# LA-210

Owner‘s Manual

# Passive Line Array Modul

the box pro

## Intended Use

This speaker box is exclusively meant for the reproduction of audio signals according to instructions and specifications given in this manual. We‘re not liable for any damage caused by unintended use.

## Safety Instructions

For your own safety you must read through this chapter *at first completely,* before you connect the device!

- Never submerse the speaker box in water. Liquid getting into the box will risk a short circuit and will be hazardous.
- Do not expose the speaker box to direct precipitation and never use it in a damp or wet environment. This speaker box was developed for indoor use only. Do not use it outdoors.
- Do not place the speaker box in locations that are subject to high temperatures, direct sunlight, or excessive dust.
- Never operate the speaker box in the vicinity of heat sources such as cookers, heating elements or other heat producing installations.
- Keep children away from the speaker box. Children frequently underestimate the dangers of electrical devices.
- Keep sufficient distance from the speaker box when operated with high volume level. Listening to music with high sound pressure level may cause permanent damage to your hearing!
- Flying and installation of this speaker cabinet must be carried out by suitably qualified personnel following the approved safety standards.
- Do not attempt to clean the plastic enclosure with solvents or petrochemical based cleaners.
- Do not place objects which are sources of heat on the speaker cabinet such as lighting equipment or smoke machines.
- Do not stack the speaker cabinet in a manner that could cause injury should a cabinet become dislodged.
- Before connecting or operating this speaker box, please study and follow the instruction manuals of all devices connected to the box, paying particular attention to the operating precautions and wiring procedure.

## Features

LA-210 is a line array loudspeaker for medium scale sound reinforcement.

Using the LA-210 Flying frame it can be flown in vertical columns with up to 12 cabinets giving a 90° constant directivity dispersion pattern in the horizontal plane.

The LA-210 is a 2-way design housing 2 x 10” neodymium kapton LF drivers and two 2 x 4” x 1” (101.6 x 25.4 mm) neodymium Kapton compression drivers. The cylindrical wave segments of each cabinet will couple without gaps and sum up coherently. Splay angles between adjacent cabinets can be set in the range from 0° to 5° in half degree steps.

All components are arranged symmetrically around the centre axis of the cabinet to produce a perfect symmetrical dispersion pattern. This setup allows a very smooth crossover design with well defined overlap of adjacent frequency bands resulting in a very consistent and accurate horizontal dispersion. Due to dipolar arrangement of the low drivers the nominal dispersion of 90° is maintained down to 200Hz.

The frequency response of LA-210 extends from 100Hz - 19kHz.

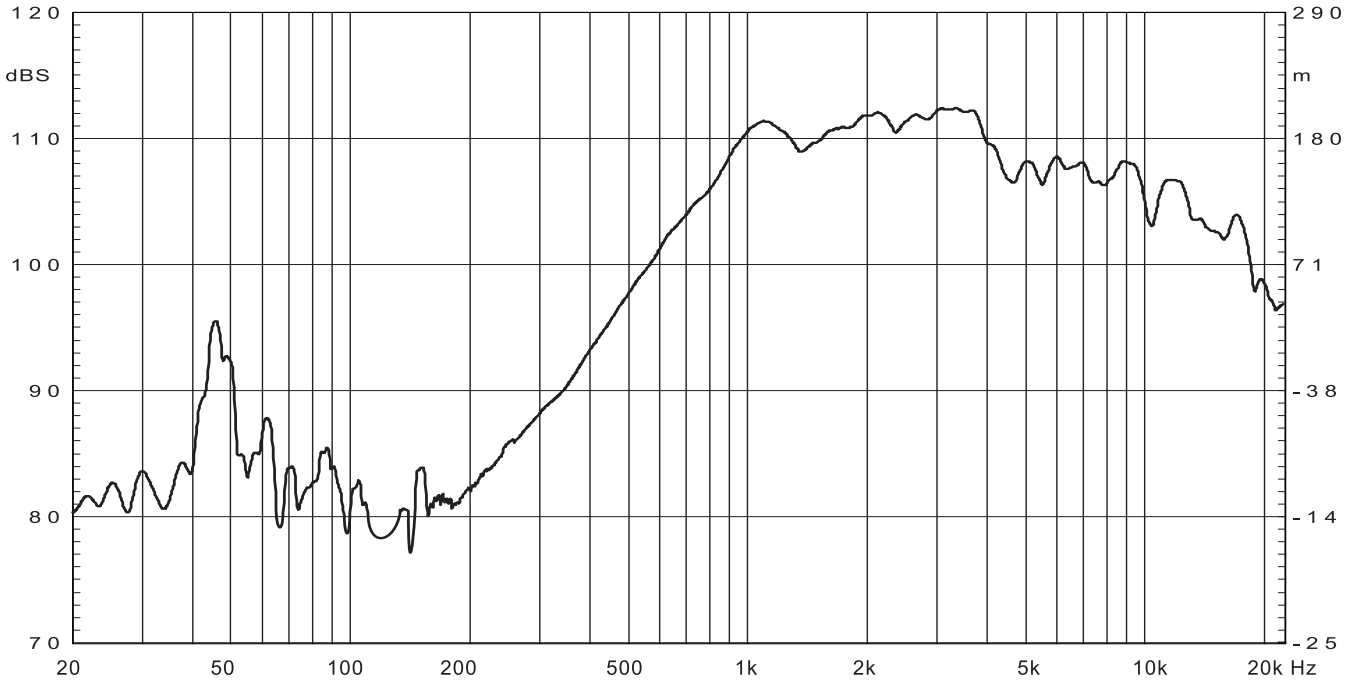
The LA-210 cabinet is made of plywood and has an impact and weather resistant polyurethane finish. The front of the loudspeaker cabinet is protected by a rigid metal grill. There are two handles designed on the side panels.

## Disposal

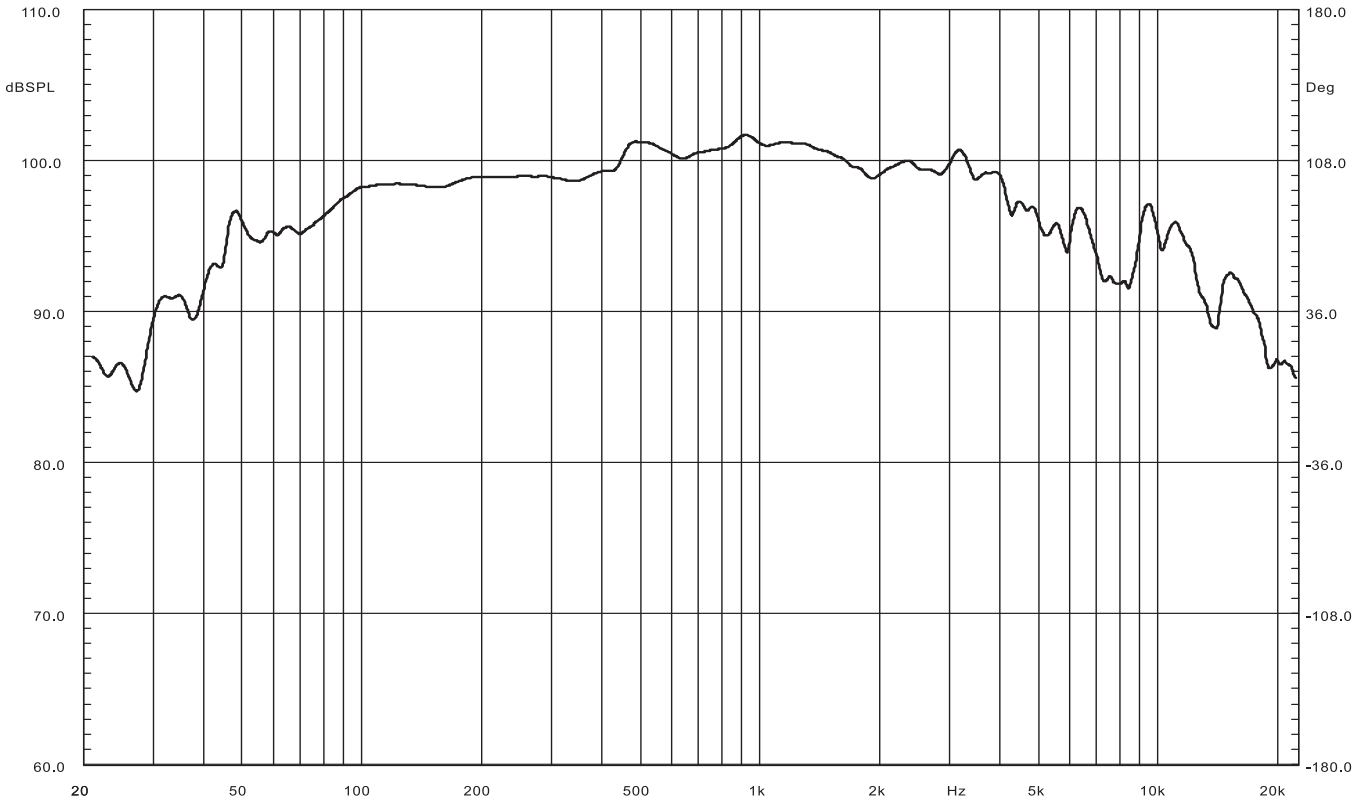
**Never throw the device into the regular household waste at the end of its useful life. This product is subject to the European Directive 2002/96/EC.**

- Dispose of the device through an approved disposal centre or at your community waste facility.
- Observe the current existing regulations. In case of doubt contact your disposal facility.
- The packaging is certified via a dual system. Take all packaging materials to an environmentally friendly disposal facility in compliance with the local regulations.

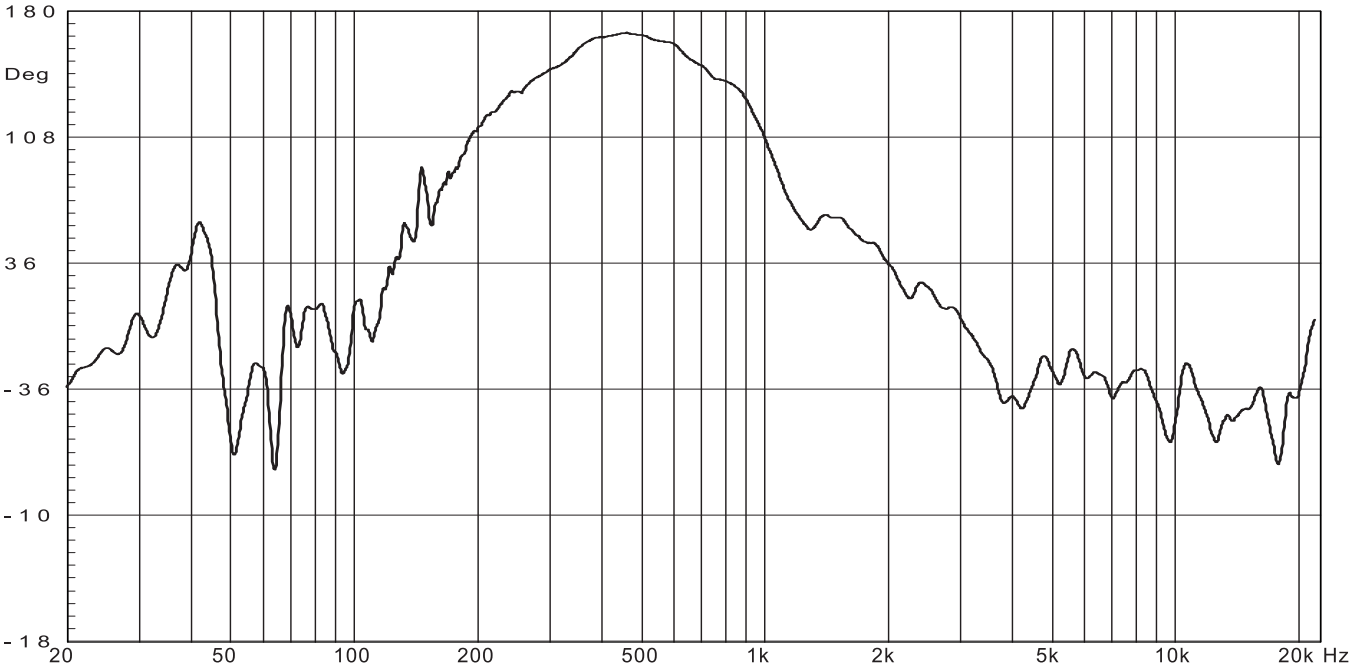
## FREQUENCY RESPONSE-HF



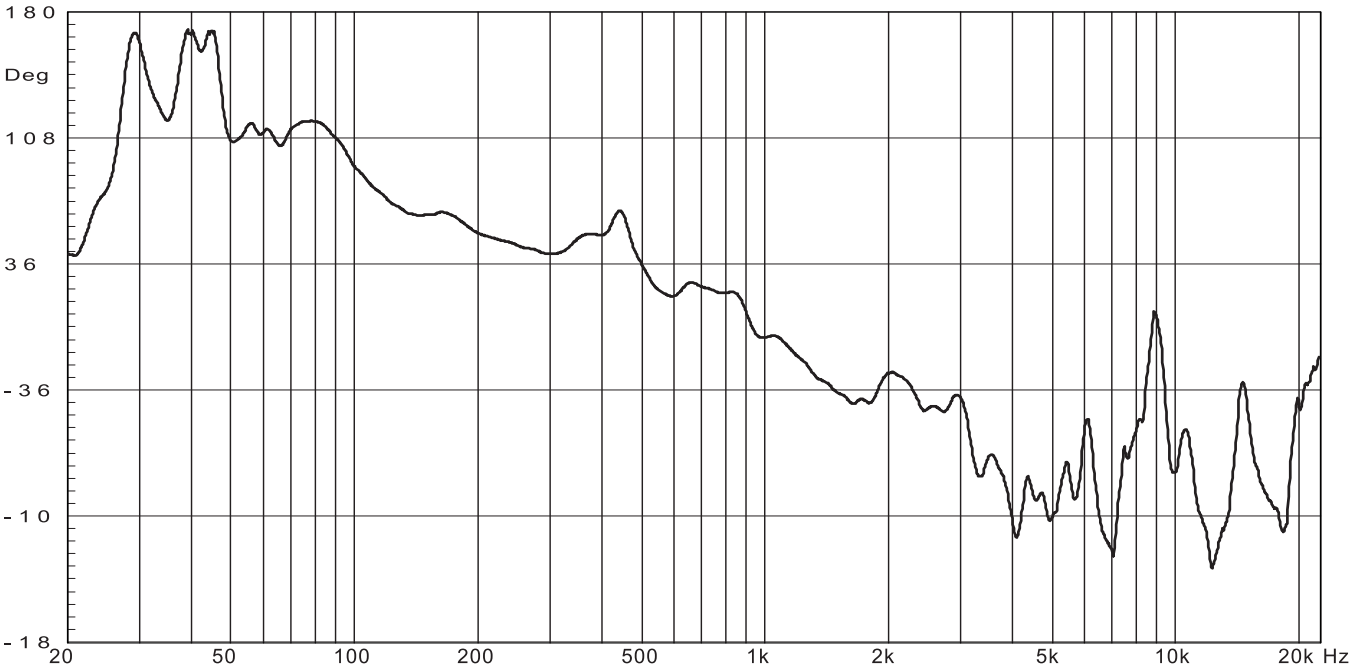

## FREQUENCY RESPONSE-LF



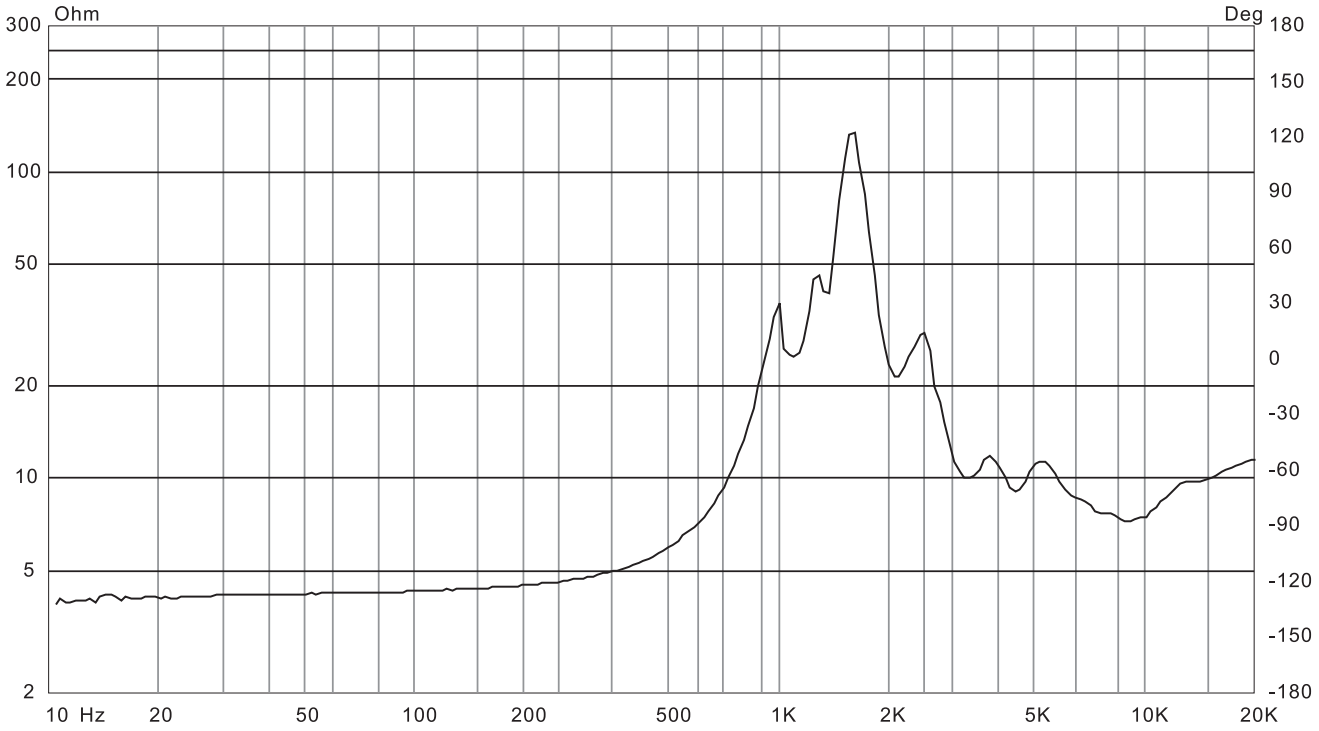
## PHASE RESPONSE-HF



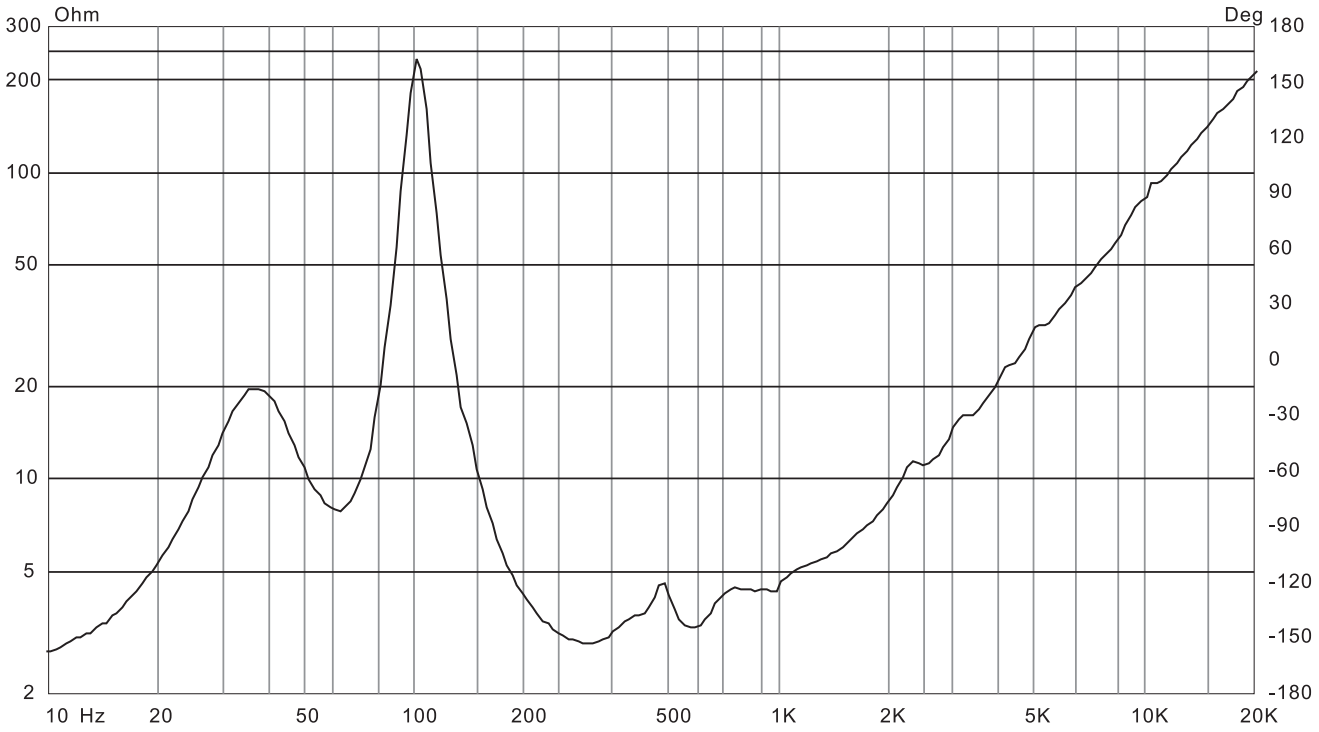

## PHASE RESPONSE-LF



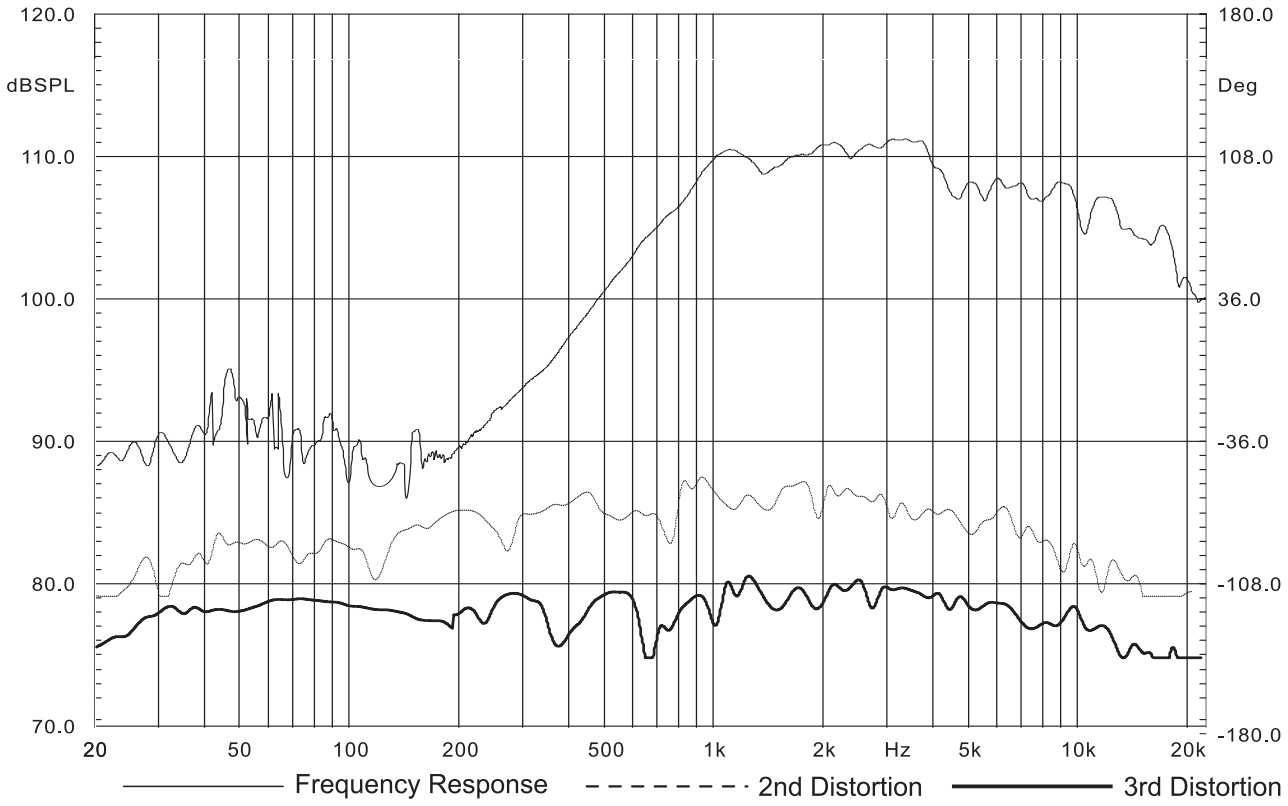
## IMPEDANCE RESPONSE-HF




## IMPEDANCE RESPONSE-LF



## THD-HF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dBSPL
110.0
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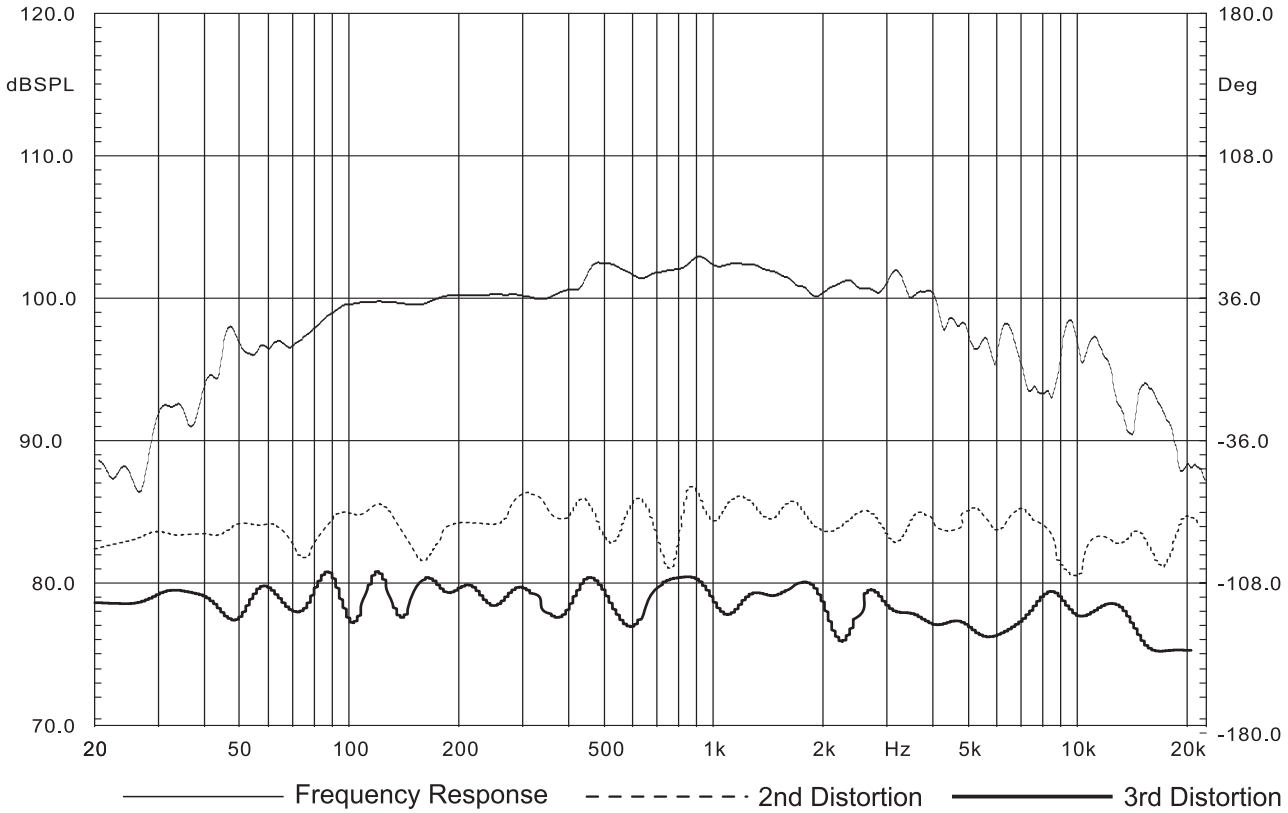
70.0
180.0
Deg
108.0
36.0
-36.0
-108.0
-180.0
20
50
100
200
500
1k
2k
Hz
5k
10k
20k
Frequency Response
2nd Distortion
3rd Distortion

## THD-LF


120.0
dBSPL
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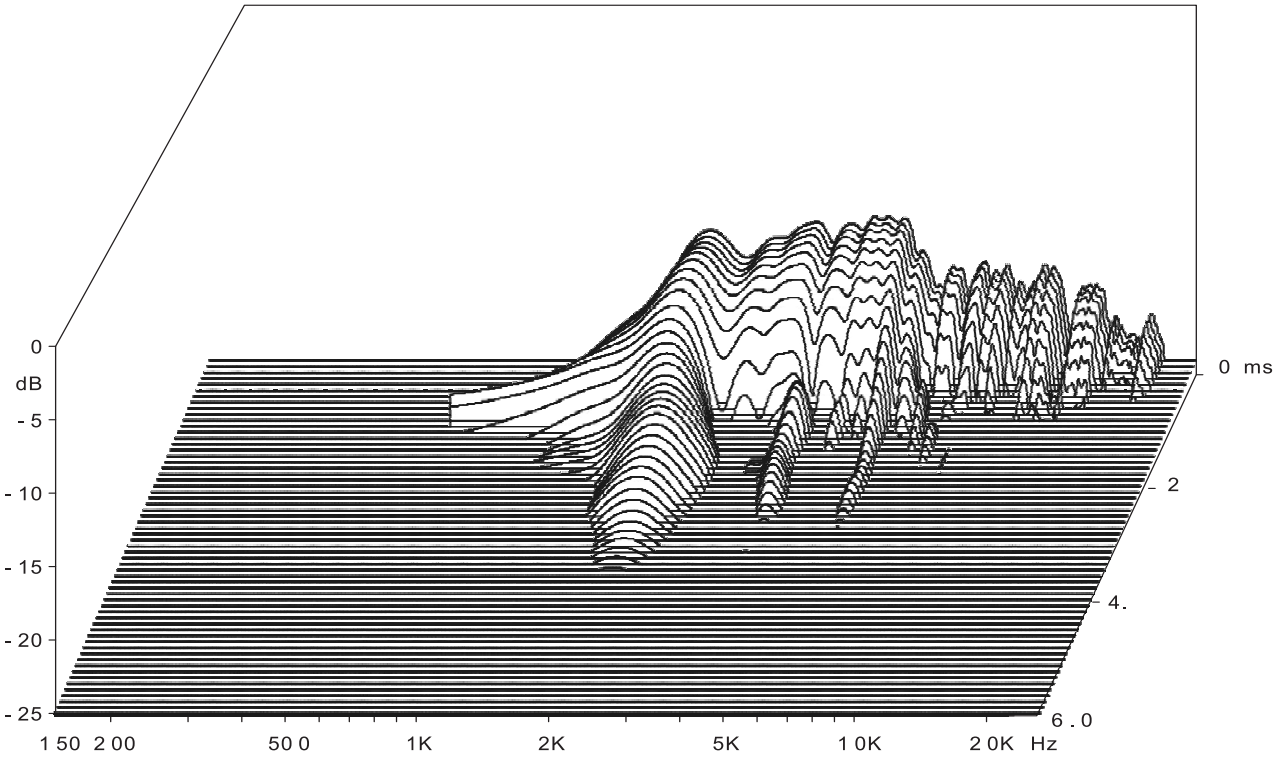
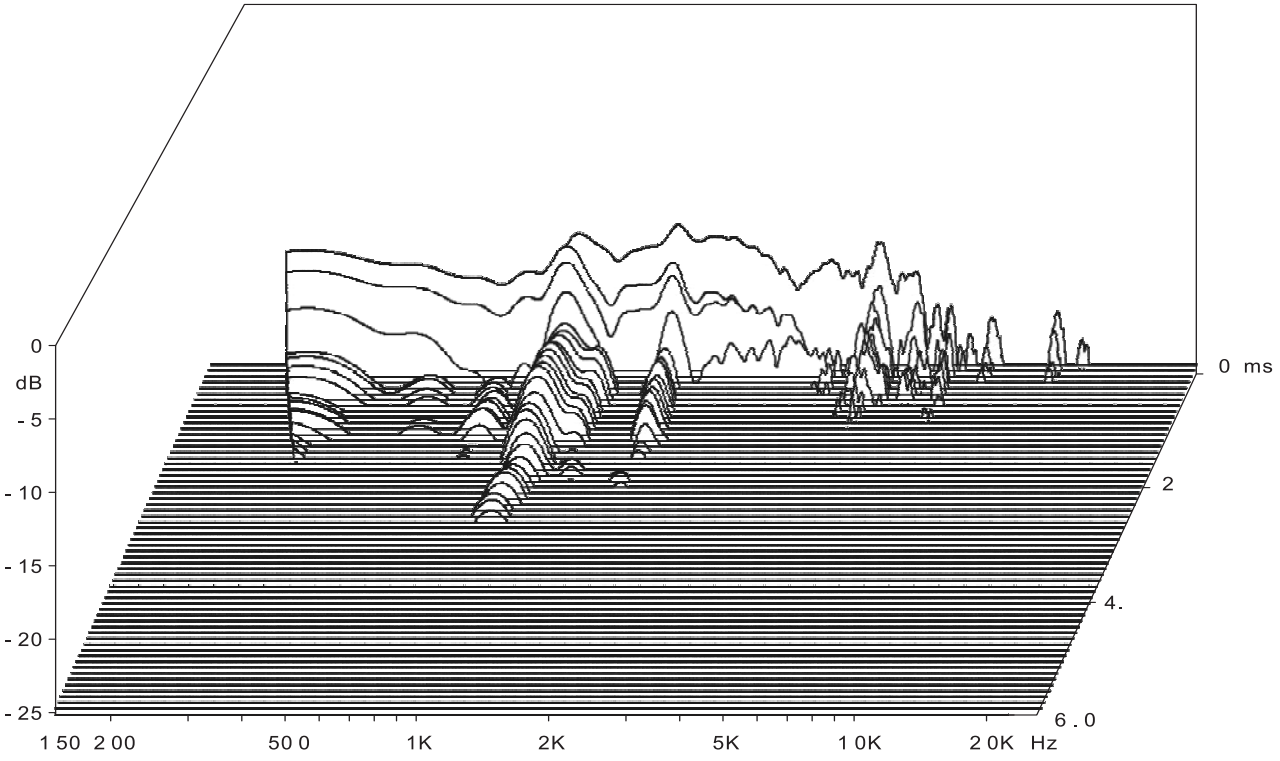
-36.0
-108.0
-180.0
20
50
100
200
500
1k
2k
Hz
5k
10k
20k
Frequency Response
2nd Distortion
3rd Distortion

## WATERFALL-HF

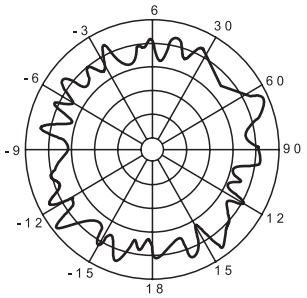



## WATERFALL-LF

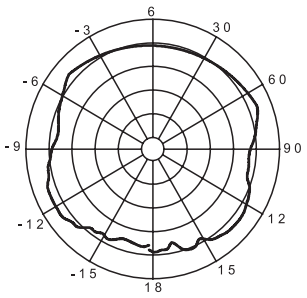


## HORIZONTAL DIRECTIVITY

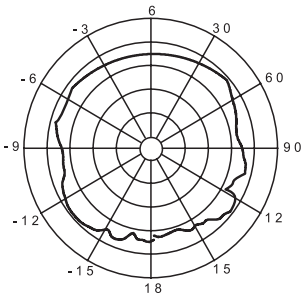
The data of LA-210 horizontal directivity were collected by testing the speaker system in a big anechoic chamber.



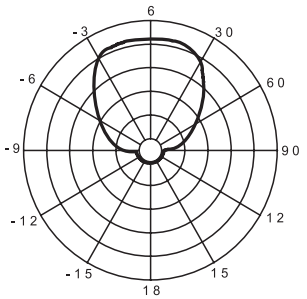

400Hz



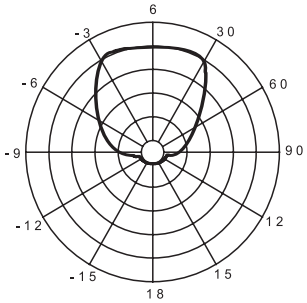

630Hz



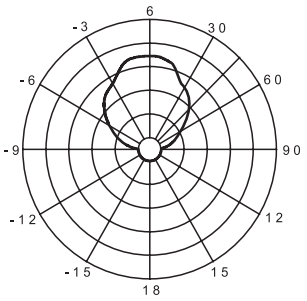

800Hz



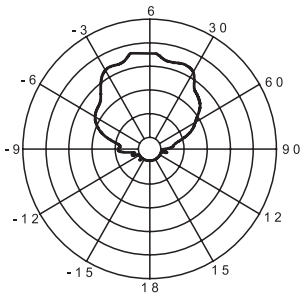

1.0kHz



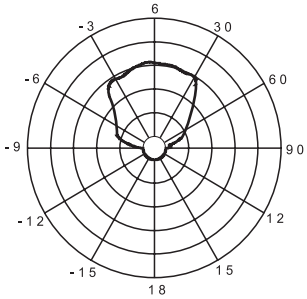

1.25kHz



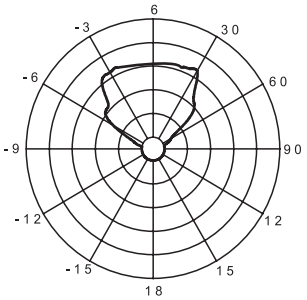

1.6kHz



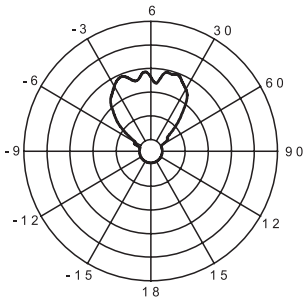

2.0kHz



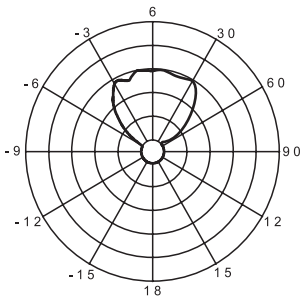

2.5kHz



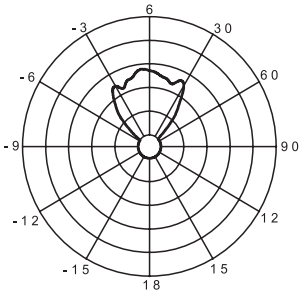

4.0kHz




6.3kHz




10kHz

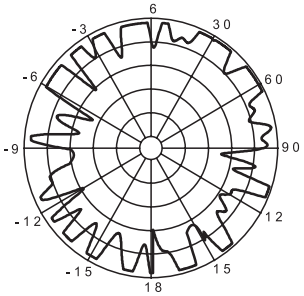



16kHz

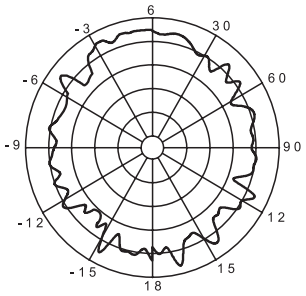
The scale is stepped by 6dB increment.

## VERTICAL DIRECTIVITY

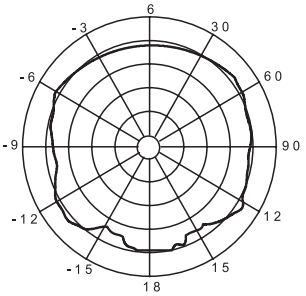
The data of LA-210 vertical directivity were collected by testing the speaker system in a big anechoic chamber.



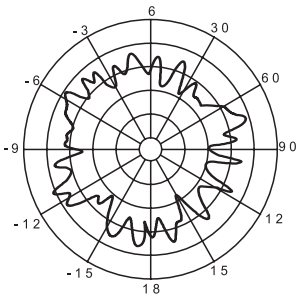

400Hz



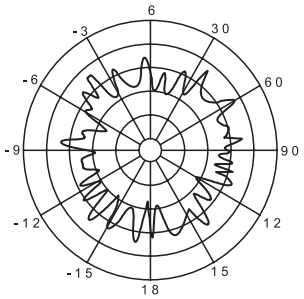

630Hz



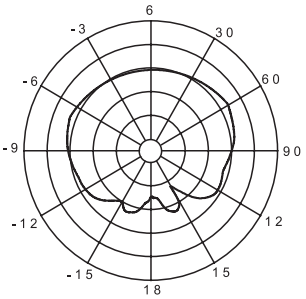

800Hz



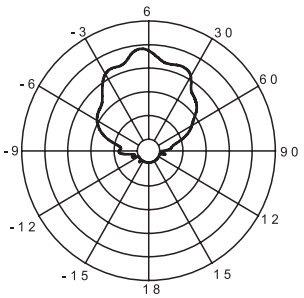

400Hz



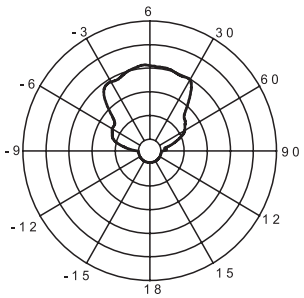

630Hz



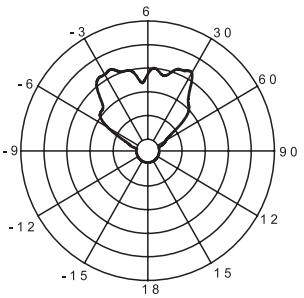

1kHz



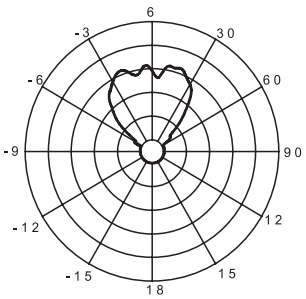

1.6kHz



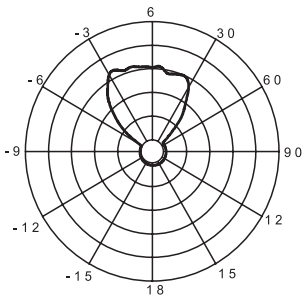

2.5kHz



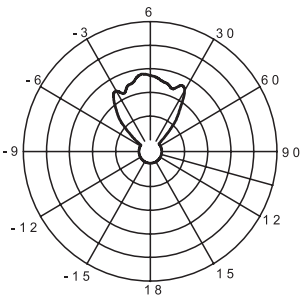

4.0kHz




6.3kHz




10kHz



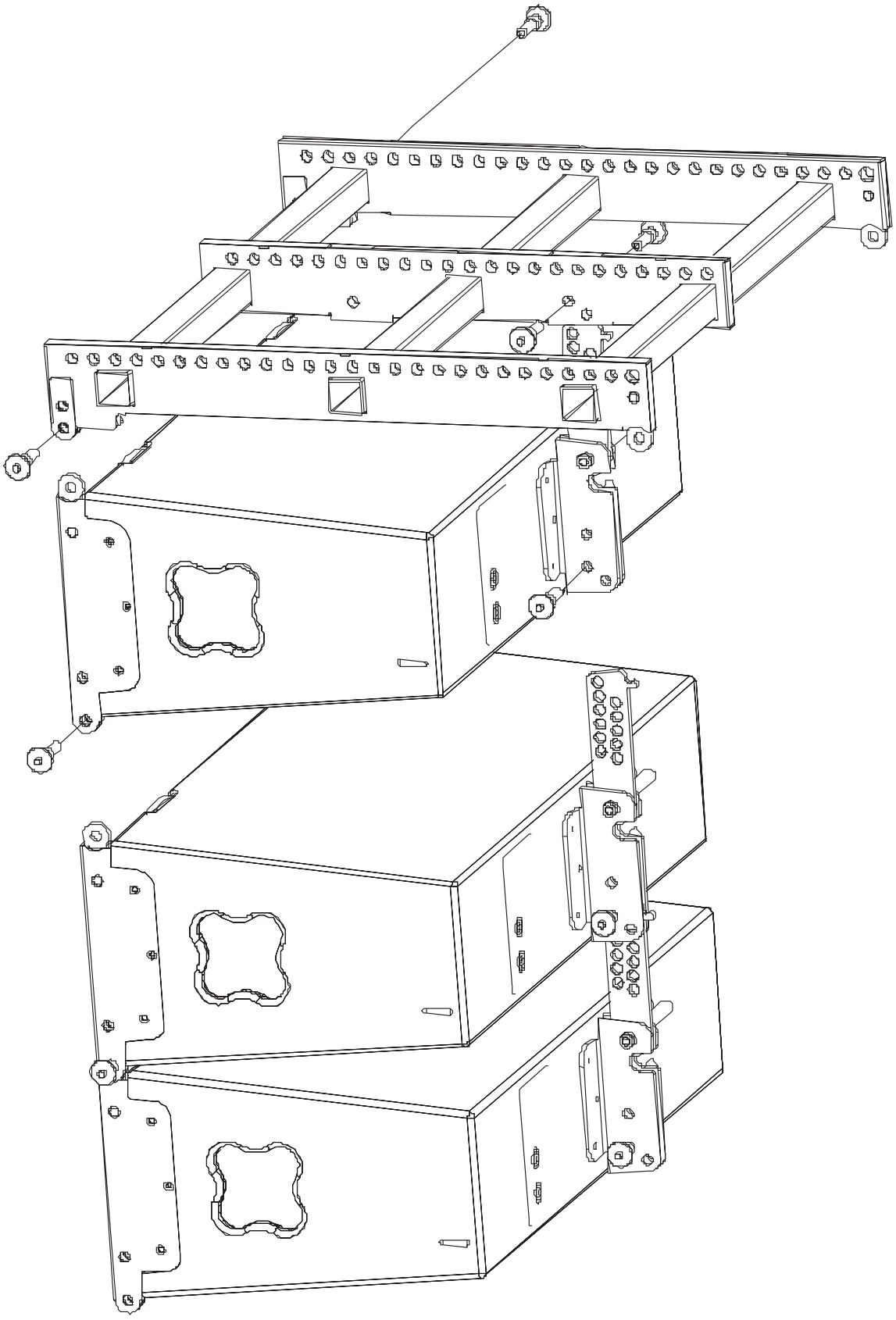

16kHz

The scale is stepped by 6dB increment.

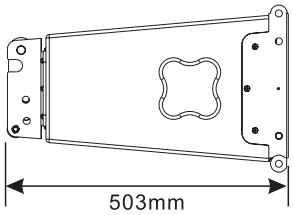
## Installation

Three points suspension system of LA-210:

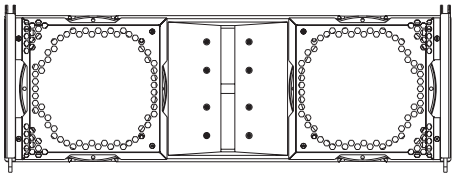
- The flying system includes LA-210 flying metal frame, front and back rigging parts and pins.
- Rear rigging part has been assembled onto cabinet to make the vertical angle (between each unit) easily adjustable and more convenient.
- LA-210 flying frame is weld steel frame, we can hang up many LA-210 speakers at the same time.



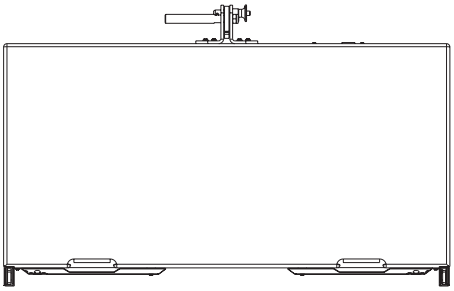
## Dimensions



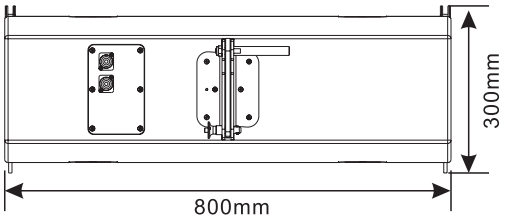

Side view



Front view



Planform




Back view

## Technical Specifications

| | | | |
|---|---|---|---|
| Transducers | LF: 10” x 2 | — | HF: Ø 44mm x 2 |
| Frequency Response | LF: 100Hz - 4kHz | — | HF: 1k - 19kHz (-3dB) |
| Sensitivity (1W/1m) | LF: 104dB | — | HF: 110dB |
| Dispersion (H x V) | 120° x 30° | | |
| Rated Impedance | LF: 8Ω | — | HF: 8Ω |
| DC impedance | LF: 5.2Ω | — | HF: 6.3Ω |
| Power handling capacity (RMS) | LF: 400W | — | HF: 70W |
| THD | < 3 % | | |
| Input Connectors | NL4 x 2 LF: 1+ 1- | — | HF: 2+ 2- |
| Dimensions (W x H x D mm) | 800 x 503 x 300mm | | |
| Packing Dimensions (W x H x D mm) | 890 x 585 x 390mm | | |
| Net Weight | 22.5 kg/pc | | |
| Gross Weight | 25.5 kg/pc | | |

Our products are subject to a process of continual further development. Therefore modifications to the technical features remain subject to change without further notice.

the box pro