



USER MANUAL

ED120A

passive point source loudspeaker

KEY FEATURES

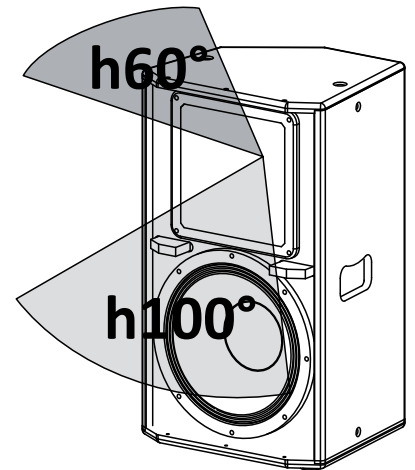
- Near-field and mid-field sound reinforcement applications
- Asymmetric HF coverage pattern
- Rotatable HF Horn for optimal horizontal coverage
- Water-repellent treatment of LF loudspeaker
- High quality, low distortion drivers
- PROEL CORE DSP and integrated Class D amplifier module
- 35° monitor taper
- Various rigging hardware

INTRODUCTION

ED point source systems are designed for indoor and outdoor sound reinforcement applications ranging from clubs, bars and restaurants to theatres, live music venues, houses of worship and theme environments. ED120A is a powered loudspeaker system able to deliver consistently repeatable performance, due to the PROEL CORE digital signal processing and to the integrated Class D amplifier module.

The ED120A consists of an 12" LF drive unit and a 1.4" HF compression driver loaded by an asymmetric HF horn in a compact enclosure, designed for many multi-purpose sound reinforcement activities. The asymmetric HF coverage pattern, varying from 100° horizontal in the lower part of the horn for more effective near field coverage, and narrowing to 60° horizontal at the top of the horn for more focused coverage in the far field. The result is more accurate coverage of a typical auditorium than is possible with a fixed horizontal coverage device. The HF horn is also rotatable through 90° by simply removing four screws and realigning the horn, so that coverage can also be optimised for stage monitor use. This rotatable horn feature also makes it possible to maintain the ideal coverage pattern when the cabinet is installed in a horizontal (landscape) orientation. Its asymmetric dispersion pattern provides optimal coverage of typical rectangular venues, with wider dispersion at the front and narrower dispersion at the rear.

This versatile loudspeaker can also be used as a low profile stage monitor with its 35° tapered side, and in this situation the HF horn can be rotated to maintain the best coverage pattern for performers both near to and further away from the monitor. ED120A cabinet is an unobtrusive and compact format designed for a multitude of near field applications such as theatre under-balcony fill, stage front fill, delay speaker, bar and restaurant audio, and discreet stage monitor. A pole mount socket make this a very versatile loudspeaker in both portable and permanently installed applications.



TECHNICAL SPECIFICATION

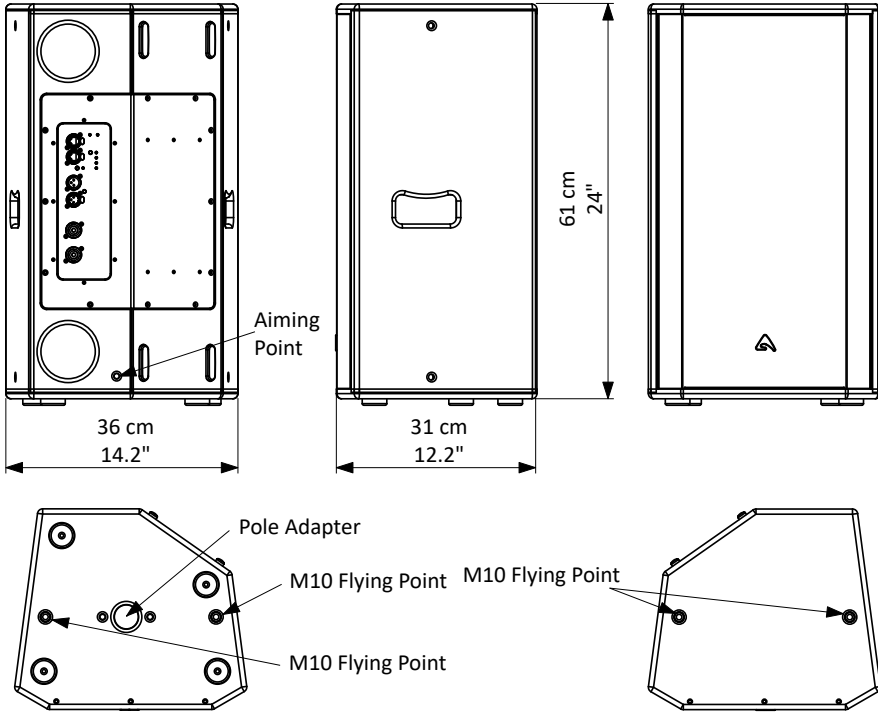
Acoustical		Remote Controls	PRONET control software
System type	Point Source Loudspeaker with asymmetric HF Horn	Network protocol	CANBUS
Low frequency transducer	12" (300 mm), 3" (75 mm) ISV aluminium voice coil, 4Ω	Amplifier Type	Class D amplifier with SMPS
High frequency transducer	1.4" (35.5 mm) compression driver, 2.4" (60 mm) aluminium voice coil, Titanium diaphragm, 8Ω	Output Power	900W + 300W
Frequency response	65 Hz – 17 kHz (-6dB Processed)	Mains Voltage Range (Vac)	230 V ~ ±15% or 115 V ~ ±15% 50/60 Hz
Horizontal Coverage Angle	60 to 100° (-6 dB)	Mains Connector	PowerCon® (NAC3MPA + NAC3MPB)
Vertical Coverage Angle	60° (-6 dB)	Consumption*	575 W (nominal) 1200 W (max)
Maximum Peak SPL @ 1m	128 dB	IN / OUT Connectors	Neutrik XLR-M / XLR-F
Electrical		IN / OUT Network Connectors	ETHERCON® (NE8FAV)
Input Impedance	20 kΩ balanced	Mechanical	
Input Sensitivity	+4 dBu / 1.25 V	Width	360 mm (14.2")
Signal Processing	CORE processing, 96kHz / 40bit floating point SHARC DSP, 24 bit AD/DA converters	Height	610 mm (24")
Direct access Controls	4 Presets: Standard, Long Throw, Down Fill-Single Box, User. Network Termination, GND Link	Depth	310 mm (12.2")
		Taper angle	35°
		Construction	15 mm phenolic birch plywood
		Paint	Black textured paint (or White)
		Suspension system	
		Suspension	Rigging points
		Net Weight	Optional brackets
			19 Kg (41.8 lbs)

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



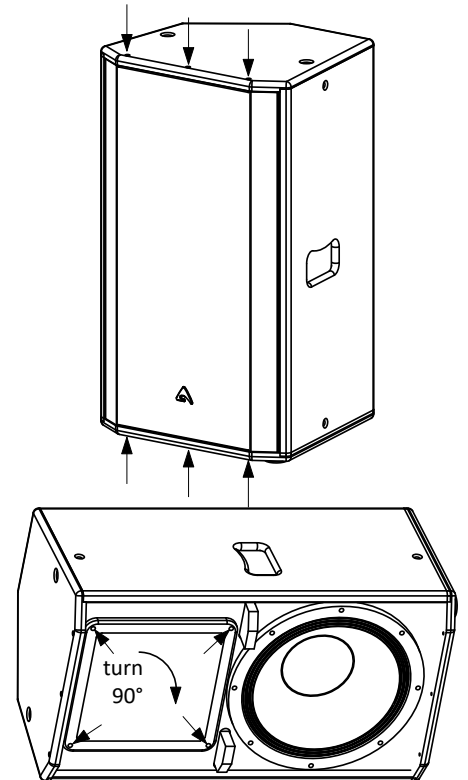


MECHANICAL DRAWING



INSTRUCTION FOR ROTATING THE HORN

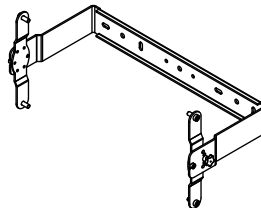
1) Remove the speaker grid unscrewing the six screws indicated below.



2) Unscrew the 4 screws fixing the horn and rotate the horn by 90°.

OPTIONAL ACCESSORIES

KPTED120B Wall or Truss Mounting "C" bracket.



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



- NAC3FCA** Neutrik Powercon® BLUE PLUG
- NAC3FCB** Neutrik Powercon® WHITE PLUG
- NE8MCB** Neutrik Ethercon PLUG
- NC3MXXBAG** Neutrik XLR-M
- NC3FXXBAG** Neutrik XLR-F
- USB2CAN-D** PRONET network converter

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

SPARE PARTS

- | | | | |
|--------------------|---|-------------------|---|
| NAC3MPA | Neutrik Powercon® BLUE SOCKET | 98ED120WZ4 | 12" woofer - 3" VC - 4 ohm |
| NAC3MPB | Neutrik Powercon® WHITE SOCKET | 98DRI2065 | 1.4" - 2.4" VC compression driver - 8 ohm |
| 91AMDED120A | Power amplifier module with mechanical assembly | 98MBN2065 | titanium diaphragm for 1.4" driver |

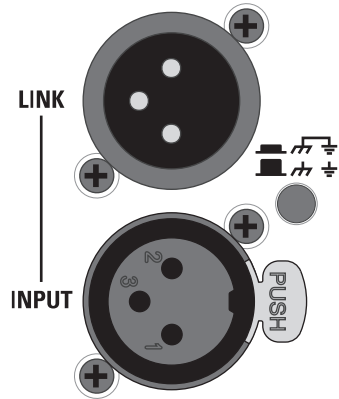
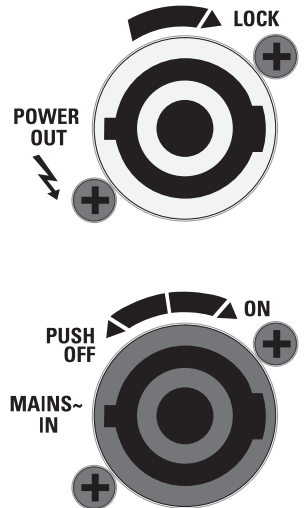




I/O AND CONTROL OPERATIONS

MAINS IN - Powercon® NAC3FCA 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.

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.



MAINS OUT - Powercon® NAC3FCB power output connector (grey). It 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 ED120A loudspeakers, with 120V~ we suggest to link a maximum of 3 ED120A loudspeaker.

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.

ON - This LED indicates power on status.

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

GND LIFT - This switch lift the ground of the balanced audio inputs from the earth-ground of the module.

PRESET BUTTON - This button has two function:

1) Pressing it while powering on the unit:

ID ASSIGN the internal DSP assigns a new ID to the unit for the PRONET remote control operation. Each loudspeaker must have a unique ID to be visible in the PRONET network. When you assign a new ID, all the other loudspeakers with the ID already assigned must be ON and connected to the network.

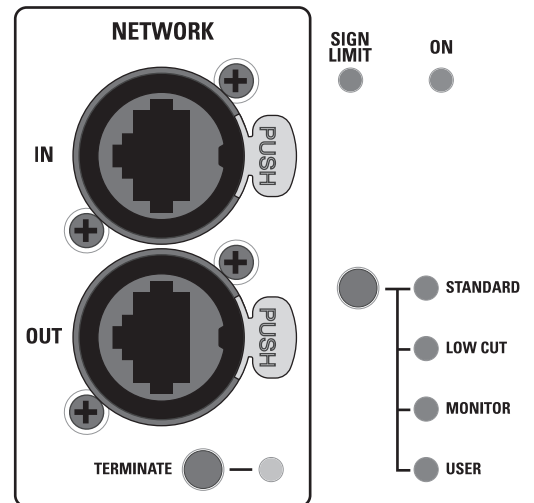
2) Pressing it with the unit ON you can select the DSP PRESET. The selected PRESET is indicated by the corresponding LED:

STANDARD Suited for a typical use of a standalone loudspeaker for any sound reinforcement situation.

LOW CUT This PRESET is the same of the previous with an high pass filter (110Hz @ 48 dB/oct.) to use the loudspeaker in combination with a subwoofer.

MONITOR Suited for the use of the system as a stage monitor. In this preset the deep lows are attenuated in order to compensate the floor position, the mid-low frequencies are enhanced for a better presence and the mid-high frequencies are reduced for an improved feedback rejection.

USER This LED lights when the USER PRESET is loaded. This preset corresponds to USER MEMORY no. 1 of the DSP and, as a factory setting, it's the same to STANDARD. If you want to modify it, you have to connect the unit to a PC, edit the parameters with PRONET software and save the PRESET into USER MEMORY no. 1. *Note: see also the PRONET example further on this manual.*



NETWORK IN/OUT - These are a standard RJ45 CAT5 connectors (with optional NEUTRIK NE8MC RJ45 cable connector carrier), used for PRONET network transmission of remote control data over long distance or multiple unit applications.

TERMINATE - In a PRONET network the last loudspeaker device must be terminated (with an inner load resistance) especially in a long run cabling: press this switch if you want to terminate the unit.

POWER AMPLIFIERS

Powering the loudspeaker drivers is a well-proven DA series Class D amplifier module used in many of the Axiom powered loudspeaker products, with audio quality that is comparable to some of the best analogue Class A-B designs, but with the benefit of lower weight and better than 90% efficiency. The output power is optimised specifically to the drive units, sharing 900 watts between both woofers and delivering 200 watts to the high frequency band. The DA series amplifier delivers superior definition at all frequencies, and very high dynamic range with low distortion even at maximum level, so your sound remains clean and dynamic even when loud.

SIGNAL PROCESSING

The system processing is based on the CORE DSP platform, which has been designed by the PROEL R&D Laboratories using one of the most advanced SHARC DSP for audio application. It features 40bit, 96kHz floating point resolution and high quality 24bit AD/DA converters, for a perfect signal integrity, a dynamic range in excess of 110dB and a superior sonic performance. Thanks to its massive processing power, the CORE platform is capable of providing the most sophisticated algorithms for speaker processing, together with remote control and networking capability. The PRONET AX control software, working on a solid and reliable CANBUS based network protocol, provides an intuitive interface for the remote control of the whole system, with the possibility of eqing, delaying, increasing the protections and monitoring the status of the amplifier.





PRONET AX

PRONET AX software has been developed in collaboration with sound engineers and sound designers, in order to offer an “easy-to-use” tool to setup and manage your audio system. With PRONET AX you can visualize signal levels, monitor internal status and edit all the parameters of each connected device.

Download the PRONET AX app from the AXIOM website at <http://www.axiomproaudio.com/> clicking on downloads section of the product.

The AXIOM active loudspeaker devices can be connected in a network and controlled by the PRONET AX software, for the network connection the PROEL **USB2CAN** (with 1-port) or the **USB2CAN-D** (with 2-port) converter optional accessory is needed.

PRONET AX network is based on a “bus-topology” connection, where the first device is connected to the network input connector of the second device, the second device network output is connected to the network input connector of the third device, and so on. To ensure a reliable communication the first and the last device of the “bus-topology” connection must be terminated. **This can be done by pressing the “TERMINATE” switch near the network connectors in the rear panel of the first and the last device.** For the network connections simple RJ45 cat.5 or cat.6 ethernet cables can be used (please don’t confuse a ethernet network with a PRONET AX network these are completely different and must be fully separated also both use the same kind of cable).

Assign the ID number

To work properly in a PRONET AX network each connected device must have a unique identifier number, called ID. By default the USB2CAN-D PC controller has ID=0 and there can be only one PC controller. Every other device connected must have its own unique ID equal or greater than 1: in the network cannot exist two devices with the same ID.

In order to correctly assign a new available ID to each device for working properly in a Pronet AX network, follow these instructions:

1. Switch off all the devices.
2. Connect them correctly to the network cables.
3. “TERMINATE” the end device in the network connection.
4. Switch on the first device keep pressed “PRESET” button on the control panel.
5. Leaving the previous device switched on, repeat the previous operation on the next device, until the latest device is turned on.

The “Assign ID” procedure for a device makes the internal network controller to perform two operations: reset the current ID; search the first free ID in the network, starting from ID=1. If no other devices are connected (and powered on), the controller assume ID=1, that is the first free ID, otherwise it searches the next one left free.

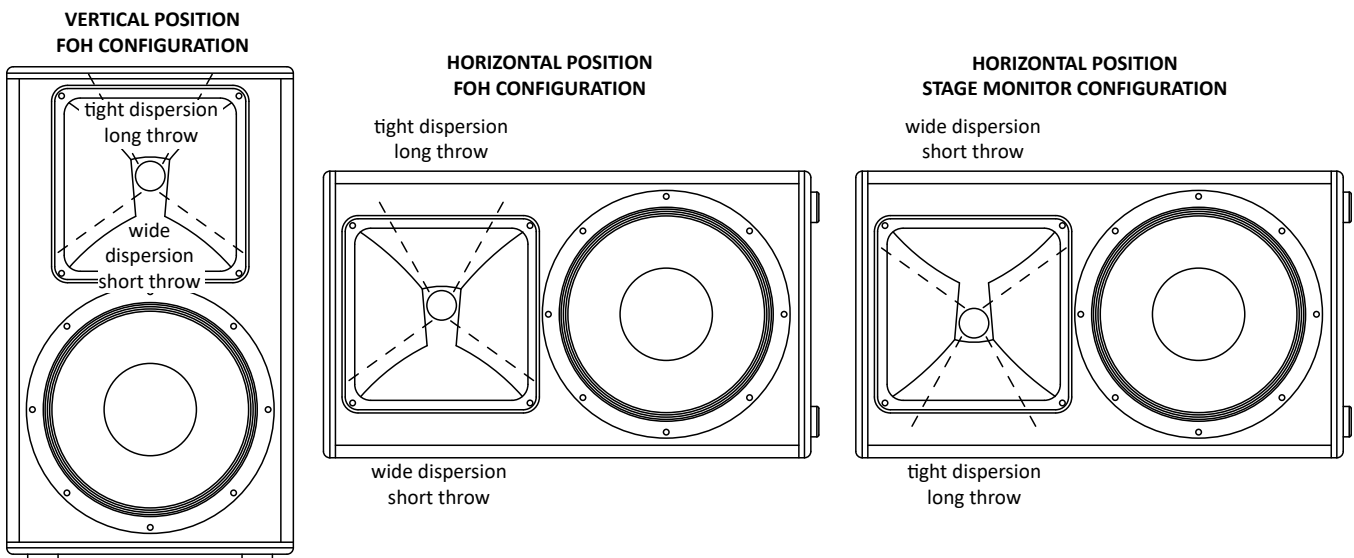
These operations ensure that every device has its own unique ID, if you need to add a new device to the network you simply repeat the operation of step 4. Every device maintains its ID also when it is turned-off, because the identifier is stored in the internal memory and it is cleared only by another “Assign ID” step, as explained above.

With the network made always of the same devices the assigning ID procedure must be executed only the first time the system is turned on.

For more detailed instruction about PRONET see the PRONET AX USER’S MANUAL included with the software.

HORN ORIENTATION

ED120A features an asymmetrical horn that can be rotated in a few minutes for obtaining the best coverage according to the speaker configuration.



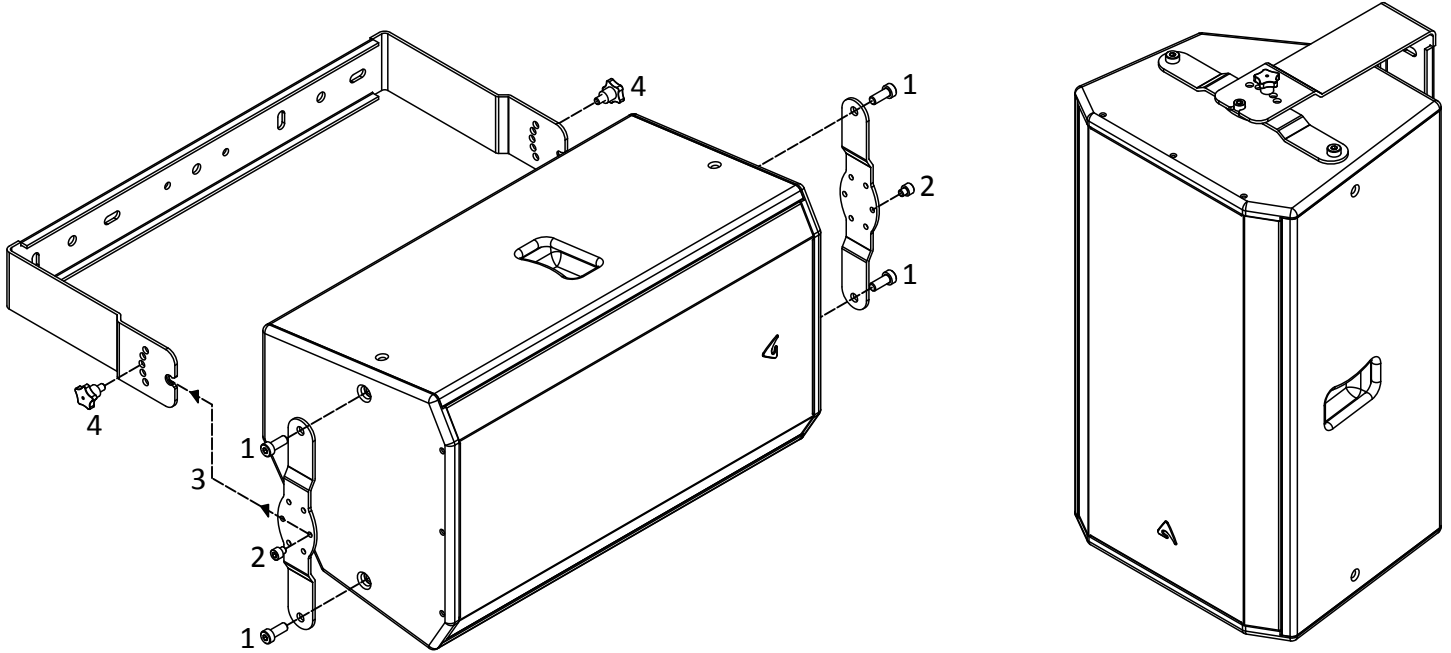


KPTED120B WALL or TRUSS MOUNTING

Using the "C" shape bracket the ED120A loudspeaker can be installed to walls or mounted to trusses in combination combining with two PLH300. It allows to aim the speaker in one direction (vertical or horizontal) in 15 steps (-70°,-55°,-40°,-30°,-25°,-15°,-10°,0°,+10°,+15°,+25°,+30°,+40°,+55°, +70°).

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

- Install the "C" bracket to the wall or to the truss.
- Mount the two rotation brackets on the top and bottom of the loudspeaker using the screws (1).
- Screw in the screws (2) into the pivot holes leaving their heads 4mm out the brackets.
- Carefully put the loudspeaker into the "C" bracket (3) then tighten the screws (2) to fix it to the "C" bracket.
- Aim the loudspeaker and tighten the screw-knobs (4) in the desired holes.





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.

SAFETY INSTRUCTIONS

- To reduce the risk, close supervision is necessary when the product is used near children.
- Protect the apparatus from atmospheric agents and keep it away from water, rain and high humidity places.
- This product should be site away from heat sources such as radiators, lamps and any other device that generate heat.
- This product should be located so that its location or position does not interfere with its proper ventilation and heating dissipation.
- Care should be taken so that objects and liquids do not go inside the product.
- The product should be connected to a power supply mains line only of the type described on the operating instructions or as marked on the product. Connect the apparatus to a power supply using only power cord included making always sure it is in good conditions.
- WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.
- Do not cancel the safety feature assured by means of a polarized line plug (one blade wider than the other) or with a earth connection.
- Make sure that power supply mains line has a proper earth connection.
- Power supply cord should be unplugged from the outlet during strong thunderstorm or when left unused for a long period of time.

CE CONFORMITY

Proel products comply with directive EMC 2014/30/CE, as stated in EN 55103-1 and EN 55103-2 standards and with directive LVD 2014/35/CE, as stated in EN 60065 standard.

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