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since 1972*

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## User's manual

# S12WP

# NÍTID

*#purelynitid*

February 2023

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## **Safety Instructions**

- 1.** All safety instructions must be read before using this device.
- 2.** Keep and follow these instructions
- 3.** Heed all warnings
- 4.** The exclamation mark in the triangle indicates internal components which if replaced can affect safety.
- 5.** The lightning symbol within the triangle indicates the presence of dangerous uninsulated voltages.
- 6.** Only clean the device with a dry cloth.
- 7.** Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8.** Do not install the device near heat sources such as radiators, heaters or other heat-emitting elements.
- 9.** Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus
- 10.** The equipment must be repaired by qualified technical service personnel when:
  - A.** The mains supply cable is damaged, or
  - B.** Any object or liquid has damaged the device; or
  - C.** The equipment does not function normally or correctly; or
  - D.** The equipment has been exposed to the rain; or
  - E.** The chassis is damaged
- 11.** Disconnect the device in the case of electric storms or during long periods of disuse.
- 12.** **WARNING** – To reduce the risk of fire or electric shock, do not expose this device to rain or moisture
- 13.** The equipment shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the device.
- 14.** For hanging and installation, use manufacturer recommended accessories only.

## 1. INTRODUCTION

### 1.1. General

Amate Audio would like to thank you for your confidence in our NÍTID Series. We suggest you to carefully read the following instructions in order to obtain the best results in performance.

### 1.2. Features and presentation

#### S12WP

- Passive subwoofer
- NL4MP Speakon input & parallel output
- 1000 W program power
- Sensitivity 1 W / 1 m: 96 dB
- 12" woofer with 3" voice coil
- Nominal impedance 8Ω

## 2. CONNECTIONS

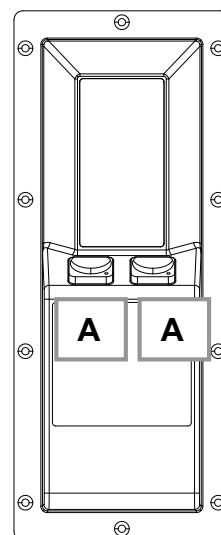
### 2.1. Connection description

A) **SPEAKON:** The S12WP uses two NL4MP Speakon terminals and is duly prepared for a perfect connection in a parallel system. Terminal Pins +1/-1 must be always used, disregarding the +2/-2 which are not internally connected. Respect always the polarity +/-.

Fig. 1. S12WP connectors



It is strongly recommended to use a two-conductor high quality wire, non-shielded and two-coloured. We recommend using a minimum section of 4 mm<sup>2</sup> for each conductor. Avoid long wire distances as they induce to important power and quality losses.

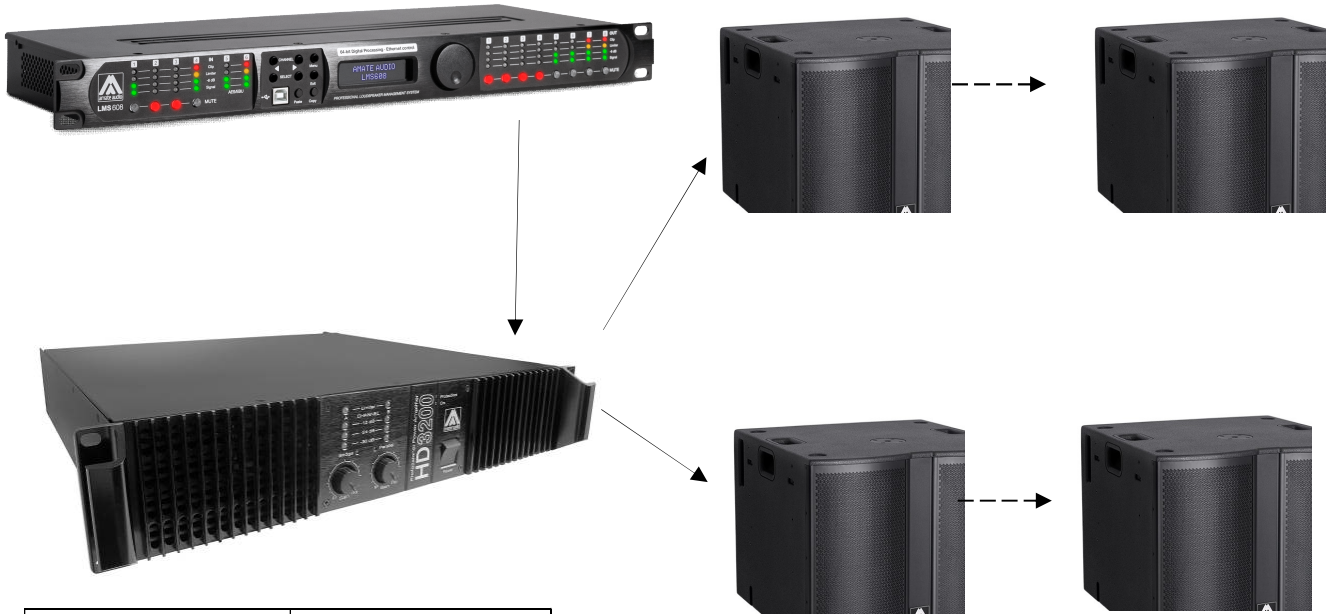


## 2.2. Recommended set-up for S12WP passive subwoofer

<b>Model</b>	LMS206 / LMS608
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<b>Model</b>	S12WP
<b>Impedance</b>	8Ω

<b>Model</b>	S12WP
<b>Impedance</b>	8Ω



<b>Model</b>	HD3200	
<b>Mode</b>	Stereo	Stereo
<b>Impedance</b>	8Ω	4Ω
<b>Program power</b>	1000W	1750W

<b>Model</b>	S12WP
<b>Impedance</b>	8Ω

<b>Model</b>	S12WP
<b>Impedance</b>	8Ω

One unit of HD3200 (in stereo mode) can feed up to four units of S12WP.



Fig. 2. S12WP configuration

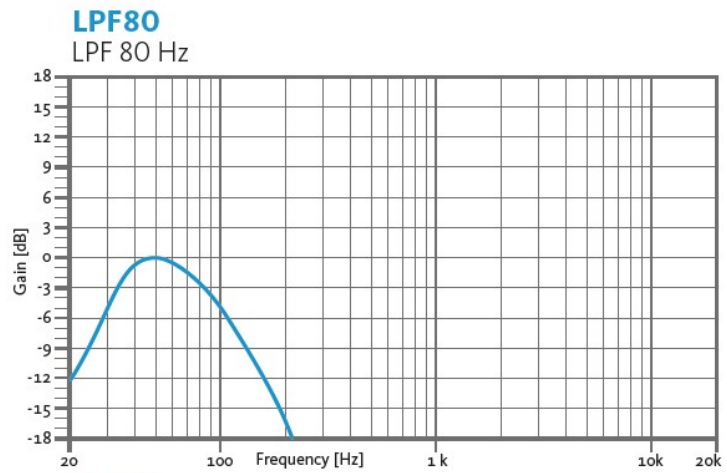
## 2.3. Recommended presets for S12WP

The S12WP can be used with an external LMS206 /LMS608 (digital signal processor).

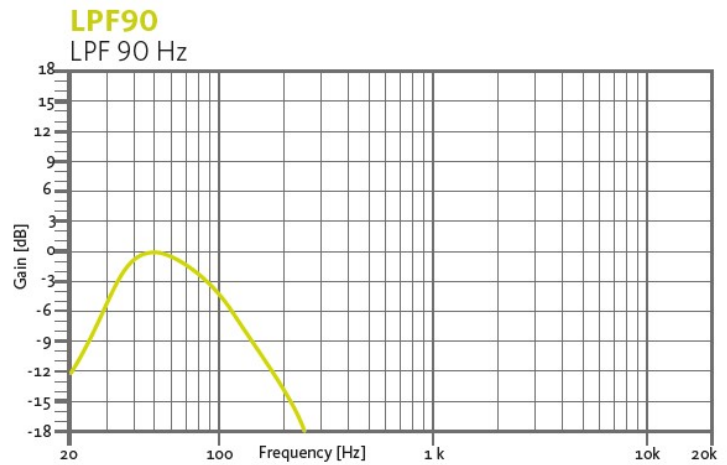
**ATTENTION:** When the S12WP is used in conjunction with the Full-range NÍTID S systems in XOVER HPF90 preset, the S12WP must operate in **positive polarity**.

When the S12WP is used in conjunction with the Full-range NÍTID S systems in FLAT, SPEECH, MONITOR presets, the S12WP must operate in **negative polarity**.

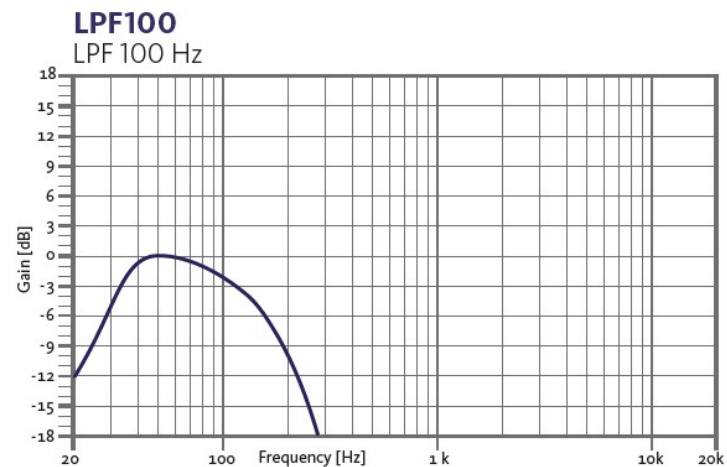
**LPF80**  
80 Hz low pass filter



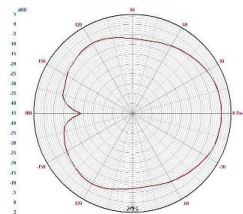
**LPF90**  
90 Hz low pass filter



**LPF100**  
100 Hz low pass filter



**CARD80/90/100**  
Cardioid polar pattern, with processing, delay and inverse polarity



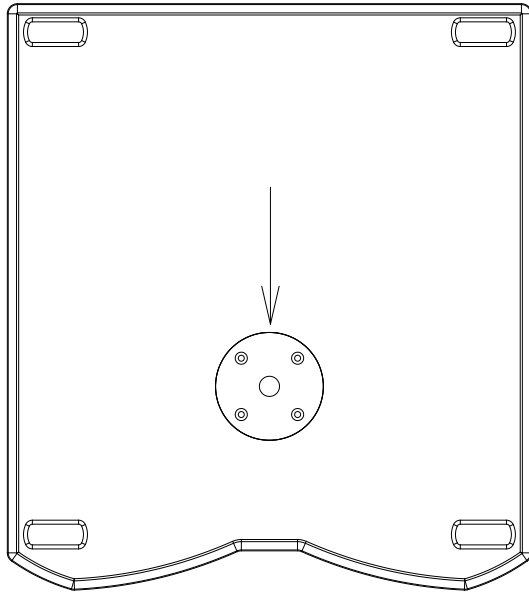
**Fig. 3.** Recommended PRESETS for S12WP

**3. MOUNTING AND PLACEMENT**

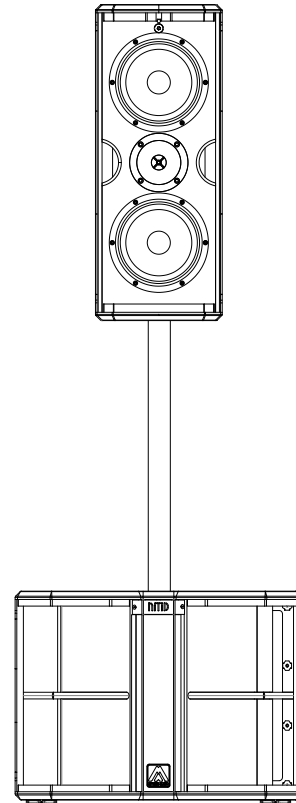
For a proper installation of the acoustic cabinet systems, it is strongly recommended to carefully read the following advices.

### 3.1. S12WP with full-range systems

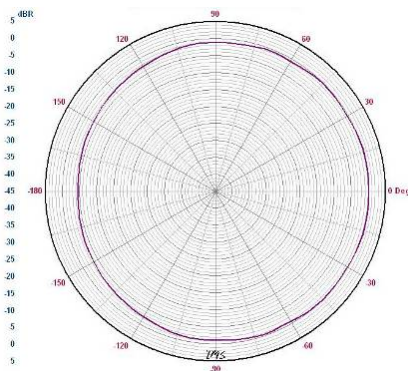
The S12WP incorporates a M20 base-plate on its upper side for the attachment of a standard 35mm diameter bar.



**Fig. 4.** S12WP socket



## 4. CARDIOID SUBWOOFERS



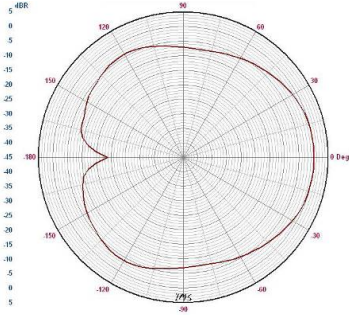
The S12WP enables the combination of three or multiple of three subwoofer cabinets in an array to provide exceptional directivity at low frequencies. To get the correct set-up parameters, please contact [export@amateaudio.com](mailto:export@amateaudio.com). High directivity at low frequencies has two main effects on the sound field: firstly, the low frequency level behind the subwoofer cabinets is greatly reduced; secondly, in closed venues the diffuse sound field at low frequencies is reduced so the low frequency reproduction is much more precise.

**Fig. 5.** Traditional polar pattern of a subwoofer at 40Hz

The typical operating range of a traditional subwoofer tends to be like a monopole, i.e. tends to radiate with the same energy in all directions. This behaviour implies that the control of radiation at low frequencies is very difficult because the wavelengths are very large compared to the size of the source (8.5 m at 40Hz).

To increase the directivity at low frequencies we must transform the omnidirectional performance into a cardioid performance. This can only be achieved by various sources, arranged in a certain position, to which we apply a specific phase, filtering and delay. That is, we need to reproduce two signals with the same frequency and similar amplitude which will have a difference in phase of approximately  $180^\circ$  at a

certain point of the sound field. If the phases and delays are well calculated, the result is a system, in which we cancel the energy of the back and not the one of the front.

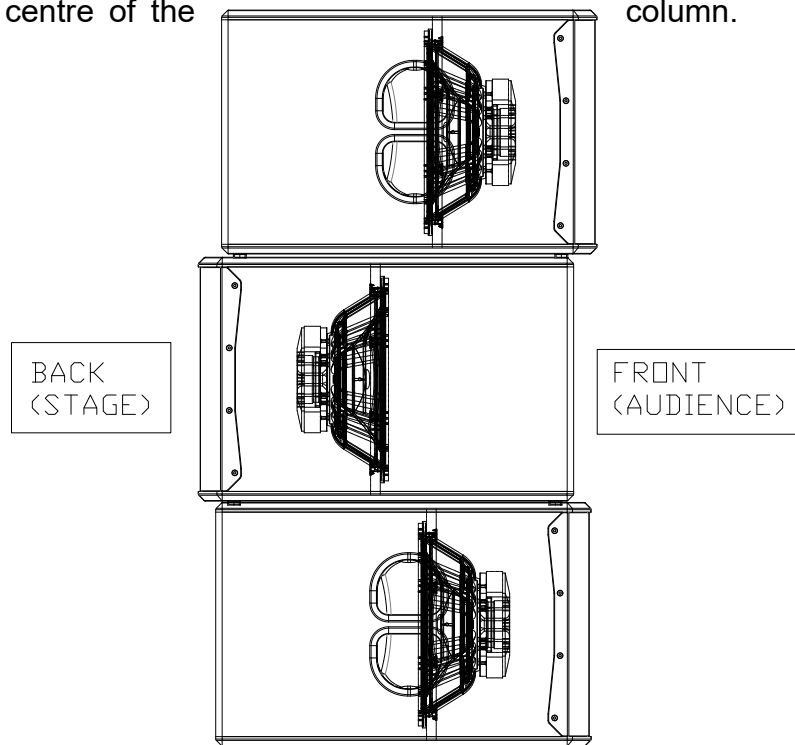


**Fig. 6.** Cardioid pattern

**4.1. The CARDIOID presets**

The S12WP can generate an uncompromised cardioid behaviour when used in conjunction with an external Amate Audio processor and their correct set-up parameters. In its minimum and standard configuration a Cardioid setup consists of a stack of three subwoofer cabinets.

Only one subwoofer is needed to compensate for the energy of the other two radiating to the front. Then, the cabinet facing to the back (to the stage) should be located in the centre of the column.



**Fig. 7.** Cardioid configuration for S12WP subwoofer

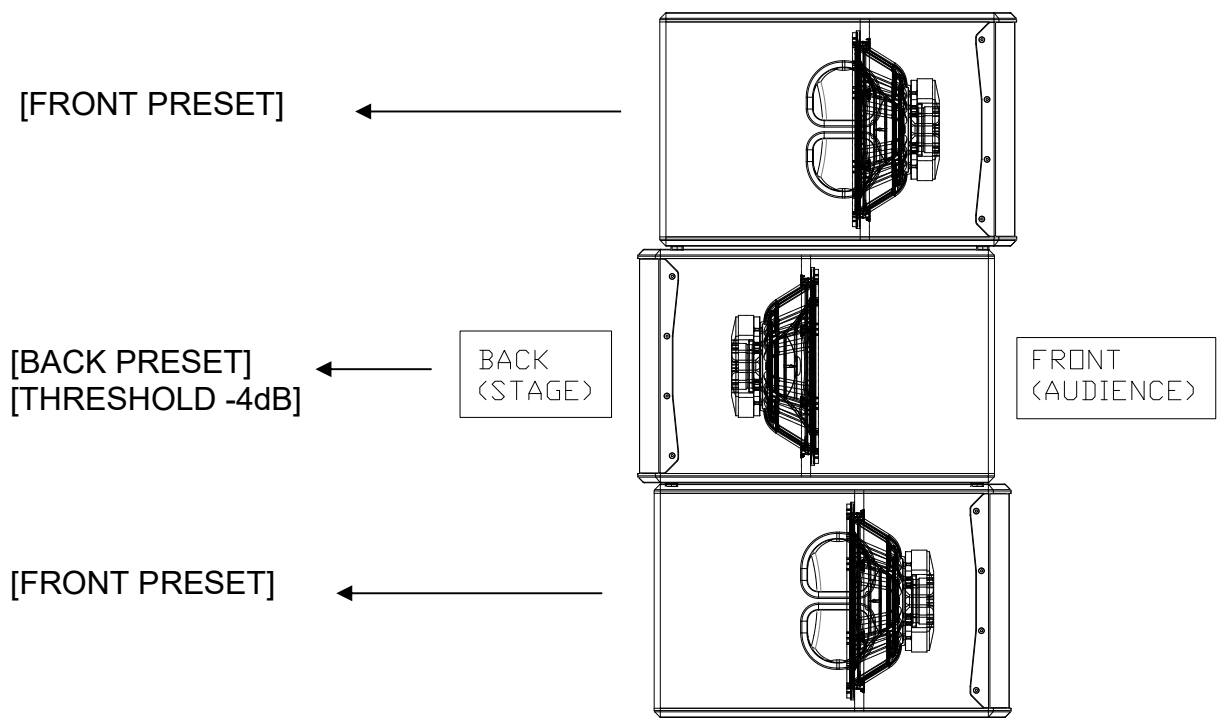


The cardioid preset must only be applied to the rear facing subwoofers (BACK STAGE). The front facing subwoofers (FRONT AUDIENCE) must use the corresponding front-facing preset, as shown in the table below:

S12WP Preset (BACK STAGE)	S12WP Preset (FRONT AUDIENCE)	Box model
CARD80 STANDARD	LPF80 STANDARD	Generic, HPF 80 Hz
CARD90 STANDARD	LPF90 STANDARD	Generic, HPF 90 Hz
CARD100 STANDARD	LPF100 STANDARD	Generic, HPF 100 Hz

**Fig. 8.** Correspondence of rear and front presets for cardioid applications

**IMPORTANT NOTE:** Due to the internal set-up of the cardioid presets, the threshold level (limiter) of the back facing subwoofers must be reduced by -4 dB when using stacks of three subwoofers.



**Fig. 9.** Cardioid presets for S12WP subwoofers (3 units)

When placing the subwoofers in a cardioid configuration keep a distance to walls of at least 60 cm in order not to affect the radiation of the central reversed cabinet.



## 5. TECHNICAL FEATURES

<b>S12WP</b>	
<b>Impedance</b>	
Nominal	8 $\Omega$
<b>Power</b>	
R.m.s	500 W
Program	1000 W
Connectors	2 x Speakon NL4MP input & link
<b>Audio Performance</b>	
Frequency response (-10 dB usable bandwidth) with external DSP	38 Hz – 130 Hz
SPL (1W / 1m)	96 dB
Nominal directivity (-6dB)	Omnidirectional
<b>Components</b>	
LF	1 x 12" woofer (3" voice coil)
<b>Cabinet</b>	
Type	Bass-reflex
Height	384 mm
Width	520 mm
Depth	582 mm
Weight (net)	24.9 Kg
Material	Multilayer birch plywood
Finish	Hi-resistance black matt Polyurea coating. 1.5 mm steel front grilles with black acoustic mesh.

**Note:** Specifications subjected to change without prior notice.



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since 1972*

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The **NÍTID** loudspeaker systems have been designed,  
engineered and manufactured in Barcelona – SPAIN  
by

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