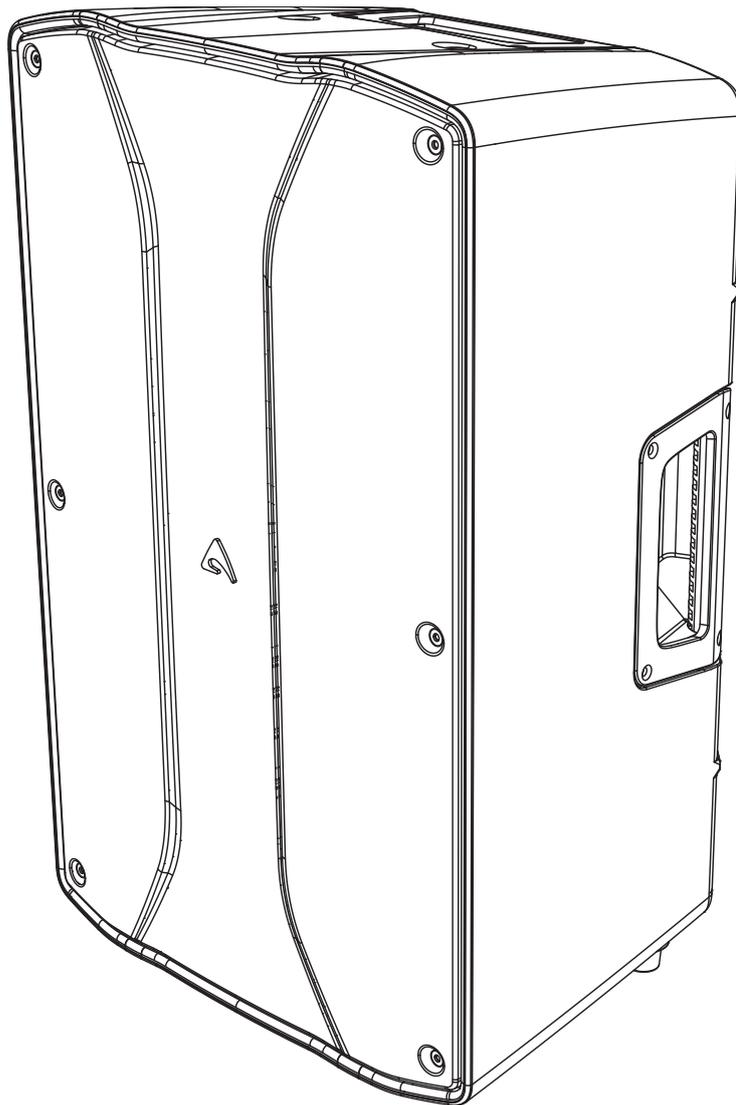




FL120A

active portable point source loudspeaker



USER MANUAL

revision 2024-03-01





IMPORTANT SAFETY INSTRUCTIONS

Watch for these symbols:

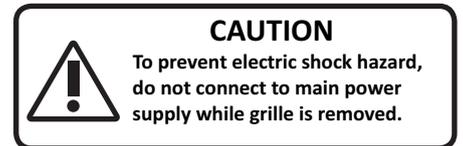


The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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.



FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

DECLARATION OF CONFORMITY

C E The product is in compliance with:
EMC Directive 2014/30/EU, LVD Directive 2014/35/EU, RoHS Directive 2011/65/EU and 2015/863/EU, WEEE Directive 2012/19/EU.

EN 55032 (CISPR 32) STATEMENT

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference. Under the EM disturbance, the ratio of signal-noise will be changed above 10 dB.

UK CA The product is in compliance with:
S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016, S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016, S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

CISPR 32 STATEMENT

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference. Under the EM disturbance, the ratio of signal-noise will be changed above 10 dB.

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.



INDEX

INTRODUCTION	4
TECHNICAL SPECIFICATION	4
MECHANICAL DRAWING	5
OPTIONAL ACCESSORIES	5
SPARE PARTS	5
I/O AND CONTROL OPERATIONS	6
MAINS IN.	6
MAINS OUT.	6

WARNING	6
INPUT	6
LINK	6
SIGN/LIMIT	6
PRESET BUTTON	6
KPTFL120 WALL or TRUSS MOUNTING	7
CONDITIONS OF USE	8
INSTALLATION WARNINGS	8

INTRODUCTION

The FL120A is a two-way powered point source loudspeaker that provides full frequency response and controlled dispersion from an easily manageable enclosure. It is designed for many kinds of foreground sound reinforcement applications requiring high quality sound, repeatable performance, and convenience of operation in an easily portable format.

The 12" low frequency neodymium driver is matched to a 1" high frequency compression driver with 1.75" aluminum voice coil, for low weight and good transient response, each of them being driven by individual channels of a powerful Class D amplifier module. The custom-designed HF horn that provide wide and accurate coverage of a typical auditorium.

The system processing is based on an advanced DSP platform featuring 56bit, double precision processing and high resolution 24bit AD/DA converters for perfect signal integrity and superior sonic performance. Thanks to its massive processing power, the DSP is capable of providing the most sophisticated algorithms for speaker processing, including linear phase FIR filters.

The FL DSP makes it possible to set an optimal TIME ALIGNMENT for the crossover filter resulting in a linear phase response. The correct acoustic filtering has been achieved using the Constant Power Crossover technique that, thanks to a particular phase relation, results in a very smooth transition between LF and HF and an even dispersion in the crossover region.

The FL DSP offers the choice of 5 optimized EQ presets to adapt the system to different applications.

The FL120A is powered by a DA SERIES digital power module, a new generation of CLASS D power amplifier with SMPS. The innovative technology used for these amplifiers offers top-of-the-range performances, such as a superior sound definition at any audio frequency, very high dynamics even for low level signals, and very low distortion even at maximum power.

The FL120A's symmetrical vented enclosure allows it to adapt to multiple portable and fixed applications, such as front-of-house duties on a speaker stand, or pole mounted on an associated subwoofer or, by using the 42° wedge angle, as a powerful stage monitor.

The compact and lightweight high-density PP cabinet is provided with a 35mm pole mount, three recessed aluminum handles for easy lifting and handling, and M10 rigging points to allow suspension in fixed installations using optional mounting brackets.

TECHNICAL SPECIFICATION

SYSTEM

System's Acoustic Principle	Two-way Vented Enclosure
Frequency response	50 Hz – 20 kHz (-6dB Processed)
Horizontal Coverage Angle	90° (-6 dB)
Vertical Coverage Angle	60° (-6 dB)
Maximum Peak SPL @ 1m	132 dB

TRANSDUCERS

Low frequency transducer	12" (305 mm) neodymium magnet waterproof cone, 2.5" (64 mm) VC, 4Ω
High frequency transducer	1" (25 mm) compression driver, 1.75" (44 mm) Edgewound copper clad aluminium VC, PEPT film diaphragm, 8Ω

ELECTRICAL

Input Impedance	30 kΩ balanced, 15 kΩ unbalanced
Input Sensitivity	+4 dBu / 1.25 V
Signal Processing	DSP DSP with FIR filters
Direct access Controls	5 Presets (STANDARD/LIVE/MUSIC/MONITOR/STANDARD LOW CUT)

Amplifier Type	Class D amplifier with SMPS
Output Power	900W + 300W
Mains Voltage Range (Vac)	220-240V~ or 100-120V~ ±10% 50/60 Hz
Consumption*	575 W (nominal) 1200 W (max)
IN / OUT Connectors	XLR-M / XLR-F
Mains Input/Link Connectors	PowerCon® (NAC3MPXXA+NAC3MPXXB)
Cooling	Variable speed DC fan

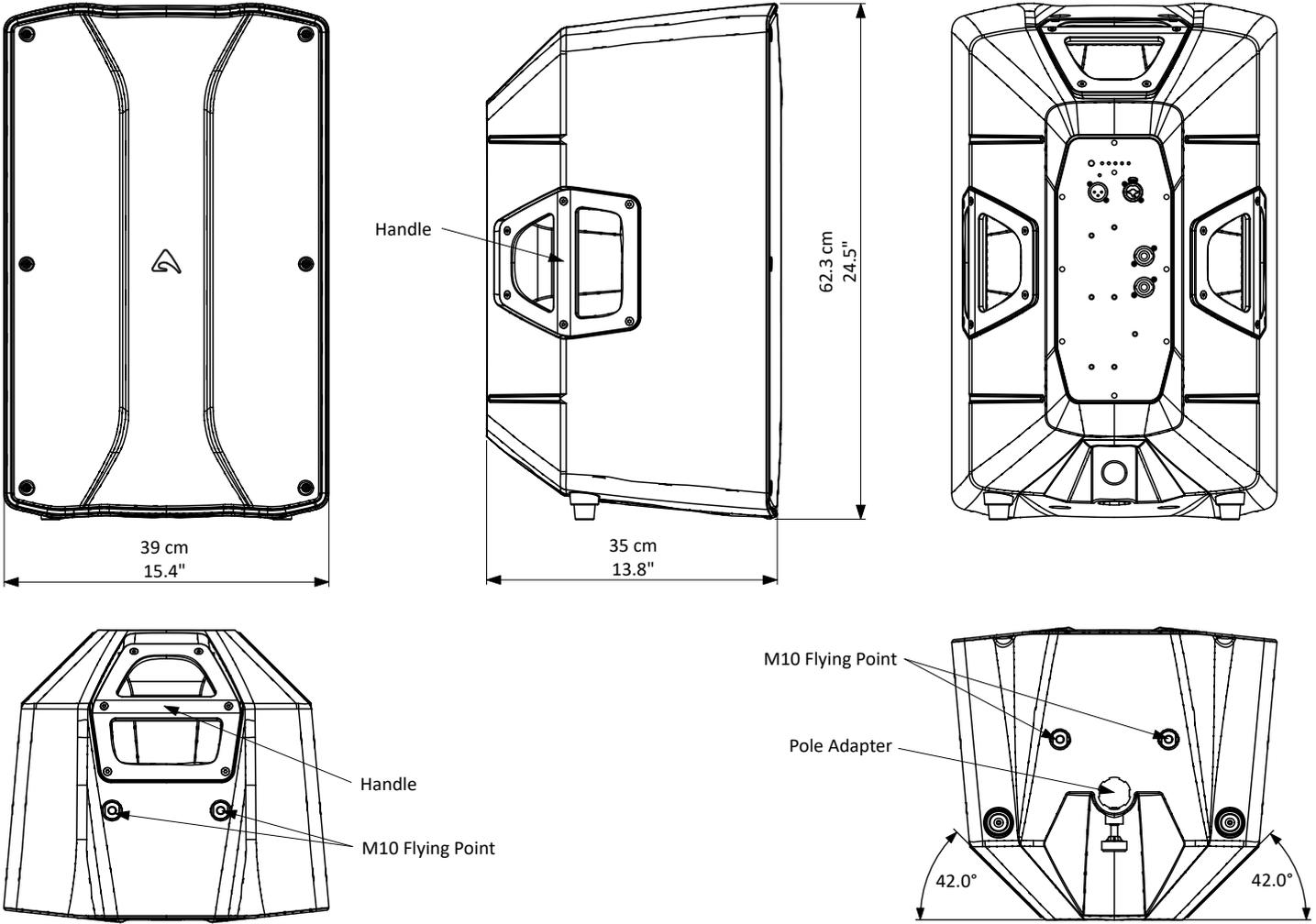
ENCLOSURE & CONSTRUCTION

Width	390 mm (15.3")
Height	623 mm (24.5")
Depth	350 mm (13.7")
Taper angle	42°
Enclosure Material	High-density Polypropylene with Metal Grid
Flying System	M10 flying points or dedicated metal brackets
Net Weight	17 Kg (37.4 lbs)

* Nominal consumption is measured with pink noise with a crest factor of 12 dB, this can be considered a standard music program.

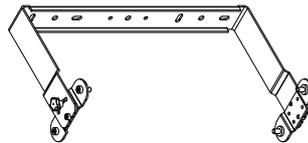


MECHANICAL DRAWING



OPTIONAL ACCESSORIES

KPTFL120 Wall or Truss Mounting "C" bracket.



PLH300 Ø 48-51mm truss tube aluminium coupler with M12 x 50 built-in bolt and fastening nut.



COVERFL120 Cover for transport

NAC3FXXA-W-L Neutrik Powercon® BLUE PLUG

NAC3FXXB-W-L Neutrik Powercon® WHITE PLUG

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

NC3MXXBAG Neutrik XLR-M

NC3FXXBAG Neutrik XLR-F

SPARE PARTS

98AXFL120WZ4 12" woofer - 2.5" VC - 4 ohm

91CRAX800

Powercon PCBA

98DRINETHRNL 1" - 1.75" VC compression driver - 8 ohm

91DA900B

DA900 Amplifier PCBA

98DRINETHRNLDPH diaphragm for 1" driver

91AMDFL120A Power amplifier module





I/O AND CONTROL OPERATIONS

MAINS IN

Powercon® NAC3FXXA-W-L power input connector (blue). To switch the amplifier on, insert the Powercon® connector and turn it clockwise into the ON position. To switch the amplifier off, pull back the switch on the connector and turn it counter-clockwise into the POWER OFF position.

MAINS OUT

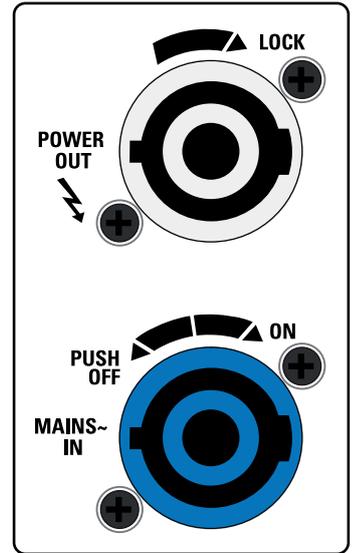
Powercon® NAC3FXXB-W-L power output connector (grey). This is connected in parallel with the MAINS ~ / IN. The maximum load applicable depends on the mains voltage. With 230V~ we suggest to link a maximum of 5 FL120A loudspeakers, with 120V~ we suggest to link a maximum of 3 FL120A loudspeaker.



WARNING

In the case of product failure or fuse replacement, disconnect the unit completely from the mains power. The power cable must only be connected to a socket corresponding to the specifications indicated on the amplifier unit.

The power supply must be protected by a suitably rated thermo-magnetic breaker. Preferably use a suitable switch to power on the whole audio system leaving the Powercon® always connected to each speaker, this simple trick extend the life of the Powercon® connectors.



INPUT

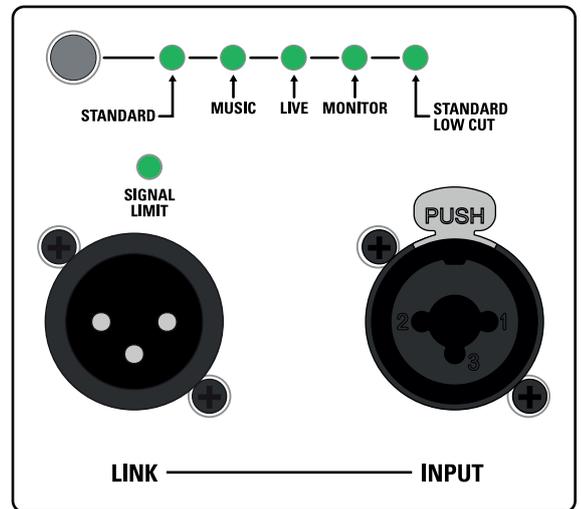
Audio signal input with locking XLR connector. It has a fully electronically balanced circuitry including AD conversion for the best S/N ratio and input headroom.

LINK

A direct connection from the input connector to link other speakers with same audio signal.

SIGN/LIMIT

This LED lights in green to indicate the presence of the signal and lights in red when an internal limiter reduces the input level.



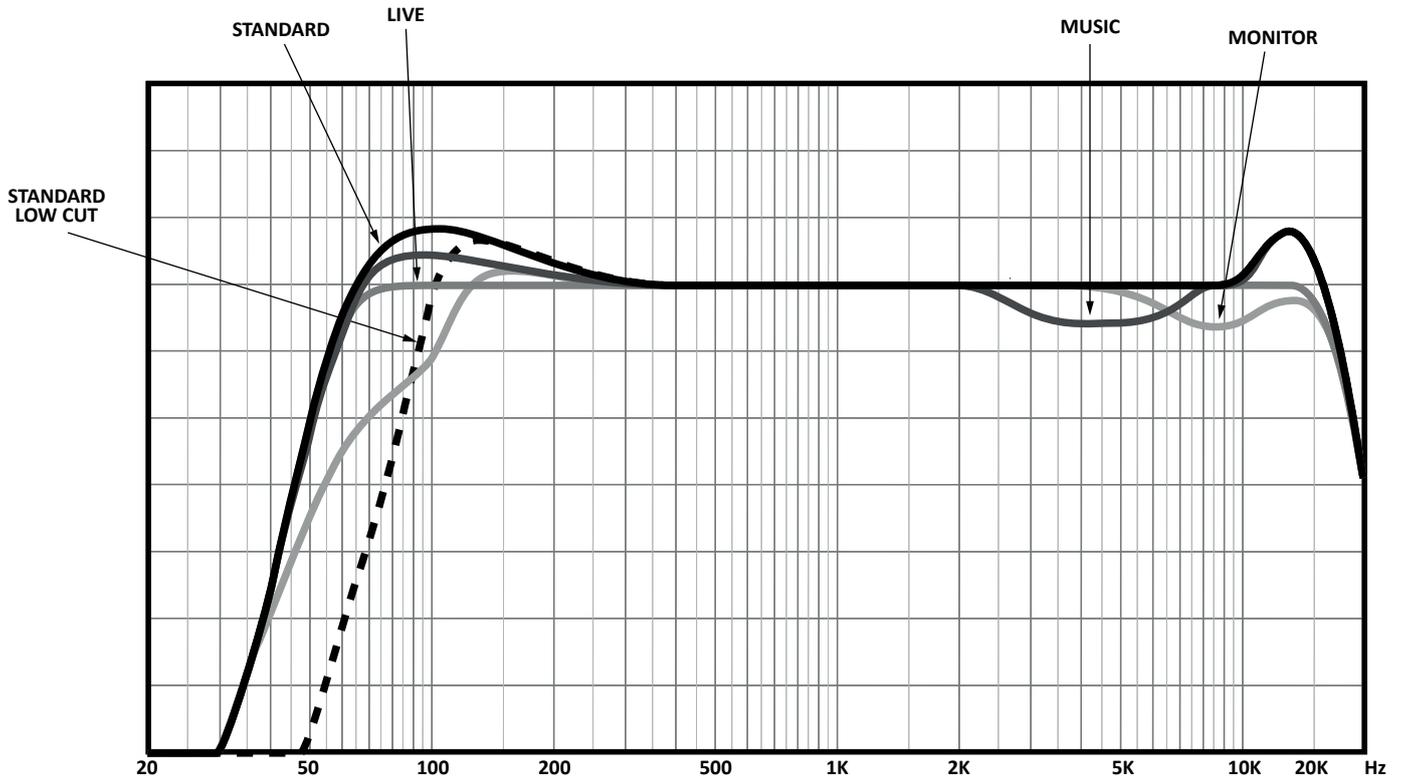
PRESET BUTTON

Pressing it you can select the DSP PRESET. The selected PRESET is indicated by the corresponding LED:

- STANDARD** Suited for a typical use of a standalone loudspeaker for any sound reinforcement situation.
- MUSIC** Introduces a slight cut of the medium-high and medium-low frequencies, providing a sound response suitable for most music playback applications.
- LIVE** Provides a linear response for the whole audio range and it is optimized for live vocal and instrumental applications.
- MONITOR** Suitable for using the system as a stage monitor, in this preset the deep bass is attenuated to compensate for floor placement, the low-mid frequencies are boosted for better presence and the high-mid frequencies are reduced an improved feedback rejection.
- STANDARD LOW CUT** This PRESET is the same as STANDARD with an high-pass filter (100Hz @ 24 dB/oct.) to use the loudspeaker in combination with a subwoofer.



FL120A - PRESET RESPONSE



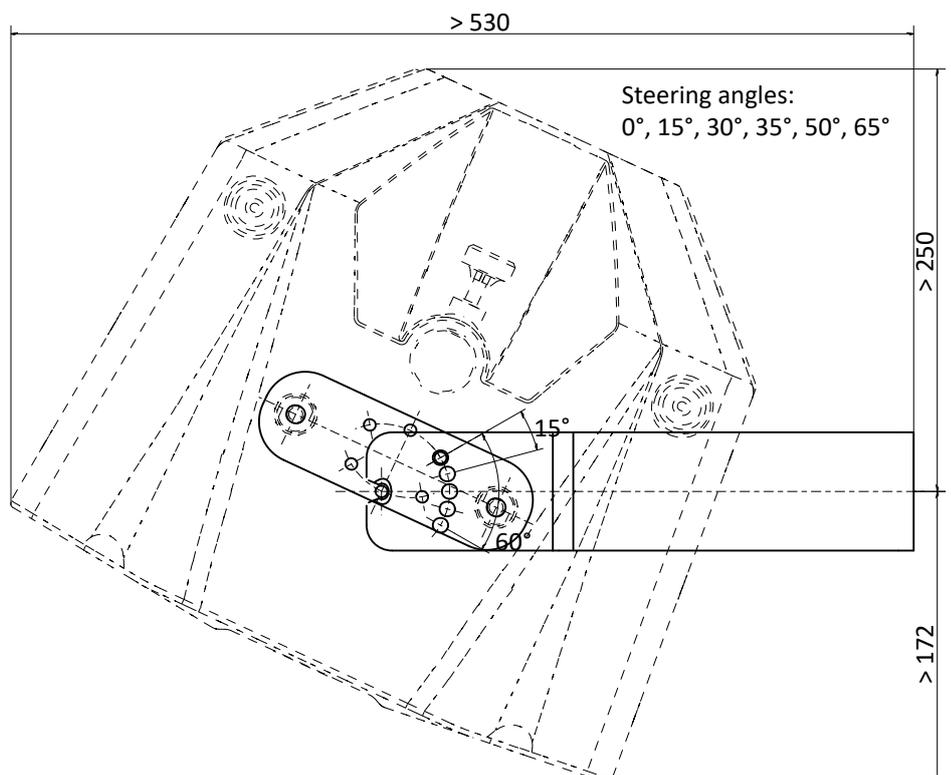
KPTFL120 WALL or TRUSS MOUNTING

Using the "C" shape bracket the FL120A loudspeaker can be mounted to walls or truss combining it with two PLH300: It allows to aim the speaker in one direction (vertical or horizontal) in 11 steps (0° , $\pm 15^\circ$, $\pm 30^\circ$, $\pm 35^\circ$, $\pm 50^\circ$, $\pm 65^\circ$).

Supplied materials:

- 1x C-SHAPE bracket
- 2x Steering plates
- 4x M10x20mm hex socket head screws (a)
- 2x M8x8mm hex socket head screws (b)
- 2x M8x12mm threaded knobs (c)

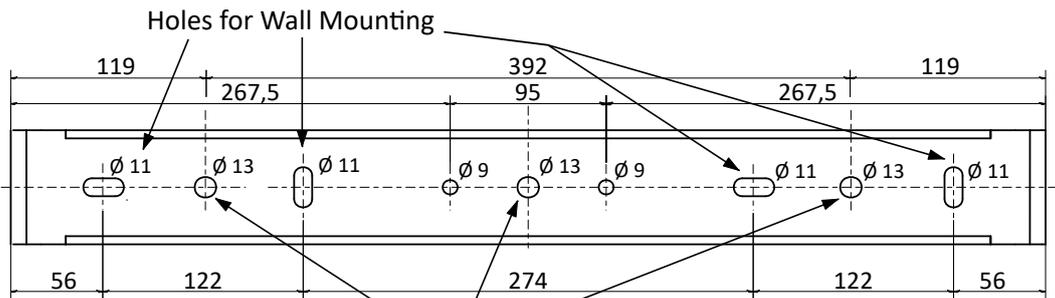
All dimensions are in mm.



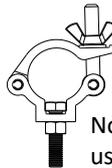


For installing the speaker using the "C" bracket follow these instructions:

- 1) Install the "C" bracket to the wall or to the truss.
- 2) Mount the two steering plates on the top and bottom of the loudspeaker using the bolts (a).
- 3) Carefully put the loudspeaker into the "C" bracket then screw in the screws (b) to fix it to the "C" bracket.
- 4) Aim the loudspeaker and tighten the screw-knobs (c) in the desired holes.
- 5) Tight the screws (b).



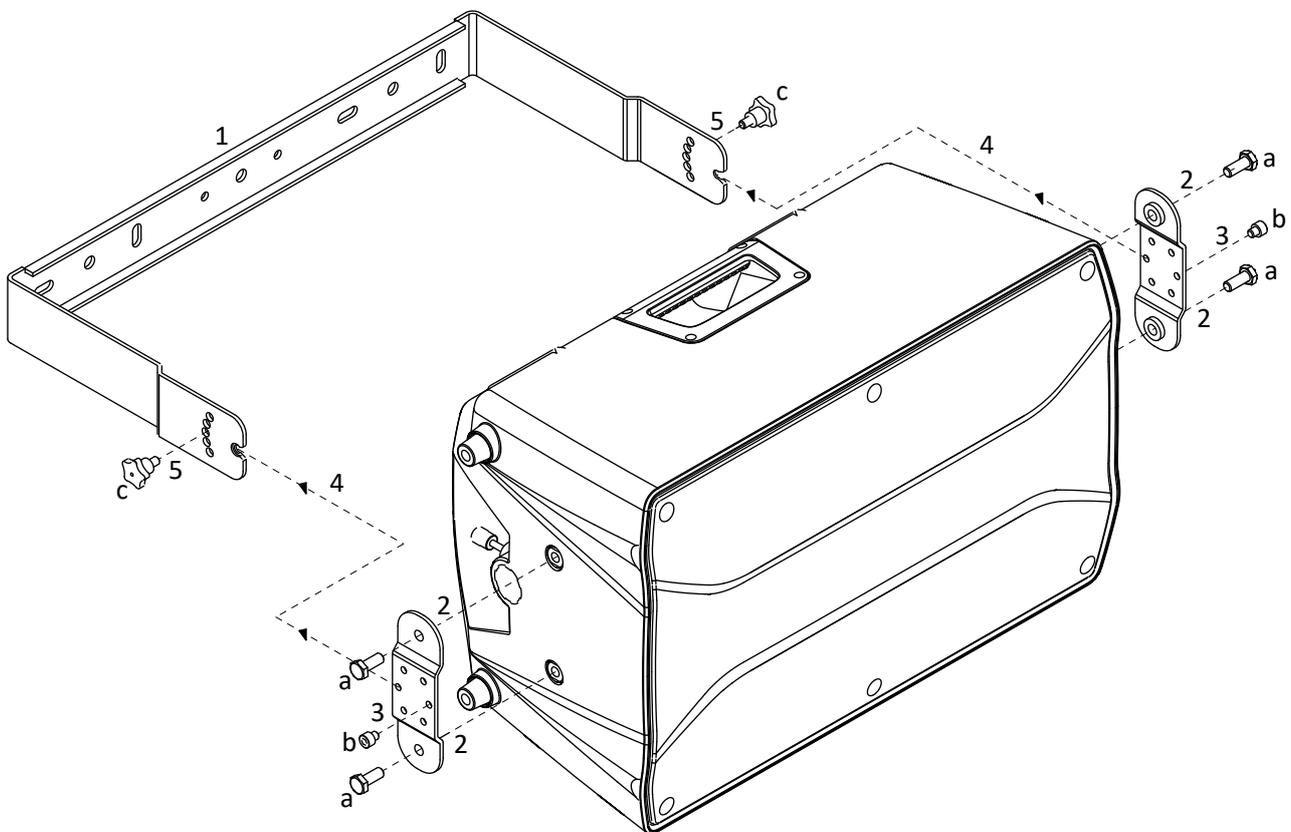
M12 TRUSS CLAMP
PROEL CODE: PLH300
(OPTIONAL)



Holes for TRUSS CLAMP

all dimensions are in mm

Note:
use at least 2 clamps



CONDITIONS OF USE

Proel does 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 local regulations. The product must be installed by qualified personal. Please contact the manufacturer for further information.



INSTALLATION WARNINGS

- Use the C-Shape bracket exclusively for FL120A/P models.
- For wall or ceiling mounting use exclusively adequate fixings to hold up at least ten times the total weight of the speaker plus the bracket, using at least two holes for double safety.
- Do not suspend speakers from plasterboard or other light walls or ceilings of any material.

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