Ionic V-24

USER MANUAL



LYNX pro-audio

V.26.09

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WELCOME

Before working with the Ionic series we recommend that you read this manual. In its pages you will find instructions for use, programming examples and practical advice that will be of great help.

For the maximum optimization of any sound system a first class digital processor with different processing options is required. This Ionic series become a working tool of great value, providing the user with the best solutions in the market with the highest level of accuracy and a host of features for the professional.

We hope that as a user you will be completely satisfied. We are sure that the Ionic series will meet your expectations and make it easier for you to get the most out of your system.

IMPORTANT SAFETY INSTRUCTIONS

Before starting to use this device, please read this instruction manual carefully.
Keep these instructions in the place where the equipment will be used and with easy access to them.



• Electrical appliance

The exclamation mark within a triangle identifies the presence of electricity. Use the system carefully without wet hands or feet. Avoid installing the speaker in wet or excesivelly humid places. Do not place material that contains liquid on or near the unit. Avoid dripping or splashing water or any liquid over the unit. Regularly check the condition of the cables and make sure these are not being walked on or pinched. Connect the speaker to bipolar, earthed mains. The mains plug must be connected to the appropriate protection (fuse or breaker). Connection to any other type of mains could result in an electrical shock and violate local electrical codes.
CAUTION: DO NOT CONNECT OR DISCONNECT AC POWER CONNECTORS UNDER LOAD.



• Heavy equipment

Apply back protection when using the system. Avoid loading and unloading at heights.



• Electrical shock risk

The diagonal mark within a triangle identifies the presence of dangerous voltage.
Do not open or manipulate the inside of the box. These parts are not to be adjusted by the user. For maintenance and/or repair please go to an authorized service centre. In order to reduce the risk of electric shock, disconnect from AC before pluging or unplugging Audio signal cables. Reconnect to AC only if all signal connections are made and secured. Never manipulate the ground type plug provided.
The AC mains plugs should always remain accessible for operation.
Unplug the loudspeaker during storms or when it's being used for a long time.



• Hearing damage risk

These systems can reproduce large quantities of sound pressure which can damage hearing. Take precautions if you are going to be near them for extended amounts of time and do not get too close.



• Hanging / Flying

Do not hang the cabinets from the handles or from any other part other than the designated hanging point. When flying this system please observe the technical and "Rainbow" software data carefully. Never exceed the maximum safe working loads or ignore the instructions included within this manual. Use only flying accessories provided by Lynx Pro Audio S.L. Rigging must be always carried out by professionals.



• Delicate Material

Please ensure no foreign object or water enters the speaker. Clean the unit only with dry cloths. Do not use solvents.



• Overheating / Fire risk

To reduce the risk of speaker's over heating, avoid direct contact with sunlight. Avoid placing the unit close to heat inducing objects such as radiators. Do not cover the equipment in use and do not block any ventilation openings. Do not expose to open flames, such as lighted candles, close or on top of the unit.



• Electromagnetic and interference emissions

Avoid placing objects which through electromagnetic waves can damage the unit, such as mobile phones, lap tops, magnetic strip cards etc.
This system complies with normatives EN 55103-1 (1)
EN 55103-2 (2)
(1) This device may not cause harmful interferences.
(2) This device may receive interference including interferences that may cause undesired working.



•IMPORTANT NOTE

This equipment must be used in accordance with these instructions and by trained professional personnel only. This equipment should not be used in places with extreme tropical climates. Don't expose this device to extreme humidity and or temperature values.

1. INTRODUCTION

This manual describes the recommended installation procedure for the **Ionic-v24**.

The **Ionic series** is Lynx Pro Audio's answer to light, portable and permanent column speakers. The Ionic series comprise four full-range modular columns (Ionic-100, Ionic-50, Ionic -v24 and Ionic- v28), one small coaxial cabinet (Ionic-5CXv) and two subwoofers (Ionic-18S and Ionic-12S).

The columns are very low profile, versatile, aesthetically pleasing and are designed for reverberant installations where intelligible, clear voice reproduction is paramount and where a low profile, discreet column is required. They are very easy to install and can be done so either horizontally or vertically.

The full range columns can be powered from the active subwoofers and also offer various preset configurations from the integrated DSP.

Please note that a wide range of mounting accessories is available.

The Ionic-v24 is a two-way passive column speaker part of the Ionic series. This column is oriented to reproduce high fidelity voice and has more vertical directivity thanks to the waveguide.

Together with Ionic v28, Ionic v24 is the newest and most powerful column system in the series and it is ideal for indoor installations, conference rooms, houses of worship and sound reinforcement.

INSTALLATION GUIDE

- **Indoor use only**

We recommend using this appliance indoors only. Moisture can damage the appliance and cause a fire.

- **Power cord safety**

  - Avoid placing the speaker, cables, or any objects on the power cord. Ensure the cord is free from pinches or damage.
  - The power supply circuit must be equipped with a fuse or circuit breaker for overload protection, and an RCD for ground fault protection.

- **Power disconnection**

To disconnect the device from the power source, the power plug must be removed from the power outlet. The appliance should be positioned to allow easy access to the power outlet without obstruction. This will allow you to quickly disconnect the power plug in an emergency.

- **Mounting options**

LAIA speaker can be installed on the floor, on a stage, on a subwoofer, on a tripod, wall-mounted, or mounted on a 35mm diameter coupling tube attached to a subwoofer.

- **Safety checks before installaion**

Give your speaker a safety check before mounting it. Make sure the stand, brackets, and anything else it attaches to are in good shape and all the pieces are there. Damaged or missing parts can cause the speaker to become unstable and fall.

- **Floor, tripod, or coupling tube installation**

For floor, tripod, or coupling tube installation, ensure the surface below is flat and stable.

- **Overhead installation**

  - Strong Support: Choose mounting hardware or suspension systems that are specifically designed to handle the weight and size of your speakers.
  - Secure Suspension: If using a tripod or hanging system, make sure the speaker is well-balanced and securely fastened to prevent it from falling, tipping over, or being accidentally bumped.
  - Double-Check Fasteners: Before letting the music flow, take a moment to confirm that all fasteners at the suspension points are tightened properly.

- **Incorrect installation**

Improper assembly or the use of unsuitable mounting equipment can result in an unstable and dangerous installation that could cause injury.

- **Seek professional assistance**

If in doubt, consult a professional to install the equipment. Ensure that national safety regulations for the installation and use of the speaker are followed.

- **Overhead installation safety**

Refer to the speaker's manual for safe overhead installation instructions, which likely recommend two people.

- **Avoid extrem weather conditions**

Do not install the speaker in direct sunlight, rain, or any other liquids. The speaker is not waterproof. If installed outdoors, protect it from the elements.

2. TECHNICAL SPECIFICATIONS

Ionic-V24

Compact, passive two-way column speaker. Consists of 4 x 4” speakers and 1” high frequency driver on waveguide designed for fixed installations.



Key features

- Compact & versatile
- DSP presets for wide applications
- Easy to use, easy to install
- Portable
- Available in black or white
- Available RAL colours by request

Applications

- PA system
- Clubs & theatres
- Houses of worship
- Sound reinforcement
- Conference rooms
- Public address
- Commercial complex

General description & specifications

The Ionic-V24 is a two-way passive column speaker part of the Ionic series. This column is oriented to contain high fidelity voice and has more vertical directivity thanks to the waveguide.

It is the newest and most powerful column system in the series and it is ideal for indoor installations, conference rooms, houses of worship and sound reinforcement. Water-based paint available in several colors.

It can be powered from the subwoofer units which include a Digital Signal Processor offering different presets to cover a wide range of sound applications. It can also be powered from an external amplifier.

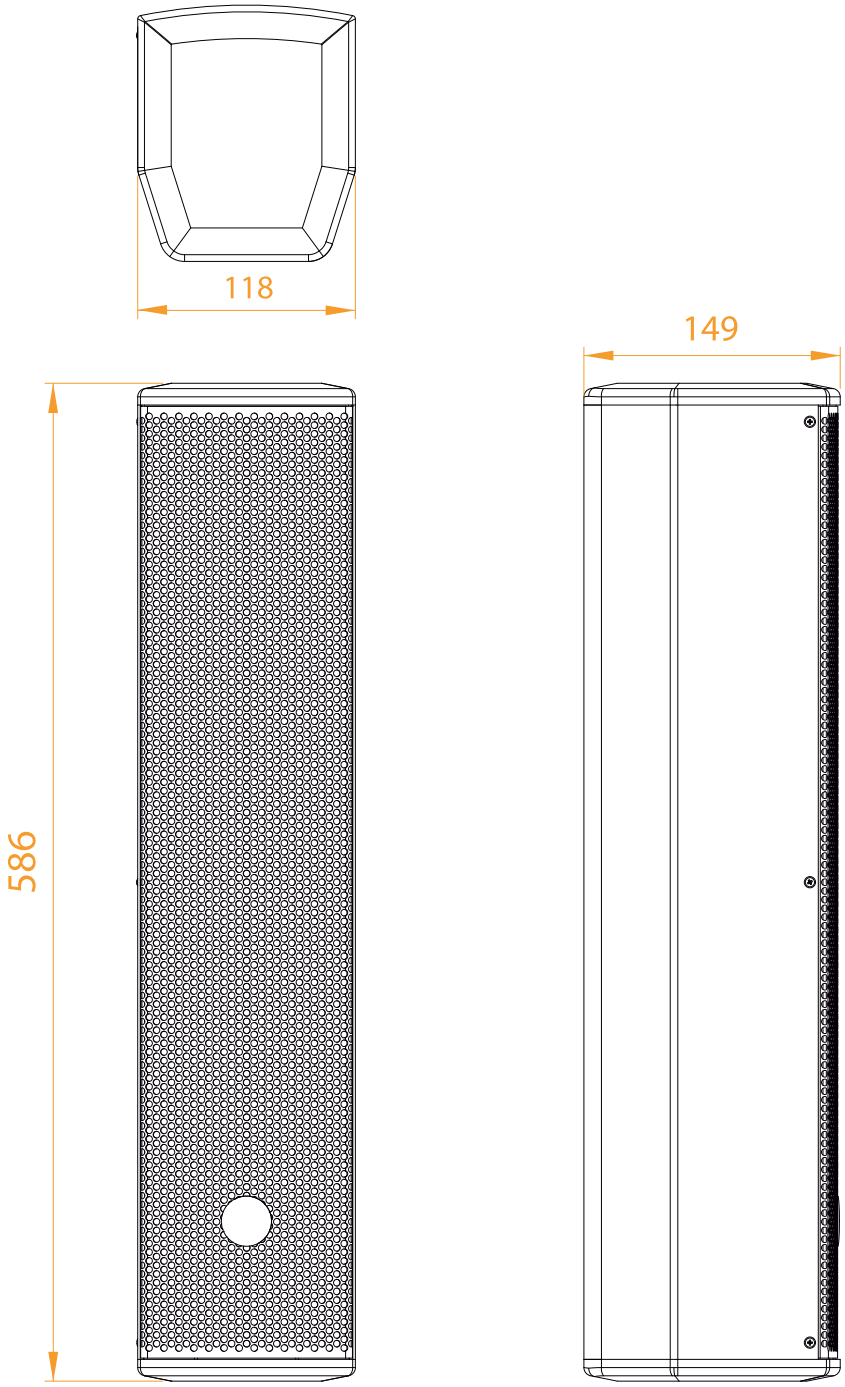
Technical Data

Components	Low/mid: 4 x 4” speakers with 1” voice coil High: 1 x 1” exit on waveguide
Frequency range	90 Hz - 20 KHz (-6dB) (processed)
Sensitivity[1]	96 dB (1W@1m)
Max SPL[2]	120 dB / 126 dB peak
Coverage	100° H x 25° V
Power	230 W (460 W program, 920 W peak)
Nominal Impedance	16 Ω
Connectors	1 x Neutrik NL4MP / 4 poles PHOENIX connector
Finish	Water-based paint
Material	9 and 15 mm birch plywood
Dimensions	586 x 118 x 149 mm (H x W x D)
Weight	7 Kg (15.4 lbs)

1: 4v@1m Pink noise with 12 dB crest factor processed.
2: Calculated based on power rating and measured sensitivity processed.

Ionic-V24

Dimensions



3. SYSTEM OVERVIEW

CONNECTORS AND CONNECTIONS

2.1 Normative

Ionic-V24 cabinets meet the following standards:

EN 55032:2012	Electromagnetic compatibility of multimedia equipment. Emmision requeriments.
EN 55103-2:2009	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.
EN 60065:2014	Audio, video and similar electronic apparatus. Safety requirements.
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

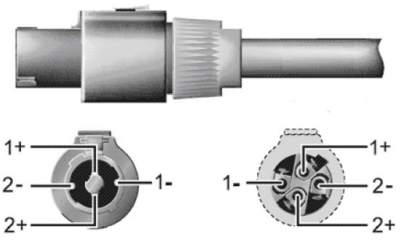
Ionic-V24 cabinets are in conformity with the following EC directives:

Low Voltage Directive	2014/35/UE
Electromagnetic Compatibility EMC	2014/30/UE
RoHS Directive	2011/65/UE
RAEE (WEEE)	2012/19/UE

2.2 Connectors

The Ionic-V24 cabinets have a connection panel at the rear of the cabinet. This consists of 2 internally bridged Neutrik NL4-MP and 4 poles PHOENIX connectors which apply no process to the signal.

Note: If pins +-2 are not used they will still be internally bridged.

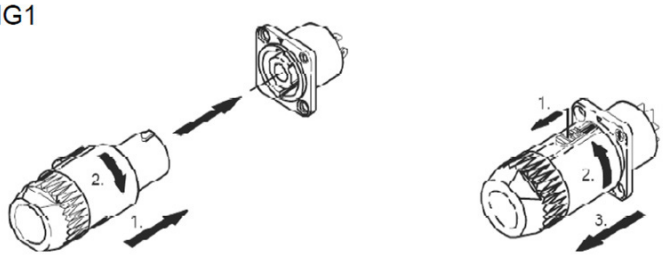


Mode	Connector	Speakon connections	per box	Impedance	Rated power	Program power
Passive	NL4	± 1 LF input/link	1	16 ohms	230 W AES	460 W
Passive	PHOENIX		2	16 ohms	230 W AES	460 W

CONNECTORS AND CONNECTIONS

To connect the speakon follow the instructions in fig. 1

FIG1



Insert the male speakon in its corresponding hole and turn right until it clicks. This fixes it safely and strongly and helps stop it being pulled out by mistake. At the other end of the cable connect in the same way to the amplifier channel.

2.3 Recommendations

Always ensure cables are in good condition. Know the recommended cable length and thickness according to the cabinet and quantity you are installing. An incorrect connection can affect the functioning of the system or even damage it. Cable thickness will vary according to cabinet impedance, quantity and distance. This is especially important when connecting Subwoofers.

As a guide, please see the following table which outlines the thickness depending on the power and length of cable.

Maximum recommended cable length for low impedance systems						
Wire section	AWG number	Cable resistance in 100 meters	Maximum recommended lenght (in pieces)			
			2 Ω	4 Ω	8 Ω	16 Ω
13.3 mm	6	0.25 ohm	24	57	122	253
6.63 mm	8	0.49 ohm	12	28	61	126
5.26 mm	10	0.62 ohm	10	23	48	100
3.31 mm	12	0.99 ohm	6	14	30	63
2.08 mm	14	1.57 ohm	4	9	19	40
1.31 mm	16	2.49 ohm	2	6	12	25
0.82 mm	18	3.98 ohm	2	4	8	16
0.52 mm	20	6.28 ohm	1	2	5	10
0.33 mm	22	9.89 ohm	1	1	3	6

Bear in mind Ohm ratings on the amplifiers used to power the cabinets. For example, 2 ohm amplifier configurations are not recommended due to the excessive power from the amp output.

Never connect more cabinets than recommended in parallel. With parallel connections, the total impedance can be calculated by dividing the impedance of 1 cabinet by the number connected.

4. RECOMMENDED AMPLIFICATION

To ensure the best performance, reliability, and protection of the Ionic-V24 system, it is strongly recommended to use Lynx Pro Audio amplifiers and factory-optimized presets.

The recommended amplification provides:
- Optimal power delivery and system performance.
- Correct loudspeaker protection through dedicated DSP processing.
- Accurate frequency response and phase alignment.Maximum reliability during operation.

The use of non-recommended amplifiers or third-party processing may affect the performance of the system and can result in damage to the loudspeaker components.

The use of Lynx Pro Audio recommended amplification and DSP presets is required to ensure the correct operation of the system. Damage caused by the use of unsuitable amplification, incorrect settings, or third-party processing is not covered by the warranty.

For safe operation and optimal performance, a maximum of six Ionic-V24 cabinets can be connected (linked) to a single amplifier channel (GTX Series). Always ensure that the total connected impedance remains within the amplifier's operating range. Please refer to the GTX Series amplifier manual for detailed information regarding amplifier configuration, DSP settings, and operation.

Recommended Amplifiers for Ionic-V24:

- GTX-5K
- GTX-10K

The following amplifier models do not feature onboard DSP. An external LUKA processor is mandatory to provide loudspeaker processing and protection.

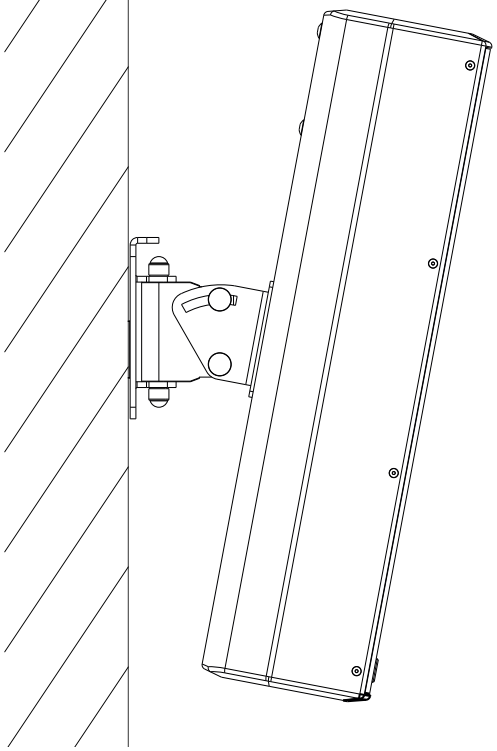
- MH2-3200
- MH4-4000
- MH4-5000
-RS2-3600
-RS4-6000
-RS4-10000

Operation				
Model	Setup	Channels Used	Boxes Per Channel	Total Load Impedance
Ionic-V24	Passive	1	1	16 Ω
Ionic-V24	Passive	1	2	8 Ω
Ionic-V24	Passive	1	4	4 Ω
Ionic-V24	Passive	1	6 (Maximum)	2.67 Ω

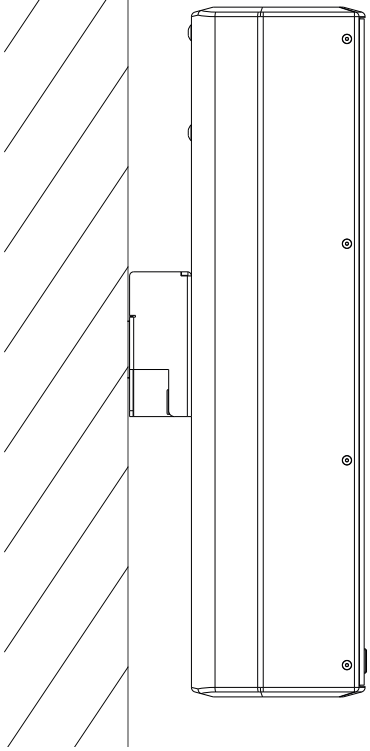
SETUP OPTIONS

This is the recommended method for installing Ionic-v24 column speakers on walls. These column speakers are ideal for clubs, theatres, houses of worship, public buildings, and complex commercial applications. Using the WB-I20/2 accesory, the speaker can be tilted gradually from 0° to -30°. The SV-20 bracket, on the other hand, is fixed at 0°.

WB-I20/2



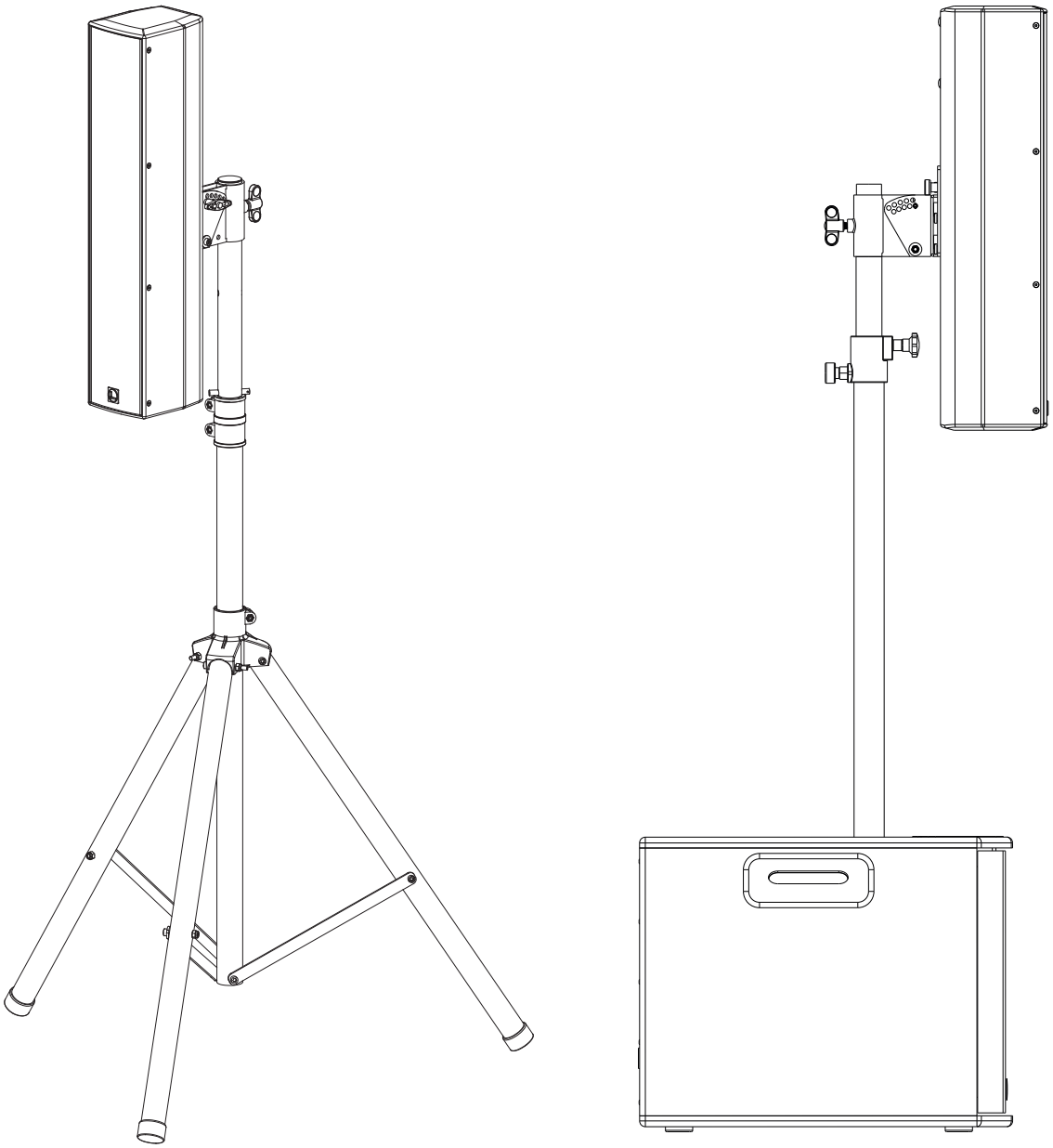
SV-23



SETUP OPTIONS

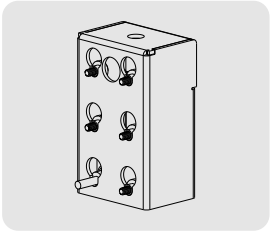
The following setup shows how to add a subwoofer to create a full-range system. The Ionic-v24 can be mounted directly on top of a compatible subwoofer or on a standard speaker stand using the SV-POLE accessory and a 35 mm pole, providing a simple and flexible system configuration.

The SV-POLE accessory allows the speaker to be tilted in ten steps from 0° to -33°, helping to achieve optimal system coverage and performance.

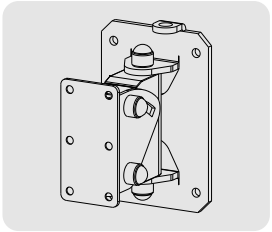


5. HARDWARE AND ACCESSORIES

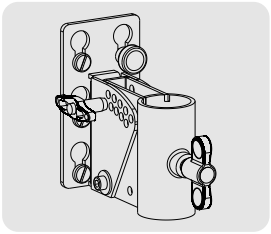
Ionic cabinets offer a variety of practical accessories to help to use the system in a number of applications.



SV - 23
Wall / truss bracket



WB-I20/2
Wall bracket for column installation – inclinable



SV-POLE
35mm inclinable Pole adaptor

6. ONLINE CONTROL SYSTEM

• Who is it for?

Users of Self powered DSP incorporated Lynx Pro Audio Cabinets where the user has requested the cabinets be supplied with the Ethernet Module kit.

• What is it for?

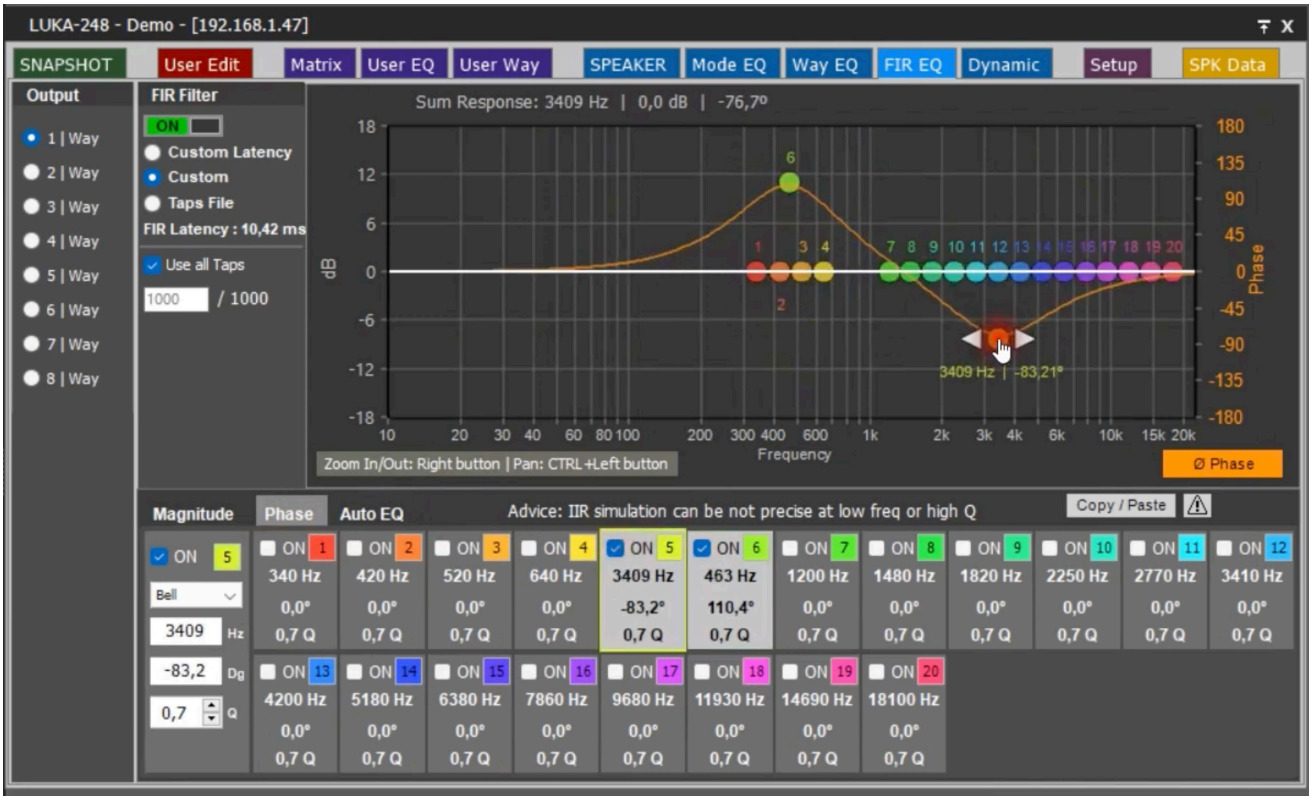
Obtain detailed information of cabinet behaviour and monitor the cabinet/s in real time. You can change the preset, gain, mute, polarity and phase. You can also activate the air absorption compensation and select the «SOLO» mode.

• How does it work?

Via Ethernet (cable or wireless). Once installed, the O.C.S. software automatically detects all the cabinets connected to the network and displays them in the O.C.S. window on the users PC.

• What does it show?

As well as displaying the cabinet model and IP address the O.C.S will be monitoring in real time and the user will be able to view RMS levels, Input clip, power module temperature, compression levels, air absorption compensation and cabinet angulation.



7. RAINBOW (Acoustic Prediction Software)

Lynx Pro Audio's R&D department is working on Rainbow 3D, our acoustic simulation software with dynamic 3D features. With a sophisticated design, Rainbow 3D stands out for its speed, being able to provide a simulation in just a few seconds. It also provides algorithms for beam steering and optimizing the listening area.

• Designed from scratch by professionals

Rainbow 3D has been programmed from scratch by Lynx Pro Audio engineers, using new programming procedures that achieve an effective simulation with really low calculation time.

• Multiple listening zones

The program can simulate all Lynx Pro Audio's acoustic enclosures located in a 3D space, including the classic side, top and front views. It can also define multiple listening zones and allows offset positioning and symmetry. Blueprint images, textures and PNG format pictures can be imported.

• Unlimited sound sources

Allows the acoustic simulation for an unlimited number of sound sources and audio systems. You can place as many systems (subwoofers, line arrays, columns and individual boxes) as you desire. Also, the line arrays can be placed in stack or flown configuration.

• Beam steering

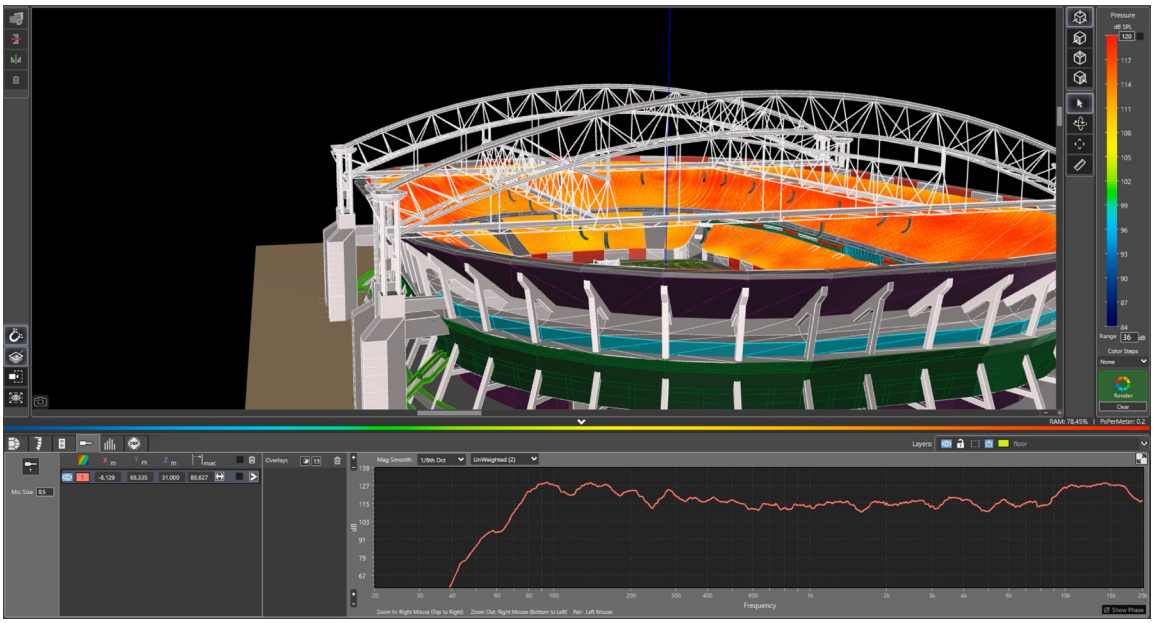
Rainbow 3D has the ability to add DSP processing to the simulation and uses algorithms to control the directivity (beam steering) in columns, without the need to tilt them physically, being able to divide the column into several beams that point to different zones.

• Accurate optimization thanks to FIR filters

Optimized algorithms are used in the listening area to improve the sound coverage and the frequency response. This feature can be executed in a matter of seconds. Additionally, the export of FIR coefficients can be performed with the optimization for later loading in the DSP via Ethernet or a USB device. In the near future direct communication with Lynx Pro Audio and OCS will be available.

• Multiple measures and tools

Likewise, the R&D department is developing multiple measurement and analysis tools for the calculated data. For example, the sound pressure curves (SPL) in the listening areas and the capture of virtual measurements that show the frequency response in the points of location indicated and added. Among other tools you will find autosplay and a wizard to set up different subwoofer arragements.



LYNX PRO AUDIO GUARANTEE

Lynx products are guaranteed against every kind of manufacturing fault 2 year after the date of sale. When products are under guarantee, the repairing and the free supplying of the device parts in order to correct any kind of defect are guaranteed by Lynx Pro Audio S.L. In the case that the product could not be returned to the factory for checking and repairing, Lynx Pro Audio S.L. would supply all the necessary parts.

Lynx Pro Audio S.L. is not responsible for any damage or defect caused during the transport or caused by an undue or improper handling by a non-authorized person during the life of this guarantee.

All our products go through rigorous testing and quality controls. We guarantee the characteristics described here within and their quality against any fabrication defect.

The user loses all warranty rights if he incorporates or carries out any modification to the product, if he uses it outside of the stated safe working loads or does not secure the system properly using all the pins in their corresponding holes.

For any question regarding the product, the user must quote the model and serial number.

WEEE Declaration: Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact Lynx Pro Audio S.L.

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DECLARATION OF CONFORMITY

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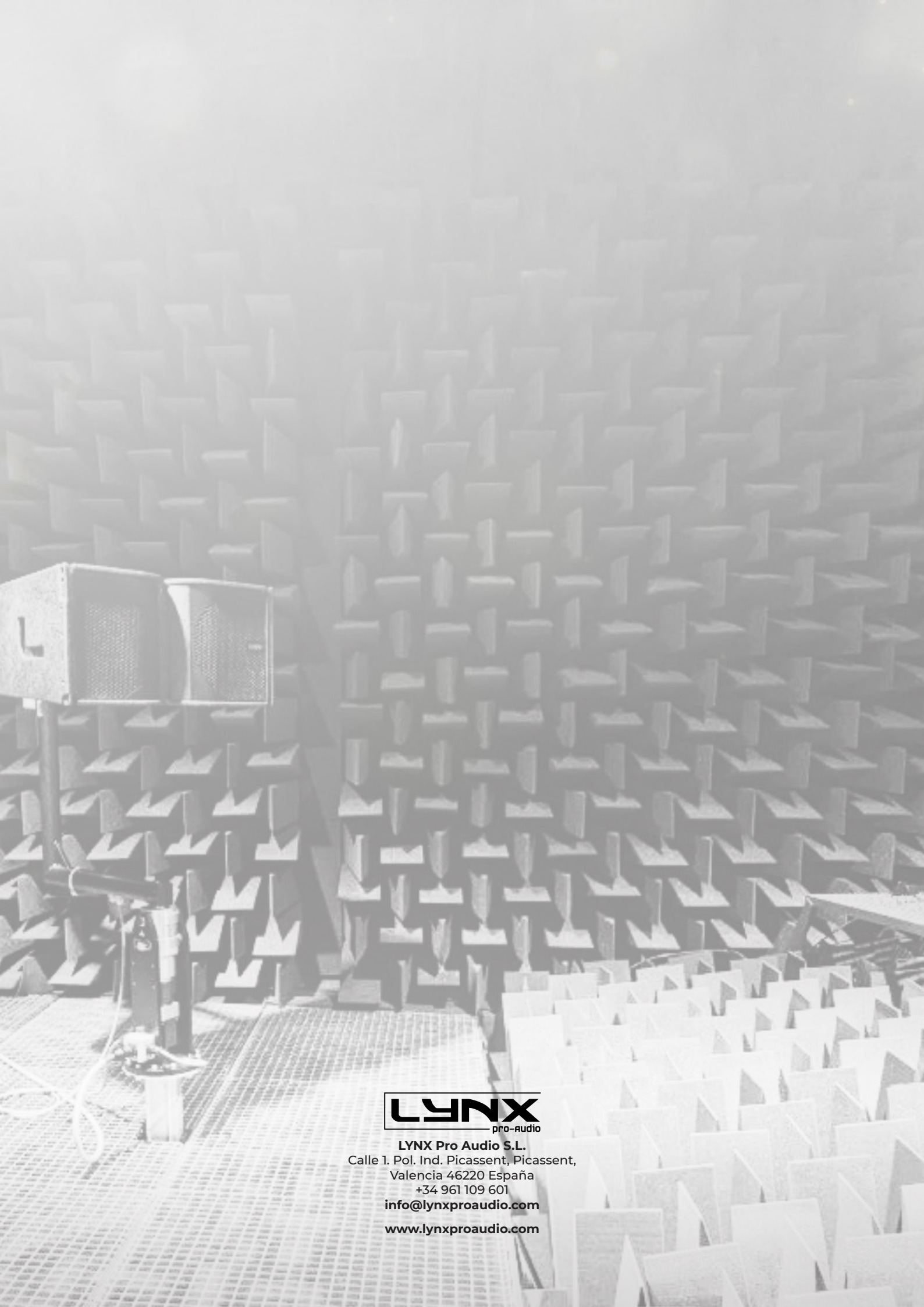
Lynx Pro Audio S.L. declares that Ionic series are in conformity with the following EC directives:

Low Voltage Directive	2014/35/UE
Electromagnetic Compatibility EMC	2014/30/UE
RoHS Directive	2011/65/UE
RAEE (WEEE)	2012/19/UE

In accordance with Harmonized European Norms:

EN 60065:2014	Audio, video and similar electronic apparatus. Safety requirements
EN 60065:2002	Audio, video and similar electronic apparatus. Safety requirements
EN 55103-1:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.
Ionic models:	Ionic-50 | Ionic-100 | Ionic -v24 | Ionic -v28 | Ionic-18S | Ionic-12S | Ionic-5CXv

LYNX pro-audio



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