

SETTING THE STANDARDS FOR STADIUM SOUND



STADIA AND ARENA

A detailed wireframe rendering of a stadium's sound system. The image shows two large, rectangular speaker cabinets in the foreground, each containing multiple drivers. The background features a grid of lines representing the stadium's seating bowl and roof structure, all rendered in a light, glowing white against a dark blue background.

Outline



STADIA

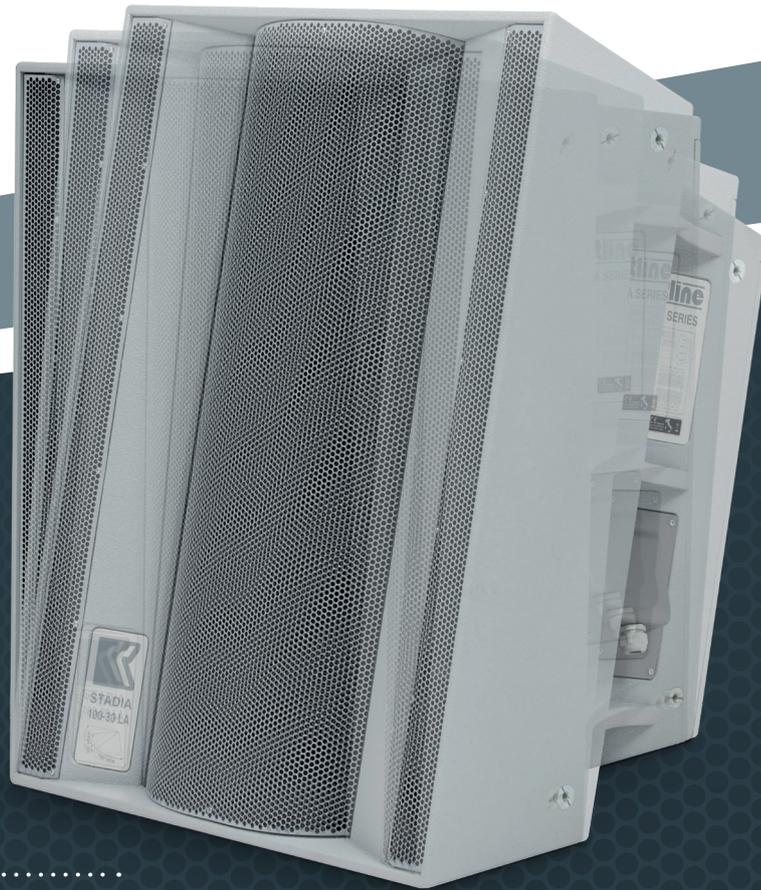
The STADIA100 LA range comprises three loudspeaker modules of very similar dimensions but identical horizontal directivity (100°) and which offer a choice of 10°, 20° or 30° dispersion in the vertical plane allowing modules to be combined to provide optimum coverage for the location. This allows the system designer to create a sound reinforcement solution that is extremely accurate at distance, which keeps audible reflections and thus unwanted reverberation to a minimum and so providing maximum intelligibility.

The acoustic and physical performance of the **STADIA100 LA** range is a result of several different design criteria. These include frequency-specific coupling of dedicated components by carefully-controlled proximity, the design of our own D.P.R.W.G. waveguides, special mid/high frequency horns (Outline's V-Power Concept) and the physical construction of the enclosure including resonance-eliminating internal and external bracing and our unique system of weatherproofing.

All three variants are two-way active designs, each containing eight 8" mid-range transducers and four 1.4" exit compression drivers mounted on Outline's unique D.P.R.W.G. wave guide which provide the designated vertical directivity. Each module can handle in excess of 8 kW peak input power, will produce a maximum SPL of 149 dB and coherent reproduction down to 300 Hz with full directional control. The frequency response of each module is 65 Hz to 19 kHz.



Outline

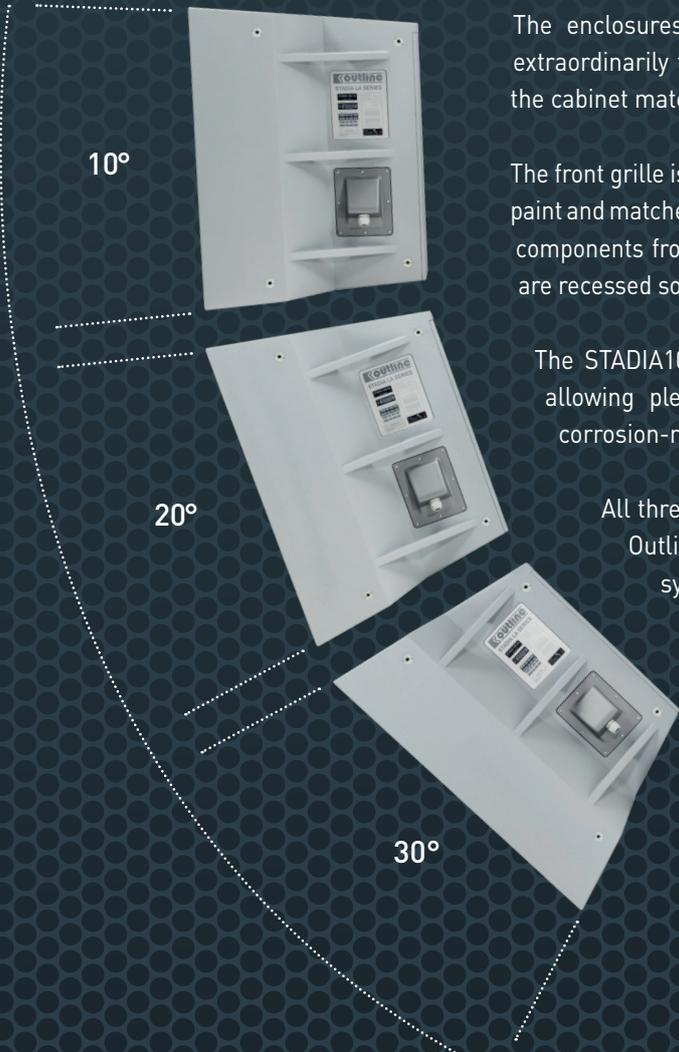


The enclosures are constructed from birch ply finished with 'outSIDE', an extraordinarily tough and waterproof elastoplastic coating which interacts with the cabinet material to provide extreme levels of long-term protection.

The front grille is treated with an epoxy and polyester-based thermosetting powder paint and matched to an acoustically transparent waterproof sheet, so protecting the components from moisture and other contaminants, while amplifier connections are recessed so that a weatherproof plate with cable retention can be fitted.

The STADIA100 LA modules are all fitted with eight (8) M10 rigging points allowing plenty of mounting options, while all the external screws are corrosion-resistant high-strength anodized aluminium alloy (Ergal).

All three STADIA100 LA models can be freely integrated with a range of Outline subwoofers when necessary, including the ST SUB series. DSP system control and amplification for all modules are also available from the current Outline product range.



IP55
PROTECTION



STADIA

SETTING THE STANDARDS FOR STADIUM SOUND

STADIA 100-10 LA



STADIA 100-20 LA



STADIA 100-30 LA



IP55

PROTECTION

FEATURES

- › STADIA100 LA range addresses acoustically challenging environments such as sports stadia, arenas and other very large spaces used for major public gatherings.
- › Extremely high efficiency and power handling capability (peak input power in excess of 8 kW).
- › Extremely high SPL (149 dB Peak).
- › Unprecedented coherent reproduction down to 300 Hz with full directional control.
- › 8 x 8" woofers (2" voice coil).
- › 4 x D.P.R.W.G. wave guide loaded compression drivers (1.4" exit; 3" diaphragm).
- › Finished with the exclusive 'outSIDE' coating, featuring amazing durability and superior physical properties (see description below).
- › Fitted with eight (8) M10 rigging points allowing plenty of mounting options.



INTRODUCTION

The new Outline STADIA100 LA series delivers an adaptable 'tool box' of loudspeaker products, specifically designed and engineered to provide a simple yet flexible solution for permanent installations in large-capacity venues. Typically these include sports stadia, arenas and other very large spaces which are used for major public gatherings. Every aspect of the enclosure and its components has been designed to provide ultimate long-range intelligibility, allowing audiences in very large venues the opportunity to hear both live and program material at a quality that has not previously been possible from an installed system.

System designers working in this field have previously had to choose between loudspeaker products that are not designed for purpose - either over-engineered and unnecessarily complex devices intended for touring - or under-powered and less accurate products to be used in smaller locations, or from an extremely limited range of dedicated products. With STADIA100 LA there is no compromise.

APPLICATIONS

Stadia / Arenas / Sports Facilities / Large Houses of Worship

BACKGROUND

The meteoric rise in popularity of line-source systems for mobile applications in recent years has been driven primarily by the practical operational advantages they offer - in comparison to point-source systems of the same performance they are smaller, easier to transport and store, lighter, quicker to deploy and more accurate. All these factors are genuine advances in large-scale mobile system technology and contribute efficiency advantages to their owners.

However, most of these factors offer no real benefit to large venues who need permanently installed systems, whose needs are somewhat different - what these customers need is a 'set and forget' solution which, while obviously meeting the audio needs of the venue, can be relied upon to operate for years with minimum maintenance.

These products need to be weatherproof, tolerant of huge temperature and humidity ranges, resistant to ingress by insects and other contaminants, simple to mount in a variety of orientations and provide ultimate operational reliability. These are the fundamental design parameters of the new Outline STADIA100 LA range, to which we have added our own experience of designing world-class loudspeaker systems.

SUMMARY

Outline's new STADIA100 LA range delivers a lightweight and cost-effective integrated solution for permanent installation in very large spaces that is simple to design and deploy, highly efficient, powerful, accurate and designed for purpose.

PERFORMANCE SPECIFICATIONS

Frequency Response -10 dB	65 Hz - 19 kHz
Operating configuration	Bi-amplified
Impedance Midrange (Nom/Min)	4 Ω / 3.2 Ω
Impedance High (Nom/Min)	8 Ω / 8.1 Ω
Watts AES Midrange (Continuous/Peak)	1600 W / 6400 W
Watts AES High (Continuous/Peak)	480 W / 1920 W

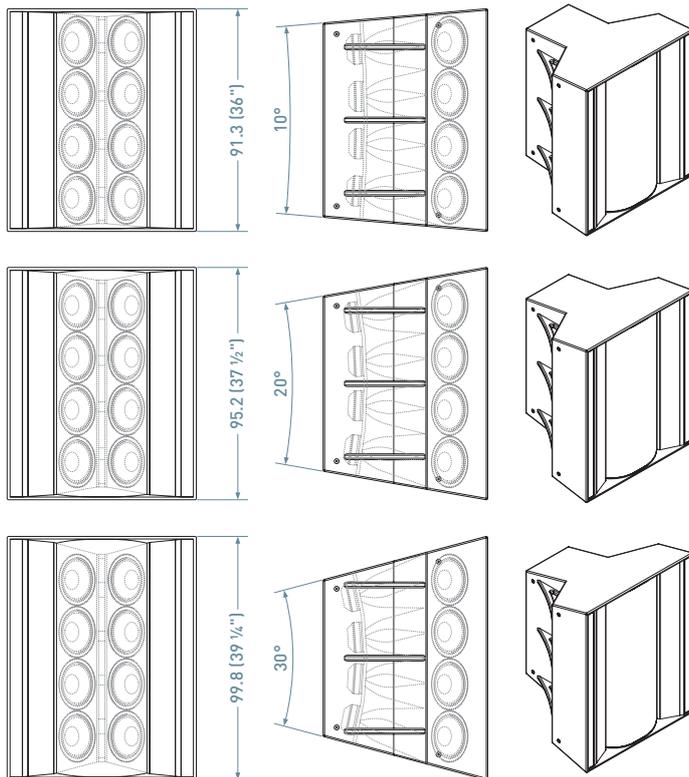
PHYSICAL

Component Midrange	8 x 8" band-pass loaded woofer
Component High	4 x 3" compression driver, DPRWG loaded
Connectors	8 Pole parallel barrier strip
Cabinet Material	Baltic birch plywood
Cabinet Finish	WP elasto-plastic coated
Grill	Epoxy powder coated
Installation Points	8 x M10 threaded points
Handles	6 Handles
Weight	73 kg - 161 lb

IP55
PROTECTION

STADIA

TECHNICAL SPECIFICATIONS



Stadia 100-10 LA

Nominal Dispersion	100° x 10° (H x V)
Continuous SPL Output *	139 dB SPL
Maximum SPL Output *	149 dB SPL
Height	913 mm - 36"
Width	770 mm - 30 3/8"
Depth	670 mm - 26 3/8"

Stadia 100-20 LA

Nominal Dispersion	100° x 20° (H x V)
Continuous SPL Output *	138 dB SPL
Maximum SPL Output *	148 dB SPL
Height	952 mm - 37 1/2"
Width	770 mm - 30 3/8"
Depth	670 mm - 26 3/8"

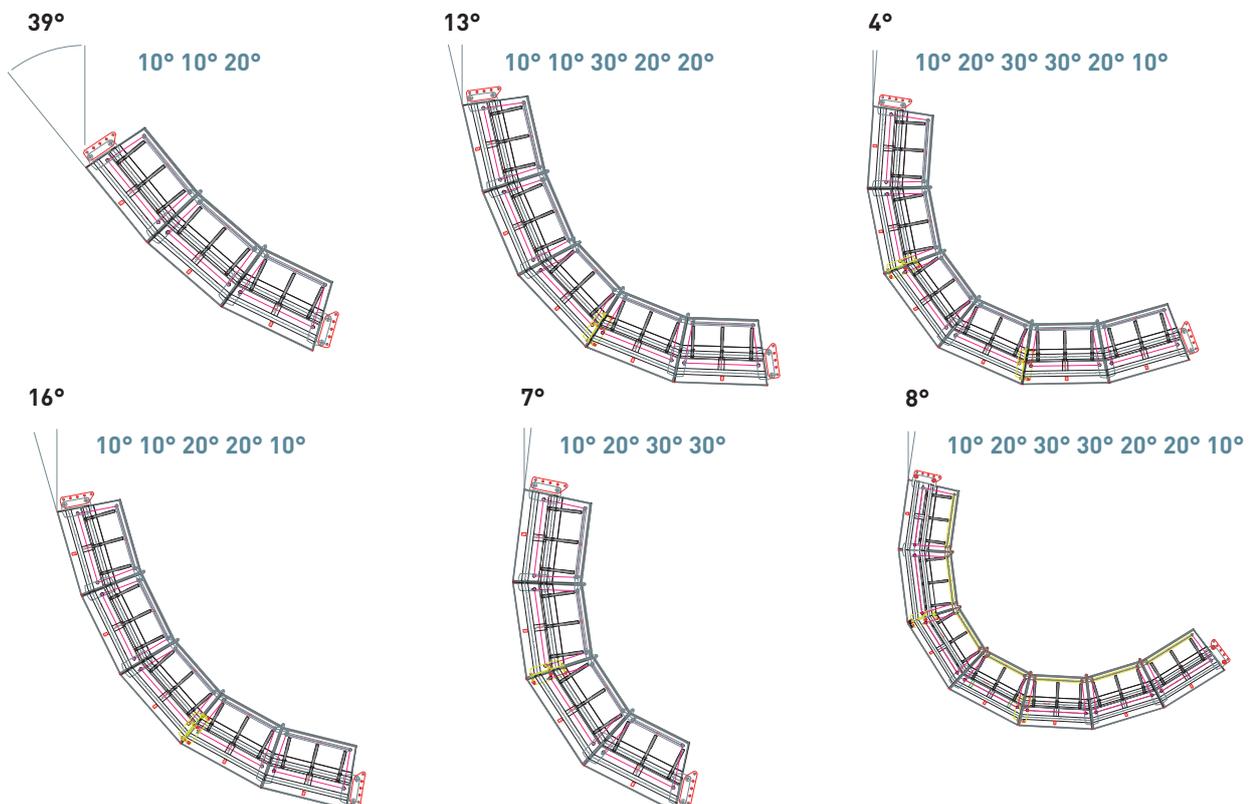
Stadia 100-30 LA

Nominal Dispersion	100° x 30° (H x V)
Continuous SPL Output *	137.5 dB SPL
Maximum SPL Output *	147.5 dB SPL
Height	998 mm - 39 1/4"
Width	770 mm - 30 3/8"
Depth	670 mm - 26 3/8"

* calculated using +10 dB Crest Factor signal @ 1 m, Free Field

SYSTEM CONFIGURATIONS

STADIA offers a choice of three cabinets with different vertical dispersion angles (10°, 20°, 30°) to meet even the most complex design requirements.



ST SUB - 215

STADIA COMPANION SUBWOOFER



This is the companion subwoofer for Stadia & Arena Series, featuring the same 'OutSide' weatherproofing system and extending the applicational usefulness of the Stadia/Arena Series still further.

PERFORMANCE SPECIFICATIONS

Frequency Response -10 dB	34 Hz – 2.4 kHz
Suggested Cross-Over	max 150 Hz
Nominal Dispersion	Quasi-Omnidirectional
Impedance (Nom/Min)	2 x 8 Ω / 2 x 6.7 Ω
Watt AES (Continuous/Peak)	2 x 600 W / 2 x 2400 W
Maximum SPL Output *	144 dB SPL

* calculated using +10 dB Crest Factor signal @ 1 m, half space

PHYSICAL

Component	2 x 15" direct radiation woofers
Connectors	4 Pole paralleled barrier strip
Cabinet Material	Baltic birch plywood
Cabinet Finish	WP elasto-plastic coated
Grill	Epoxy powder coated
Installation Points	16 x M10 threaded points
Height	480 mm – 18 5/8"
Width	940 mm – 37"
Depth	700 mm – 27 9/16"
Weight	50 kg – 112.4 lb

ARENA



215 CX

Arena 215 CX enclosure integrates perfectly into stadium installations with Stadia Series units, providing seamless audio throughout areas not covered by the main system. This loudspeaker also provides extremely effective multi-purpose solutions in any application where high quality audio needs to be distributed around outdoor areas, such as **theme parks, leisure facilities, tourist attractions and public spaces**. Arena 215 CX features a 15-inch LF transducer and a 15-inch mid-low driver incorporating a coaxial 3-inch diaphragm HF compression driver, mounted on Outline's proprietary moulded waveguide. Uniquely configured as a 'two-and-a-half' way system both electrically and acoustically, Arena 215 CX delivers audio performance approaching a three-way design with extended low frequency, outstanding sound quality and remarkable SPL. Better still, thanks to Outline's exclusive internal crossover designs, it can be driven by a single channel of amplification which adds desirable cost-efficiency to an already compelling package.

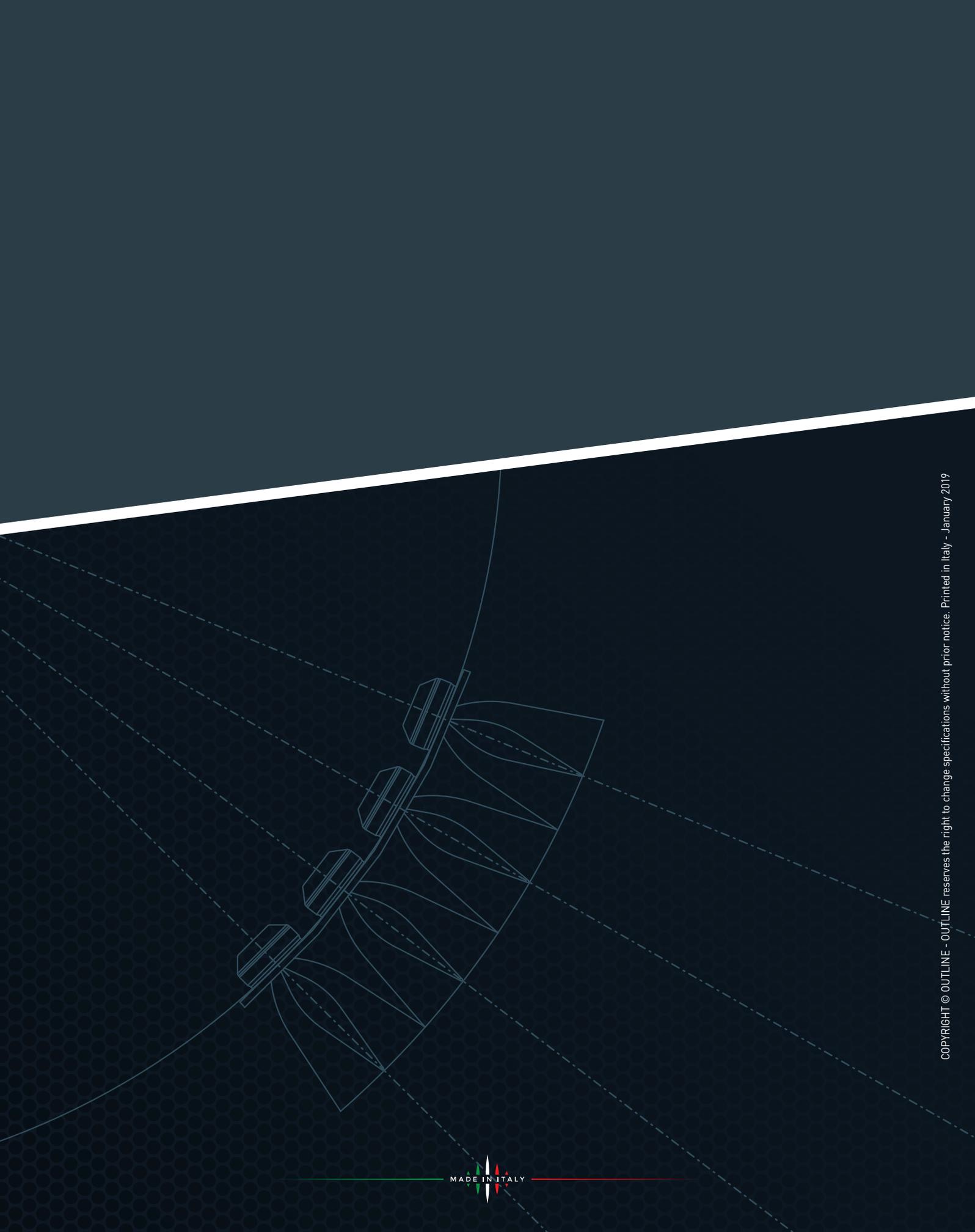
PERFORMANCE SPECIFICATIONS

Nominal Dispersion	80° x 60° (H x V)
Continuous SPL Output*	130 dB SPL
Maximum SPL Output*	140 dB SPL
Frequency Response -10 dB	50 Hz – 20 kHz
Operating configuration	Mono-/Bi-amplified
Impedance Low (Nom/Min)	8 Ω / 6.8 Ω
Impedance Coaxial (Nom/Min)	8 Ω / 7.2 Ω
Watt AES Low (Continuous/Peak)	600 W / 2400 W
Watt AES Coaxial (Continuous/Peak)	500 W / 2000 W

* calculated using +10 dB Crest Factor signal @ 1 m, half space

PHYSICAL

Component Low	1 x 15" bass-reflex loaded woofer
Component Mid-Low (coaxial)	1 x 15" bass-reflex loaded woofer
Component High (coaxial)	3" coaxial rotatable moulded horn-loaded compression driver
Connectors	8 Pole parallel barrier strip
Cabinet Material	Baltic birch plywood
Cabinet Finish	WP elasto-plastic coated
Grill	Epoxy powder coated
Installation Points	11 x M8 threaded points Smart Fix Rail system
Pole mount	35 mm socket
Handles	8 handles
Height	940 mm – 37"
Width	480 mm – 18 7/8"
Depth	480 mm – 18 7/8"
Weight	42 kg – 92.6 lb



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