

# WPC

## Optimised Line Array – Three-way, bi-amp line array element



### Features

- Compact line array
- Scalable resolution for advanced array control
- External, dedicated, multi-channel Class D amplification
- Industry-leading DISPLAY software interacts with DSP for highly-accurate results
- Fast, integral 3-point flying systems for up to 16 enclosures
- Side and rear handles for ease of handling and setting splay angles
- 100° horizontal constant directivity pattern control

### Applications

- Touring sound reinforcement for small and medium-size venues
- Fixed installations in concert halls, theatres, ballrooms and HoW
- Sports stadium and arena installations
- Corporate AV events

While Martin Audio's multi-cellular MLA technology represents the ultimate in coverage control, with individually powered and processed cells within each enclosure, the scalable resolution of WPC offers greatly improved coverage consistency and control compared to a standard line array and provides a flexible pathway to advanced array control.

The WPC is a new breed of medium-format optimised line array which brings innovative acoustic design, ultra-high performance and coverage consistency to a wider range of users, applications and budgets than previously possible. A three-way, bi-amp system, it features horn-loaded low-frequency, mid and HF sections to raise efficiency and increase output. Its high efficiency acoustic design can equal or outperform larger, direct radiator systems — a 12-box array will throw beyond 60 metres (200ft) and deliver impressive rock levels to a 5000-seat venue, saving on truck space and weight.

The WPC's low frequency section consists of 2 x 10" (250mm) neodymium drivers in a Hybrid® configuration which marries the benefits of horn and reflex loading. Each driver is slot-loaded into a short horn to give a high sensitivity of 103dB @ 1m/2.83V, while the rear of the driver is reflex-loaded to extend the LF output. The punch and low-frequency extension produced from such a small enclosure volume are remarkable.



Mid and HF horns are physically separate — a key factor in the WPC's exemplary 100° horizontal constant directivity dispersion pattern. The midrange horn design utilises 2 x 5" (125mm) neodymium drivers to produce a high SPL of 109dB @ 1m/2.83V, while the HF section employs 4 x 0.7" (19mm) exit neodymium compression drivers which feed 4 individual horns. Use of multiple small HF drivers instead of a more traditionally-used large format compression driver results in less distortion and a more extended HF response.

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## WPC – system example with variable resolution

	WPC S36 1 Box Resolution	WPC S36 2 Box Resolution	WPC S36 3 Box Resolution
<b>Top Box</b>	WPC	WPC	WPC
<b>Quantity</b>	24	24	24
<b>Subwoofer</b>	SX218	SX218	SX218
<b>Quantity</b>	12	12	12
<b>Amp</b>	iK42	iK42	iK42
<b>Quantity</b>	15	9	7



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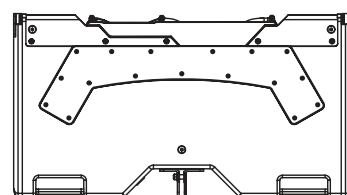
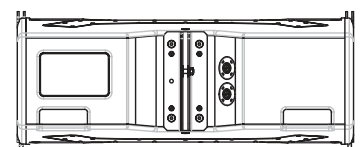
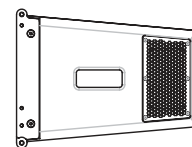
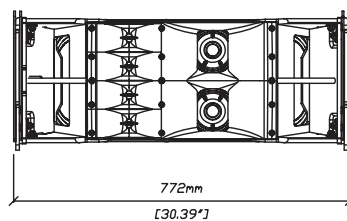
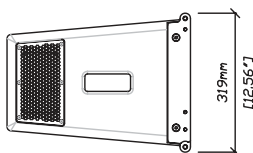
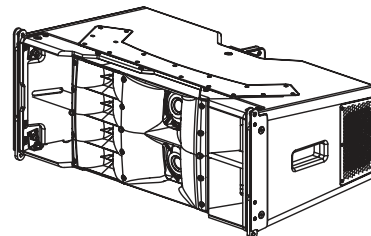
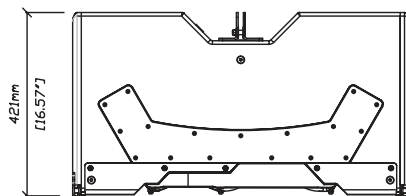


### Technical Specifications

TYPE	Three-way, bi-amp line array element
FREQUENCY RESPONSE (5)	65Hz-18kHz $\pm$ 3dB
DRIVERS	
LF	2 x 10" (250mm)/2.5" (63mm) voice coil, long excursion, vented pole, neodymium magnet drivers, Hybrid® slot-horn loaded
MF	2 x 5" (125mm)/1.5" (38mm) coil, neodymium magnet drivers, horn loaded
HF	4 x 0.7" (19mm) exit neodymium magnet compression drivers, horn loaded
SYSTEM AMPLIFIER	iKON iK42
SYSTEM RESOLUTION	1 to 3 enclosures per amplifier channel
MAXIMUM SPL (9)	135dB peak
NOMINAL IMPEDANCE	LF: 8 ohms, MF + HF: 8 ohms
DISPERSION	100° horizontal (-6dB), 130° horizontal (-10dB) 10° vertical
CROSSOVER	440Hz active, 4.4kHz internal passive
ENCLOSURE	Vertical trapezoid with 5° wall angle, multi-laminate birch and poplar-ply construction
FINISH	Black textured paint
PROTECTIVE GRILLE	Black HEX perforated steel
CONNECTORS	2 x NL4 type
PIN CONNECTIONS	LF: 1+/-, MF + HF: 2+/-
FITTINGS	3-point rigging system 2 x side pocket handles 2 x rear grip handles
FLOWN ARRAY MAXIMUM DIMENSIONS	16 enclosures in single array (W) 772mm x (H) 319mm x (D) 421mm (W) 30.4in x (H) 12.6in x (D) 16.6in
WEIGHT	35kg (77.1lbs)
ACCESSORIES	Install flying frame Touring flying frame Flying Pin

#### Notes

- (1) Measured on-axis in half (2pi) space at 2 metres, then referred to 1 metre.
- (2) AES Standard ANSI S4.26-1984.
- (3) Measured in half (2pi) space at 2 metres with 1 watt input, using band limited pink noise, then referred to 1 metre.
- (4) Measured in half (2pi) space at 2 metres using band limited pink noise, then referred to 1 metre.
- (5) Measured on-axis in open (4pi) space at 2 metres, then referred to 1 metre.
- (6) Measured in open (4pi) space at 2 metres with 1 watt input, using band limited pink noise, then referred to 1 metre.
- (7) Measured in open (4pi) space at 2 metres using band limited pink noise, then referred to 1 metre.
- (8) Measured in open (4pi) space at 2 metres with 2.83v input, using band limited pink noise, then referred to 1 metre.
- (9) Calculated at 1 metre.
- (10) Measured in half (2pi) space at 2 metres with 2.83V input, using band limited pink noise, then referred to 1 metre.



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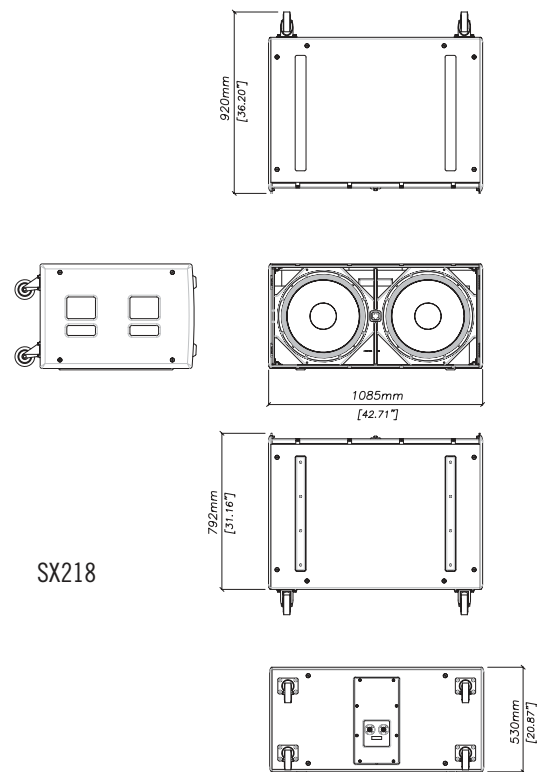
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### Technical Specifications

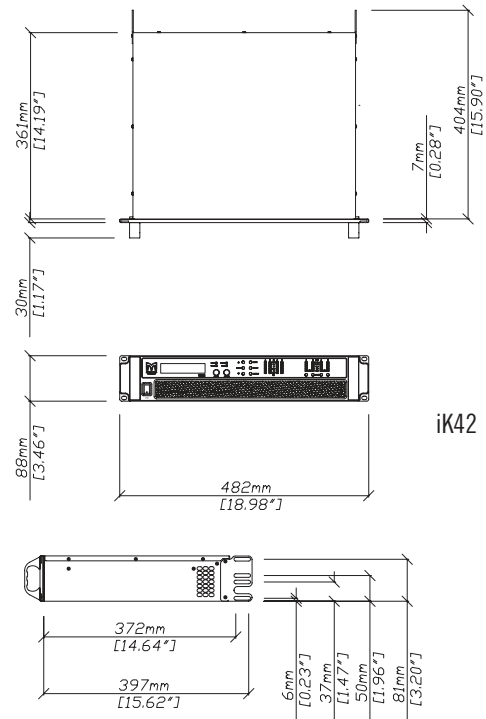
#### SX218 Subwoofer

TYPE	Dual-driver, direct radiating subwoofer
FREQUENCY RESPONSE (1)	35Hz – 150Hz ±3dB, -10dB @ 30Hz
DRIVER	2 x 18" (460mm)/4" (100mm) voice coil, long excursion, ferrite magnet, waterproof cone
RATED POWER (2)	2000W AES, 8000W peak
SYSTEM AMPLIFIER	iKON iK42, iK81
SENSITIVITY (10)	105dB
MAXIMUM SPL(9)	144dB peak
NOMINAL IMPEDANCE	2 x 8 Ohms
DISPERSION (-6dB)	Omnidirectional/or Cardioid (paired)
ENCLOSURE	Multi-laminate birch/poplar ply
FINISH	Textured black paint
PROTECTIVE GRILLE	Black perforated steel
CONNECTORS	2 x NL4
PIN CONNECTIONS (INPUT)	LF1: 1+, 1- LF2: 2+, 2-
PINS CONNECTIONS (LINK)	LF1: 1+, 1- LF2: 2+, 2-
FITTINGS	Two skids on base, with mating channels on top Four rear-mounted 100mm (4in) castors 24 x M10 mounting points 4 x bar handles, 2 on each side 4 x fittings for optional transit cover
DIMENSIONS (INCL SKIDS)	(W) 1085mm x (H) 537mm x (D) 792mm (920mm including castors) (W) 42.7in x (H) 21.1in x (D) 31.2in (36.2in including castors)
WEIGHT	102kg (225lbs)
ACCESSORIES	Transit cover



#### iK42 Amplifier

<b>General</b>	
TYPE	Four-channel Class D amplifier
POWER OUTPUT	4 x 5000W into 2 ohms, all channels driven 4 x 3000W into 4 ohms, all channels driven 4 x 1500W into 8 ohms, all channels driven
DIGITAL SIGNAL PROCESSING	96kHz DSP on all inputs and outputs
COOLING	Dual vari-speed fans, front-to-back airflow
MAXIMUM AMBIENT TEMPERATURE	40°C (104°F)
<b>Audio Inputs/Outputs</b>	
ANALOGUE IN/LINK (4 CHANNELS)	4 x female, 4 x male Neutrik™ XLR
ANALOGUE INPUT IMPEDANCE	20kΩ balanced to ground
MAXIMUM ANALOGUE INPUT LEVEL	+20dBu
NOMINAL SYSTEM GAIN	32dB
AES3 IN/LINK (2 CHANNELS)	1 x female, 1 x male Neutrik™ XLR, balanced
DANTE™ (4 CHANNELS)	2 x shielded RJ45, primary and secondary
AMPLIFIER OUTPUTS	4 x Neutrik Speakon™ NL4
<b>Control and Monitoring Network</b>	
PROTOCOL	Ethernet
CONTROL APPLICATION	Martin Audio VU-NET™
<b>Power Supply</b>	
TYPE	High performance Series Resonant
AC INPUT OPERATING RANGE	85 – 240V ~ AC, 47 - 63Hz
MAINS INRUSH CURRENT	6A at 115V, 12A at 230V (max for <10ms)
MAINS CONNECTOR	Neutrik 32A Powercon™
<b>Physical</b>	
DIMENSIONS	(W) 483 x (H) 2U/89mm x (D) 357mm (W) 19in x (H) 2U/3.5in x (D) 14.1in incl handles and optional rear support
WEIGHT	12.5kg (27.5lbs)



#### Trade Descriptions Act

Due to Martin Audio's policy of continuing improvement, we reserve the right to alter these specifications without prior notice. Martin Audio is committed to refining state of the art sound reinforcement, combining in-depth product and field applications research with advanced manufacturing techniques. Every Martin Audio product is built to the highest manufacturing standards and rigorously tested to ensure that it meets the performance criteria specified in the design.

Martin Audio Ltd  
Century Point, Halifax Road, High Wycombe  
Buckinghamshire HP12 3SL, England

Telephone: +44 (0) 1494 535 312  
Email: [info@martin-audio.com](mailto:info@martin-audio.com)

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### SPL Comparisons Vs Competitors

- The core measurement of SPL is measured differently by manufacturers
- Simply put, many competitors now quote figures based upon a crest factor of 4 (12dB peak vs continuous) and often use the highest sensitivity frequency band (typically HF) to derive their figures given that at LF, where the most power is required, even large amplifiers can't swing twice the peak output volts demanded by a doubling in crest factor from 2 to 4.
- Martin Audio quotes the AES industry standard crest factor of 2 (6dB peak vs continuous) and we ensure our partnering amplifiers are capable of delivering the volts and power to achieve our specs.
- Therefore, if people reading specifications do not understand how SPL is measured and the implications it would appear incorrectly that some competitors have significantly higher SPL.
- While absolute comparable data is not available, some element of logic can be applied for the following products to bring a more realistic comparison.

Product	Peak at Crest factor 2 (6dB)	Peak at Crest factor 4 (12dB)
Martin Audio WPL broadband	139 dB*	145 dB**
Martin Audio WPL HF band	145dB*	151 dB**
d&B KSL12	138 dB**	144dB*
Adamson E12	139 dB**	145dB*
JBL VTXA12	140 dB**	146 dB*
L-Acoustics K2	141 dB**	147 dB*
Martin Audio WPC broadband	135dB*	141dB**
Martin Audio WPC HF band	135dB*	141dB**
d&B V12	136dB**	142dB*
Adamson S10	135dB	141dB*
JBL VTXV20 (Active)	130 / 133 / 142 dB*	136/139/148 dB**
L-Acoustics Kara	135dB**	141dB*
Martin Audio WPM broadband	130dB*	136dB**
Martin Audio WPM HF band	130dB*	136dB**
d&B T10	124/126**	130 (LF) / 132dB (HF)*
Adamson S7 (2x7")	132dB**	138dB*
L-Acoustics KIVAII	132dB**	138dB*

\*Manufacturer quoted

\*\*calculated