

LA122_{v2}/LA122W_{v2}
2-Way Compact
Line Array Element
USER MANUAL

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INTRODUCTION

Thank you for purchasing a NEXT LA122v2/LA122Wv2 Line-Array element. This manual will provide you with useful and important information about your NEXT LA122v2/LA122Wv2 element. Please devote some time reading this manual, and keep it at hand for future reference. NEXT-proaudio is concerned with your safety and well-being, so please follow all instructions and heed all warnings. Also, a better understanding of some specific features of the LA122v2/LA122Wv2 line array element will help you to operate your system to its full potential. With a continuous evolution of techniques and standards, NEXT-proaudio, reserves the right to change the specifications of its products without early warning. For the most current data, please visit our website: www.next-proaudio.com

UNPACKING

Each NEXT LA122v2/LA122Wv2 line-array element is built in Europe (Portugal) by NEXT-proaudio, to the highest standard and thoroughly inspected before it leaves the factory. When unpacking the NEXT LA122v2/LA122Wv2, examine it carefully for any signs of possible transit damage and inform your dealer immediately if any such damage is found.

It is suggested that you retain the original packaging so that the system can be repacked in the future if necessary. Please note that NEXT-proaudio and its authorized distributors cannot accept any responsibility for damage to any returned product through the use of non-approved packaging.

LA122v2/LA122Wv2 OVERVIEW

The LA122v2/LA122Wv2 is part of the NEXT-proaudio LA series. It's a compact line-array element that incorporates an impressive battery of high technology features that makes it able to achieve an unprecedented level of performance on compact line array systems.

The LA122v2/LA122Wv2 incorporates a special 12" low frequency transducer employing a 75mm voice coil and neodymium magnet motor assembly. High frequency reproduction relies on the exceptional characteristics of two 1.4" neodymium compression drivers designed for use in applications where high SPL and low distortion are required. A titanium diaphragm featuring a 65mm copper-clad, aluminium flat-wire voice coil, yields high sensitivity, low distortion and extended frequency response.

The two HF drivers are loaded by a wave converter with path length equalization, the ICWG, that transforms the spherical waves into cylindrical isophasic waves coupling seamlessly with the other high frequency transducers of the array. For maximum flexibility, this line-array element is available in three different coverage angles configuration: 90° horizontal by 8° vertical (LA122v2), 120° horizontal by 8° vertical (LA122v2 + dispersion adaptor accessory, NC55126) and 120° horizontal by 15° vertical (LA122Wv2). A combination of these two elements provides optimum vertical coverage for any application.

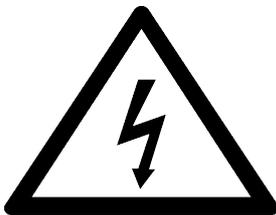
SAFETY FIRST

It's important that loudspeaker systems are used in a safe manner. Please take some time to review the following points concerning safe use of the NEXT LA122v2/LA122Wv2 line array element.

DANGER – HEARING DAMAGE



LA Series systems are capable of producing extremely high sound pressure levels and should be used with care. Hearing loss is cumulative and can result from levels above 90dB if people are exposed for a long period. Never stand close to loudspeakers driven at high levels.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICE TO QUALIFIED PERSONNEL

GROUND STACKING

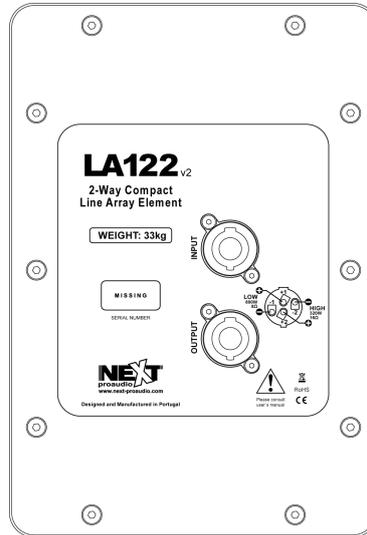
- Always ensure that the floor or structure where the stack will be placed is even and can withstand the weight of the complete stack.
- Do not stack speakers too high, especially outdoors where winds could topple the stack.
- Place cables in a way that they do not present a trip hazard.
- Do not place any objects on top of the stack, they can fall accidentally and cause injuries.
- Do not attempt to move the enclosures while connected.
- Try not to operate the LA122v2/LA122Wv2 under heavy rain or moisture, it is weather-resistant but not completely "weather-proof".
- Do not expose the systems to extreme heat or cold conditions to prevent component damage.

RIGGING AND SUSPENSION

- Before rigging or suspending NEXT LA122v2/LA122Wv2 systems, inspect all components and all hardware for any signs of damage or missing parts.
- If you find any damaged, corroded or deformed parts, do not use them, replace them immediately.
- Do not use hardware that isn't load rated or that its' rating is not enough to handle the system's weight with a good safety factor (4 minimum). Don't forget that the hardware won't just hold the systems weight. It has to be sturdy enough to handle dynamic forces like winds and other, without any part deformation. NEXT-proaudio advises customers to contact a licensed, professional engineer regarding equipment installation.
- NEXT LA122v2/LA122Wv2 system installation should only be carried out by qualified personnel.
- Always use adequate protective clothing and equipment to prevent possible injuries.
- Only install the systems on solid, levelled ground and isolate the surrounding area during installation and operation, to prevent general public presence near the systems.
- Be sure you understand all local and national regulations regarding equipment installation.
- Failure to comply with these instructions may result on injury or death.

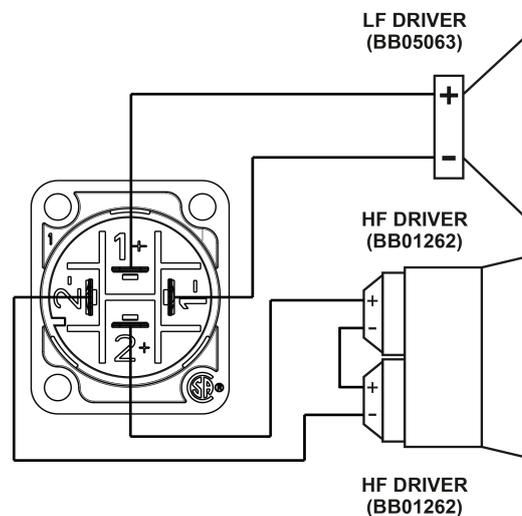
CONNECTIONS AND ELECTRIC DIAGRAM

The LA122v2 / LA122Wv2 is connected through Neutrik® SpeakON® NL4 plugs (not supplied). A wiring description is printed on the connections panels located on the back of the cabinet.



The 4 pins of the two Neutrik® NL4 SpeakON® sockets are wired in parallel within the enclosure. Either connector can be used to connect to the amplifier or another LA122v2/LA122Wv2 element. Please notice that LA122v2/LA122Wv2 Line Array element is a two-way system. See the table and the diagram below:

NL4 PIN	Description
1+	LOW +
1-	LOW -
2+	HIGH +
2-	HIGH -



AMPLIFICATION

Normally, LA122v2 systems are also supplied with NEXT-proaudio power-rack mounts already configured for optimum performance, according to the configuration chosen by the customer. NEXT-proaudio recommends using only NEXT-proaudio approved amplifiers and signal processing units, and only provides signal processing configuration files for approved signal processing units.



WARNING - Be advised that due to some specific features and technologies employed on the LA122v2 element, you will damage the speakers if the wrong crossover configuration is employed.

The LA122v2 / LA122Wv2 element is a passive two-way system. The high frequency band is reproduced by two 1.4" drivers connected in serial, having a combined nominal impedance of 16Ω. The low frequency band is reproduced by a single 12" driver with 8Ω nominal impedance. See the table below for recommended power amplifier power:

2 x LA122v2 Line Array Element (parallel)	
Input	Recommended Amplifier (1 channel)¹
LOW	1600W @ 4Ω
HIGH	640W @ 8Ω

CABLE SELECTING

Selecting a cable consists of calculating the correct cable section (size) in relation to the load impedance and the required cable length. A small cable section will increase its serial resistance, which will induce power-loss and response variations (damping factor).

The following table indicates, for 3 common sizes, a cable length with a maximum serial resistance equal to 4% of the load impedance (damping factor = 25):

Cable section	Maximum Length related to load impedance	
	8Ω	4Ω
1.5 mm²	12m [40 ft]	6m [20 ft]
2.5 mm²	20m [64 ft]	10m [32 ft]
4 mm²	32m [104 ft]	16m [52 ft]

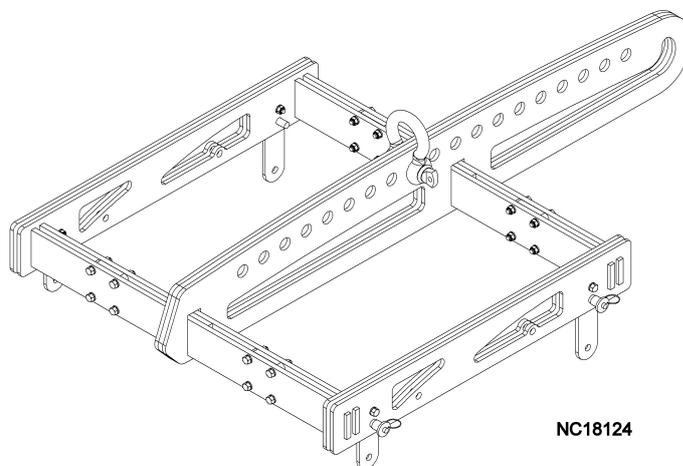
¹ - Power ratings are indicated according to the specific load conditions described. For more accurate information on NEXT-proaudio amplifiers, visit www.next-proaudio.com

RIGGING SYSTEM

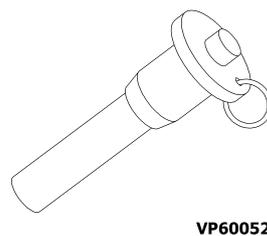
The LA122v2 / LA122Wv2 has a simple and intuitive four-point rigging system. It has 2 articulated joints on the front and 2 rear adjustable joints. The rear joints let you define the angle between two elements.

The LA122v2 is the main model. It will be the core of any LA122v2/LA122Wv2 system. It has a controlled 8° vertical dispersion and its angle is adjustable from 0° to 8° relative to the upper element. LA122Wv2 is a wider dispersion element (15°), normally used as the last element on the array, pointing to the nearest public.

In order to suspend a LA122v2/LA122Wv2, you'll need to use the NEXT NC18124 frame. This suspension frame is built specifically to suspend the LA122v2/LA122Wv2 and/or LAs118v2² elements. It makes possible the suspension of up to 16 x LA122v2/LA122Wv2 elements.



You will also need the NEXT VP60052 lock pins.



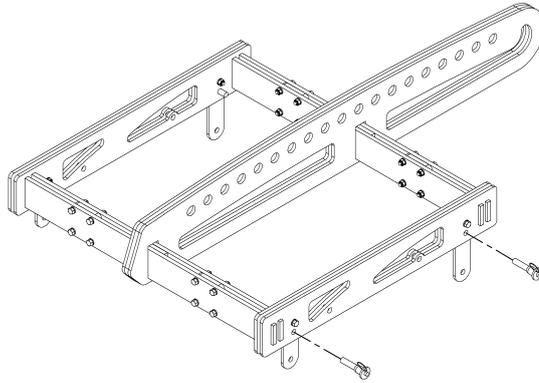
Never use any lock pins but the ones supplied by NEXT-proaudio. These pins are built to withstand the system's weight with a good safety factor. They are also built with very specific dimensions. On the other hand, before you suspend the system, please read the instructions in the "Safety first" chapter.

² For information about NEXT LAs118v2 please look into LAs118v2 manual or visit www.next-proaudio.com

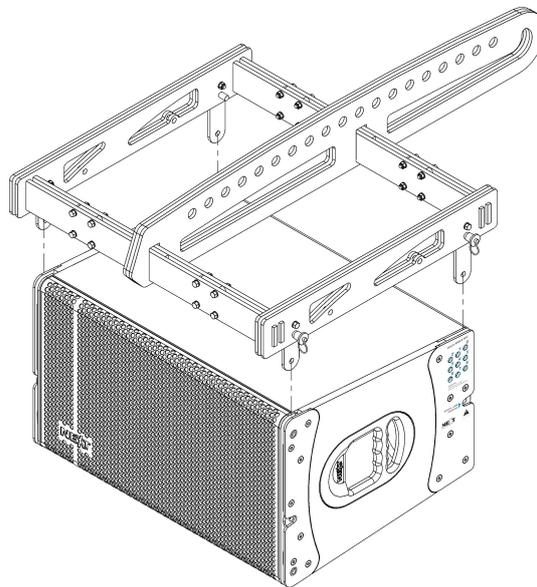
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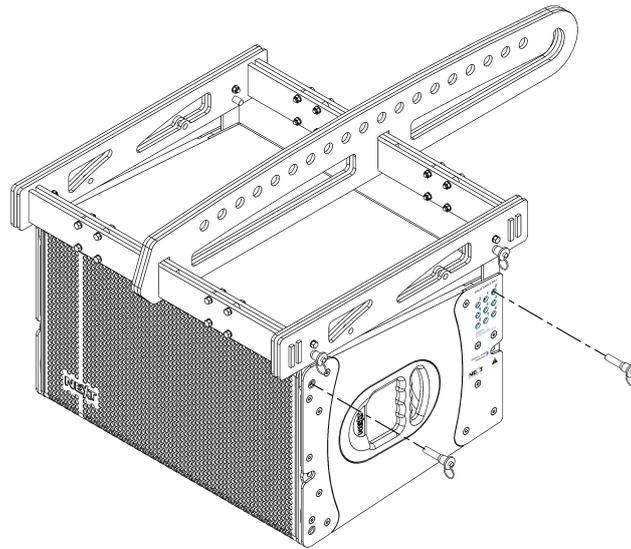
Let's assemble a typical LA122_{v2} array system consisting on four LA122_{v2} with angle positioning of 0°, 2°, 4°, 8° from top to bottom. After reading and understanding the "Safety first" chapter, follow the instructions below:



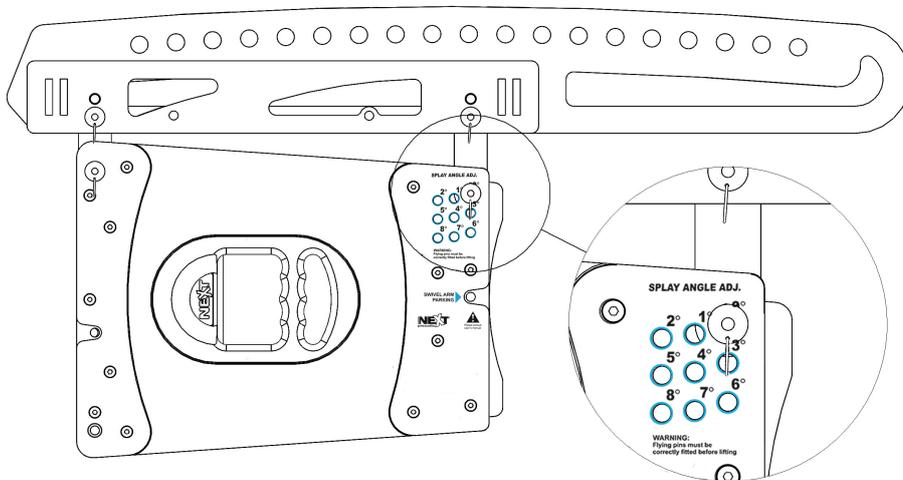
Step 1 - Pull the frame's swivel arms out of the parking position and insert a safety locking pin in each swivel arm locking position as shown in the image above. Verify that the locking pins are secured.



Step 2 - With the swivel arms locked in place, align and insert them in the LA122_{v2} as shown above.

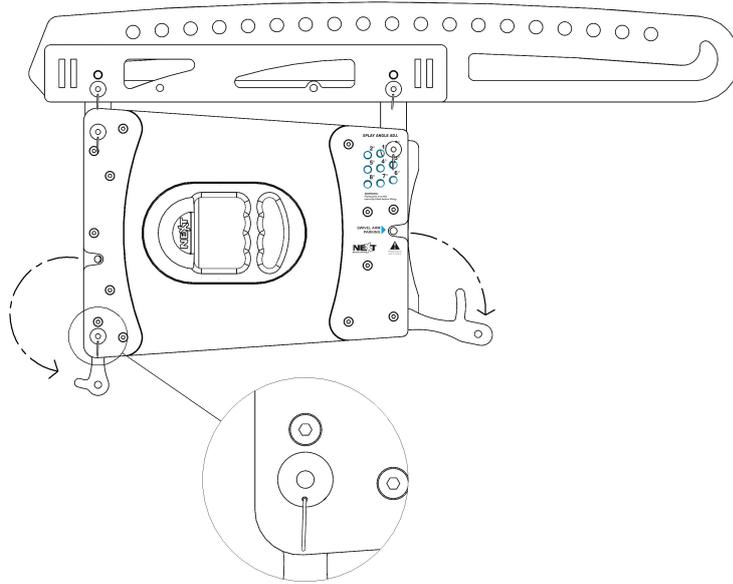


Step 3 - Insert a locking pin on both front swivel arms first, then lift the frame at the back until the swivel arm is aligned with the 0° hole. Insert now lock pins at these holes on both sides of the element and verify they're secure.

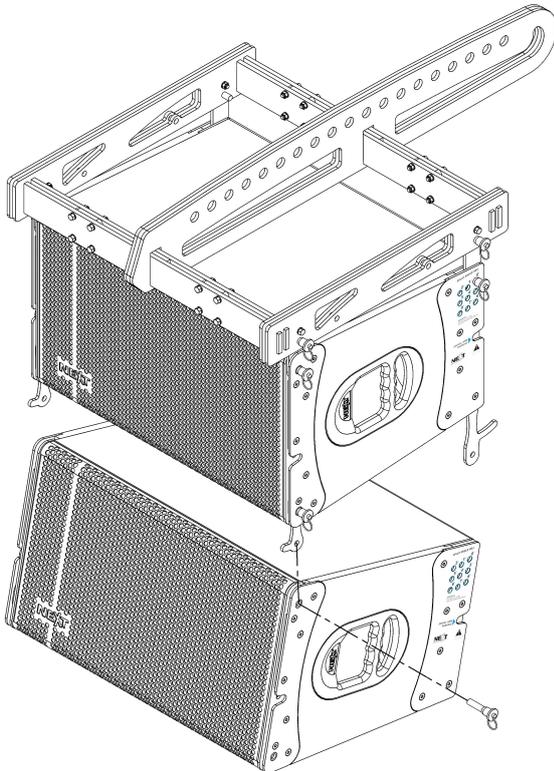


Attention:

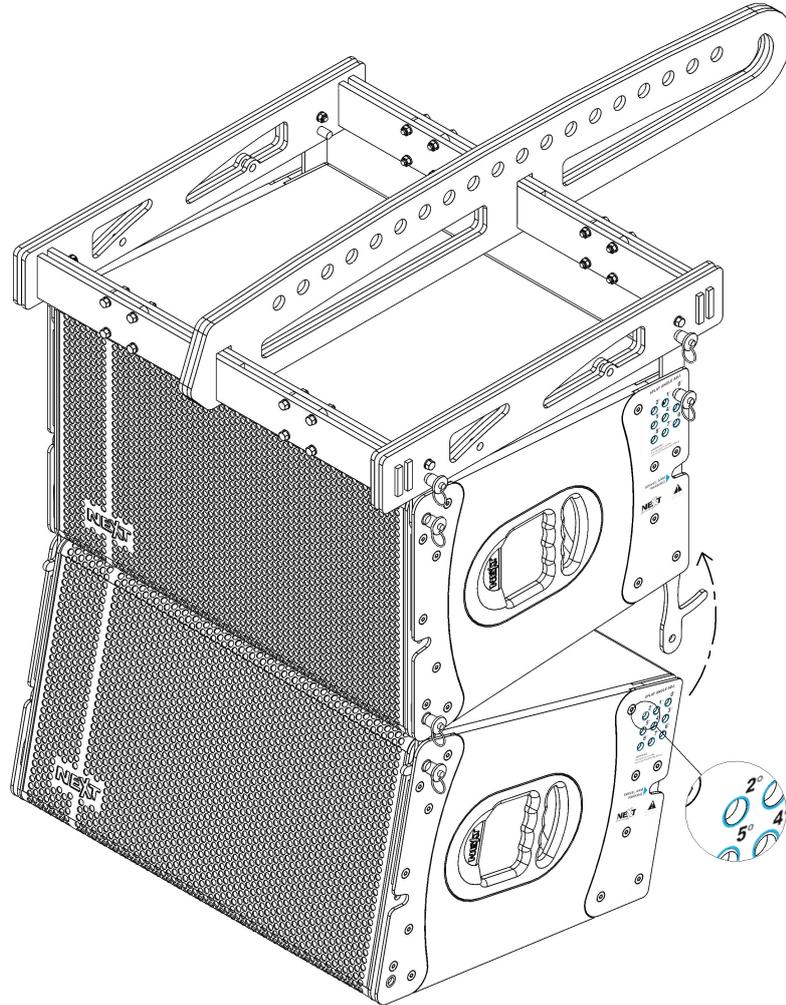
Between the Flying Frame and the first LA122v2 the splay can only be configured on the 0° position. If any initial inclination is needed move the shackle to the appropriate hole on the centre bar.



Step 4 - Pull the LA122v2 swivel arms out. On the front swivel arms, insert the locking pin. This will assure that the centre of rotation of the next element is fixed. Check if the locking pin is secured.



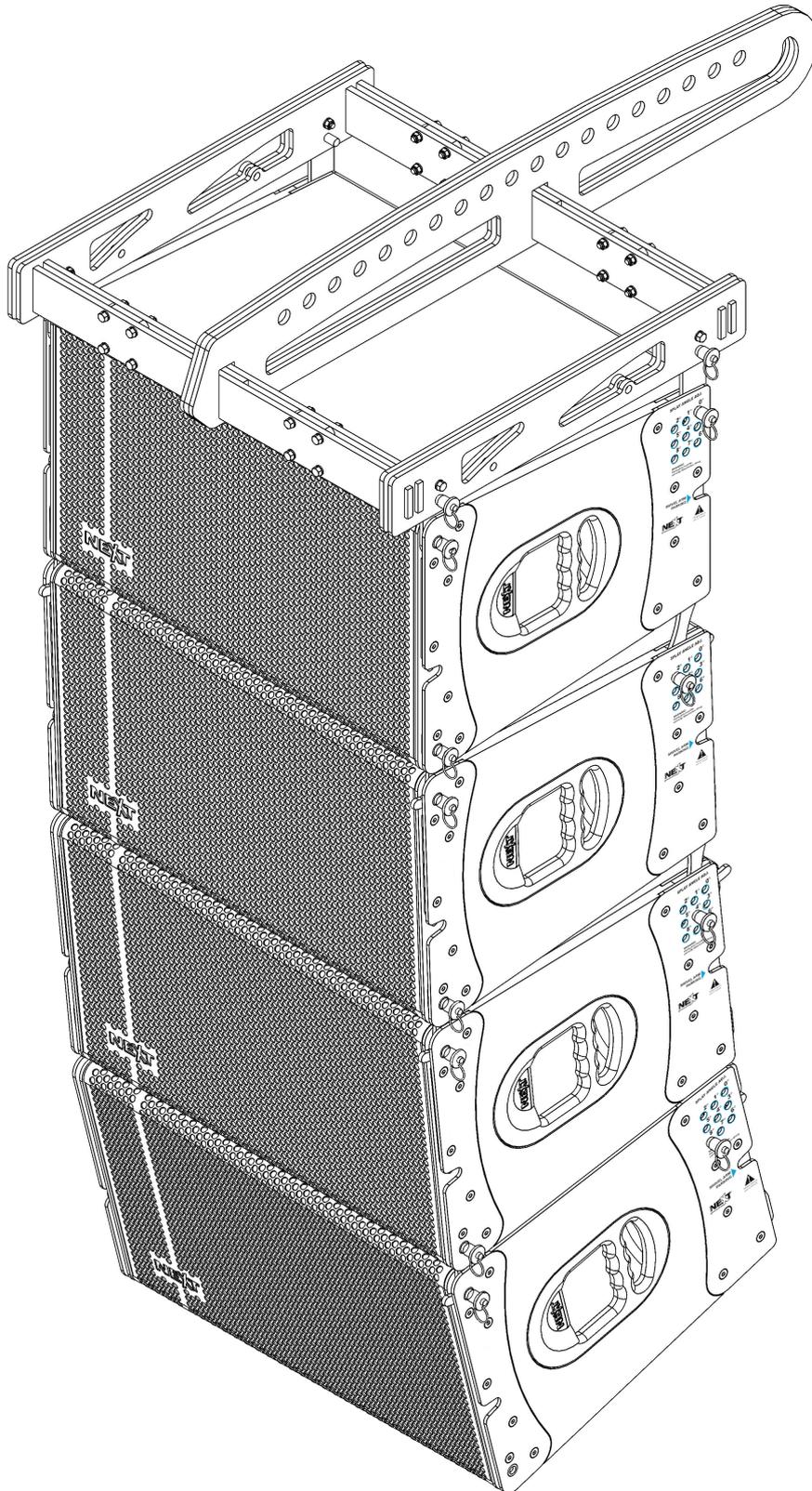
Step 5 - Insert the next LA122v2 in the array starting with the front side and insert the front locking pins. Check if the locking pins are secured.



Step 6 - With the front swivel arms locked in place you can now rotate the element and with the aid of the handles on the rear swivel arms lock the element with a splay angle of 2°. Insert the locking pins and check that they are secured.

Step 7 - Repeat steps 4 to 6 for the next two elements using the 4° and 8° splay angle adjustment positions respectively.

Here's an image of the full system assembly:

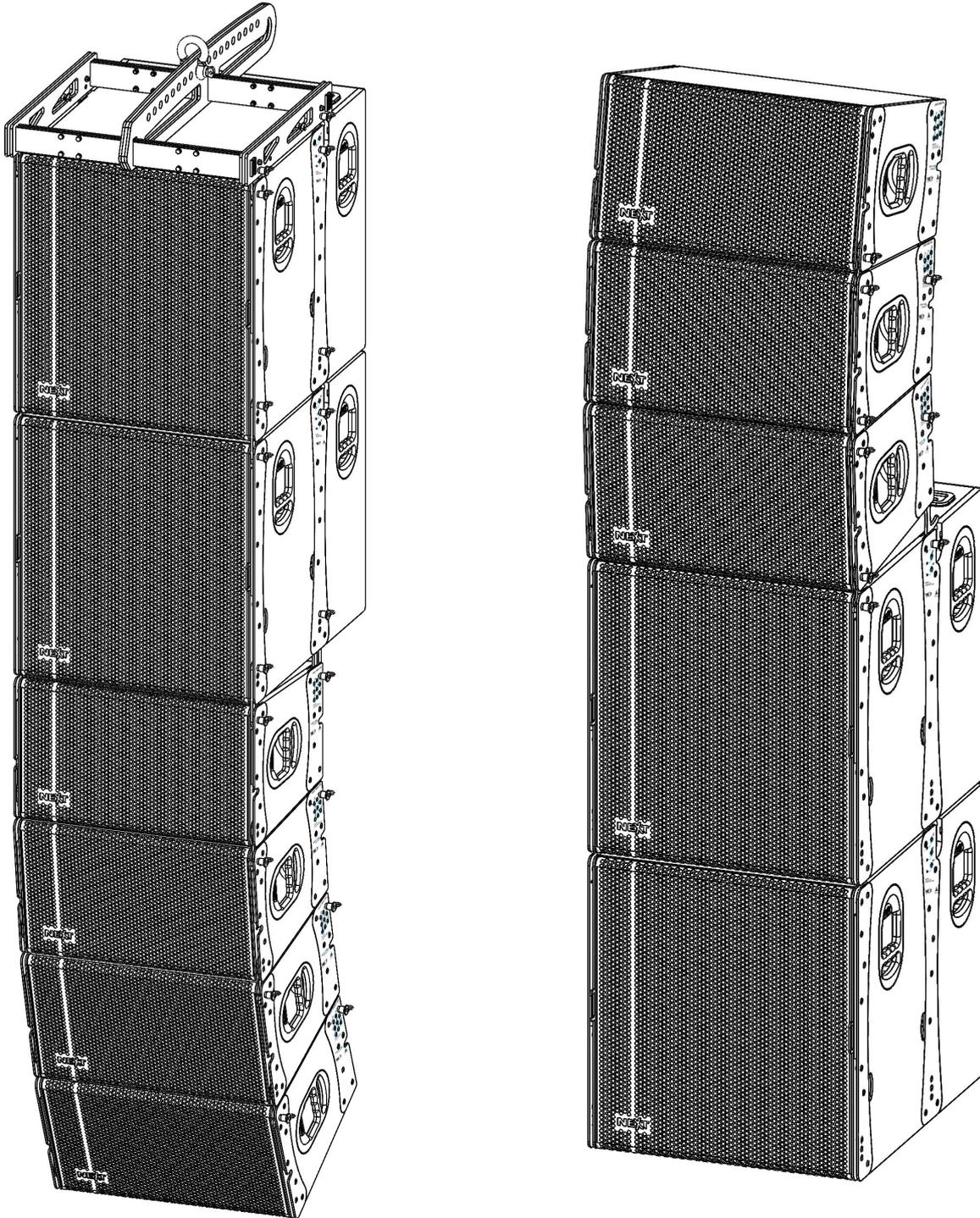


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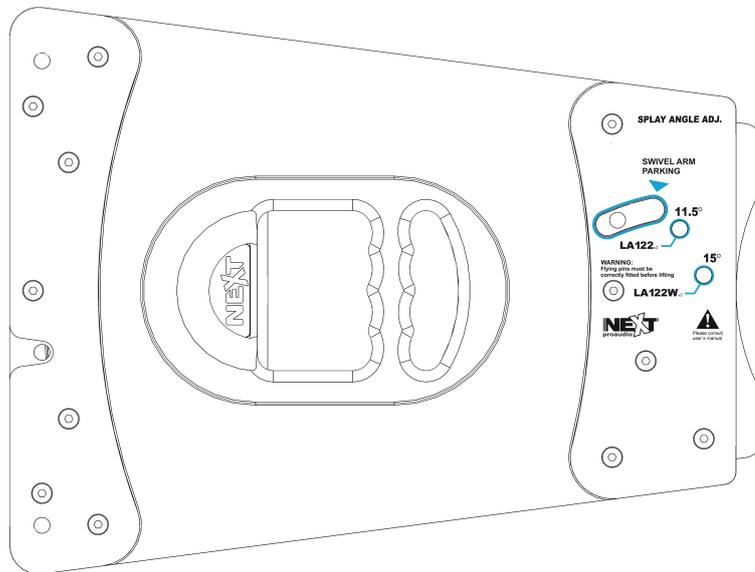
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Also, some other configurations can be done using LA122v2 and LAs118v2. The flying system is ready to attach subwoofers and full-range speakers on the same array.

The mixed array, with subwoofers and full-range speakers, can be either flown or stacked. The left-most picture is a flown array. The right-most picture is a stacked array.



The LA122Wv2 is a little different from the LA122v2. The principle is the same, but instead of eight possible splay angles it has only two splay positions, those differ according to the element that is mounted above it. When it is assembled below a LA122v2, for example as a nearfield speaker, the position will be 11.5°. When coupled to another LA122Wv2, the position will be 15°. We can see this information on the panels of the element as shown below.



TROUBLESHOOTING

Simple troubleshooting does not require sophisticated measurement equipment and can be easily undertaken by users. The technique should be to segment the system in order to identify the faulty system component: signal source, controller, amplifier, loudspeaker or cable? Most installations are multi-channel. It is often the case that one channel works and others do not. Trying different combinations of system elements can usually help to isolate and locate the fault.

Some cabinet faults can be quite easily identified and corrected by the user. A simple sweep with a sine wave generator can be very helpful though it MUST be made at a fairly low level to prevent damage to the speakers. A sine wave sweep can help find:

- Vibrations due to loose screws.
- Air-leak noises: check that no screws are missing, particularly where the accessories attach to the cabinet.
- Vibrations due to a front grille badly positioned on the quick release fixings.
- Foreign object that has fallen into the cabinet after repair or through the ports.
- Internal connection wires or absorbing material touching the loudspeaker diaphragm: check by removing the bass loudspeaker.
- Loudspeaker not connected or phase reversed following a previous inspection, test or repair.

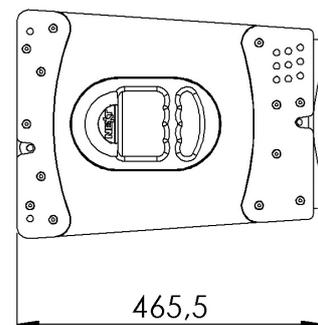
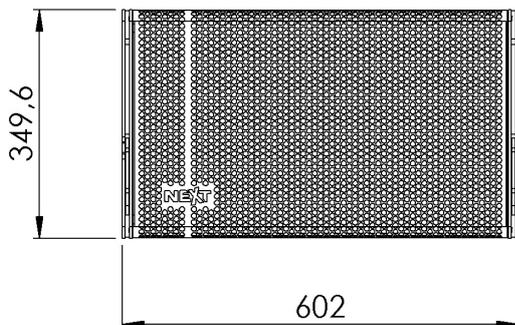
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TECHNICAL SPECIFICATIONS

NEXT LA122v2/LA122Wv2 TECHNICAL SPECIFICATIONS		
	LA122v2	LA122Wv2
Speaker Type	2-Way Compact Line Array Element	
Frequency Response (-6dB)	58Hz to 19KHz	
Maximum SPL Calc. (Continuous/Peak)	129dB/132dB	
Coverage Angle -6dB (HxV)	90° x 8° (120° x 8° optional)	120° x 15°
Components	LF - 1 x 12" / 3" Voice Coil Custom B&C Speaker	
	HF - 2 x 1.4" / 2.5" Voice Coil Custom B&C Compression Driver	
Program Power	LF - 800W	
	LF - 320W	
Nominal Impedance	LF - 8Ω	
	HF - 16Ω	
Sensitivity (1W@1m)	LF - 100dB (Full-Space)	
	HF - 113dB (Full-Space)	
Calculated Max. SPL (Cont/Peak)	LF - 129dB / 132dB (Full-Space)	
	HF - 135.1dB / 138.1dB (Full-Space)	
Recommended Crossover Frequencies (ACTIVE)	1150Hz Linkwitz-Riley 48dB/oct	
Recommended HPF (with subwoofers)	80Hz Linkwitz-Riley 24dB/oct	
Fittings	Adjustable Rigging System (0° to 8°)	Adjustable Rigging System (11.5° or 15°)
Construction	15mm Multi-laminate Birch Plywood, Screwed and Glued	
Connectors	2 x SpeakON NL4	
Finish	Black Textured Scratch Resistant Paint	
Grille	Black-Powder Coated Perforated Grille	
Dimensions (W x H x D)	602 x 350 x 466 mm	
Net Weight	33 kg	34.5kg

DIMENSIONS



CONTACTS

In case of any doubts or any further information just:

Write us:

NEXT-PROAUDIO
Rua da Venda Nova, 295
4435-469 Rio Tinto
Portugal

Contact us:

Tel. +351 22 489 00 75
Fax. +351 22 480 50 97

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info@next-proaudio.com

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