

# SPECIFICATIONS SP™ 2



**Frequency response, 1 meter on-axis, swept-sine in anechoic environment:**  
54 Hz to 17 kHz ( $\pm 3$  dB)

**Usable low frequency limit (-10 dB point):**  
44 Hz

**Power handling:**  
Full range:  
500 watts continuous  
1,000 watts program  
2,000 watts peak

Low frequency section:  
500 watts continuous  
1,000 watts program  
2,000 watts peak

High frequency section:  
60 watts continuous  
120 watts program  
240 watts peak

**Sound pressure level, 1 watt, 1 meter in anechoic environment:**  
Full range:  
98 dB SPL (2.83 V input)

Low frequency section:  
99 dB SPL (2.83 V input)

Mid/high frequency section:  
110 dB SPL (2.83 V INPUT)

**Maximum sound pressure level (1 meter):**  
Full range:  
125 dB SPL continuous  
131 dB SPL peak  
Low frequency section:  
126 dB SPL continuous  
132 dB SPL peak  
High frequency section:  
129 dB SPL continuous  
135 dB SPL peak

**Radiation angle measured at -6 dB point of polar response:**  
90° horizontal by 40° vertical

The vertical main polar lobe is angled down 10° with respect to straight ahead being +10, -30°

**Transducer complement:**  
Low frequency section:  
1 x 15" woofer, vented  
Black Widow® 1508-8 HE SF

High frequency section:  
1 x .875" exit /51 mm voice coil  
RX™ 22 compression driver on an

asymmetrical Quadratic Throat  
CD horn

**Box tuning frequency:**  
Low frequency section: 55 Hz

**Crossover frequency (internal passive):**  
Low frequency – high frequency  
1,800 Hz

**Recommended active crossover frequency region and slope:**  
Low frequency – high frequency:  
1,800 Hz at 12 dB/octave

**Time offset:**  
Low frequency: 0.0 ms  
High frequency: 0.48 ms

**Impedance (Z):**  
Full range:  
Nominal: 8.0  $\Omega$   
Minimum: 6.0  $\Omega$

Low frequency:  
Nominal: 8.0  $\Omega$   
Minimum: 6.9  $\Omega$

Passive HF:  
Nominal: 8.0  $\Omega$   
Minimum: 5.4  $\Omega$

**Input connections:**  
Full range: two 1/4" phone jacks, one Neutrik® four-pin Speakon® jack & one Neutrik NL4 Speakon (bi-amp only)

**Enclosure materials and finish:**  
Aspen hardwood plywood finished in Hammertex™ covering

**Mounting provisions:**  
This unit is not designed for overhead suspension

Built-in SA-1 stand-mount adapter and four large rubber feet on bottom for floor use

**Dimensions (H x W x D):**  
Front:  
32.45" x 20.55" x 23.00"  
824 mm x 522 mm x 584 mm

Rear:  
32.45" x 12.63" x 23.00"  
824 mm x 321 mm x 584 mm

**Net Weight:**  
91 lbs. (41.3 kg)



# SPECIFICATIONS SP™ 2

## Features

- Two-way, full-range/bi-ampable Sound Reinforcement system
- RX™ 22 compression driver with ferrofluid cooling
- 15" BWX Black Widow® 4" VC woofer
- 1000 watts program, 2000 watts peak
- Patented Quadratic Throat Waveguide™ technology
- Asymmetrical horn aims the sound down 10° (at the audience, not over their heads)
- Sound Guard™ III tweeter protection
- Full-range inputs include a Neutrik® Speakon® four-pin jack and two 1/4" phone jacks
- Bi-amp input via four-pin switching Neutrik® Speakon®
- Trapezoidal aspen hardwood enclosure
- Stand-mount adapter

## Description

The new SP 2 features the Peavey Quadratic Throat Waveguide with an RX™ 22 compression driver loaded onto the constant directivity waveguide. The SP 2 is a two-way speaker system comprised of the new 15" Black Widow BWX SF series woofer with a Kevlar® impregnated cone.

The SP 2 has a trapezoidal-shaped enclosure, which reduces the buildup of standing waves inside the enclosure to minimize mid-bass and mid-range coloration. The enclosure is constructed of aspen hardwood plywood augmented with dual-layer top and bottom panels, covered with a heavy duty, textured black Hammertex™ covering and reinforced with high-impact plastic corners. A full-length, wrap-around perforated steel grille protects the front of the enclosure. An SA-1 stand-mount adapter is incorporated to accommodate a speaker stand. The two-way system consists of the following driver components: a 15" Black Widow BWX SF series woofer with a Kevlar impregnated cone and dust cap. The woofer is capable of over 500 Watts of continuous power handling (AES Std 2-1984). The high frequencies are handled by a 2" RX™ 22

titanium diaphragm compression driver utilizing ferrofluid cooling. This superb driver is coupled to a Quadratic Throat Constant Directivity Waveguide (U.S. Patent #6,059,069) to provide smooth, even response, low distortion and good high frequency dispersion. This horn has an asymmetrical vertical polar response, aiming the main energy lobe down 10 degrees so it reaches the audience instead of over their heads. This reduces ceiling reflections and ensures greater clarity and gain before feedback. The RX™ 22 driver features the Radialinear Planar Phase Correction System (U.S. Patent #6,064,745), which provides a smooth and extended high frequency response.

Full-range input connection to the system is made via two 1/4" phone jacks and a four-pin Neutrik jack in parallel. A four-pin Neutrik switching jack is provided for bi-amping flexibility while maintaining superior signal integrity. The internal passive crossover features the Peavey-exclusive Sound Guard protection circuit for the tweeter and an advanced topology crossover with high-performance components to provide high power handling and reliability. Sound Guard provides long- and medium-term driver overload protection without impairing musical transients or dynamics on either the mid-range or the tweeter when the system is used full range or when it is bi-amped. The crossover provides driver roll-off and protection as well as driver EQ for the woofer and horn for a clean, clear and smooth response. High-quality, reliable crossover components include polypropylene capacitors and high-current inductors. The optimal integration of the crossover with the selected drivers results in a smooth frequency response from 54 Hz to 17 kHz.

Despite its compact dimensions, this system can produce very high sound levels and handle 1000 watts program power, resulting in high articulation and long-term reliability.

## Frequency response

This measurement is useful in determining how accurately a given unit reproduces an input signal. The frequency response of the SP 2 is measured at a distance of 1 meter using a 1 watt (into the nominal impedance) swept-sine input signal. As shown in figure 1, the selected drivers in the SP 2 combine to give a smooth frequency response from 54 Hz to 17 kHz.

## Power handling

There are many different approaches to power handling ratings. Peavey rates this loudspeaker system's power handling using a full-range form of the AES Standard 2-1984. Using audio band 20 Hz to 20 kHz pink noise with peaks of four times the RMS level, this strenuous test signal assures the user that every portion of this system can withstand today's high-technology music. This rating is contingent upon having a minimum of 3 dB amplifier headroom available.

## Harmonic distortion

Second and third harmonic distortions vs. frequency are plotted in figures 3 & 4 for two power levels. Ten percent (10%) of rated input power and either one percent (1%) of rated input power or 1 watt, whichever is greater. Distortion is read from the graph as the difference between the fundamental signal (frequency response) and the desired harmonic. As an example, a distortion curve that is down 40 dB from the fundamental is equivalent to 1% distortion.

## Mounting

This unit is not designed for overhead suspension. The SA-1 stand-mount adapter may be incorporated, and four large rubber feet are included on the bottom for floor use.

# SPECIFICATIONS SP™ 2

## Architectural & engineering specifications

The loudspeaker system shall have an operating bandwidth of 54 Hz to 17 kHz. The nominal output level shall be 98.0 dB when measured at a distance of 1 meter with an input of 1 watt. The nominal impedance shall be 8.0 ohms. The maximum continuous power handling shall be 500 watts, with maximum program power of 1,000 watts, peak power input of at least 2,000 watts and

a minimum amplifier headroom of 3 dB. The nominal radiation geometry shall be 90 degrees symmetrical about the center axis in the horizontal plane, and +10, -30 degrees about the center axis in the vertical plane. The outside dimensions shall be 32.45 inches high by 20.55 inches wide by 23.00 inches deep. The weight shall be 91 lbs. The loudspeaker system shall be a Peavey model SP™2.

## 3 + 2 Year Limited Warranty

**NOTE:** For details, refer to the warranty statement. Copies of this statement may be obtained by contacting Peavey Electronics Corporation, P.O. Box 2898, Meridian, Mississippi 39301-2898.

### Amplitude Response (1W 1m On-Axis)

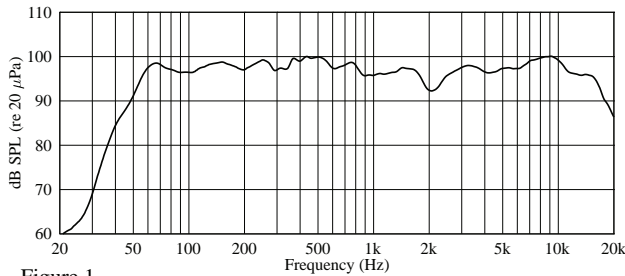


Figure 1

### Impedance

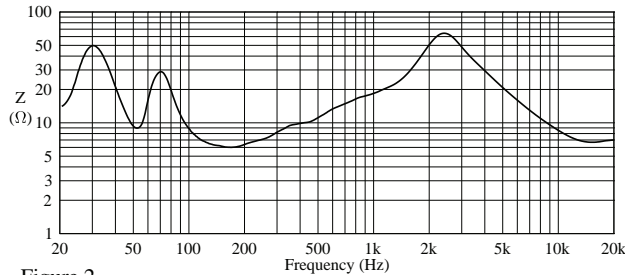


Figure 2

### Harmonic Distortion : 1% Rated Power

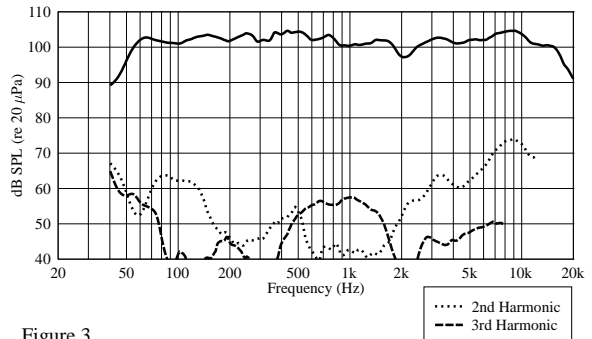


Figure 3

### Harmonic Distortion : 10% Rated Power

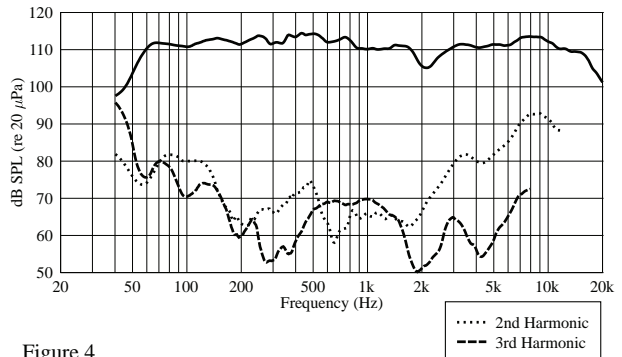
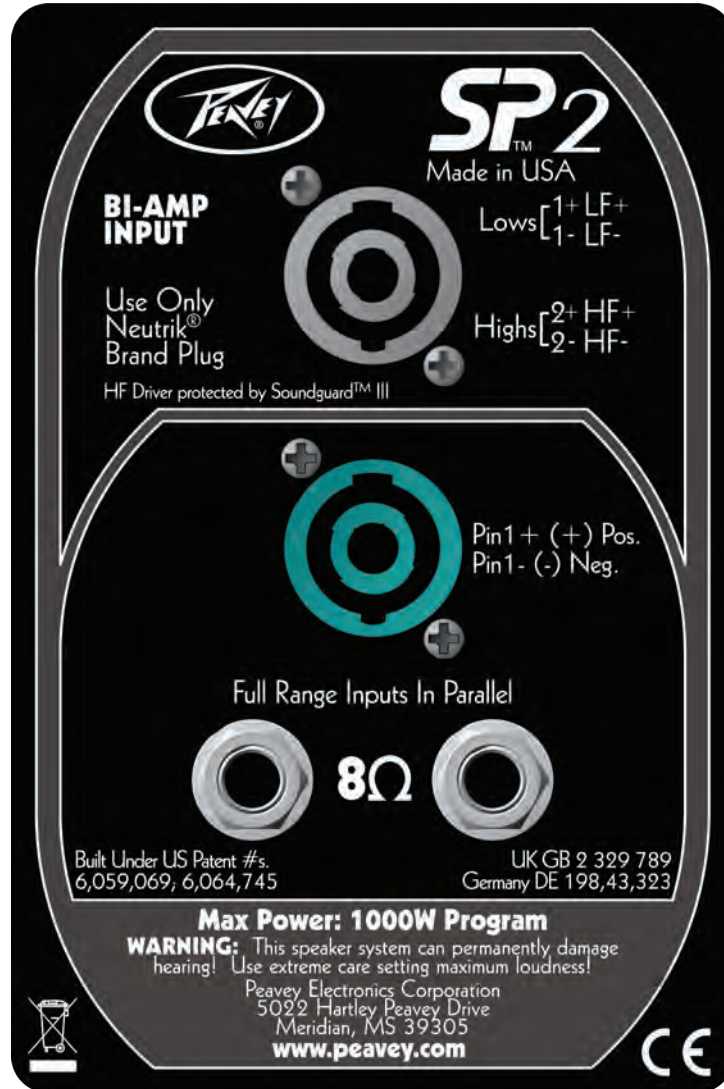


Figure 4

SP 2 Input Plate



80305550

Features and specifications are subject to change without notice.

Peavey Electronics Corporation • 5022 Hartley Peavey Drive • Meridian, MS 39305 • (601) 483-5365 • www.peavey.com  
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