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

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Contents

Introduction

This manual has been designed to help all the users of the system GTA 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. GTA 2X10 L.A. is a Line Array system totally designed, manufactured and optimized in Spain, exclusively using European components.

Description

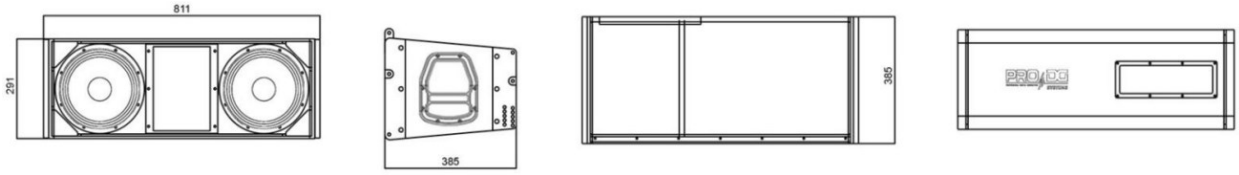
GTA 2X10 L.A. is a 2-way self-powered Line Array system of high performance equipped with two (2) speakers of 10” in a tuned enclosure. The HF section has two (2) compression drivers of 1” coupled to a waveguide. The transducer configuration generates a symmetric and horizontal dispersion of 90º without 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 GTA 118 B, GTA 218 B or GTA 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 into the cabinet.
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: 36,2 Kg (79,81 lbs) net / 37.5 Kg (82,67 lbs) with packaging.

Architectural specifications



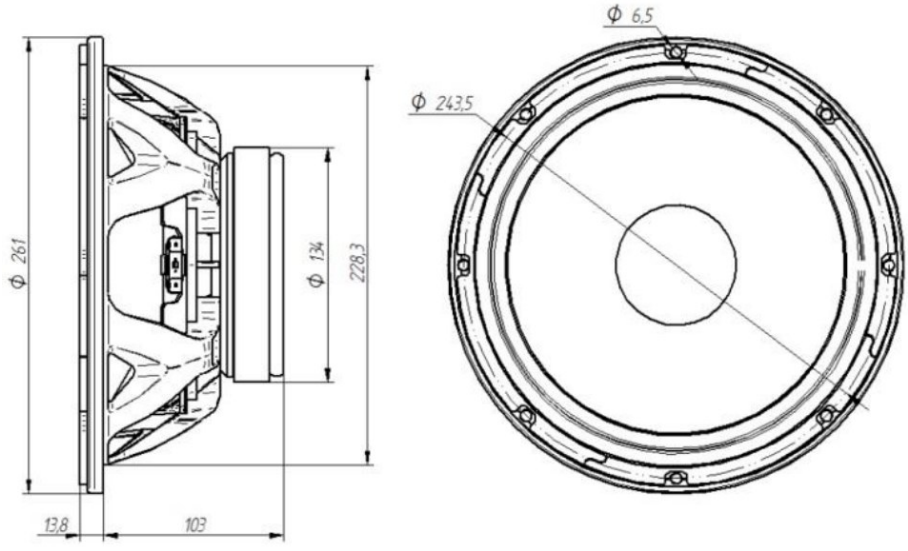
Inside GTA 2X10 L.A.

GTA 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 16 Ω
Minimum impedance 4 Ω
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 / 50 l 0,53 / 1,77 ft3
Voice coil diameter 50,8 mm (2 in)

Bl 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

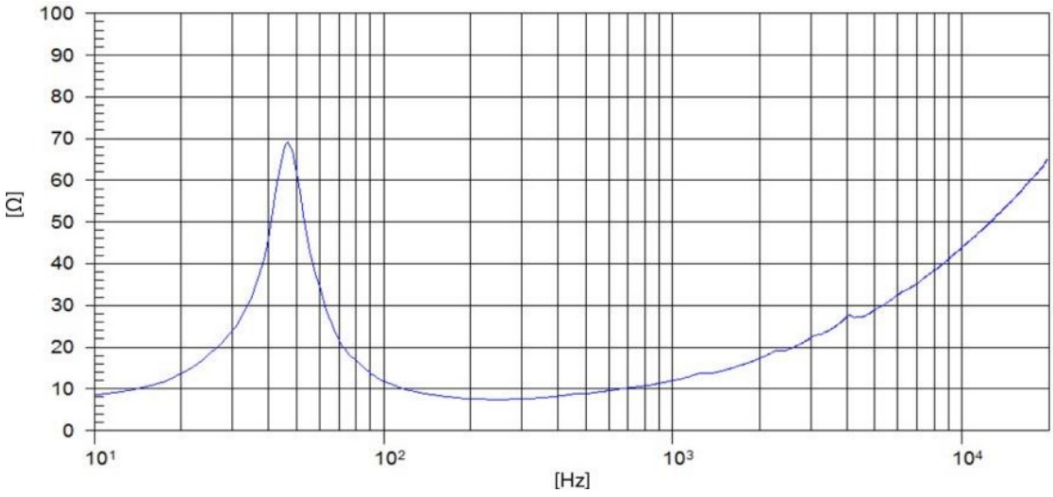
MOUNTING INFORMATION

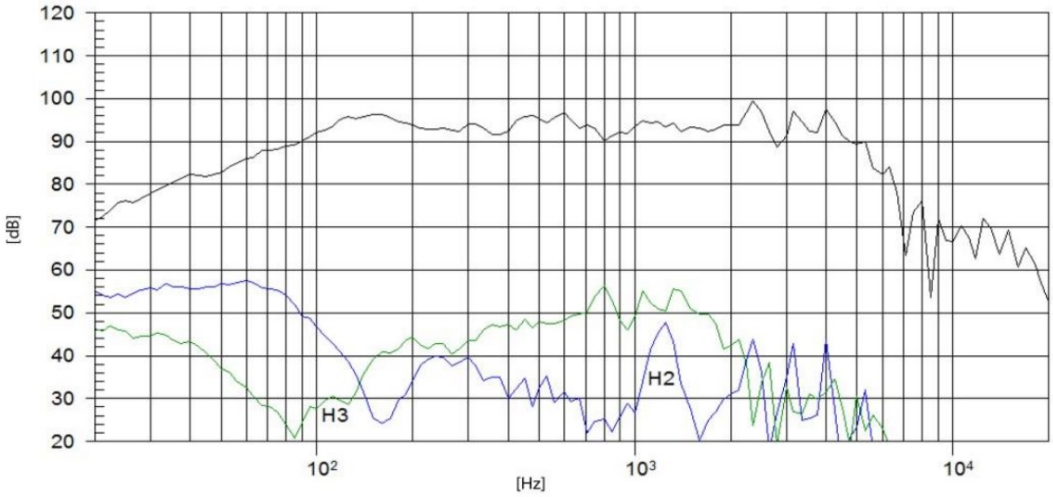
Overall diameter 261 mm (10,28 in)
Bolt circle diameter 243,5 mm (9,59 in)

Baffle cutout diameter:
Front mount 230 mm (9,06 in)
Depth 115 mm (4,52 in)
Net weight 3,5 kg (7,71 lb)

* 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

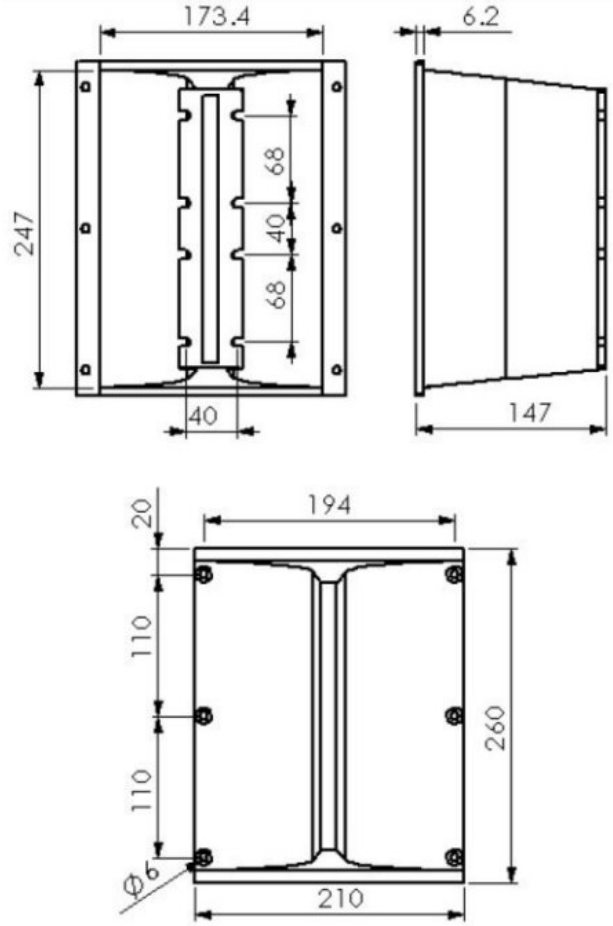
Inside GTA 2X10 L.A.

GTA 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



Throat dimensions (WxH) 12x208mm (0.47×8.19in)
Horizontal beamwidth 90º (+22º, -46º) (-6 dB, 1.2 – 16 kHz)
Vertical beamwidth 20º (+27º , -15º) (-6 dB, 2 – 16 kHz)
Directivity factor (Q) 60 (average 1.2 – 16 kHz)
Directivity index (DI) 15.5 dB (+7 dB, -8.1 dB)
Cutoff frequency 800 Hz
Size (WxHxD) 210x260x147mm (8.27×10.2×5.79in)
Cutout dimensions(WxH) 174x247mm (6.85×9.72in)
Net weight 1.5 kg (3.3 lb)
Construction Cast Aluminum

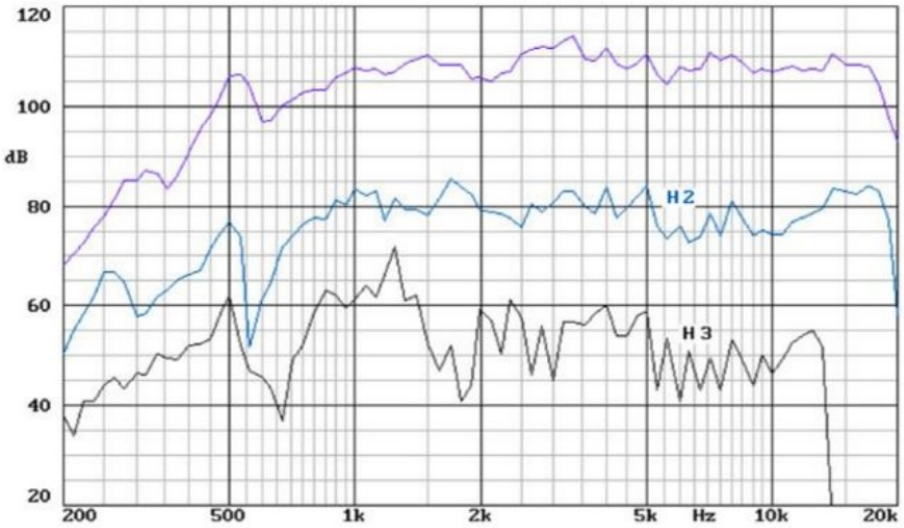
Inside GTA 2X10 L.A.

GTA 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 GTA 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.

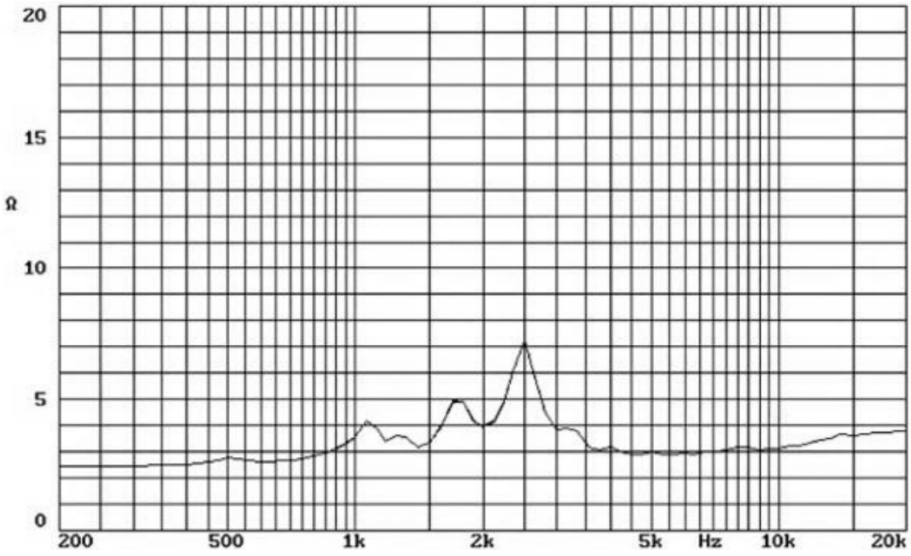
- 4” x 0.5” rectangular exit
- Neodymium magnetic circuit for high efficiency
- Effective acoustical coupling up to 18 KHz
- True 105 dB sensitivity 1w@1m (averaged 1-7 KHz)

- Extended frequency range: 0.7 – 20 KHz
- 1.75” voice coil with a power handling of 50 W RMS

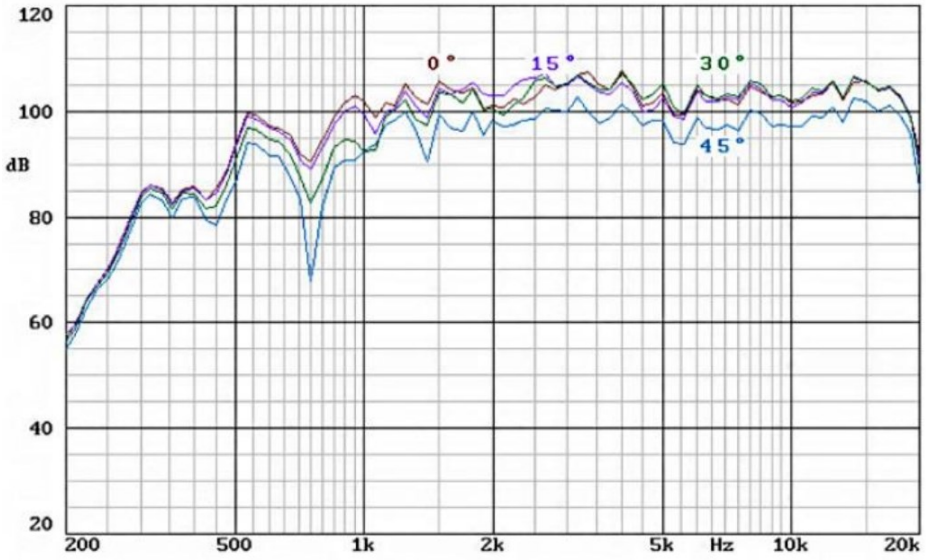
Frequency Drivers and Distortion Curves



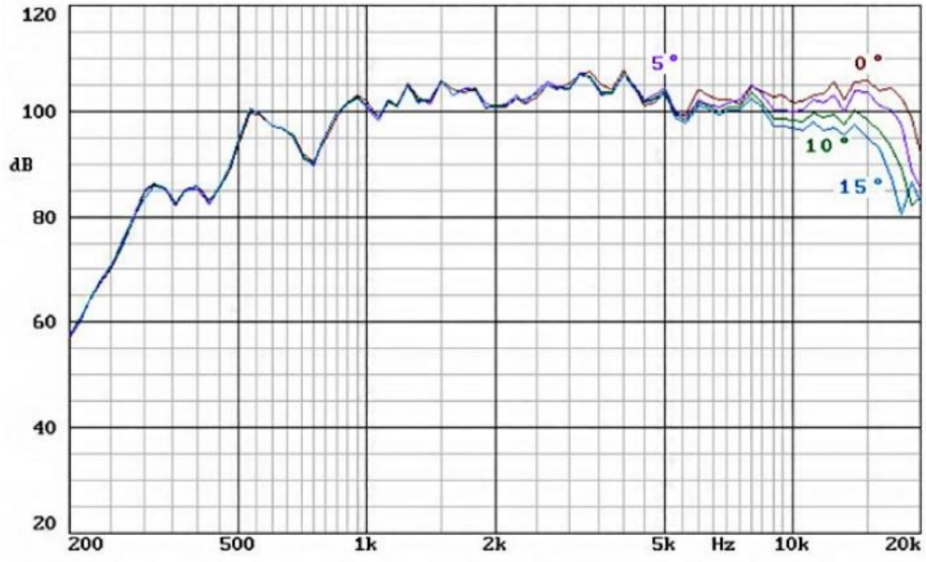
Free Air Impedance Curve



HORIZONTAL DISPERSION



VERTICAL DISPERSION

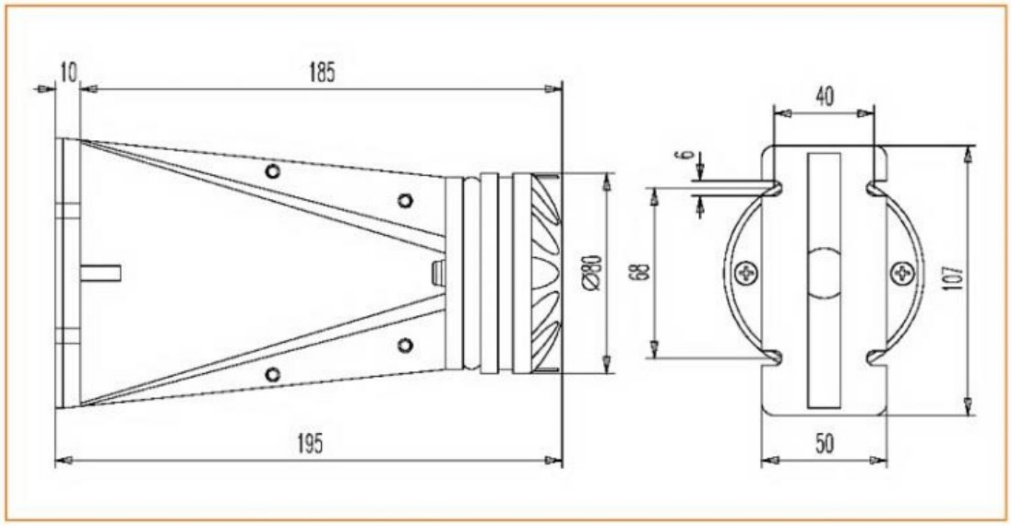


Notes: dispersion measured with two waveguides coupled to a 90º x 5º horn in anechoic chamber, 1w @ 2m. All angle measurements are from the axis (45º means +45º).

TECHNICAL SPECIFICATIONS

Throat diameter 20.5 mm (0.8 in)
Rated impedance 8 ohms
Minimum impedance 5.5 ohms @ 4.5 kHz
D.C. Resistance 5.6 ohms
Power capacity 50 W RMS above 1.5 kHz
Program power 100 W above 1.5 kHz
Sensitivity * 105 dB 1w @ 1m coupled to a 90º x 5 º horn
Frequency range 0.7 – 20 kHz
Recommended crossover 1500 Hz or higher (12 dB/oct. min.)
Voice coil diameter 44.4 mm (1.75 in)
Magnetic assembly weight 0.6 kg (1.32 lb)
Flux density 1.8 T
BL factor 8 N/A

DIMENSION DRAWINGS



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

MOUNTING INFORMATION

Overall diameter 80 mm (3.15 in)
Depth 195 mm (7.68 in)
Mounting Four 6 mm diameter holes
Net weight (1 unit) 1.1 kg (2.42 lb)
Shipping weight (2 units) 2.6 kg (5.72 lb)

CONSTRUCTION MATERIALS

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

Amplification

GTA 2X10 L.A. incorporates an amplifier module GT 1.2 H from Pro DG Systems. GT 1.2 H is a Class D digital amplifier module of last generation. It includes a digital processor with XLR Input and Output + USB and Ethernet connector.DSP Software for GTA 2X10 L.A. is available, it includes all the control functions which are necessary in the modern acoustic engineering, being very intuitive and easy to use. Our software is available for different Windows versions, Mac OS X and iOS (iPad). Contact our Technical Service for more information.

TECHNICAL SPECIFICATIONS

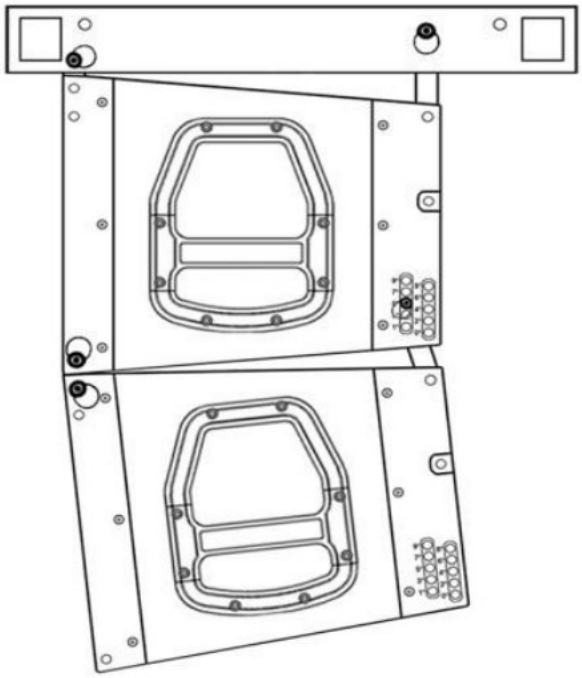
Output power per channel: 1 x 1000 W @ 4 Ohm – 1 x 400 W @ 4 Ohm
Output Circuitry: UMAC™ Class D – full bandwith PWM modulator with ultra low distortion.
Output Voltage: 70 Vp / 140 Vpp (unloaded) / Bridged 140 Vp / 280 Vpp (unloaded)
Amplifier Gain: 26 dB.
Signal To Noise-Ratio: > 119 dB (A-weighted, 20 Hz – 20 kHz, 8 Ω load)
THD+N (typical): < 0.05 % (20 Hz – 20 kHz, 8 Ω load, 3 dB below rated power)
Frequency Response: 20 Hz – 20 kHz ± 0.15 dB (8 Ω load, 1 dB below rated power)
Damping Factor: > 900 (8 Ω load, 1 kHz and below)
Protection Circuits: Short circuit protection, DC protection, under voltage protection, temperature protection, overload protection.
Readouts for DSP/Network: Protect/Disable (mute), Heatsink temperature, Clip (for each channel)
Power Supply: UREC™ universal mains switch mode power supply with Power Factor Correction (PFC) and integral standby converter.
Operation Voltage: Universal Mains, 85-265VAux. Power for DSP ±15 V (100 mA), +7.5 V (500 mA)
Standby Consumption: < 1 W (Green Energy Star compliant)
Dimensions (HxWxD): 296 x 141 x 105 mm / 11.65 x 5,55 x 4,13 in
Weight: 1,28 Kg / 2.82 lbs

Rigging Hardware.

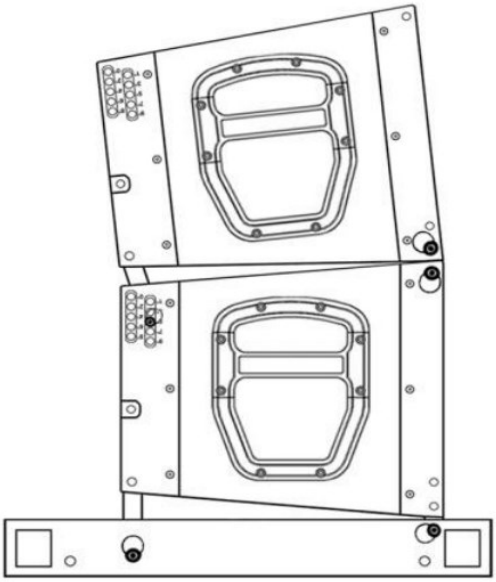
The magnetic pinlock is an innovative security fixing which avoids its loss and allows an easy fit with the flight hardware thanks to its magnetic properties.

Rigging Hardware for GTA 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 GTA 2X10 L.A.

Flight hardware incorporated into the cabinet with different angulation grades.

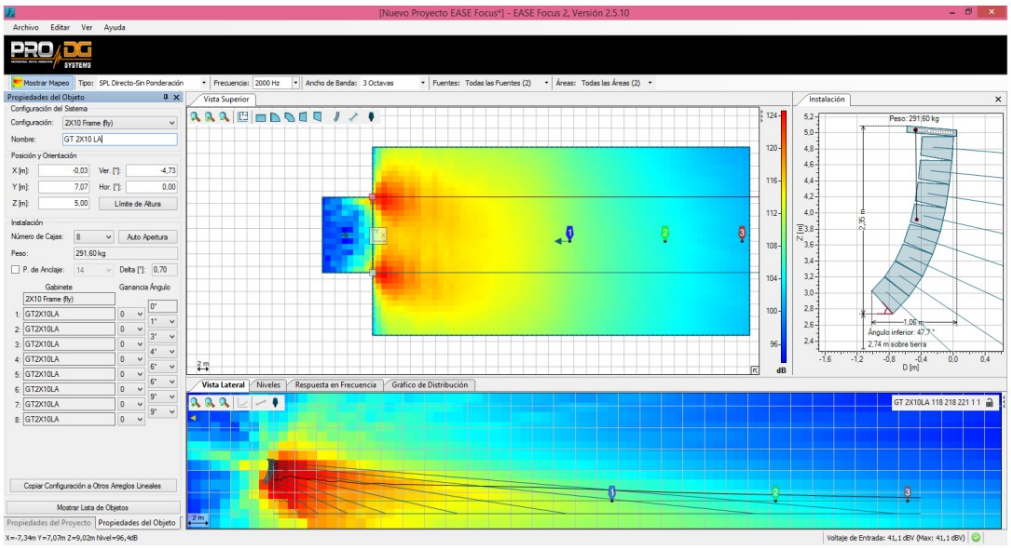


Stack mode for the maximum versatility and coverage.



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 GTA 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**

Accesories

Pro DG Systems offers to their customers all type of equipment and accessories for their systems. GTA 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 transport 4 units GTA 2X10 L.A. Totally dimensioned for an hermetic packaging and ready to road.

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

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

Documents / Resources

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