QB series

USER MANUAL

QB-5
SUB-08

Lynx Pro Audio S.L.

V.24.12

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QB-5

SUB-08

Manufacturer

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CE CERTIFICACTION, EUROPEAN PRODUCT

INTRODUCTION

To facilitate, correct and reliable use of the QB series we have designed this instruction manual. Please read the manual carefully before proceeding to install the cabinets.

The QB series comprises one two-way, passive full range cabinet and one subwoofer and is the smallest series that Lynx Pro Audio offers, designed and intended for background sound reinforcement where the power of the HR or BS series is not required.

All QB Series components have been carefully selected to offer a lightweight, versatile series delivering dynamic sound whilst remaining as competitively priced as possible and guaranteeing utmost reliability. All cabinets deliver a linear phase response and have been engineered to reduce distortion.

The components have been carefully selected to offer a lightweight, versatile series, delivering a linear phase response with excellent sound distribution and fidelity for background installations in bars, restaurants, conferences, etc.

CONTENTS

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 THE 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 handle the interior 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 plug in 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. Only clean the unit with dry cloths. Do not use solvents.

• Overheating / Fire risk

To reduce the risk of the speaker 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 put naked flame, such as lighted candles, close or on top of the unit.

• Electromagnetic and interferente 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 apparatus to extreme humidity and or temperature values.

SYSTEM OVERVIEW

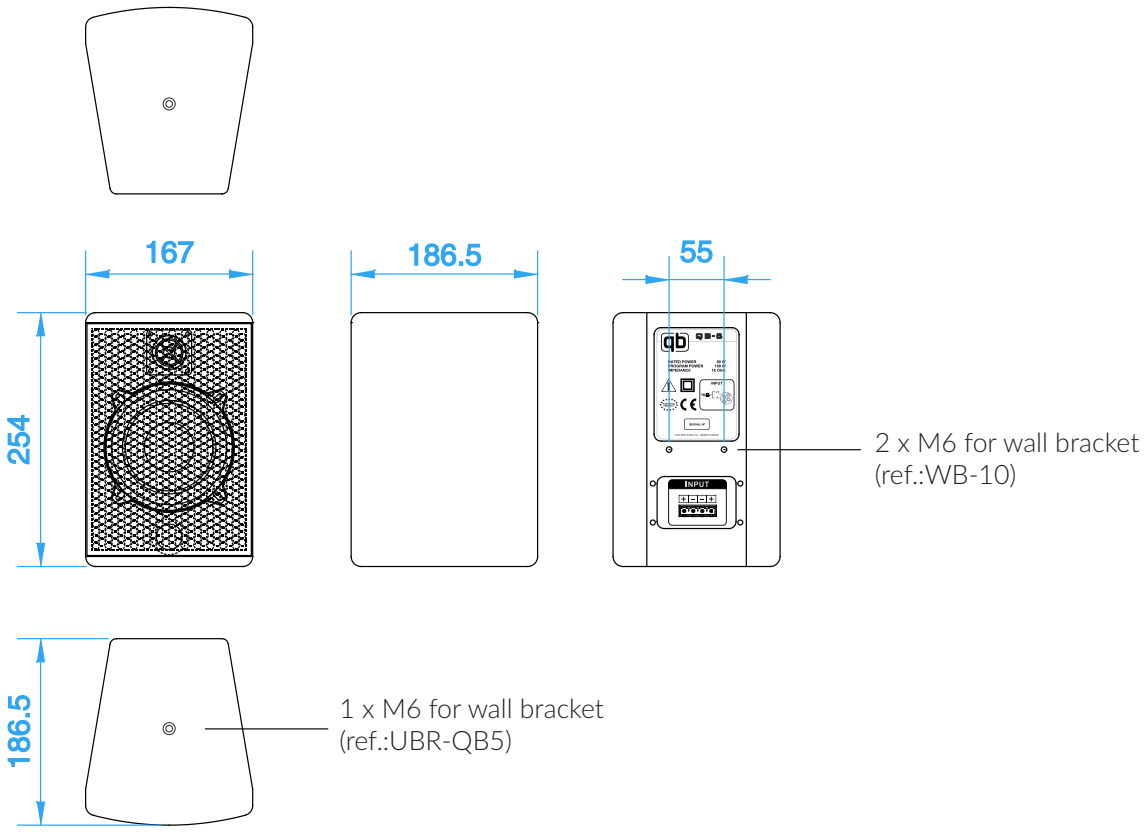
- QB-5

  Ultra-compact, full range, two way passive cabinet for background sound reinforcement. It consists of a 5" transducer and a 1" high frequency neodymium tweeter. It offers 90°conic dispersion and 110 dB SPL (160W program).

- Technical Data:

Components:	
• LF:	1 x 5" transducer
• HF:	1 x 1" tweeter
Frequency range:	65 Hz – 20 KHz (-10dB)
Frequency response:	75 Hz – 18 KHz (± 3dB)
Sensivity	88 dB (1W@1m)
Max SPL / Peak:	107 dB - 113 dB peak
Coverage:	90° H x 90° V conic
RMS power:	80 W
Program power:	160 W
Nominal impedance:	16 Ω
Input connectors:	4 x Terminal Block 7.62 mm between pins
Finish:	Water based paint
Material:	9 mm premium birch plywood
Dimensions:	254 x 167 x 186 mm (H x W x D)
Weight:	3 Kg (6.6 lbs)

- QB-5 measurements



SYSTEM OVERVIEW

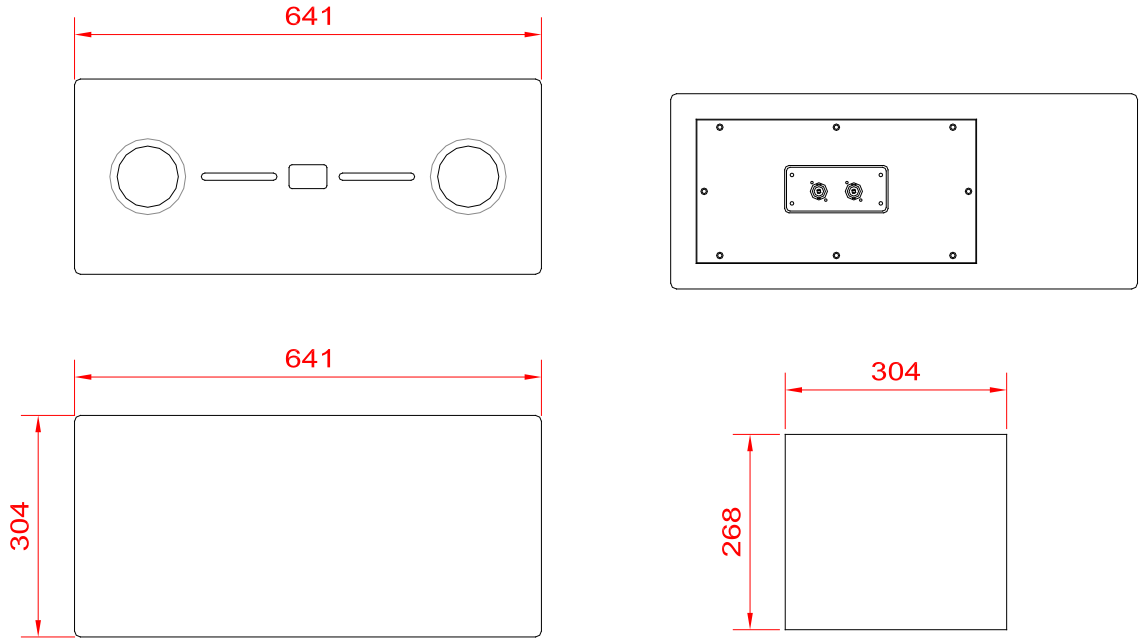
- SUB-08

  Ultra-compact double band pass, passive sub woofer with one 8” transducer with double independent coil and rubber suspension. 117 dB SPL (400W).

- Technical Data:

Components:	1 x 8” transducer (2 x 50mm voice coil)
Frequency range:	43 Hz – 160 Hz (-10dB)
Frequency response:	47 Hz – 154 Hz (± 3dB)
Sensivity	93 dB (1W@1m)
Max SPL / Peak:	116 dB - 122 dB peak
Coverage:	360° single unit
RMS power:	200 W
Program power:	400 W
Nominal impedance:	2 x 8 Ω
Input connectors:	2 x Neutrik Speakon NL4MP
Finish:	Polyurea coating
Material:	15 mm Premium birch plywood
Dimensions:	268 x 641 x 304 mm (H x W x D)
Weight:	9 Kg (20 lbs)

- SUB-08 measurements



CONNECTORS AND CONNECTIONS

- Normative

QB Series cabinets meet the following standards:

EN 55103-1:1996: Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use (-1 Emmision).

EN 55103-1:1996: Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. (-2 Immunity)

EN 60065:2002: Audio, video and similar electronic apparatus. Safety requirements.

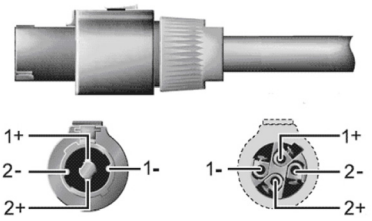
- Cable connection

In the following table you can see the maximum power of the cabinets and their nominal impedance.

Connector	Connections	per box	Impedance	Power
NL4MP	±1	2	16 Ohms	80 W
NL4MP	±1/ ±2	1	2 x 8 Ohms	

- Connectors

The QB Series has a connection panel at the rear of the cabinet. This consists of 2 internally bridged Neutrik NL4-MP connectors which apply no process to the signal.

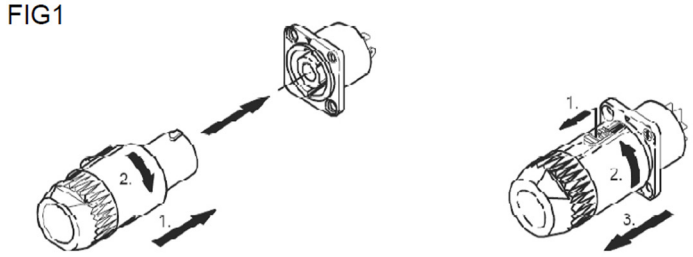


Note: If pins +-2 are not used they will still be internally bridged.

To power the cabinet use NL4 speakon connectors as shown in the following diagram. Consult the ''Conection cable table'' on previous page, under the column 'Speakon Connections' to see which pins are used for each cabinet.

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.

CONNECTORS AND CONNECTIONS

- 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 Sub-bass cabinets.

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 meters)			
			2 Ω	4 Ω	8 Ω	16 Ω
13.3 mm²	6	0.25 Ω	24	57	122	253
6.63 mm²	8	0.49 Ω	12	28	61	126
5.26 mm²	10	0.62 Ω	10	23	48	100
3.31 mm²	12	0.99 Ω	6	14	30	63
2.08 mm²	14	1.57 Ω	4	9	19	40
1.31 mm²	16	2.49 Ω	2	6	12	25
0.82 mm²	18	3.98 Ω	2	4	8	16
0.52 mm²	20	6.28 Ω	1	2	5	10
0.33 mm²	22	9.89 Ω	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. E.g: 2 QB-8 cabinets in parallel have an impedance of 4Ohm (8Ohm impedance - for 1 cabinet - divided by 2 – numbers of cabinets connected).

RAINBOW 3D Acoustic Prediction Software

Lynx Pro Audio's R&D department is working on Rainbow 3D, a new 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

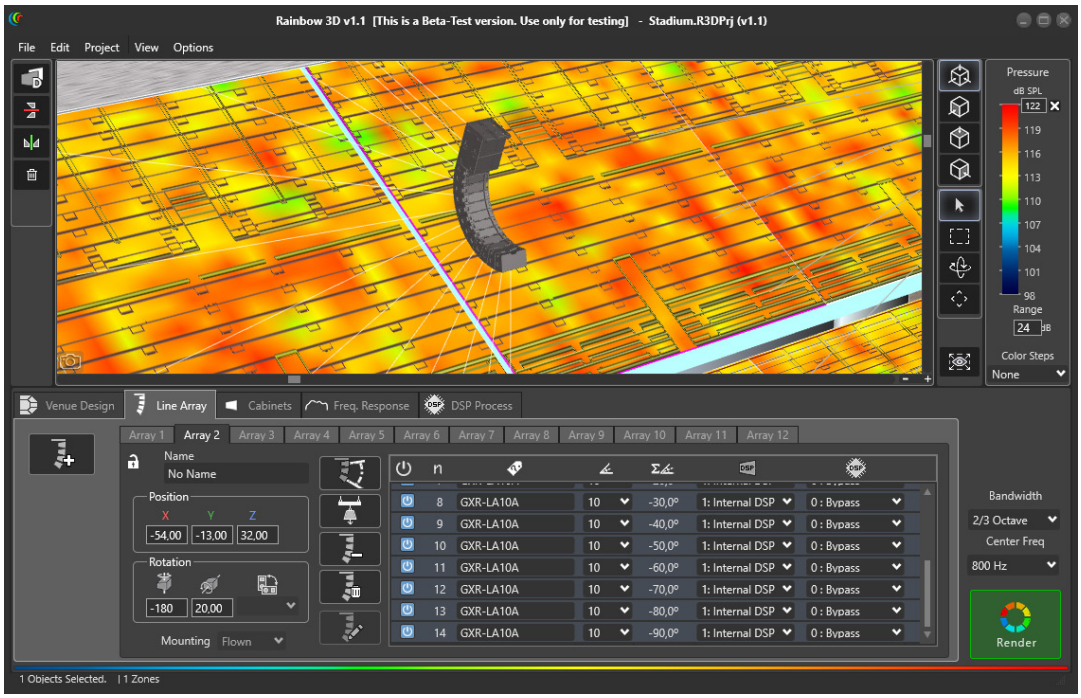
Rainbow 3D has the ability to add DSP processing to the simulation and uses algorithms to control the directivity (beam steering) in columns, without the need to tilt them physically, being able to divide the column into several beams that point to different zones.

- 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.

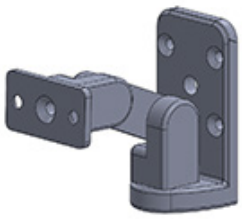
- Multiple measures and tools

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.

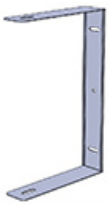


HARDWARE AND ACCESSORIES

The QB Series is designed to be used in fixed installations such as pubs, bars, restaurants, conference halls, hotels, etc. A large selection of accessories are available to help ease the installation and achieve the necessary angulation to direct the sound towards the required listening zones.



WB-10
Wall bracket for the QB-5.
Also available in white
with Ref.: WB-10W



UBR-QB5
Horizontal flying /mounting
bracket for QB-5

CE

DECLARATION OF CONFORMITY

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Lynx Pro Audio S.L. declares that QB 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.
QB models:	QB-5 / SUB-08

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 y a non-authorized person during the life of this guarantee.

All our products undergo rigorous tests 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.

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.