SOUND PROJECTS

PRODUCT INFORMATION

SP2 SYSTEM

SOUND PROJECTS
Jonkerweg 17-19
1217 PM Hilversum
The Netherlands
Phone +31 (0)35 6213233
Fax +31 (0)35 6215455

SP2 System

SOUND PROJECTS' **SP2** system combines maximum efficiency, true versatility, compactness and expandability in one twin-bin concept. The **SP2** system is designed for medium to small sized configurations. A double stack set-up already provides enough SPL for a audience of a few hundred people.

The **SP2** system is endlessly expandable, and interchangeable with SOUND PROJECTS **SP3** and **SP4** systems because of their compatible crossover positions.

The system is applicable in numerous situations, fixed or touring, ranging from bands to small theatres or churches and from acoustic instruments to dance acts. The **SP2** system is particularly useable at medium sized rooms, even with difficult room shapes.

Master Blaster's philosophy to provide systems with virtually flat frequency response enables the sound engineer to create his/her specific sound with minimal effort. For most programme material the power balance between one **SP2** top and one **SP15** sub-low will be just right, although in single stack set-ups one could prefer to use **SP2-15** bass cabinets instead. Apart from taste this is of course largely dependent on programme and venue.

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

Ease of use has been a key feature in all SOUND PROJECTS designs. Therefore nothing but the necessities are employed in a SOUND PROJECTS system. 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 **SP2 Mounting Bracket** is designed in compliance with the German BGV C1 rules for the prevention of accidents and can hold a cabinet in a large number of angles. For larger numbers of cabinets or combinations with **SP3** cabinets a proprietary rigging system, **Quick-rig™**, can be employed. Cabinet hardware for this system is standard in all SP2 top enclosures.

To guarantee maximum reliability and noiseless (hiss free) operation each driver of the **SP2** system is powered by its dedicated 300W η-**max®** power amplifier. This unique and proprietary design is an integrated combination of amplifier, filter section and protection circuitry.

The **SP2** top cabinet is based on a 1″ and a 12″ mounted on a shared wave-guide. A switch at the back of the cabinet let's you choose between full-range or high-pass mode. This clever option makes the **SP2** top to a very compact, stand-alone loudspeaker, yet becomes a very powerful front of house system, when switched to high pass and combined with a sub-low.

Despite of the wide horizontal dispersion the **SP2** top cabinet is capable of generating an impressive 123dB SPL and even 125dB SPL when switched to high pass.

The **SP2-15** is a self-powered, port loaded design incorporating two 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″.

The specially shaped port enables the **SP2-15** to achieve 129dB SPL continuous over the frequencies ranging from 30-80 Hz.

η-MAX® POWER AMPLIFIER CONTROL MODULE

η-max® power amplifier control module

The η-max® power amplifier module incorporates power supplies for the controllers and η-max® electronics, soft power up, filter sections, two amplifiers and protection circuitry. The integral network of these different functions is designed to perform with minimal number of components yet acquiring the highest efficiency. The amplifier module is available in different main voltages (100V, 115V, and 230V)

Signal conditioning

The DALC (Dual Audio-logic Level Control) audio processing unit of the η-max® power amplifier module incorporates multiple analogue VCA techniques with high accuracy, headroom and dynamic range. The SALC 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.

η-max® power amplifiers

The bi-channel amplifier in the η-max 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 η-max® power amplifier module comes with soft power up, to enable multiple cabinet switch-on's at once without excessive transformer inrush current.

Controls and connectors

Mains power LED indicator integrated
Full-range / High pass LED indicator (Green)
LF protection active (blink green)
HF protection active (blink green)
Input 3 pin XLR (female), balanced
Signal thru XLR (male)
Protection circuits:
- Mains inrush current limiter
- Over-voltage protection
- Self resetting over temperature protection
- Speaker overheating and fusing current protection
- Delayed speaker switch-on

Data SP2

Amplifier(s): 2x η-max® technology
RMS power:
1 x 300W @ 6 ohms
1 x 300W @ 16 ohms
Protection threshold: +4dBU
Frequency response (-3dB): 40/80 Hz - 20kHz
Max. SPL cont.: 123dB@1m
Calculated peak/longterm: 126dB@1m
Coverage angle: 90° H, 40° V
Drivers: 12",1"
Transient output: 400W
Crossover 4th order: 1600Hz
Low-pass 4th order: -
Filter subsonic: 40/80Hz, 4th order
Filter ultrasonic: 20.000Hz 1st order
Mains voltage: 210 - 240V (50/60 Hz)
                 100 V, 110 V optional

Data SP15

Amplifier(s): η-max® technology
RMS power:
1 x 600W @ 4 ohms
Frequency response (-3dB): 30 Hz – 80 Hz
Max. SPL continuous: 123dB@1m
Calculated peak/longterm: 126dB@1m
Coverage angle: omni-directional
Drivers: 15"
Transient output: 600W
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

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 functions is designed to perform with minimal number of components yet acquiring the highest efficiency.

The intelligent silent fan cooler avoids unwanted cooling noises during programme silences.

The amplifier module is available in different main voltages (100V, 115V, and 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.

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 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: 132dB@1m
Calculated peak/long-term: 135dB@1m
Coverage angle: omni-directional
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
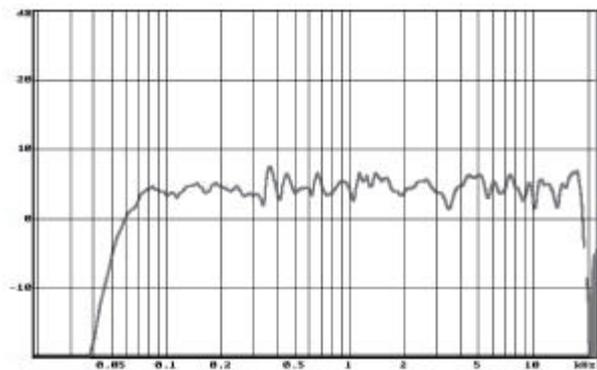
THE SP2 LOUDSPEAKER

SP2 loudspeaker

The SP2 top loudspeaker cabinet is a full range, two-way CD horn-loaded enclosure holding a 12" Low/Mid driver and a 1" HF driver mounted on a proprietary wave-guide that optimises the air load and smoothly blends the radiation pattern of the two transducers.
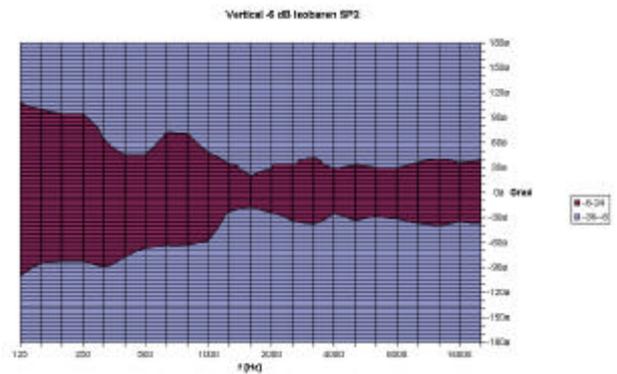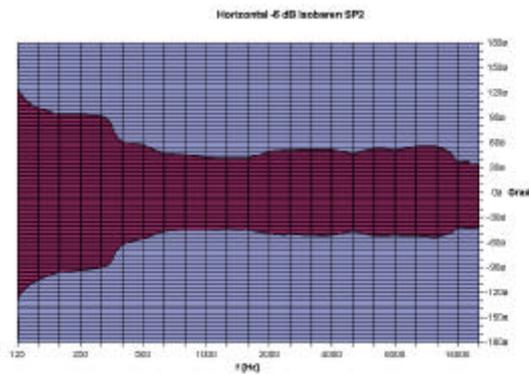
The enclosure is constructed of 13-layer 'ecoplex' (poplar) plywood and is covered with sturdy industrial automotive carpet (impact resistant paint finish optional).
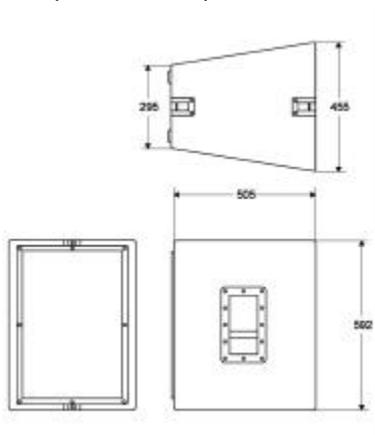
SP2 top, cabinet dimensions in mm.


SP2 top, frequency response standard.

THE **SP15** LOUDSPEAKER
THE **SP2-15** LOUDSPEAKER

SP15 Sub-low loudspeaker

The SP15 physically matches the SP2 top 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 a 15″ driver powered by a 600W amplifier.

The enclosure is constructed of 13-layer birch plywood for extra stiffness and impact rigidity.
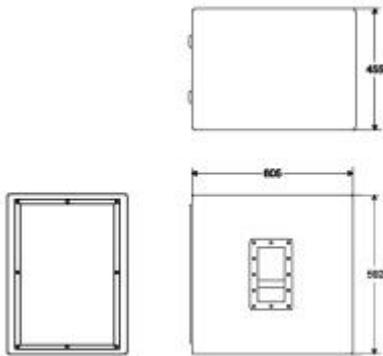
SP2-15 Sub-low loudspeaker

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.

SP15, cabinet dimensions in mm.
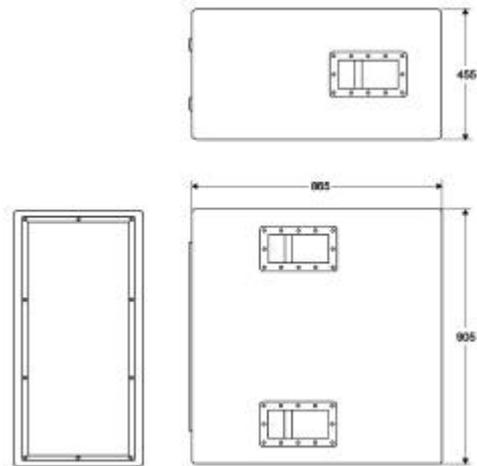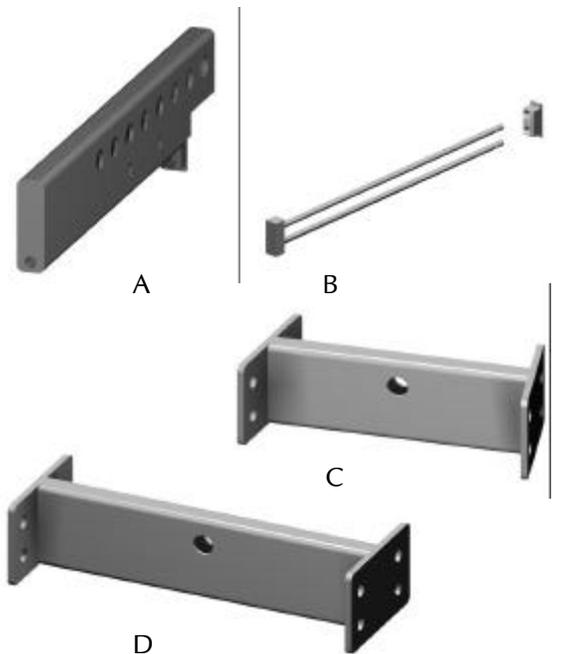
SP2-15, cabinet dimensions in mm.

QUICK-RIG™ FLYING HARDWARE

The SP2 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 were 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.

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

Quick-rig™ flying example.

ACCESSORIES

An optional Multipurpose Mounting Bracket is available for mounting of a single SP2 cabinet to wall, ceiling, trussing etc. The standard Quick-rig™ cabinet hardware is used to easily connect the mounting bracket to the cabinet. Once attached, the cabinet can rotate 360° in the horizontal plane and tilt approximately 80° up- and downwards.
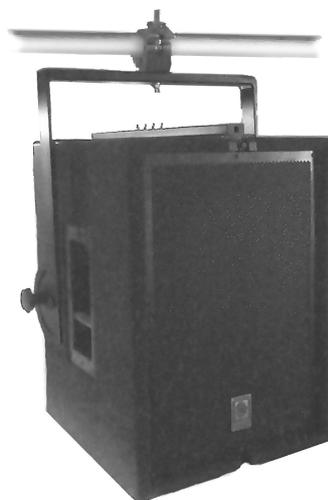
Easy-to-install SP2 Mounting Bracket