

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

## PRODUCT INFORMATION

### SP3-90



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## SP3-60

The **SOUND PROJECTS 3-90** is a full-range self-powered sound reinforcement system with a dispersion angle of 90 degrees horizontal and 40 degrees vertical.

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 **SP3-90** consists of a 15-inch mid/bass, 10-inch mid driver and a 1-inch HF driver loaded on a constant directivity horn with 90 degrees horizontal and 40 degrees vertical dispersion. Together with the accompanying subwoofers, the **SP2-15** or **SP3-15**, this system is capable of generating tremendous SPL in small to medium sized configurations.

The **flying hardware** of the SP3, **Quick-rig™**, is designed in compliance with the German BGV C1 rules for the prevention of accidents. (see **Quick-rig™** documentation for details).

SOUND PROJECTS' 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 **SP3-90** and one **SP3-15** sub-low will be just right, although in single stack set-ups one could prefer to use double **SP2-15** sub-low cabinets. Apart from taste this is of course largely dependent on programme and venue.

Dedicated 600W MA4 power amplifiers feed each driver of the SP3-90 system, guaranteeing maximum reliability and noiseless (hiss free) operation. This unique and proprietary design is an integrated combination of amplifier, filter section and protection circuitry.

The **SP-215** and **SP3-15** are port loaded sub-low designs incorporating two and three of our proprietary 15" long excursion drivers respectively that can make the same volume displacement as 21" drivers and yet generate the punch of a 15".

## 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 is 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

- \* Temperature and signal dependent DC fan

- \* Speaker overheating and fusing current protection

- \* Delayed speaker switch-on

### Data SP3-90

Amplifier(s): 3 x MA4-technology

RMS output: 3 x 600W @ 4 ohms

Frequency response (-3dB): 40 Hz - 20kHz

Max. SPL continuous: 124dB @ 1m

Calculated peak/long-term: 131dB@1m

Coverage angle: 90H x 40V degrees

Drivers: 1 x 15", 1 x 10", 1 x 2"

Transient output: 1250W

Crossover 4th order: -

Low-pass 4th order: -

Filter subsonic: 40Hz, 4th order

Filter ultrasonic: 20.000Hz 1st order

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

100 V, 110 V optional

### Data SP2-15

Amplifier(s): 3x MA4-technology

Rated output power: 3 x 600W @ 4 ohms

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

Max. SPL continuous: 129dB@1m

Calculated peak/long-term: 135dB@1m

Coverage angle: omni-directional

Drivers: 2x15"

Transient output: 1200W

Crossover 4th order: -

Low-pass 4th order: 80 Hz

Filter subsonic: 30Hz, 2nd order

Filter ultrasonic: -

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

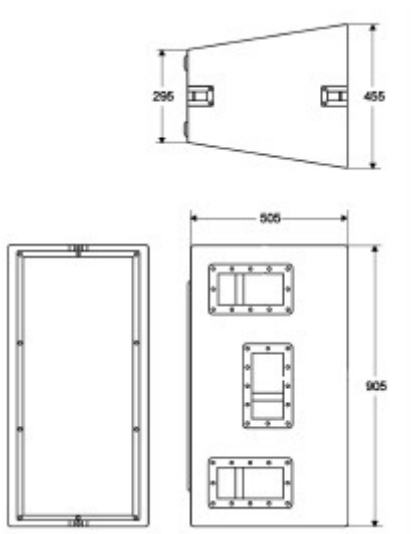
100V, 110V optional

# THE SP3-90 LOUDSPEAKER

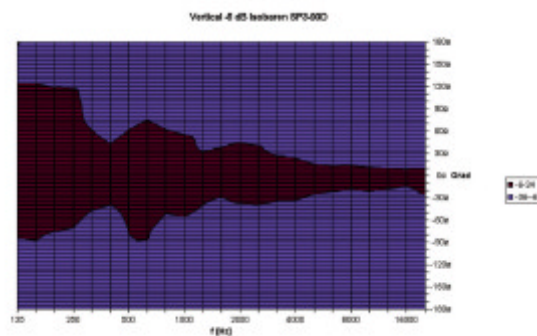
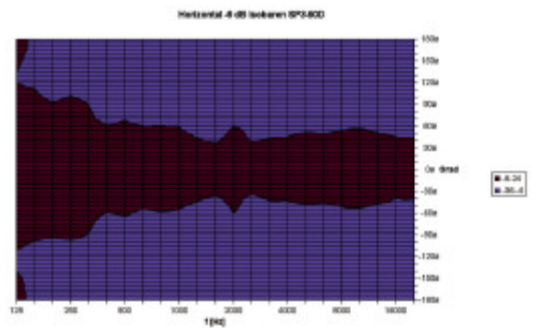
## SP3-90 loudspeaker

The SP3-90 loudspeaker cabinet is a full-range, two-way horn-loaded enclosure holding one 15" mid/bass, one 10" mid driver and one 1" HF driver on a CD horn that optimises the air load and smoothly blends the radiation pattern of the transducers. With a coverage angle of 90 degrees horizontally and 40 degrees vertically ultra high SPL is realized. Consequentially a longer 'throw' can be achieved since our proven horn designs endow the SP3-90 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.



SP3-90, cabinet dimensions in mm.



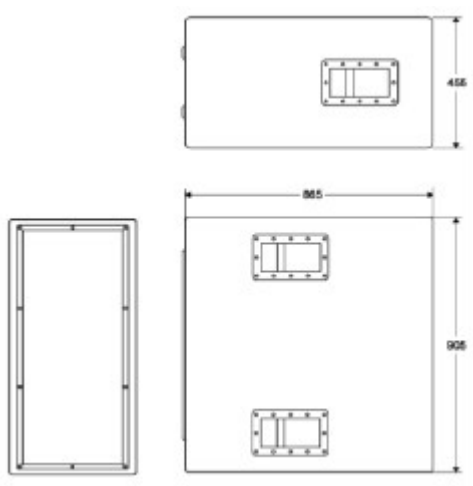
SP3-90, horizontal (top) and vertical (bottom) isobars

## THE SP2-15 SUB-LOW

### SP2-15 Sub-low loudspeaker

The SP2-15 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 two 15" drivers powered by separate 600W amplifiers.

The enclosure is constructed of 13-layer birch plywood for extra stiffness and impact rigidity.



SP2-15, cabinet dimensions in mm.

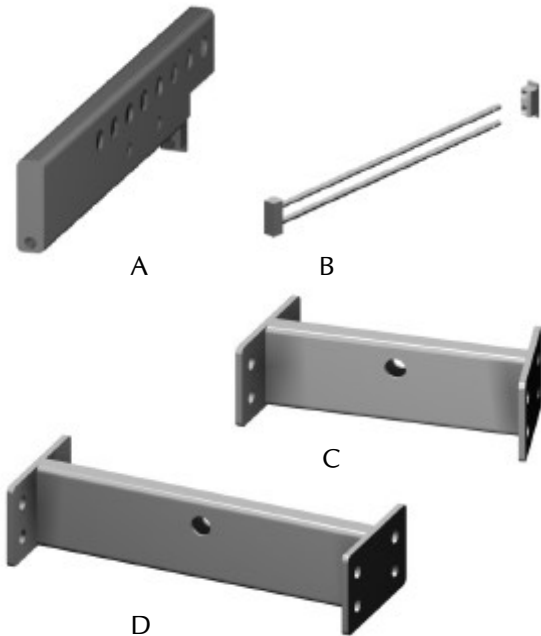
## QUICK-RIG™ FLYING HARDWARE

The SP3 enclosure comes with Quick-rig™ cabinet hardware. The Quick-rig™ flying system provides numerous rigging possibilities. The proprietary flying system can hold up to 360 kg (6 SP3 cabinets or up to 10 SP2 in a column), with a safety factor of 10. The truss-module allows SP2 and SP3 cabinets to be flown as a single or multiple column array. When used as a single column array the truss-module is accommodated with a 5T shackle to provide connection with lifting gear. Positioning the shackle to the back of the truss-module will slant the array to the front.

The Connecting Bar is used for those situations where more than one column is needed. Two types of connecting bars are available. The 18-

degree version for waved front configurations and the 0-degree version for flat front situations. The Q-pin is the brain behind the Quick-rig™ system, because only one connection per cabinet is needed. It is used for truss module-to-cabinet and cabinet-to-cabinet connection. Easy handling evidently shortens build-up times and can be done by just one person.

After positioning of the truss-module or cabinet on top of another cabinet the Q-pin is pushed through the cabinet hardware from the front to the back of the cabinet(s). At the backside the two legs of the pin will stick out just enough for the Q-pin block to slide over. Two locking pins, one for each leg, avoid the Q-pin block to slide back.



Quick-rig™ flying hardware. Trussmodule[A], Q-pin[B], Trussconnector 18-degrees[C] and 0-degrees[D].



Top view of three arrays with 18-degree truss-to-truss connecting bars.



Top view of three arrays with 0-degree truss-to-truss connecting bars.



Quick-rig™ flying example.