

S O U N D P R O J E C T S

PRODUCT INFORMATION

SP4 SYSTEM



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SP4 SYSTEM

The **SOUND PROJECTS 4** system is composed of only two different types of cabinets and yet combines maximum efficiency with true versatility, compactness and expandability.

The advantages of **self-powered** system design are constantly employed (already since 1986) to achieve maximum efficiency through optimal cooperation of the different components, e.g. speakers, horns, filters electronics.

Ease of use and ergonomics are key features in all SOUND PROJECTS designs. Only real necessities are employed in a SP system. No gimmicks. True PLUG AND PLAY without crash sensitive hardware, often found in digital equipment. Minimal cabling, no complimentary control units, and virtually no equalising are necessary.

The full range **SP4 Diamond** with it's accompanying subwoofer, the **SP4-15**, are designed for both medium and large sized configurations. A **single stack** set-up already provides enough SPL for a thousand-headed audience.

An **SP4 Diamond** stacked on top of an **SP4-15** sub low is instantly positioned at the right height. The high frequency horn will be well above 2 meter, so forget about podium segments, flight cases or beer crates to bring your stack to size!

The SP4 system is endlessly expandable and, with its revolving high/mid horn, easily converts to a **vertical array of up to 16 SP 4 Diamonds**.

The **flying hardware** of the SP4 is designed in compliance with the German BGV C1 rules for the prevention of accidents.

Master Blaster's philosophy to provide systems with virtually flat frequency response enables the sound engineer to create his/her specific sound with a minimal effort. For most programme material the power balance between one top and one bass will be just right, although in single stack set-ups one could prefer to use double bass cabinets. Apart from taste this is of course largely dependent on programme and venue.

To guarantee maximum reliability and noiseless (hiss free) operation each driver of the SP4 system is powered by its dedicated 600W MA4 power amplifier. This unique and proprietary design is an integrated combination of amplifier, filter section and protection circuitry.

The high/mid section of the SP4 Diamond cabinet is based on a 1.5" and a 10" mounted on a shared wave-guide. **This dedicated wave-guide can easily be rotated, to change between stack and line-array set-up.**

Despite of the wide horizontal dispersion it 's capable of generating an impressive 134dB SPL endowing the SP4 with excellent long-throw capabilities. The low/mid is provided by a low compression horn-loaded 15".

The **SP4-15** is a port loaded design incorporating three of our proprietary 15" long excursion drivers that can make the same volume displacement as 21" drivers and yet generate the punch of a 15". Although physically matching the **SP4-Diamond** at front view the **SP4-15** gains a lot of volume with its square cabinet design and slightly deeper back. It's because of this volume that the **SP4-15** can provide frequencies down to 25Hz.

MA4 POWER AMPLIFIER CONTROL MODULE

MA4 power amplifier control module

The MA4 power amplifier module incorporates power supplies for the controllers and MA4 electronics, soft power up, filter sections, three or four amplifiers (product dependent) and protection circuitry. The integral network of these different sections are designed to perform with minimal number of components yet acquiring the highest efficiency.

The step-less speed silent fan cooler avoids unwanted cooling noises to the limit.

The amplifier module is available in different mains voltages (100V, 115V, 230V)

Signal conditioning

The DALC (Dual Audio-logic Level Control) audio processing unit of the MA4 power amplifier module incorporates multiple analogue VCA techniques with high accuracy, headroom and dynamic range. The DALC is a dual operating RMS based gain riding circuit which maintains the tonal balance of the sound as perceived by the human ear, even at very high levels. Filter peaking, which could limit headroom and often encountered with commonly used feedback-filters, is avoided through use of constant-Q filter sections.

MA4 power amplifiers

The multiple channel amplifiers in the MA4 module is a low feedback, low distortion design with overheating protection. It reveals good stability upon spontaneous loads along with excellent protection handling of fast rise time signals and excessive signal conditions.

Power Supply Unit

The PSU of the MA4 power amplifier module comes with soft power up, to enable multiple cabinet switch-on's at once without excessive transformer inrush current.

When an over voltage is detected the mains input will automatically be shortcut (high-voltage clamping) to make sure the outside mains fuse (for instance from a generator) detects the problem, and shuts down.

Controls and connectors

Mains power LED indicator (Green)

Signal present LED indicator (Yellow)

LF protection active (Red)

HF protection active (Red)

Input 3 pin XLR (female), balanced

Signal thru XLR (male)

Protection circuits:

* Mains inrush current limiter

* Over-voltage protection

* Self resetting over temperature protection

* Temp. and signal dependent DC fan

* Speaker overheating and fusing current protection

* Delayed speaker switch-on

Data SP4-Diamond

Amplifier(s): 3x MA4-technology

RMS output:

1 x 600W @ 4 ohms

2 x 300W @ 8 ohms

Frequency response (-3dB): 80 Hz - 20kHz

Max. SPL continuous: 136dB@1m

Calculated peak/long-term: 139dB@1m

Coverage angle: 85° H, 30° V

Drivers: 15",10",1"

Transient output: 1250W

Crossover 4th order: 320/1400Hz

Low-pass 4th order: -

Filter subsonic: 30Hz, 2nd order

Filter ultrasonic: 20.000Hz 1st order

Mains voltage: 210 - 240V (50/60 Hz)

100 V, 110 V optional

Data SP4-15

Amplifier(s): 3x MA4-technology

RMS output:

3 x 600W @ 4 ohms

Frequency response (-3dB): 25 Hz – 80 Hz

Max. SPL continuous: 132dB@1m

Calculated peak/longterm: 135dB@1m

Coverage angle: omnidirectional

Drivers: 3x15"

Transient output: 1500W

Crossover 4th order: -

Low-pass 4th order: 80 Hz

Filter subsonic: 30Hz, 2nd order

Filter ultrasonic: -

Mains voltage: 210 - 240V (50/60 Hz)

100V, 110V optional

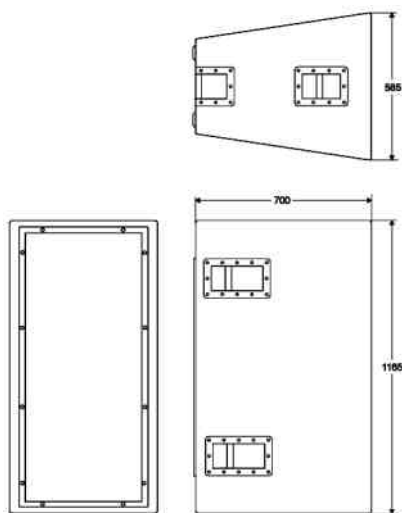
THE SP4-DIAMOND LOUDSPEAKER

THE SP4-15 LOUDSPEAKER

SP4-Diamond loudspeaker

The SP4-Diamond loudspeaker cabinet is a full range, three-way fully horn-loaded enclosure containing a 15" Low/Mid driver on a folded horn, and a 10" MF a 1.5" HF driver combined on a proprietary rotating horn that optimises the air load and smoothly blends the radiation pattern of the two transducers. Consequentially a longer 'throw' can be achieved since our proprietary and proven horn designs endows the SP4-Diamond with the perfect combination of efficiency and radiation pattern control.

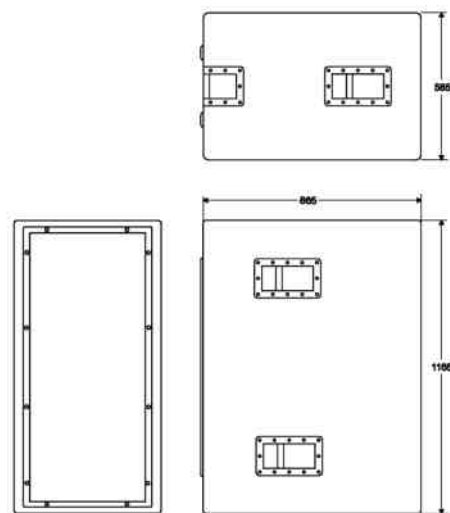
The enclosure is constructed of 13-layer 'ecoplex' (poplar) plywood and is covered with sturdy industrial automotive carpet (impact resistant paint finish optional).



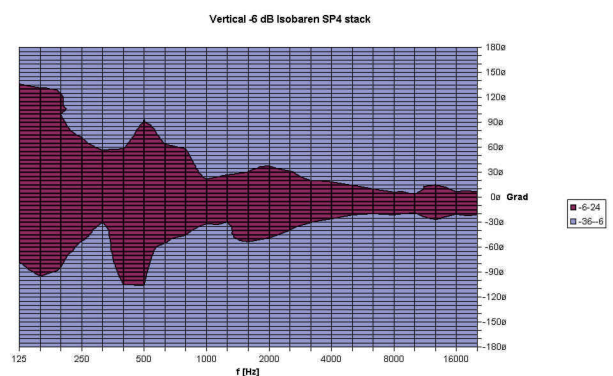
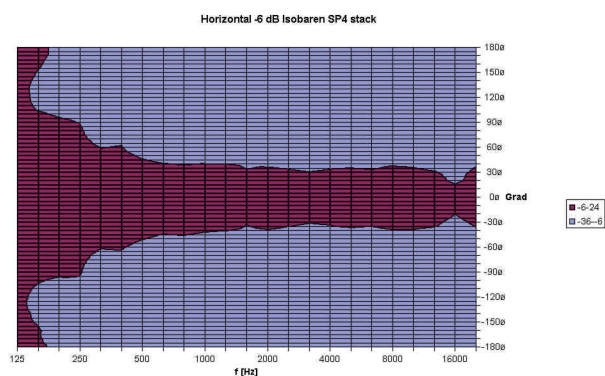
SP4-Diamond, cabinet dimensions in mm.

SP4-15 Sub-low loudspeaker

The SP4-15 physically matches the SP4-Diamond from the front view and is developed to augment and extend the low-end of the top cabinet to the deep sub you can feel. The cabinet is a bass-reflex concept containing three 15" drivers powered by separate 600W amplifiers. The enclosure is constructed of 13-layer birch plywood for extra stiffness and impact rigidity.



SP4-15, cabinet dimensions in mm.



RIGGING ACCESSORIES

The SP4-Diamond provides numerous rigging possibilities. The enclosure comes with the necessary cabinet hardware for the V-rig™ Light (LT) Flying System. This Light version of SOUND PROJECTS proprietary flying system can hold up to 6 cabinets in a vertical array designed in compliance with BGV C1 rules for prevention of accidents.

The front of the cabinet is connected by means of easy accessible hinges, keeping the fronts of the cabinets at the ideal plane in the array.

The V-rig™LT connecting bar can make 0-, 9-, 15- and 18-degree angles between the cabinets. It is easily folded and locked inside the rear cabinet hardware for storage and transport.

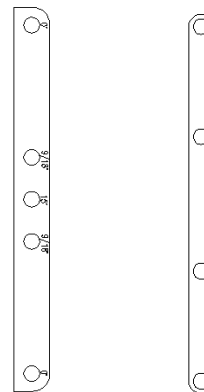


V-rig™ Flying Hinge for connection of cabinet front side, used both with V-rig™ LT and HD.

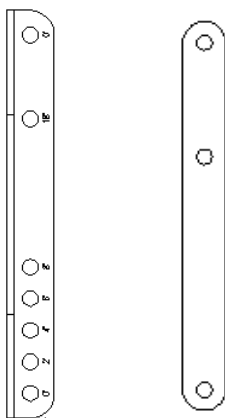
For those situations where more than 6 cabinets in an array are needed, a special Heavy-Duty (HD) upgrade rigging system for the rear of the cabinets is developed. This V-rig™ HD system can hold up to 12 cabinets when applying the BGV C1 rules (Safety Factor 12). Please refer to the V-rig™ manual for further details.

The V-rig™ HD connecting bar at the rear of the cabinet allows 0-, 2-, 4-, 6-, 8-, and 18-degree angles between the cabinets. After use the connecting bar simply folds into the rear cabinet hardware for easy transportation.

The same weight load limit (WLL) is applied for the Light and Heavy-Duty truss-module, e.g. 6 and 12 cabinets respectively.



V-rig™LT standard cabinet hardware with angle adjustment holes.



V-rig™HD upgrade cabinet hardware with angle adjustment holes.

ACCESSORIES

An optional sturdy, wooden Protection Cover with Quick-locks protects the SP4 against any unexpected impacts with wheels from other cabinets, other equipment in the truck etc. during transportation and storage. Holes in the cover enable quick testing of the speakers when returned from a job, without having to remove it.

The optional SP4 dolly/protection cover with swivel castors has Quick-locks and transports the SP4-Diamond with the front of the cabinet to the floor. The dolly is a necessary item when using V-rig™ HD flying hardware for cabinet transportation.



Easy stackable SP4 dollies for use with SP4-Diamond and SP4-15.