PRO DG GT 2X10 L.A 2 Way Self Powered Line Array User Manual

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Safety Indications

Please read it before use the system and keep for later use

PRO DG SYSTEMS® GIVES YOU THANKS FOR ACQUIRE THIS PROFESSIONAL SOUND SYSTEM FULLY DESIGNED, MANUFACTURED AND OPTIMIZED IN SPAIN, EXCLUSIVELY WITH EUROPEAN COMPONENTS AND WE WISH THAT YOU ENJOY WITH ITS HIGH QUALITY AND PERFORMANCE.

- This system has been designed, fabricated and optimized by Pro DG Systems® in perfect working order. To maintain this condition and ensure the right operation, the user must respect the following indications and advices of this manual.

  THE FIABILITY, SAFETY AND EFFICIENCY OF THE SYSTEM ARE ONLY AND EXCLUSIVELY GUARANTEED BY PRO DG SYSTEMS IF:
- Assembly, manipulation, re-adjustment and modifications or repairs are carried out by Pro DG Systems.
- The electrical installation complies with the requirements of IEC (ANSI).
- The system is used according to the use indications. WARNING:
- If protectors are opened or sections of chassis are removed, except where this can be done manually, live parts can become
- Any adjustment, manipulation, optimization or reparation of the system must be done only and exclusively by Pro DG Systems. PRO DG SYSTEMS IS NOT RESPONSIBLE OF ANY DAMAGE OF THE SYSTEM CAUSED BY A MANIPULATION, ADJUSTMENT, OPTIMIZATION OR REPARATION REALIZED BY NO-AUTHORIZED PERSONAL BY PRO DG SYSTEMS
- High loudspeaker levels can cause hearing damage, it must avoid the direct contact with loudspeakers operating at high levels, otherwise it must use hearing protectors.

MAINS CONNECTION:

- The system is designed for continuous operation.
- The set operating voltage must match the local mains supply
- The units has to be connected to the mains via the supplied power unit or power cable.
- Power unit: never use a damaged connection lead. Any type of damage must be fixed.
- Avoid connection to the mains supply in distributor boxes together with several other power consumers.
- The plug socket for the power supply must be positioned near the unit and must be easily accessible.

PLACE OF SITUATION:

- The system should stand only on a clean and totally horizontal
- The system must not be exposed to any type of vibration during its
- Avoid the contact with the water or wet surfaces. Do not place objects containing liquid on the system.
- Procure that the system has sufficient ventilation and do not block or cover any ventilation opening. Obstruct the ventilation may cause overheating in the system.
- Avoid the direct exposition with the sun and proximity with sources of heat or radiation.
- If the system undergoes an extreme change in temperature may affect its operation, before starting the system hope it has reached room temperature.

ACCESSORIES:

- Do not place the system on a unsteady base that can be cause of damage to people or to the system, use it only with the trolley, rack, tripod or base recommended or supplied by Pro DG Systems following the installation indications. The system's combination must *be* moved very carefully.

  The application of an excessive use of force and uneven floors can cause the combination of system and stand to tip over.

- Additional equipment: don’t use additional equipment wich has not be recommended by Pro DG Systems. The use of not recommended equipment can cause accidents and damage to the system.
- To protect the system during bad weather or when left unattended for prolonged periods, the main plug should be disconnected. This prevents the system being damaged by lightning and power surges in the AC mains supply.

IT IS RECOMMENDED TO THE USER READ THESE INSTRUCTIONS BEFORE USING THE SYSTEM AND SAVE FOR LATER USE.
PRO DG SYSTEMS IS NOT RESPONSIBLE OF AN INADEQUATE USE OF THE SYSTEM BY NO-AUTHORIZED PERSONNEL WITHOUT ENOUGH KNOWLEDGE OF USE.
THE USE OF THE PRO DG SYSTEMS PRODUCTS IS INDICATED FOR AUTHORIZED PROFESSIONALS THAT MUST TO HAVE ENOUGH KNOWLEDGE OF THE SYSTEM USE AND ALWAYS RESPECTING THE INDICATIONS SHOWED BELOW.

Declaration of Conformity

CE **EXPORTING COMPANY**
JOSE CARLOS LOPEZ PRODUCTION, S.L. (PRO DG SYSTEMS)
CIF/VAT: ESB14577316
Mr. José Carlos Lopez Cosano manufacturer and representative of JOSE CARLOS LOPEZ PRODUCTION S.L., CERTIFIES AND DECLARES AT ITS OWN RISK
That the product with GT2X10 LA reference whose description is LINE ARRAY 2X10” + 2X1” 900W 16 Ohm meets the criteria expressed at the following European directives:

Low voltage 2006/95/CE
Electromagnetic compatibility 2004/108/CE
Remains of electric and electronic systems 2002/96/CE
Restrictions on the use of certain dangerous substances in electric and electronic systems 2001/95/CE
That the product with GT2X10 LA reference whose description is LINE ARRAY 2X10” + 2X1” 900W 16 Ohm is according to the following European Harmonized Rules:

FIRMA: José Carlos López Cosano
Company representative

Introduction

This manual has been designed to help all the users of the system GT 2X10 L.A. of Pro DG Systems to its correct use as well as for the understanding of the benefits and versatility of the same. GT 2X10 L.A. is a Line Array system totally designed, manufactured and optimized in Spain, exclusively using European components.

GT 2X10 L.A.

Totally designed, manufactured and optimized in Spain, exclusively using European components.

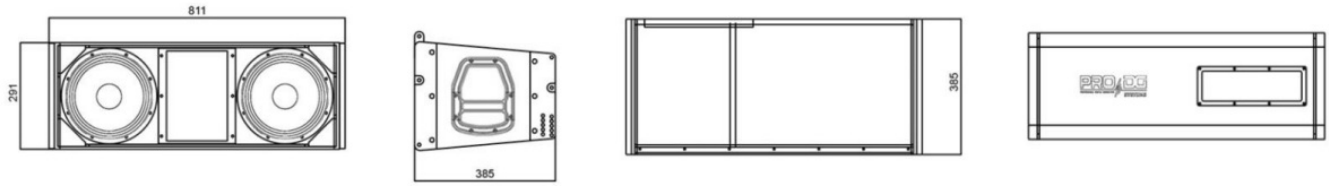
Description

GT 2X10 L.A. is a 2-way Line Array system of high performance equipped with two (2) speakers of 10” in a tuned enclosure. The HF section has two (2) compression drivers of 1” coupled to a waveguide. The transducer configuration generates a symmetric and horizontal dispersion of 90º without secondary lobes over the frequency range. It is the perfect solution as main P.A, frontfill and sidefill in outdoor events or permanent installation.

Technical specifications

Power Handling:	900 W RMS (EIA 426A standard) / 1800 W program / 3600 W peak.
Nominal Impendence:	16 Ohm.
Average Sensitivity:	101 dB / 2.83 V / 1m (average of 100-18000 Hz wideband).
Calculated Maximum SPL:	/ 1m 129 dB continuous/ 132 dB program / 135 dB peak (one unit) / 132 dB continuous / 135 dB program / 138 dB peak (four units).
Frequency Range:	+/- 3 dB from 70 Hz to 20 KHz.
Nominal Directivity:	(-6 dB) 90º horizontal coverage, vertical coverage depends on longitude or personalized configuration.
Low / Mid Frequency Driver:	Two (2) Beyma speakers of 10″, 400 W, 16 Ohm.
Subwoofer partner Cut-off:	Together with subwoofer system GT 118 B, GT 218 B or GT 221 B: 25 Hz Butterworth 24 filter – 90 Hz Linkwitz-riley 24 filter.
Mid Frequency Cut-off:	90 Hz Linkwitz-riley 24 filter – 1100 Hz Linkwitz-riley 24 filter.
High Frequency Driver:	Two (2) Beyma drivers of 1″, 8 Ohm, 50 W, 25mm exit, (44.4mm) with voice coil Mylar diaphragm.
High Frequency Cut-off:	1100 Hz Linkwitz-riley 24 filter – 20000 Hz Linkwitz-riley 24 filter
Recommended Amplifier:	Pro DG Systems GT 1.2 H or Lab.gruppen FP 6000Q, FP 10000Q.
Connectors:	2 NL4MP Neutrik speakon connectors.
Acoustic Enclosure:	CNC model, 15mm made from birch plywood plated on the exterior.
Finish:	Standard finish in black paint of high weather resistance.
Cabinet Dimensions:	(HxWxD); 291x811x385mm (11,46”x31,93”x15,16”).
Weight:	34,9 Kg (76,94 lbs) net / 36,1 Kg (79,59 lbs) with packaging.

Architectural specifications



Inside GT 2X10 L.A.
GT 2X10 L.A. counts with two Beyma speakers of 10”, 400 W (RMS). Specially designed under our own parameters for the best performance of the system.

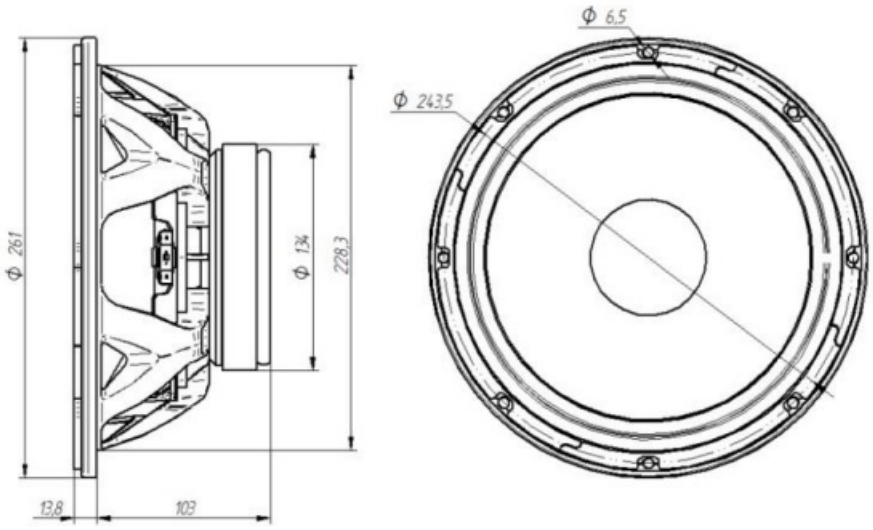
KEY FEATURES
High power handling: 400 W (RMS)
2” copper wire voice coil
High sensitivity: 96 dB (1W / 1m)
FEA optimized ceramic magnetic circuit
Designed with MMSS technology for high control, linearity and low harmonic distortion
Waterproof cone treatment on both sides of the cone

Extended controlled displacement: Xmax ± 6 mm
Xdamage ± 30 mm
Low harmonic distortion and linear response
Wide range of applications of low and mid-low frequencies

TECHNICAL SPECIFICATIONS

Nominal diameter	250 mm (10 in)
Rated Impedance	160
Minimum impedance	40
Power capacity	400 W (RMS)
Program power	800 W
Sensitivity	96 dB 1W / 1m @ ZN
Frequency range	50 – 5.000 Hz
Recom. Enclosure vol.	15 / 5010,53 / 1,77 ft3
Voice coil diameter	50,8 mm (2 in)
BI factor	14,3 N/A
Moving mass	0,039 kg
Voice coil length	15 mm
Air gap height	8 mm
Xdamage (peak to peak)	30 mm

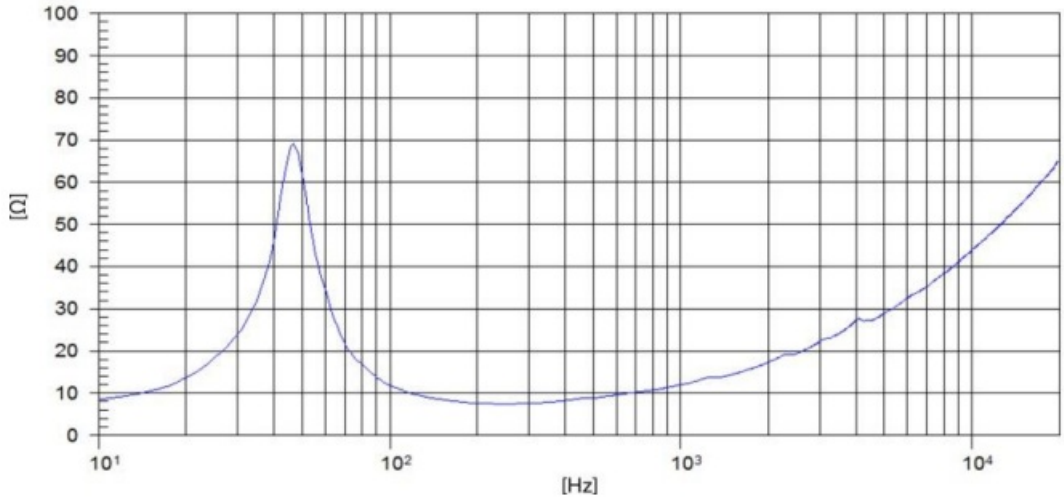
Specially designed under our own parameters for the best performance of the system.



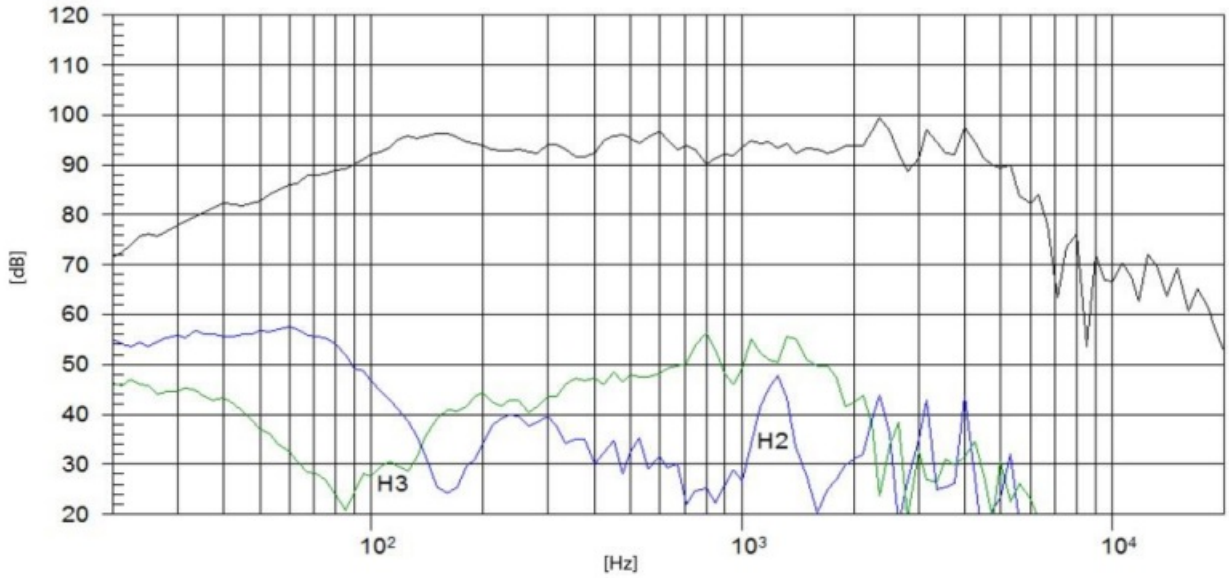
MOUNTING INFORMATION

* T-S parameters are measured after an exercise period using a preconditioning power test. The measurements are carried out with a velocity-current laser transducer and will reflect the long term parameters (once the loudspeaker has been working for a short period of time).
** The Xmax is calculated as (Lvc – Hag)/2 + (Hag/3,5), where Lvc is the voice coil length and Hag is the air gap height.

FREE AIR IMPEDANCE CURVE



FREQUENCY RESPONSE AND DISTORTION



Note: On axis frequency response measured with loudspeaker standing on infinite baffle in anechoic chamber, 1W @ 1m

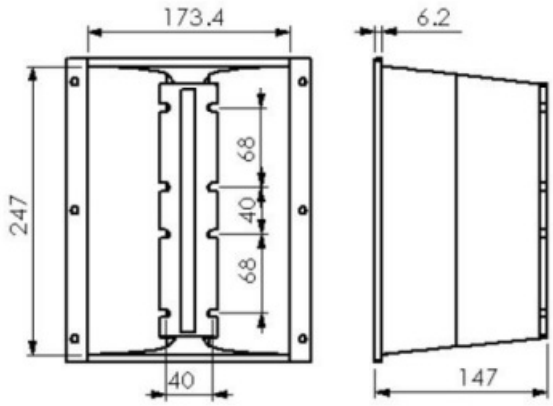
Inside GT 2X10 L.A.

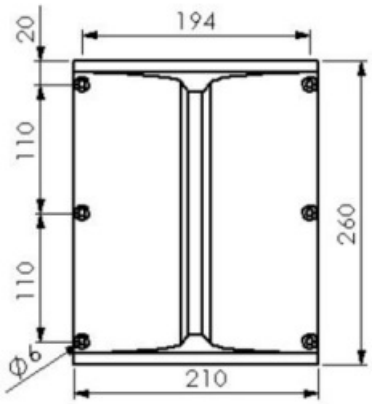
GT 2X10 L.A. is also composed by a constant directivity horn specifically designed to work with two Pro DG Systems compression drivers of 50 W RMS which are coupled to a waveguide. The constant directivity characteristics of this model ensure the ability to cover 90º wide horizontally and 20º wide vertically, at virtually any frequency within its operational range. To ensure freedom of resonance, this flare is constructed of cast aluminium, with flat front finish to facilitate flush mounting.

KEY FEATURES

- Designed to work with two (2) Pro DG Systems compression drivers of 50 W RMS.
- It provides uniform response, on and off – axis with a neutral and natural frequency reproduction
- Coverage angles of 90º in the horizontal plane and 20º in the vertical plane
- Precise directivity control in the pass band
- Cast aluminium construction

TECHNICAL SPECIFICATIONS





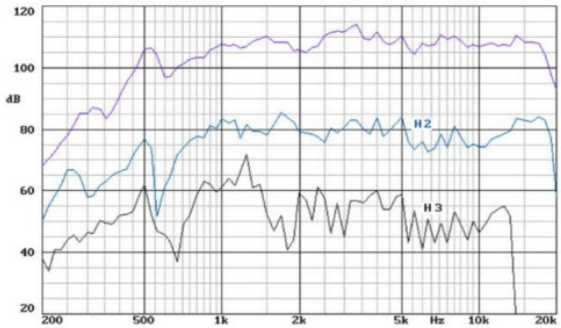
Inside GT 2X10 L.A.

GT 2X10 L.A. is also composed by two Beyma compression drivers of 50 W RMS which are coupled to a wave guide. Specially designed under our own parameters for the best performance of the system.
A combination of high power neodymium compression driver with waveguide provides the best junction for the best performance of GT 2X10 L.A. solving the hard problem of achieving an optimum coupling between adjacent high frequency transducers. Instead of using expensive and troublesome wave-shaping devices, a simple but effective waveguide transforms the circular aperture of the compression driver into a rectangular surface, without undue angle aperture to provide low curvature to the acoustic wave front, arriving to fulfil the necessary curvature

requirement for the optimal acoustic coupling joint between adjacent sources until 18 KHz. This is achieved with the minimum possible length for low distortion, but without being excessively short, which would cause strong high frequency interferences.

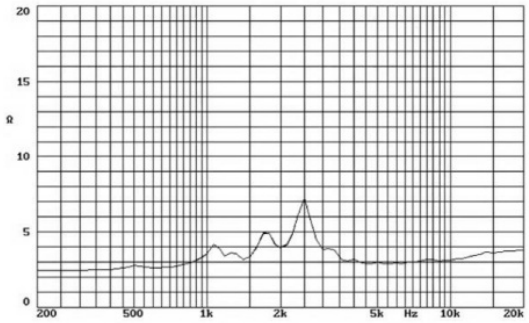
- 4” x 0.5” rectangular exit
- Neodymium magnetic circuit for high efficiency
- Effective acoustical coupling up to 18 KHz
- True 105 dB sensitivity 1w@1m (averaged 1-7 KHz)
- Extended frequency range: 0.7 – 20 KHz
- 1.75” voice coil with a power handling of 50 W RMS

Frequency Drivers and Distortion Curves

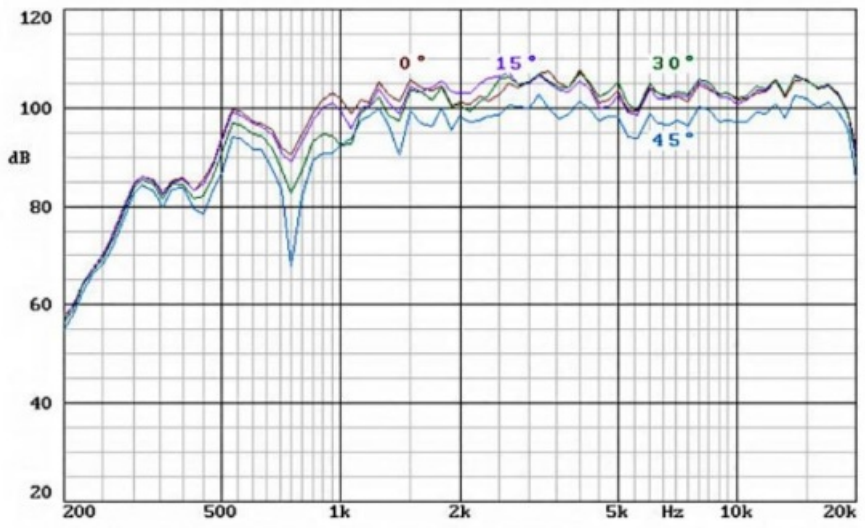


Note: on axis frequency response measured with 2 waveguides coupled to a 90º X 5º horn in an anechoic chamber, 1 w @ 1 m.

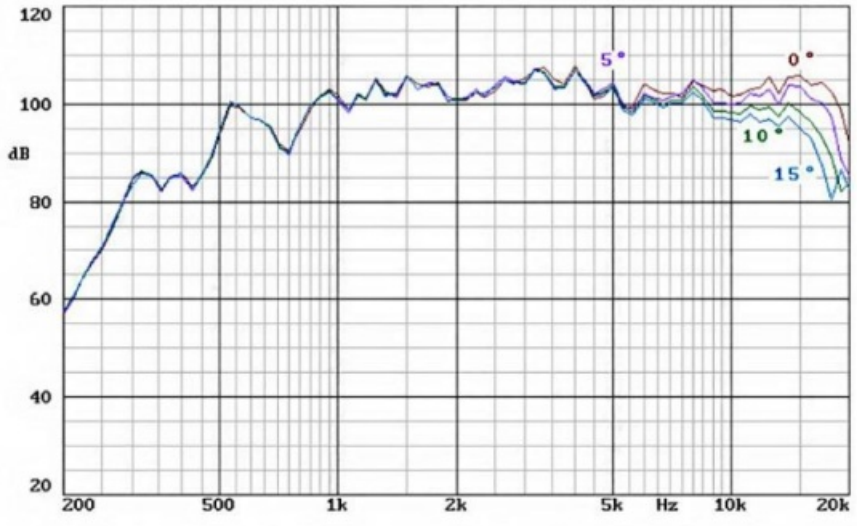
Free Air Impedance Curve



HORIZONTAL DISPERSION

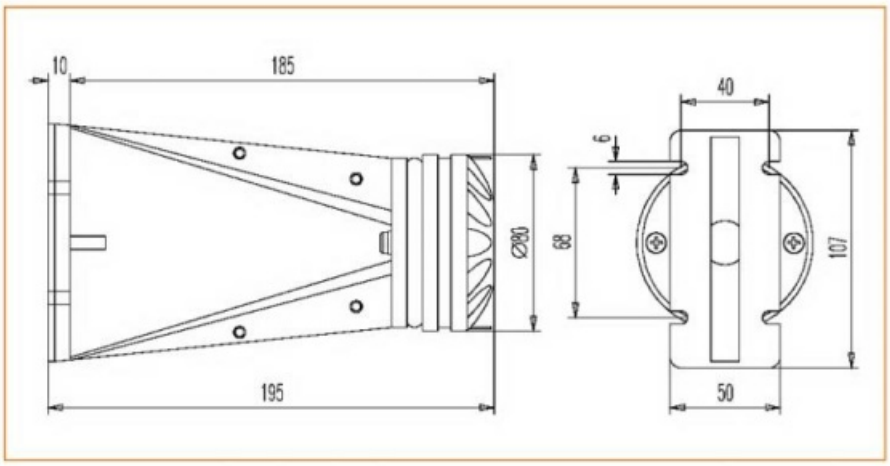


VERTICAL DISPERSION



Notes: dispersion measured with two waveguides coupled to a 90º x 5º horn in anechoic chamber, 1w @ 2m. All angle measurements are from the axis (45º means +45º).

DIMENSION DRAWINGS



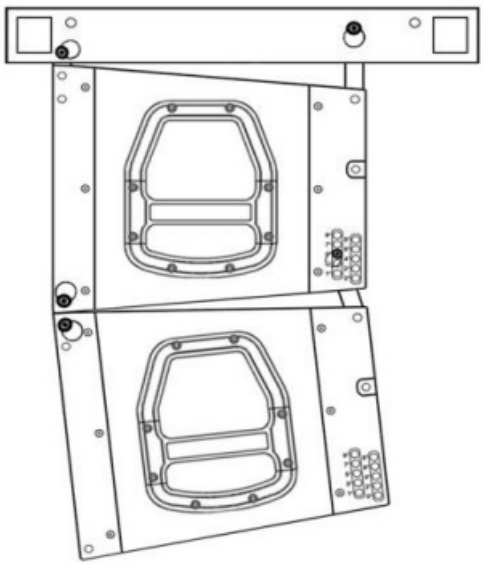
Note: * Sensitivity was measured at 1m distance on axis with 1w input, averaged in the range 1-7 KHz

CONSTRUCTION MATERIALS

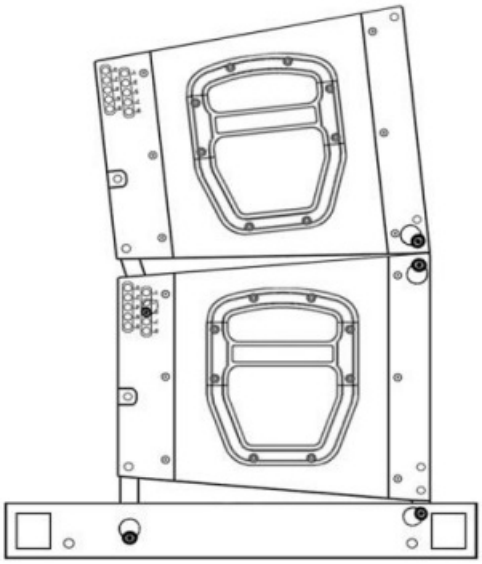
Waveguide	Aluminium
Driver diaphragm	Polyester
Driver voice coil	Edgewound aluminium ribbon wire
Driver voice coil former	Kapton
Driver magnet	Neodymium

Rigging Hardware

The magnetic pinlock is an innovative security fixing which avoids its loss and allows an easy fit with the flight hardware thanks to its magnetic properties.
Rigging Hardware for GT 2X10 L.A. Composed by: a lightweight steel frame + 4 magnetic pinlocks + a shackle to support a maximum weight of 1.5 tons. It allows raising up a total of 16 units GT 2X10 L.A.

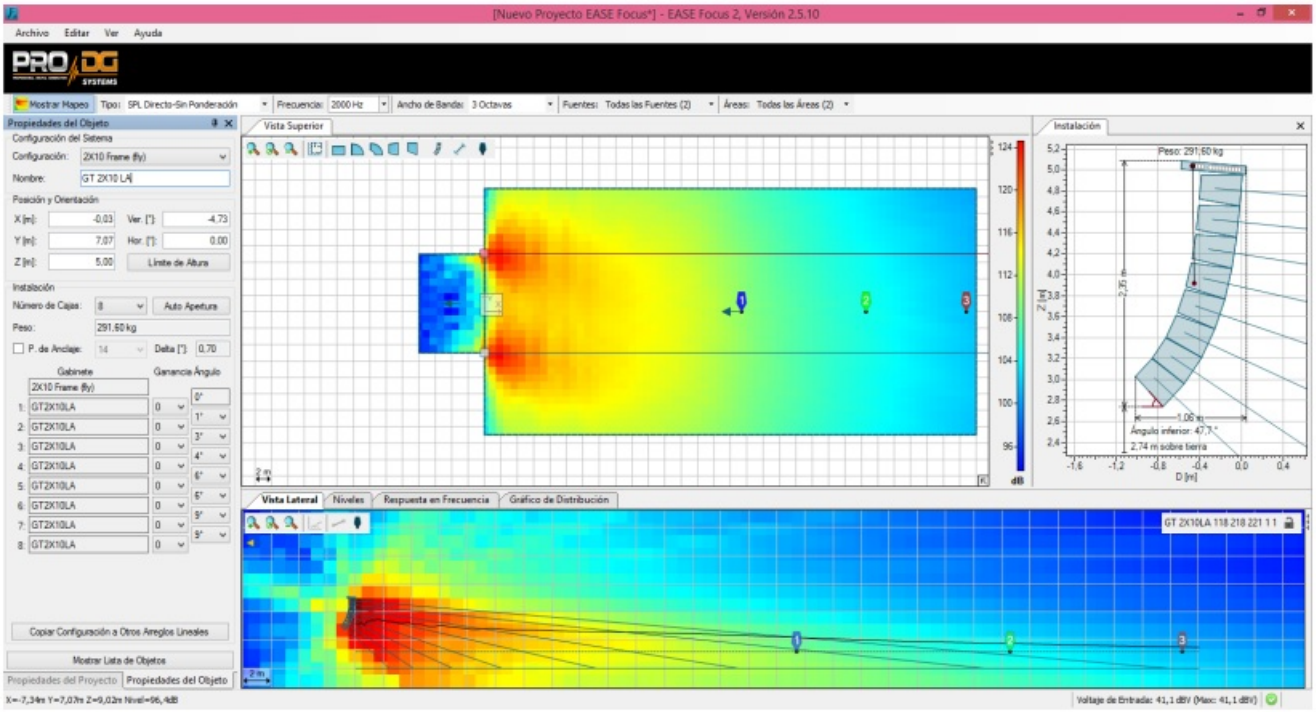


Flight hardware incorporated into the cabinet with different angulation grades.



Stack mode for the maximum versatility and coverage.
VERY IMPORTANT: a misuse of the frame and components can be motive of cracking that could compromise the safety of an array. Using a damaged frame and components could cause serious mishaps.

Prediction software.



In Pro DG Systems we know that making high quality speakers is an important part of our job. Then, offering the warranty of using speakers properly is another part which is also fundamental in our job. Good tools make the difference for an optimal use of the system.
With Ease Focus V2 prediction software for GT 2X10 L.A. we can design different configurations between systems and simulate their behavior in different places and circumstances like obtain information of: coverage, frequency, SPL and general system behavior in an easy and comfortable way. It is easy to handle and we offer training courses for Pro DG Systems users. For more information, consult our technical service at: **sat@prodgsystems.com**

Accessories

Pro DG Systems offers to their customers all type of equipment and accessories for their systems.
GT 2X10 L.A. has flight case or dolly board and covers for transport in addition to complete cabling for the system ready to use.

Flight case for transporting 4 units GT 2X10 L.A. Totally dimensioned for an hermetic packaging and ready to road.

Dolly board and covers for transporting 4 units GT 2X10 L.A. Perfectly dimensioned to transport in any type of truck.

Complete cabling for the system is available and ready to use.

www.prodgsystems.com

Documents / Resources

	PRO DG GT 2X10 L.A 2 Way Self Powered Line Array [pdf] User Manual GT 2X10 L.A 2 Way Self Powered Line Array, GT 2X10 L.A, 2 Way Self Powered Line Array, Powered Line Array, Line Array