink noise with Cf = 2.82 (9 dB)
Maximum peak power	600 W
Sound power level	> 120.0 dB re 1 pW (typical 120.5 dB re 1 pW)
Power compression	< 1 dB (after 1 h continuous operation @ maximum power)
Equalized sound pressure level 1/3 Octave 1/1 Octave	PA3 amplifier output adjusted for acoustically equalized DS3 output signal 100 dB re 1 pW ± 3 dB from 100 Hz to 8 kHz 105 dB re 1 pW ± 3 dB from 125 Hz to 8 kHz
Bandwidth	50 Hz to 10 kHz
Input connector	Speakon (chn1: 1+ 1- / chn2: 2+ 2-)
Number of speakers	12 pcs. $\approx 5"$ in dodecahedral configuration
Weight	7.5 kg (16.53 lbs)
Diameter	350 mm (13.8")
Accessories (included)	<ul style="list-style-type: none"> • Included: Carrying bag, Speakon cable 5 m, Manufacturer Calibration Certificate • Optional: Speaker stand 35 mm, 130...230 cm retractable, with carrying bag (NTi# 600 000 508) • Optional: Speakon cable 10 m (NTi # 600 000 512) or 20 m (NTi # 600 000 513)
Order information	NTi Audio # 600 000 507



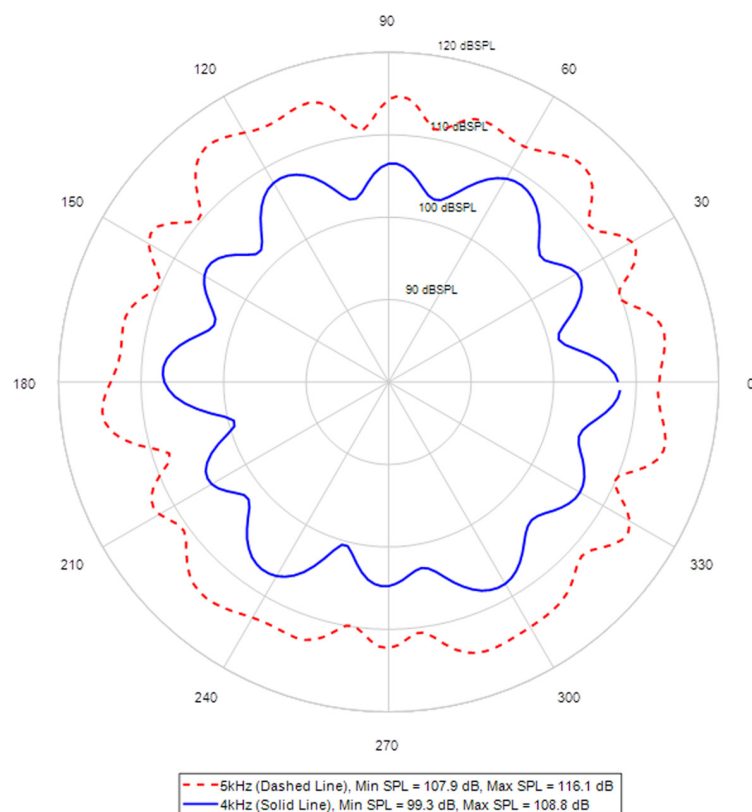
DS3 frequency response @ PA3 setting 'Pink' (maximum sound power)



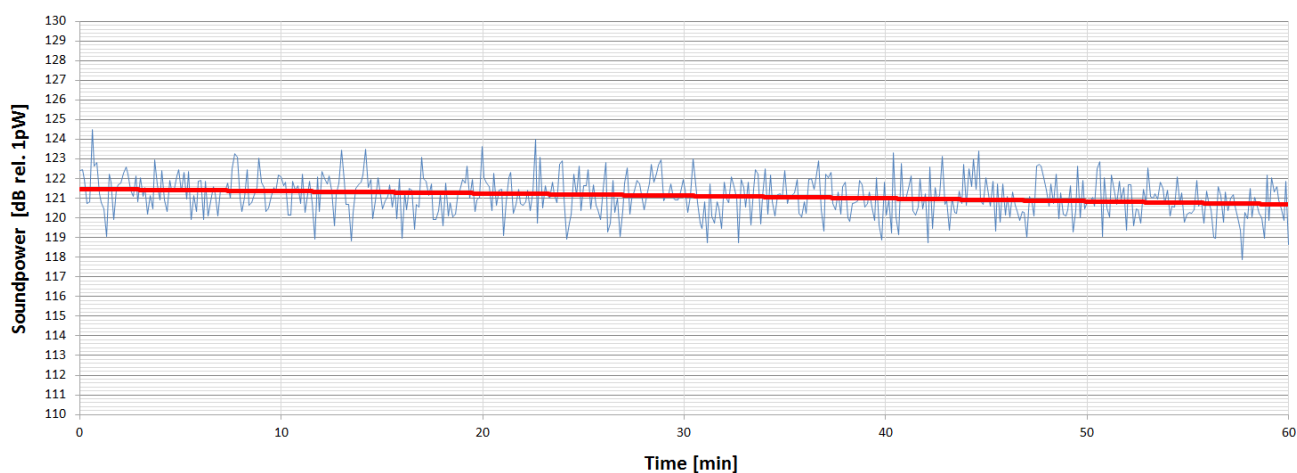
DS3 frequency response @ PA3 setting 'EQ Pink' (equalized)



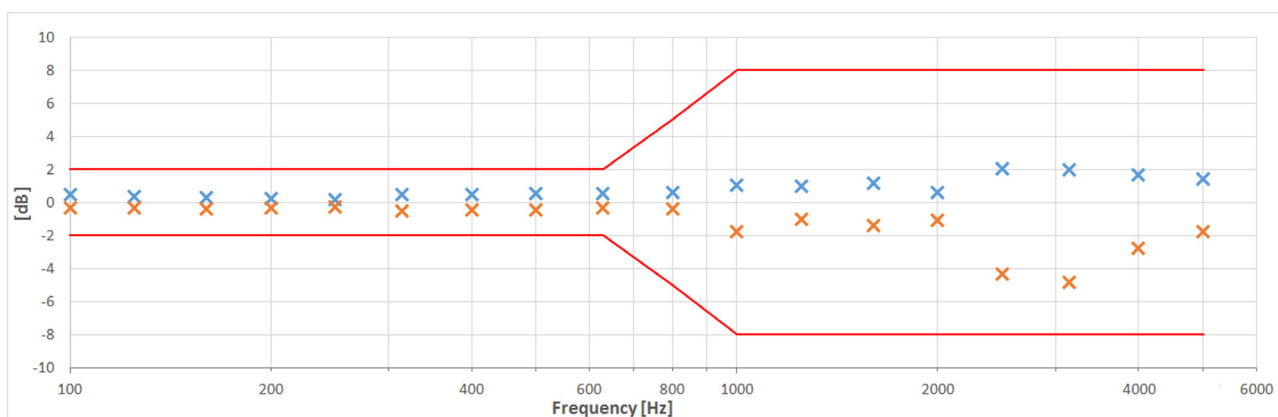
Polar plot of DS3 @ 1 kHz and 2 kHz for horizontal plane, measured in 1.5 m distance with 3rd octave analysis (signal source: GlideSweep)



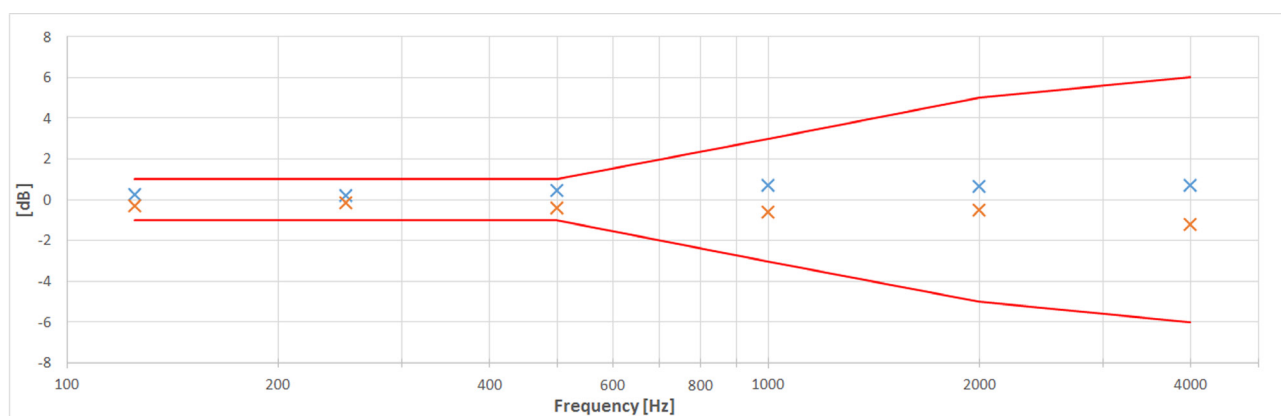
Polar plot of DS3 @ 4 kHz and 5 kHz for horizontal plane, measured in 1.5 m distance with 3rd octave analysis (signal source: GlideSweep)



DS3 power compression @ 300 W continuous power (PA3 setting 'Pink')



Directivity of DS3 in accordance with ISO 16283-1:2014



Directivity of DS3 in accordance with ISO 3382-1:2009

x: max. positive deviation from mean for moving 30° arc. average
x: max. negative deviation from mean for moving 30° arc. average

All information subject to change without notice.

Safety instructions

The following paragraphs provide important instructions for the safe operation of the device. Please read and follow these safety notes and instructions. Keep the instructions for future reference. Make sure that it is available to all persons using the device.



DANGER! Threats for children

Make sure that plastic covers, packaging, etc. are disposed of properly and are not within the reach of babies and small children. Danger of suffocation! Ensure that children do not detach any small parts from the device (e.g. control knobs or similar). They could swallow the parts and choke on them! Do not allow children to use electrical devices unsupervised.



DANGER! Electric shock due to high voltages inside the device

There are parts inside the device that are under high electrical voltage. Never remove any covers. There are no user-serviceable parts inside the device.



DANGER! Electric shock due to short circuit

Always use a properly insulated three-core power cord with a grounding-type plug. Do not make any modifications to the power cord or the power plug. Failure to do so may result in an electric shock and pose a risk of fire or death. If you are unsure, contact an authorized electrician.



CAUTION! Possible hearing damage

When the loudspeaker is connected, the device can generate volumes that may cause temporary or permanent hearing impairment. Wear appropriate hearing protection when operating the unit continuously at high volume. Reduce the volume immediately if you experience ringing in your ears or hearing loss.

HINT! Fire hazard

Never cover the device or the ventilation slots. Do not mount the device directly next to a heat source. Keep the device away from open fire.

HINT! Operating conditions

The device is designed for indoor use. To avoid damage, never expose the device to liquids or moisture. Avoid direct sunlight, heavy dirt and strong vibrations.

HINWEIS! Power supply

Before connecting the device, check whether the voltage specification on the device matches your local power supply network and whether the mains socket is protected by a residual current circuit breaker (RCD). Failure to do so may result in damage to the unit and injury to the user. To reduce the risk of electric shock or fire, unplug this apparatus during lightning storms or when unused for long periods of time. If thunderstorms develop or if you do not intend to use the device for a longer period of time, disconnect it from the mains to reduce the risk of electric shock or fire.