AX1012A

12" (305mm), 2-way, full-range, CORE Processed, Powered, Constant Curvature Array Element

KEY FEATURES

- Powered Constant Curvature Array Element
- 12" woofer,1.4" HF neodymium compression driver
- Constant curvature Seamless Transition Waveguide (SWT) with 100° H x 20° V dispersion
- Class D amplifier module with SMPS
- 96KHz / 40 bit floating point CORE processing with PRONET remote control
- Integral suspension hardware for horizontal or vertical array installation
- Pole mounting available for free-standing applications

APPLICATIONS

- Sound reinforcement in small-to-medium-size live venues.
- Sidefill, Outfill or Infill applications
- Delay systems in stadia and arenas
- Theatres
- Corporate & A/V
- Theme parks
- Houses of Worship
- Leisure and Fitness

TECHNICAL SPECIFICATIONS

SYSTEM	
System's Acoustic Principle	Constant Curvature Array Element
Frequency Response (-6dB)	65 Hz – 17 kHz (processed)
Horizontal/ Vertical Coverage Angle	100°/20° 1kHz to 20kHz (-6dB)
Maximum (peak) Output	134 dB SPL @ 1m
TRANSDUCERS	
LF	One 12" (305mm) LF driver, 3" (76mm) aluminium voice coil
HF	One 1.4" (35.5mm) HF compression driver, 2.4" (61mm) aluminium voice coil
ELECTRICAL	
Input Impedance	20 kΩ balanced, 10 kΩ unbalanced
Input Sensitivity	+4dBu / 1.25 V
Signal Processing	CORE processing, 96kHz / 40bit floating point SHARC DSP, 24 bit AD/DA converters
Direct access Controls	4 Presets (SINGLE/MID-THROW/LONG-THROW/USER), Network Termination, GND Link
Remote Control	PRONET control software
Network Protocol	CANBUS
Amplifier Type	Class D with SMPS
Output Power	900W + 300W
Mains Voltage Range (Vac)	230V ±15% - 115 ±15% 50/60Hz (internally selectable)
IN / OUT Connectors	Neutrik XLR-M / XLR-F
IN / OUT Network Connectors	ETHERCON®(NE8FAV)
Mains Input / Link Connector	PowerCon® (NAC3MPA), PowerCon® (NAC3MPB)
Cooling	Variable speed DC fan
ENCLOSURE & CONSTRUCTION	
Dimensions (W x H x D)	246 mm (9.7") x 611 mm (24.0") x 500 mm (19.7")
Enclosure Material	15mm, reinforced phenolic birch
Paint	High resistance, black water based paint
Flying System	Captive suspension system
Net Weight	32.5 kg (71.6 lbs)

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DESCRIPTION

AX1012A is a versatile constant curvature full-range element that can be used to create both vertical and horizontal line source arrays and also as a high-directivity point-source loudspeaker.

The 1.4" high frequency compression driver is coupled to a constant curvature precision waveguide, which ensures a precise control of mid-high frequencies both on horizontal and vertical axis, for a perfect acoustic coupling between the enclosures that form the array. The unique waveguide design produces vertical line source directivity with a horizontal pattern that is maintained down to approximately 950Hz. This allows to project clean music and vocals evenly around the audience without hot-spots and dead-spots. The sharp SPL off-axis rejection is used to avoid reflecting surfaces in the enclosure coupling plane and perfectly adjusts the acoustic coverage to the audience geometry.

The system designer or sound engineer can build true line source horizontal or vertical arrays in 20° building blocks with seamless integration between cabinets.

The tour-grade 15mm phenolic birch plywood cabinet is provided with four integrated steels rails, to be used for coupling the cabinets with the KPTAX1012 aluminium coupling bars. A comprehensive set of accessories is available for creating horizontal or vertical arrays, for ground-stacking the systems and also for pole mounting one or two units.

Constant curvature precision waveguide

To extend the system's low frequency response the AX1012A can be complemented by sub-woofers from the Axiom SW series such as SW18A or SW1800A.

AX1012A is recommended for Indoor FOH (Left – Centre - Right systems), Medium-sized outdoor events or as a fill complement to large Systems, Out-fills, In-fills or distributed fill applications in a wide range of venue.

Horizontal array

Vertical array

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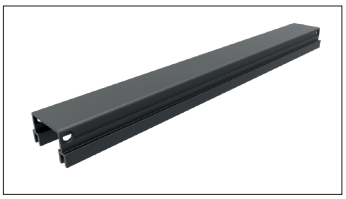
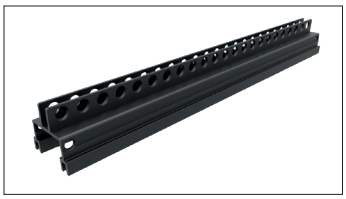
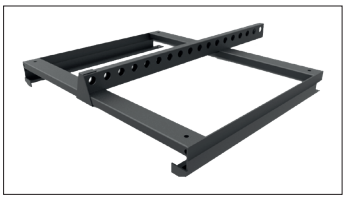
RIGGING HARDWARE



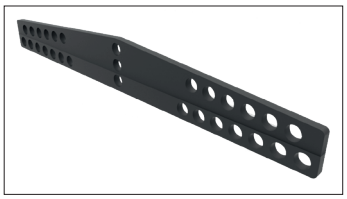
KPTAX1012 - Coupling bar



KPTAX1012H - Horizontal array flying bar



KPTAX1012V - Vertical Array flying bar



KPTAX1012T - Suspension bar

SYSTEM CONFIGURATION EXAMPLES

3-unit vertical array (100°x60°)

4-unit horizontal array (80°x100°)

3-unit ground stack (100°x60°)

1-unit pole mounted (100°x20°)

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SYSTEM PROCESSING

The system processing is based on the CORE DSP platform 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 top quality 24bit AD/DA converters for perfect signal integrity, dynamic range in excess of 110dB and 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 CORE 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.

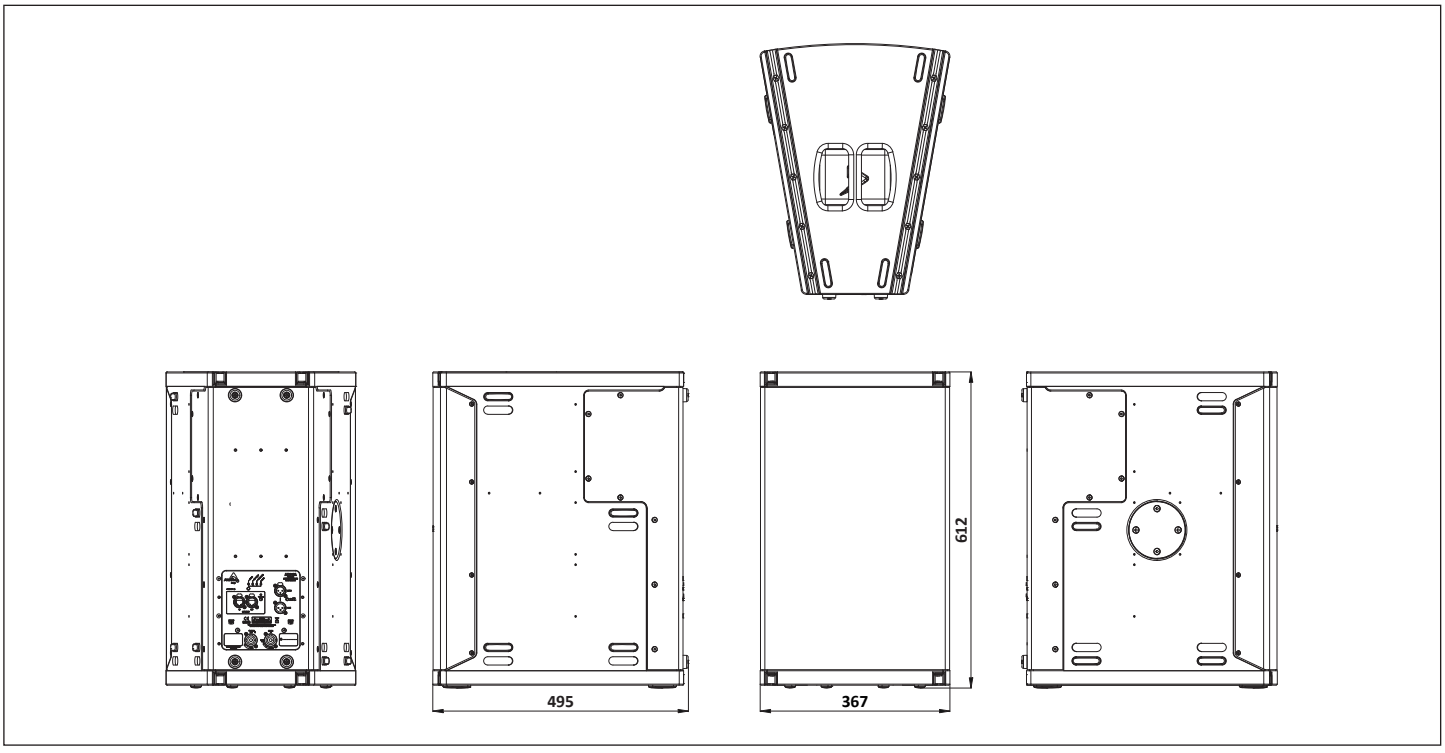
The PRONET control software, working on a solid and reliable CANBUS based network protocol, provides an intuitive interface for the remote control of the whole system, with the possibility of EQing, delaying, managing the protection functions, and monitoring the status of the amplifier.

POWER AMPLIFIER

The AX1012A 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.

Output power is optimised specifically to the drive units for efficient power transfer, with the low frequency section producing 900 watts while 300 watts is available for the high frequency compression driver. Input and link connections are via balanced 3-pin XLR connectors, and a ground lift switch is provided for hum-free operation. Mains power is connected through a locking Neutrik PowerCON, and a Power Out connector allows mains power to be linked to additional AX1012A cabinets.

ENGINEERING DRAWING



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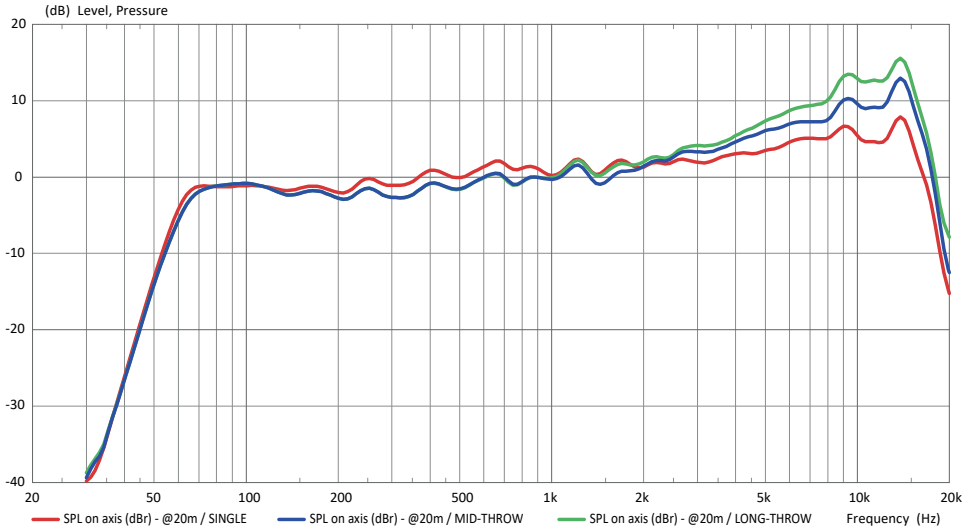
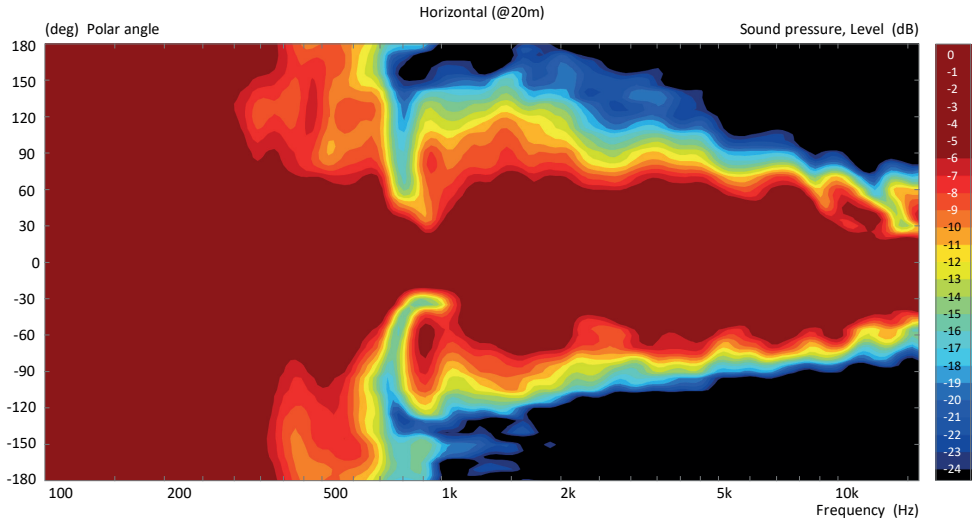
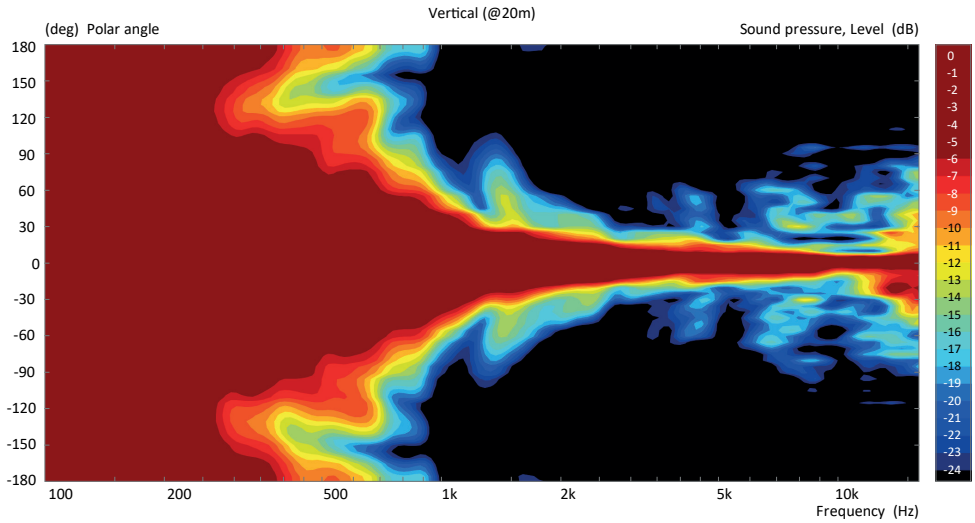
AX1012A frequency response



AX1012A HORIZONTAL directivity map



AX1012A VERTICAL directivity map



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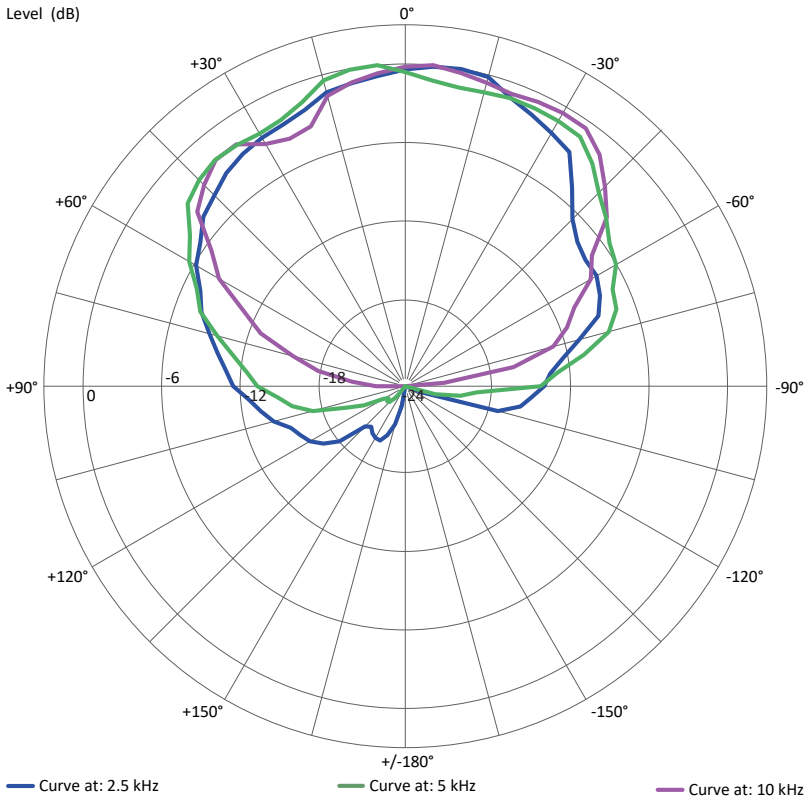
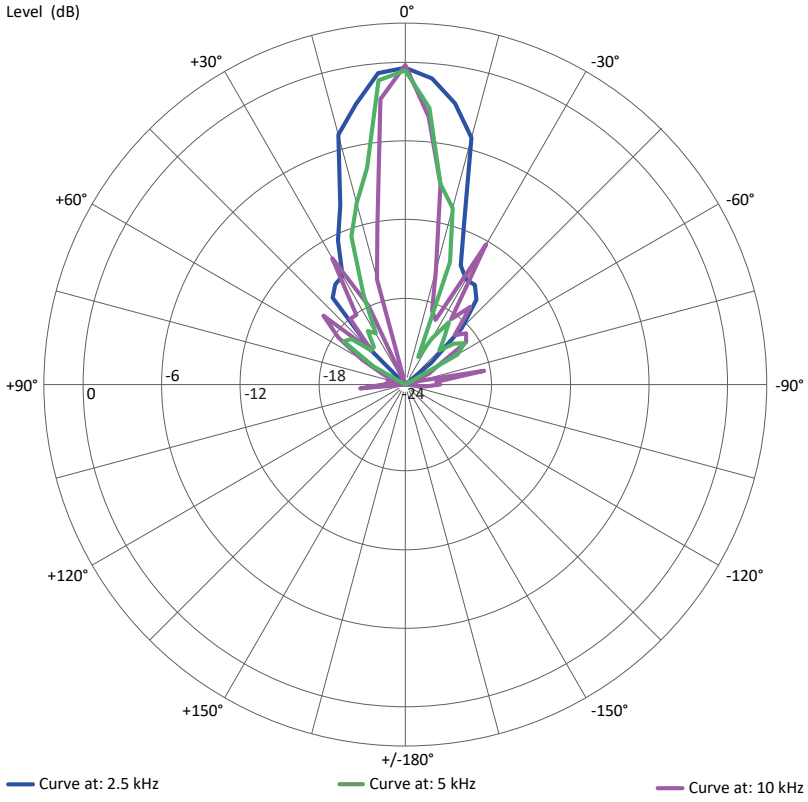
AX1012A HF HORIZONTAL polar diagram



AX1012A HF VERTICAL polar diagram



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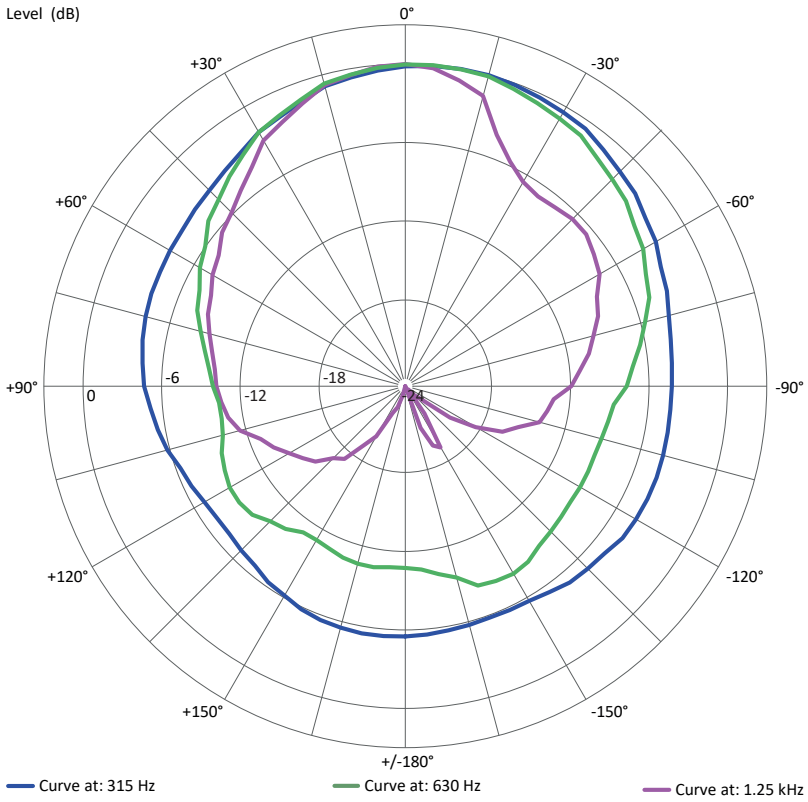
AX1012A LF HORIZONTAL polar diagram



AX1012A LF VERTICAL polar diagram