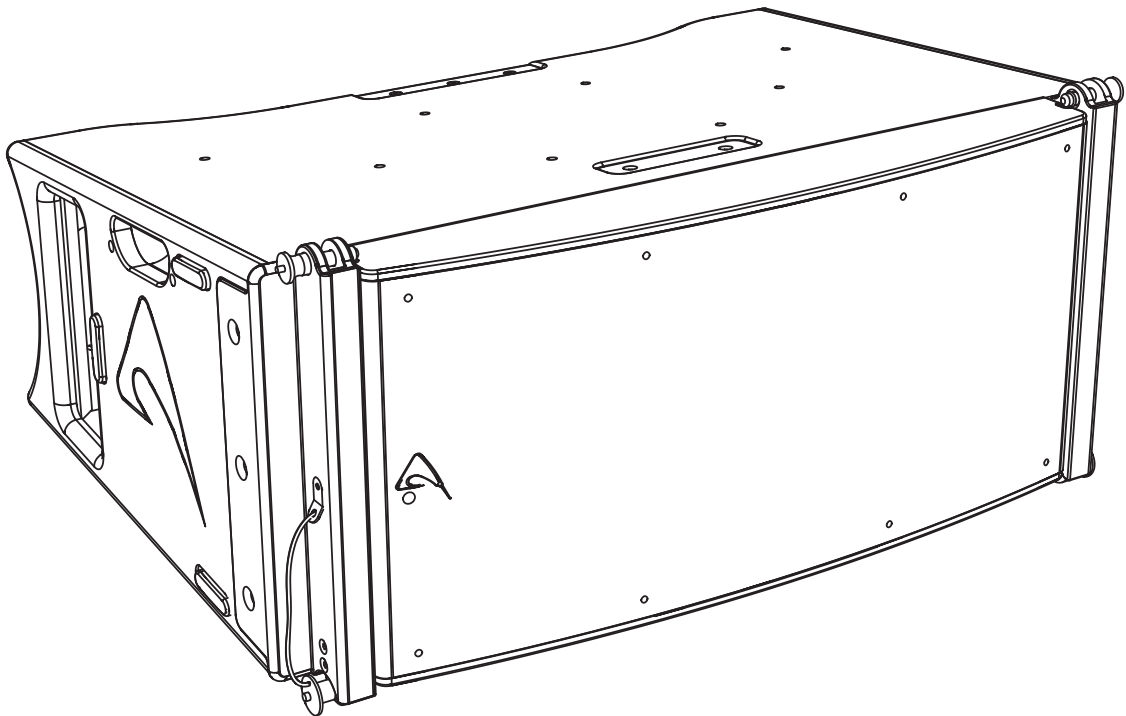




AX2010P

Passive Vertical Array Loudspeaker



USER MANUAL

revision 2023-07-05





IMPORTANT SAFETY INSTRUCTIONS

Watch for these symbols:



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Warning: to reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
17. To completely disconnect this apparatus from the ac mains, disconnect the power supply cord plug from the ac receptacle.
18. The mains plug of the power supply cord shall remain readily operable.
19. This apparatus contains potentially lethal voltages. To prevent electric shock or hazard, do not remove the chassis, input module or ac input covers. No user serviceable parts inside. Refer servicing to qualified service personnel.
20. The loudspeakers covered by this manual are not intended for high moisture outdoor environments. Moisture can damage the speaker cone and surround and cause corrosion of electrical contacts and metal parts. Avoid exposing the speakers to direct moisture.
21. Keep loudspeakers out of extended or intense direct sunlight. The driver suspension will prematurely dry out and finished surfaces may be degraded by long-term exposure to intense ultra-violet (UV) light.
22. The loudspeakers can generate considerable energy. When placed on a slippery surface such as polished wood or linoleum, the speaker may move due to its acoustical energy output.
23. Precautions should be taken to assure that the speaker does not fall off a stage or table on which it is placed.
24. The loudspeakers are easily capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



DECLARATION OF CONFORMITY



The product is in compliance with:

RoHS Directive 2011/65/EU and 2015/863/EU, WEEE Directive 2012/19/EU.



The product is in compliance with:

S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

LIMITED WARRANTY

Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any "direct damage" or "indirect damage" caused by product defectiveness.

- This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
- If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
- Proel is not responsible for any damage that occurs during shipment.
- Products are sold "delivered ex warehouse" and shipment is at charge and risk of the buyer.
- Possible damages to unit should be immediately notified to forwarder. Each complaint for package tampered with should be done within eight days from product receipt.

CONDITIONS OF USE

Proel do not accept any liability for damage caused to third parties due to improper installation, use of non-original spare parts, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards. Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. The product must be installed by qualified personal. Please contact the manufacturer for further information.



PRESET USING EXAMPLE: INSTALLATION IN A THEATRE WITH BALCONY..... 15

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INTRODUCTION

The AX2010P Vertical Line Array element is designed for a wide range of sound reinforcement applications where a flexible and easy to use vertical array systems is needed.

The high frequency range is reproduced by two low-distortion compression drivers, equipped with very light-weight diaphragms. Two transmission line waveforming waveguides have been used to load the HF drivers, in order to provide a detailed and natural sound and to achieve a long-distance HF projecting capacity.

The two 10" woofers employed in the reproduction of the mid-bass range are equipped with very light-weight cones. The lightness of the diaphragm is furthermore improved by the use of aluminium voice coil instead of conventional copper.

The crossover filter approach is based on a "Constant Power" technique. Thanks to a particular phase combination between the two ways around the crossover frequency, this approach is able to provide a very stable horizontal coverage and a very stable off-axis sound image, also minimizing unwanted effects around the crossover frequency.

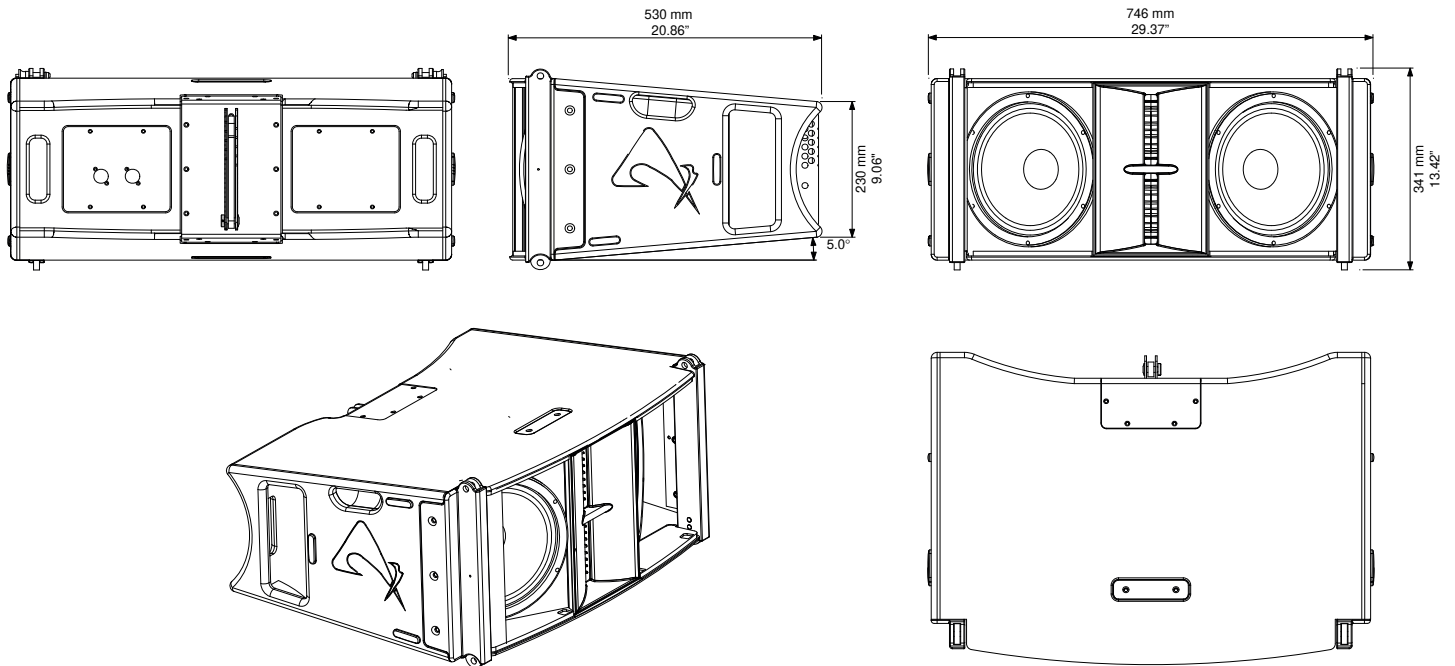
TECHNICAL SPECIFICATION

Table with columns: SYSTEM, INPUT CONNECTION, POWER HANDLING, ENCLOSURE & CONSTRUCTION, and TRANSDUCERS. It lists technical details such as acoustic principle, frequency response, impedance, sensitivity, coverage angles, peak SPL, dimensions, and driver specifications.





MECHANICAL DRAWING



OPTIONAL ACCESSORIES

AXCASE02PT	Carrying Case for 2 box unit
AXCASE04PT	Carrying Case for 4 box unit
NL4FFX-W-L	Neutrik Speakon® PLUG for OD 10-16mm
PC260	2 in 6 out digital loudspeaker processor
USB2CANDV2	Dual output PRONET network converter
KPTAX2012P	Fly bar for Axiom AX2010 Loudspeakers
AXFEETKIT	Kit of 6pcs BOARDACF01 M10 foot for stacked installation
RAINCOV2010PW	Rain protection for power connectors

see <http://www.axiomproaudio.com/> for detailed description and other available accessories.

SPARE PARTS

NL4MP	Neutrik Speakon® panel socket
95AXM014	Locking Pin for AX2010
PLG716	Straight Shackle 16 mm for Fly bar
91CRAIN3	Crossover/protection module
98AXM210W16	10" woofer speaker 2.5" VC - 16Ω
98DRI1424	1.4" compression driver - 2.4" VC - 16Ω
98MBN1424	titanium diaphragm for 98DRI1424 HF driver

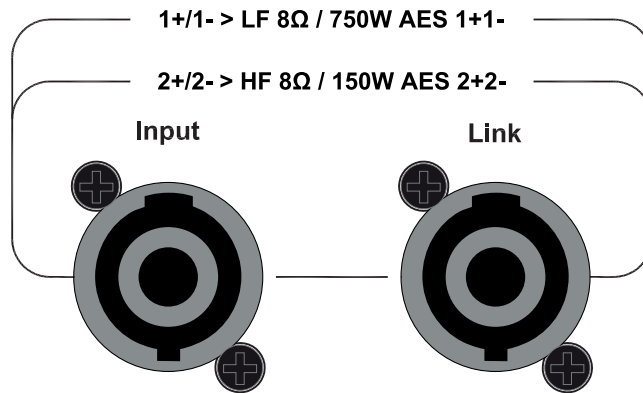
contact the technical support on <http://www.axiomproaudio.com/> for request or detailed spare part list.



INPUT

Power input for the external amplifier. The AX2010P does not include a passive crossover for filtering the signal, but only an internal protection that applies a gentle high-pass filtering and a limitation for excessive power on the HF section. The connections are the following:

INPUT - LINK	
NL4 pin number	internal connection
1+	LF+
1-	LF-
2+	HF+
2-	HF-



LINK

Power output in parallel with the INPUT socket for connecting the unit to another speaker. The number of AX2010P cabinets that can be connected in parallel depends on the amplifier load capacity.

Useful tools to set up properly a vertical array system

This is a list of tools that can be very useful to set properly a vertical array system.



CABLE TESTER

It is a good practice to check all cables before each installation, because even one faulty cable can compromise heavily the system performance.



INCLINOMETER WITH LEVER

This tool can be used to verify the vertical array angle. It can be used at the top or at the bottom of the array. In this case you have to sum all splay angles, so the maximum precision is needed for aiming the vertical array, particularly for long throw applications.



LASER DISTANCE METER

This instrument can be useful to measure the height of the vertical array and to know the distance between FOH-Subs and FOH-Array for setting the delay time.



SMAART or similar acoustic measurement system

These are useful to measure delays, phase and response of the system.




PREDICTION SOFTWARE: EASE FOCUS 3

To aim correctly a complete system we suggest to use always the Aiming Software - EASE Focus 3:

The EASE Focus 3 Aiming Software is a 3D Acoustic Modelling Software that serves for the configuration and modelling of Line Arrays and conventional speakers close to reality. It only considers the direct field, created by the complex addition of the sound contributions of the individual loudspeakers or array components.

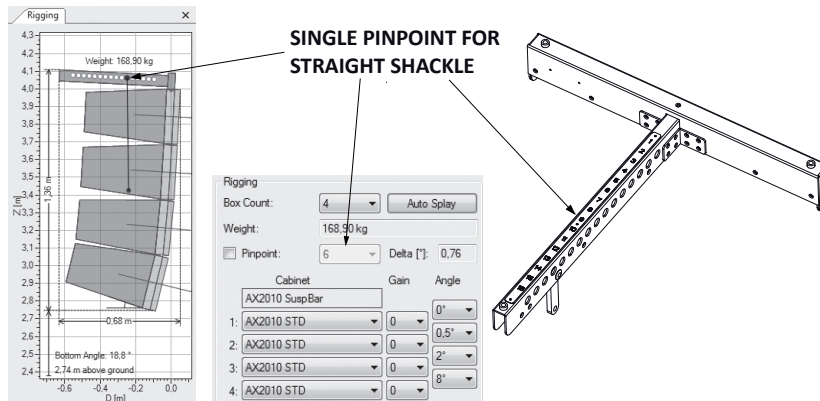
The design of EASE Focus is targeted at the end user. It allows the easy and quick prediction of the array performance in a given venue. The scientific base of EASE Focus stems from EASE, the professional electro- and room acoustic simulation software developed by AFMG Technologies GmbH. It is based on the EASE GLL loudspeaker data file required for its use. The GLL file contains the data that defines the Line Array with regard to its possible configurations as well as to its geometrical and acoustical properties.

 **Download the EASE Focus 3 app from the AXIOM website at <https://www.axiomproaudio.com/> clicking on downloads section of the product.**

Use the menu option **Edit / Import System Definition File** to import the **GLL** file, the detailed instructions to use the program are located in the menu option **Help / User's Guide**.

Note: Some windows system can require the .NET Framework 4 that can be download from website at <https://focus.afmg.eu/>.

KPTAX2012P FLOWN PINPOINT



BASIC INSTALLING OPERATION


The EASE FOCUS prediction software is the tool that allows you to evaluate your installation both to meet the acoustic requirements of the project and also to suspend or stack AX2010 systems, the program allows you to simulate the rigging pinpoint on the fly bar to obtain the calculated splay angle of the entire line array system and of the individual angles between each loudspeaker element. The following examples shows how to operate correctly to link the loudspeaker box and to suspend or stack the whole system safely and surely, read these instructions with extreme attention:

 **WARNING! CAREFULLY READ THE FOLLOWING INSTRUCTIONS AND CONDITION OF USE:**

- This loudspeaker is designed exclusively for Professional audio applications. **The product must be installed by qualified personal only.**
- Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. Please contact the manufacturer for further information.
- Proel do not accept any liability for damage caused to third parties due to improper installation, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards.
- During assembly pay attention to the possible risk of crushing. Wear suitable protective clothing. Observe all instructions given on the rigging components and the loudspeaker cabinets. When chain hoists are in operation ensure that there is nobody directly underneath or in the vicinity of the load. Do not under any circumstances climb on the array.
- **Wind loads**

When planning an open-air event it is essential to obtain current weather and wind information. When loudspeaker arrays are flown in an open-air environment, possible wind effects must be taken into account. Wind load produces additional dynamic forces acting on the rigging components and the suspension, which may lead to a dangerous situation. If according to the forecast wind forces higher than 5 bft (29-38 Km/h) are possible, the following actions have to be taken:

- The actual on-site wind speed has to be monitored permanently. Be aware that wind speed typically increases with height above ground.
- Suspension and securing points of the array should be designed to support double the static load in order to withstand any additional dynamic forces.

 **WARNING!** **Flying loudspeakers overhead at wind forces higher than 6 bft (39-49 Km/h) is not recommended.** If the wind force exceeds 7 bft (50-61 Km/h) there is a risk of mechanical damage to the components which may lead to a dangerous situation for persons in the vicinity of the flown array.

- **Stop the event and make sure that no person remains in the vicinity of the array.**
- **Lower and secure the array.**



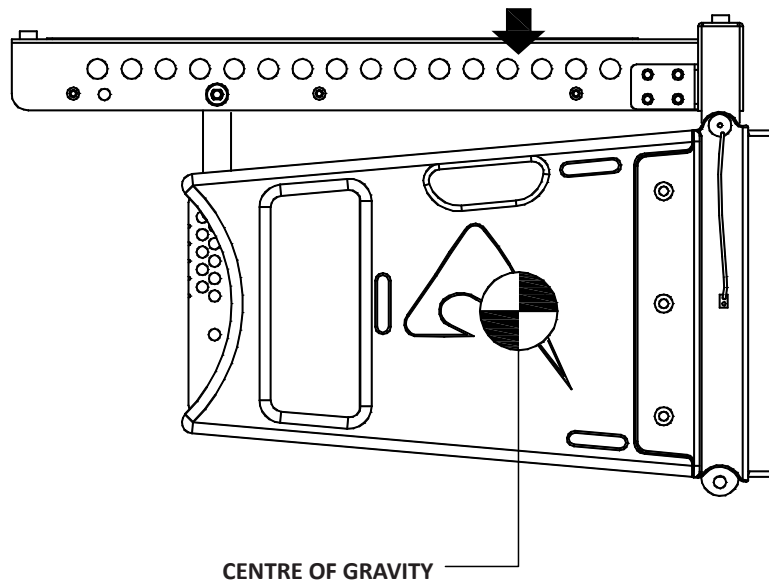
Fly bar suspension and angle setup (centre of gravity)

The figure shows where the normal centre of gravity is with one box or several boxes arranged in a line. Usually the boxes are arranged to make an arc for the best coverage of the audience, so the center of gravity moves backward. The aiming software suggests the ideal suspension pinpoint taking into account this behaviour: fix the straight shackle in this position.

Note that the ideal aiming angle often doesn't correspond to the pinpoint: there is often a little difference between ideal aiming and real aiming and its value is the Delta angle: positive delta angle can be adjusted a little using two ropes, negative delta angle are self adjusted a little because the cables weight on the back of the array. With some experience it's possible to consider preventively these required little adjustments.

During the flown set up you can connect the elements of the array to their cables. We suggest to discharge the weight of the cables from the flying pinpoint by tying them with a textile fibre rope, instead of letting them hang freely: in this way the position of the array will be much more similar to the simulation produced by the software.

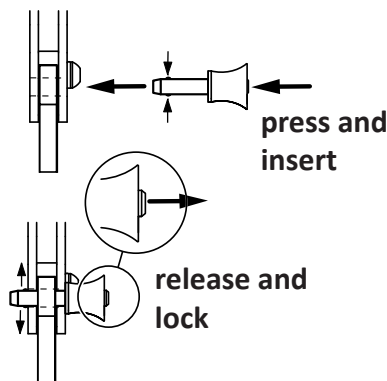
KPTAX2012P FLY BAR FOR FLOWN ARRAY



Pin locking and splay angles set up

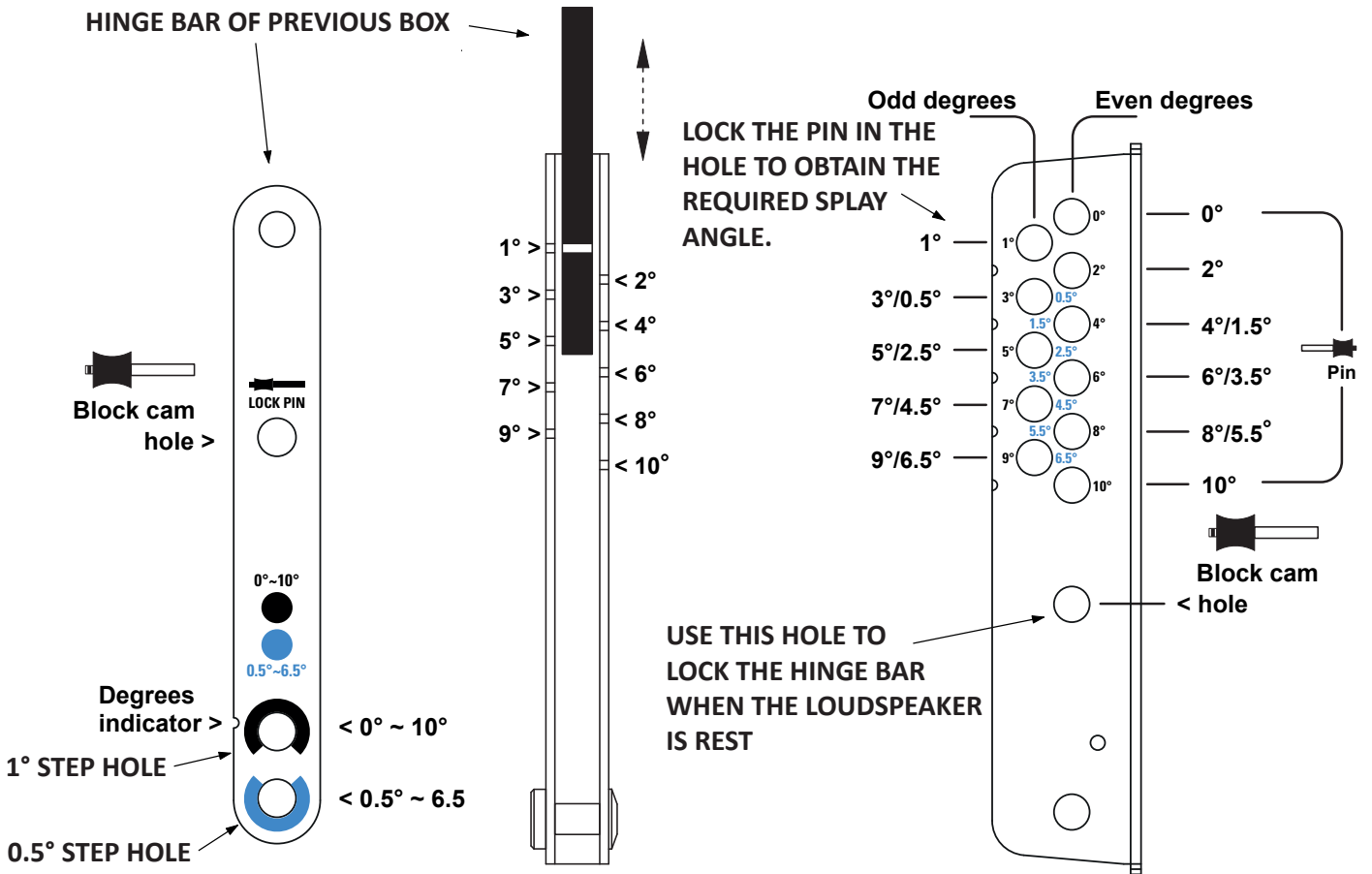
The figures below shows how to insert correctly the locking pin, always carefully check that each pin is fully inserted and locked in the correct position. Set up the splay angle between loudspeakers inserting the pin in the correct hole, please note that the inner hole in the hinge top is for whole angles (1, 2, 3 etc.) while the outer hole is for the half angles (0.5, 1.5, 2.5 etc.).

95AXM014 LOCKING PIN





LOUDSPEAKER SPLAY ANGLES SET UP



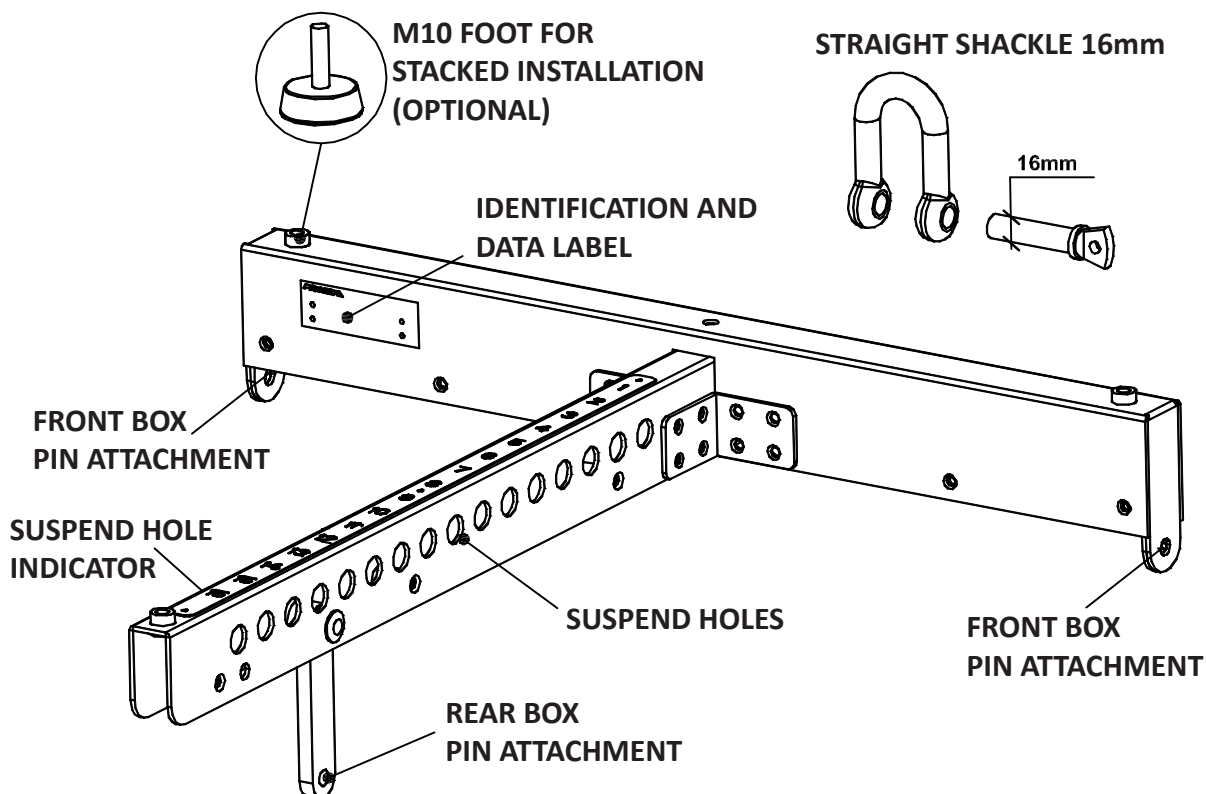



FLY BAR AND ACCESSORIES

The AX2010 Systems are built to allow the suspension of array with variable shape and dimensions. Thanks to a suspension mechanism designed to be functional, flexible and safe, each system must be suspended or stacked using the **KPTAX2012P** fly bar. The loudspeakers are linked together in a column using a series of couplers integrated in the frame of each enclosure. Each system is set up properly both acoustically and mechanically only using the aiming software.

Coupling system in the front does not require any adjustment: using two locking pins, each loudspeaker box is fixed to the previous. The slotted bar in the back is inserted in a U-shaped frame which features a series of numbered holes. Sliding the slotted bar in the U-shaped frame of the next loudspeaker and inserting a locking pin in one of the numbered holes, it is possible to adjust the relative splay angle between two adjacent loudspeakers in the array column.

KPTAX2012P FLY BAR AND ACCESSORIES

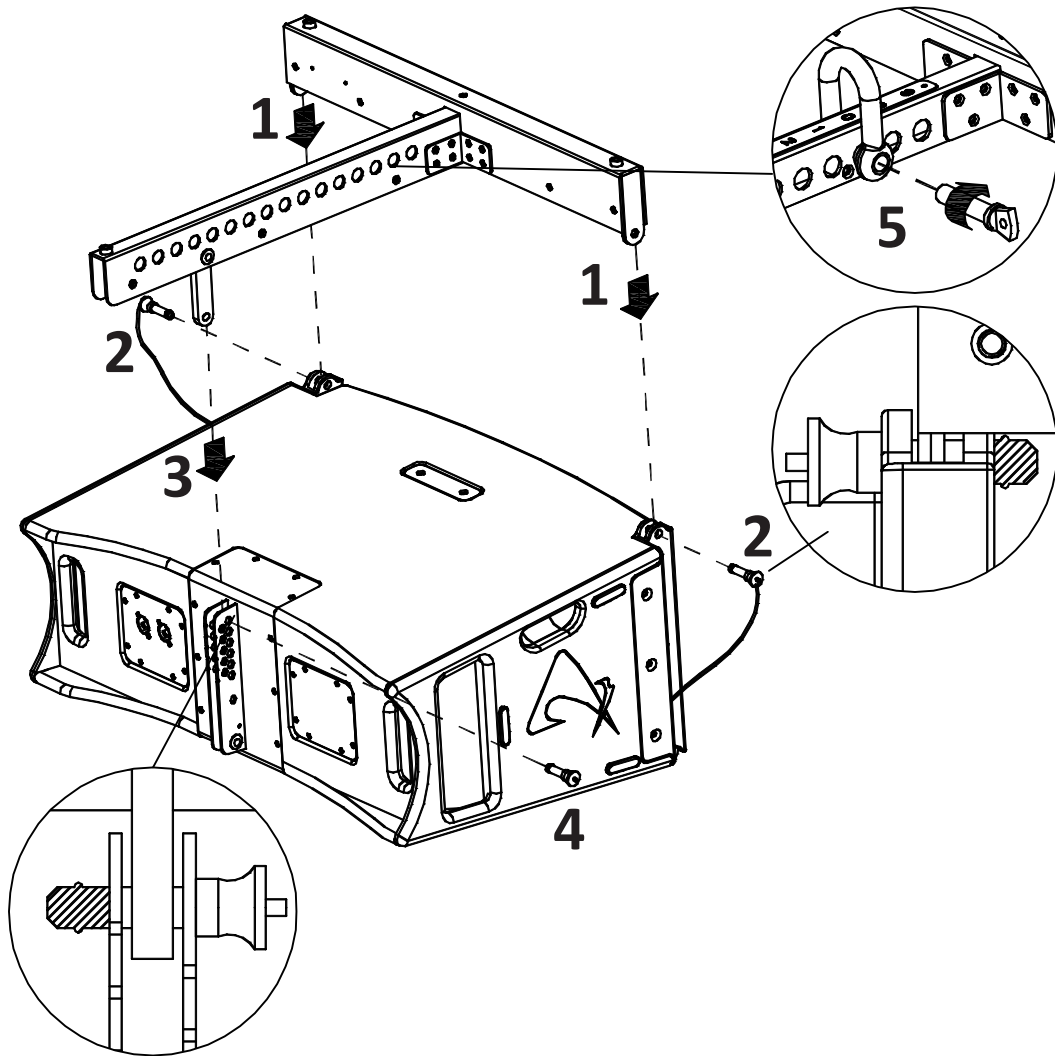


 KPTAX2012P fly bar maximum capacity is 700 Kg (1540 lbs) with the 0° angle. It can support up to 12 AX2010 loudspeakers with a safety factor of 10:1.



Follow the sequence in the figure for fixing the fly bar at the first box. Usually this is the first step before lifting up the system. Be careful to insert properly all the locking pins (2)(3) and the shackle (5) in the right holes as specified by the aiming software. When lifting the system always proceed gradually step by step, paying attention to secure the fly bar to the box (and the box to the other boxes) before pulling up the system: this makes easier to insert properly the locking pins. Also when the system is released down, unlock gradually the pins. During the lifting be very careful to not let the cables enter the space between one enclosure and the other, as their compression could cut them.

KPTAX2012P FLY BAR ASSEMBLY SEQUENCE





STACKED INSTALLATION



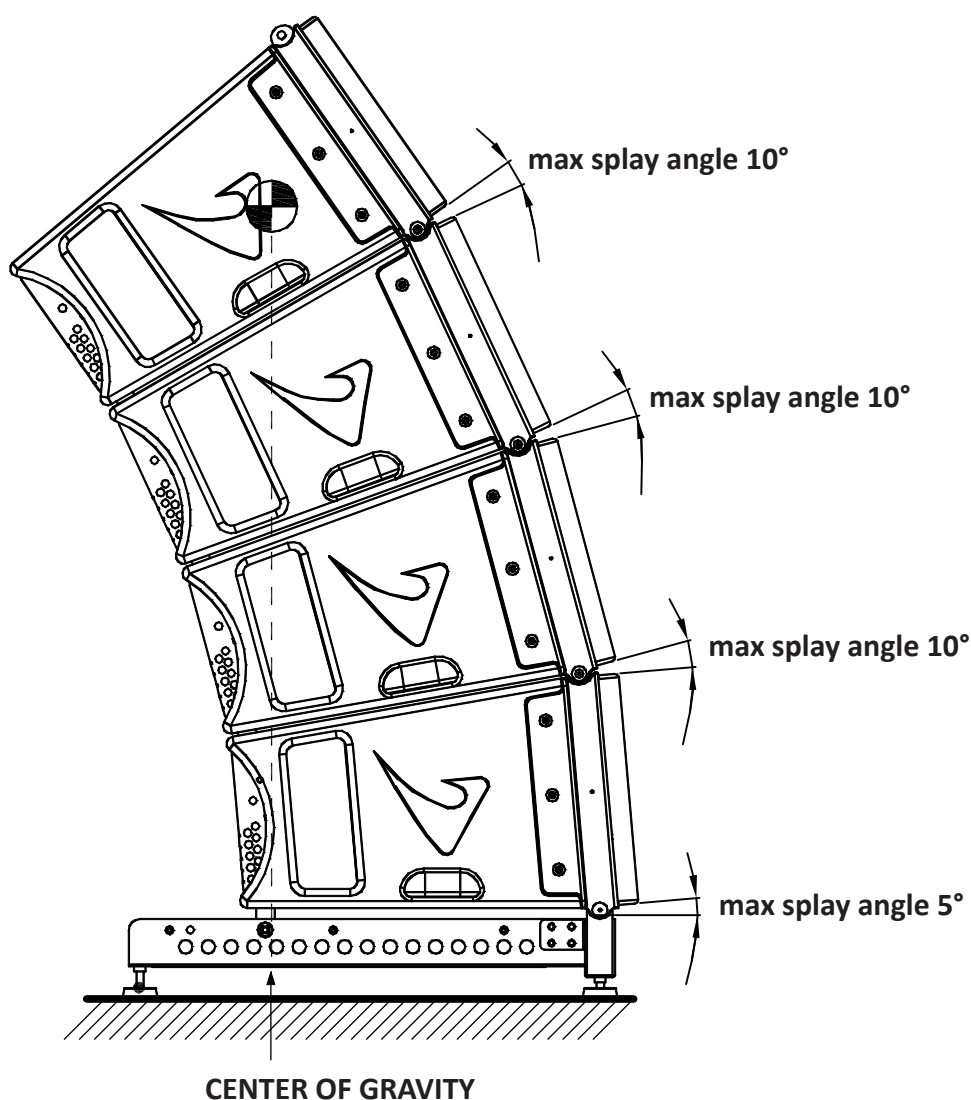
WARNING!

- The ground where the **KPTAX2012P** Fly bar serving as ground support is placed needs to be absolutely stable and compact.
- In the stack configuration you have to use the three optional feet **BOARDACF01 (AXFETKIT kit)** and the fly bar must be mounted upside down on the ground.
- Adjust the feet so to lie the bar perfectly horizontal.
- Always secure ground stacked setups against movement and possible tipping over.
- A **maximum of 4 x AX2010** cabinets with the **KPTAX2012P** Fly bar serving as ground support are allowed to be set up as ground stack.

Coupling system in the front do not require any adjustment: using two locking pins each loudspeaker box is fixed to the previous. The slotted bar in the back is inserted in a U-shaped frame which features a series of numbered holes. Sliding the slotted bar in the U-shaped frame of the next loudspeaker and inserting a locking pin in one of the numbered holes, it is possible to adjust the relative splay angle between two adjacent loudspeakers in the array column.

The optimal splay angles can be simulated using the EASE Focus 3 software.

KPTAX2012P STACKED ARRAY





SYSTEM PROCESSING BASIC INSTRUCTIONS

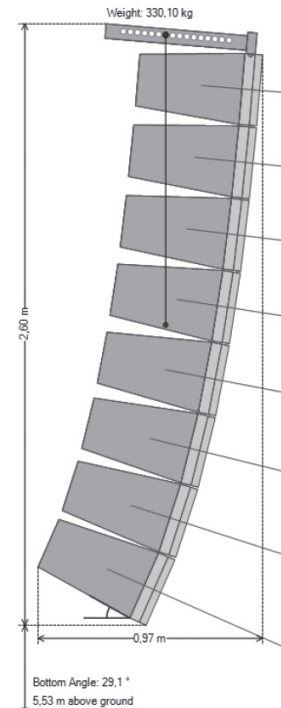
The AX2012P system do not feature passive filters and, to work, it needs an external processor to take care of crossover filtering, temporal alignment and protection of all devices. Proel provides PC260 digital processor which comes with the basic preset for the AX2010. The optimization of vertical array systems through digital processing is based on data obtained through measurements of the polar response throughout space and on their elaboration through purpose-designed mathematical models. For detailed instructions about PC260 refer to its proper manual.

The preset provided for the AX2012P allow the correct operation of the system, provide the best starting point for setup of temporal alignment, gain adjustment and, eventually, system equalization.

The preset is made considering several AX2010P boxes and most commonly used types of subwoofers in various configuration, the following figure shows a configuration example of a typical application of AX2010P vertical array:

System:	AXIOM AX Series
Company:	PROEL S.p.A.
Label:	AXIOM AX Series
Position:	X=0.00 m Y=0.00 m Z=8.00 m
Orientation:	Hor=0.0° Ver=-4.8°
Weight:	330,10 kg
Setup:	AX2010 SuspBar
Box Count:	8
Pinpoint Mode:	Best Pinpoint
Pinpoint Number:	10
Remaining Vertical Angle:	0.0°
Bottom Angle:	29,1 °
Above Ground:	5,53 m

	Box Type	Gain	Rigging Angle	Aiming Angle
	(Frame)			-4.8°
Box 1	AX2010 STD	0.0 dB	0°	-4.8°
Box 2	AX2010 STD	0.0 dB	1°	-5.8°
Box 3	AX2010 STD	0.0 dB	1°	-6.8°
Box 4	AX2010 STD	0.0 dB	2°	-8.8°
Box 5	AX2010 STD	0.0 dB	2°	-10.8°
Box 6	AX2010 STD	0.0 dB	3°	-13.8°
Box 7	AX2010 STD	0.0 dB	4°	-17.8°
Box 8	AX2010 STD	0.0 dB	6°	-23.8°



Follows a list of currently available preset downloadable from the Axiomproaudio website, all these must be considered a good start point for your system and application in site.

AX2010P/SW3XFP - Presets for PC260 Release 2.2 (PC260 and HPX8000 power amplifiers).

All the presets are intended for the use of SW36XFP subwoofer flown on top of the array.

- **STANDARD PRESET** (name: AX2010P+SW36XFP_STANDARD v2_2.pcf): This PRESET is suitable for vertical flown arrays that may range from 4 to 8 boxes or for the centre region of a bigger flown array. It can be used also for stacked arrays.
- **LONG THROW PRESET** (name: AX2010P+SW36XFP_LONGTHROW v2_2.pcf): This PRESET can be used in arrays bigger than 6 or 8 boxes and loaded in the top 1 or 2 boxes in order to obtain a more even distribution of the sound pressure, especially if they point very far away or to the upper deck of a large theatre.
- **SINGLE/DOWN-FILL PRESET** (name: AX2010P+SW36XFP_DOWNFILL v2_2.pcf): This PRESET, which features a much smoother high frequency response, can be loaded in the bottom boxes (usually 1 or 2 boxes) of a large flown array, in order to reach conveniently the audience close to the stage. This preset could be very useful also when the box is used just on its own as a Front Fill element in the front of very large stages.

AX2010P/SW121HLP - Presets for PC260 Release 1.2 (PC260 and HPX8000 power amplifiers).

All the presets are intended for the use of SW121HLP subwoofer placed on the ground underneath the flown array.

- **STANDARD PRESET** (name: AX2010P+SW121HLP_STANDARD v1_2.pcf): This PRESET is suitable for vertical flown arrays that may range from 4 to 8 boxes or for the centre region of a bigger flown array. It can be used also for stacked arrays.
- **LONG THROW PRESET** (name: AX2010P+SW121HLP_LONGTHROW v1_2.pcf): This PRESET can be used in arrays bigger than 6 or 8 boxes and loaded in the top 1 or 2 boxes in order to obtain a more even distribution of the sound pressure, especially if they point very far away or to the upper deck of a large theatre.
- **SINGLE/DOWN-FILL PRESET** (name: AX2010P+SW121HLP_DOWNFILL v1_2.pcf): This PRESET, which features a much smoother high frequency response, can be loaded in the bottom boxes (usually 1 or 2 boxes) of a large flown array, in order to reach conveniently the audience close to the stage. This preset could be very useful also when the box is used just on its own as a Front Fill element in the front of very large stages.



AX2010P/SW218P - Presets for PC260 Release 4.2 (PC260 and HPX6000 power amplifiers).

All the presets are intended for the use of SW218P subwoofer placed on the ground underneath the flown array.

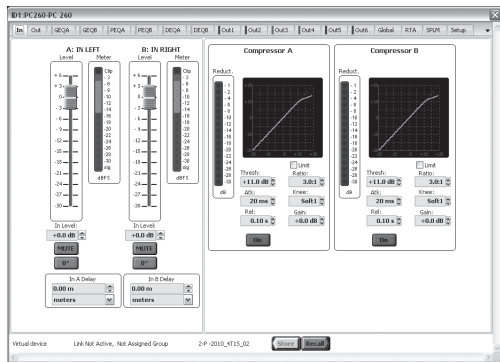
- **STANDARD PRESET** (name: AX2010P+SW218P_STANDARD v4_2.pcf): This PRESET is suitable for vertical flown arrays that may range from 4 to 8 boxes or for the centre region of a bigger flown array. It can be used also for stacked arrays.
- **LONG THROW PRESET** (name: AX2010P+SW218P_LONGTHROW v4_2.pcf): This PRESET can be used in arrays bigger than 6 or 8 boxes and loaded in the top 1 or 2 boxes in order to obtain a more even distribution of the sound pressure, especially if they point very far away or to the upper deck of a large theatre.
- **SINGLE/DOWN-FILL PRESET** (name: AX2010P+SW218P_DOWNFILL v4_2.pcf): This PRESET, which features a much smoother high frequency response, can be loaded in the bottom boxes (usually 1 or 2 boxes) of a large flown array, in order to reach conveniently the audience close to the stage. This preset could be very useful also when the box is used just on its own as a Front Fill element in the front of very large stages.

AX2010P/SW218XP - Presets for PC260 Release 2.2 (PC260 and HPX8000 power amplifiers).

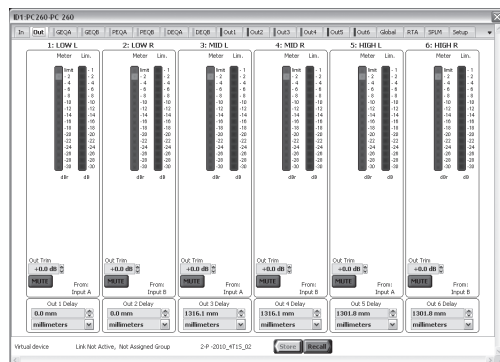
All the presets are intended for the use of SW218XP subwoofer placed on the ground underneath the flown array.

- **STANDARD PRESET** (name: AX2010P+SW218XP_STANDARD v2_2.pcf): This PRESET is suitable for vertical flown arrays that may range from 4 to 8 boxes or for the centre region of a bigger flown array. It can be used also for stacked arrays.
- **LONG THROW PRESET** (name: AX2010P+SW218XP_LONGTHROW v2_2.pcf): This PRESET can be used in arrays bigger than 6 or 8 boxes and loaded in the top 1 or 2 boxes in order to obtain a more even distribution of the sound pressure, especially if they point very far away or to the upper deck of a large theatre.
- **SINGLE/DOWN-FILL PRESET** (name: AX2010P+SW218XP_DOWNFILL v2_2.pcf): This PRESET, which features a much smoother high frequency response, can be loaded in the bottom boxes (usually 1 or 2 boxes) of a large flown array, in order to reach conveniently the audience close to the stage. This preset could be very useful also when the box is used just on its own as a Front Fill element in the front of very large stages.

In the PC260 preset some parameters can be customized and some other are protected, this ensure a safe operation of the system. In the next page follows a brief description of customizable parameters:



IN: In this screen you can adjust the input levels and the input compressors. The input range can be optimized in the -30 ÷ +6 dB range. The level is set after the AD conversion, so if you have problems with an excessive input signal use the analog PAD button on the PC260 back panel. The compressors are set in order to attenuate very high input signals (the threshold is +11 dB), ensuring a more transparent musical behaviour of the system limiting. If needed, the compressor threshold can be freely adjusted.



OUT: in this page you can see the level of the output signals and the gain reduction if the limiters are activated. You can also trim (±6 dB) the output signals in order to adjust the balance of LF, MF and HF ranges.

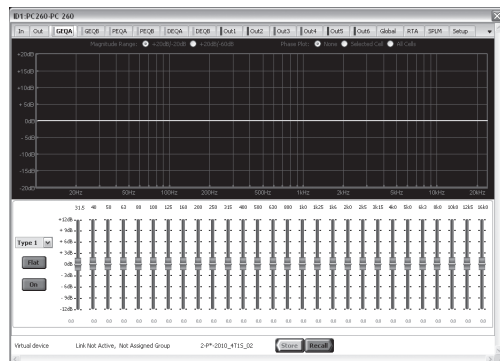


WARNING! The limiter setting of PC260 and most preset is set for the use of **32 dB fixed gain power amplifiers**: contact PROEL if you need a different setting.

The delays are set for the optimal alignment of a standard flown configuration with the vertical array on top of the subwoofers. If needed, the delay of the subwoofers (LOW-L and LOW) can be adjusted in relation to the MID-HIGH outputs for the optimal alignment when the system is installed in a different position.

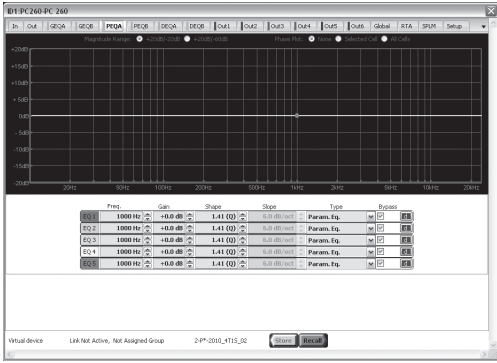


WARNING! The **DELAY difference between MID and HIGH outputs must always be 14.3 mm** (HIGH before MID). If you modify the MID delay to align the tops with the subs, remember always to set the HIGH delay accordingly (-14.3 mm).

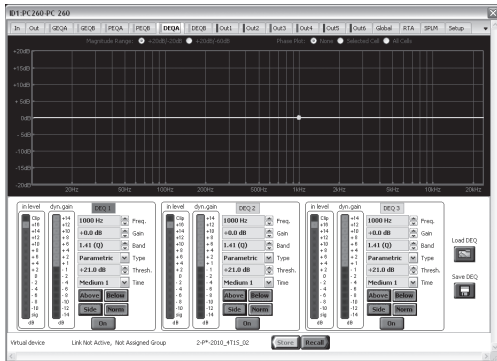


GEQ: this is the graphic equalizer on the processor inputs to be used for equalizing the whole system. It can be used for adjusting the system's response or for fixing particular frequency problems in the environment where the system is installed. The AX2010P preset has been prepared in order to obtain the best performance from the system, so we suggest to avoid extreme use of the GEQ.





PEQ: this is a full parametric 5-band equalizer on the processor's inputs. Each filters can be set also as shelving, notch, allpass, high-pass and lo-pass, so this equalizer can be used to optimize the system response according to the environment characteristics, including temperature, humidity and absorption due to the audience.

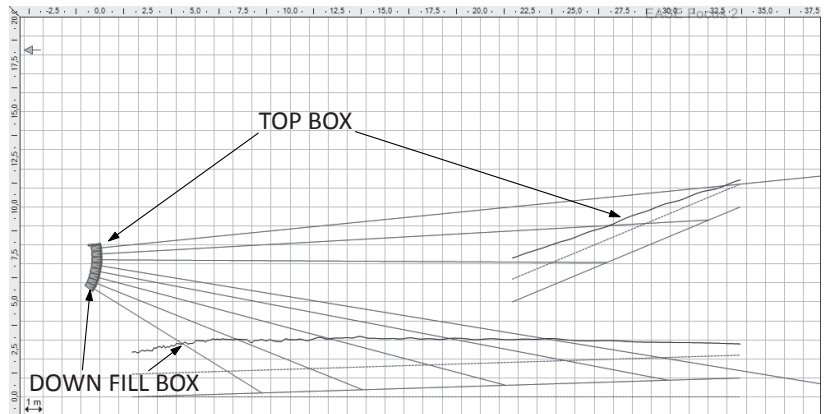


DEQ: this is 3-band dynamic equalizer useful to optimize the system's response for different kind of applications and different music genres, or to obtain an optimal behaviour of the system at different levels.

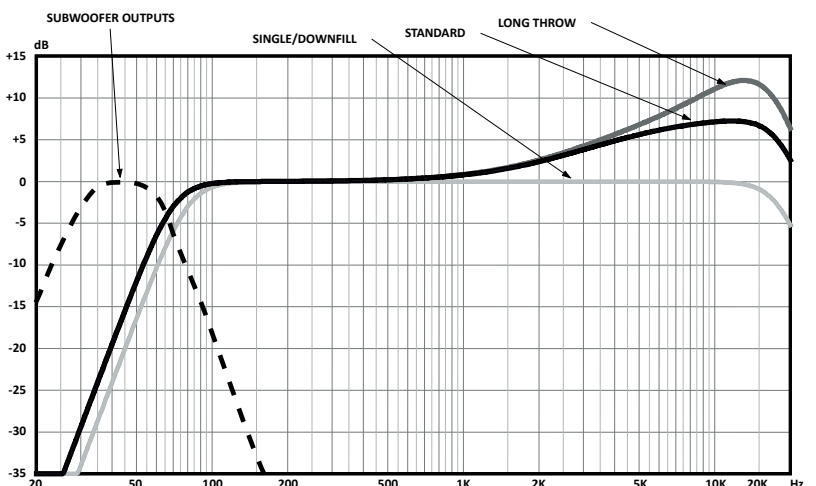
PRESET USING EXAMPLE: INSTALLATION IN A THEATRE WITH BALCONY

In the following figure you can see an example of the use of different PRESETS in an AX2010P flown array installed in a big theatre with balcony:

- The TOP BOXES of the array are aiming at the balcony while the DOWN FILL box is aiming at the audience close to the stage.
- TOP BOXES: the power level at the end of the balcony is lower, as well as the high frequency level.
- DOWN FILL BOXES: the power level in the proximity of the stage is higher, as well as the high frequency level.



AX2010P - PRESET RESPONSE



In order to optimize the array performances for the specific application, the PRESETS should be used in the following way.

- Load the STANDARD preset in the central boxes.
- Load the LONG THROW preset in the TOP 1 or 2 boxes, in order to compensate the loss of power level and high frequencies of the program sent the upper deck of the theatre.
- Load the DOWN FILL / SINGLE BOX preset in the BOTTOM box in order to smooth the high frequency content of the program sent to the audience close to the stage.





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