

SPECIFICATIONS SP™ 2



Frequency response, 1 meter on-axis, swept-sine in anechoic environment:
54 Hz to 17 kHz (± 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:
98.0 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:
1x 15" woofer, vented
1508-8 HE SF

High frequency section:
1x .875" exit /51mm 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
1800 Hz

Recommended Active Crossover Frequency Region and Slope:
Low Frequency – High Frequency:
1800 Hz at 12 dB/octave

Time Offset:
Low Frequency: 0.0 ms
High Frequency: 0.48 ms

Impedance (Z):
Full Range:
Nominal: 8.0 Ω
Minimum: 6.0 Ω

Low Frequency:
Nominal: 8.0 Ω
Minimum: 6.9 Ω

Passive HF:
Nominal: 8.0 Ω
Minimum: 5.4 Ω

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:
Nine-ply Baltic birch plywood
finished in black carpet

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:
30.75" x 20.56" x 23.00"
781 mm x 522 mm x 584 mm

Rear:
30.75" x 12.5" x 23.00"
781 mm x 314 mm x 584 mm

Net Weight:
71 Lbs. (32.3kg)



SPECIFICATIONS SP™ 2

Features

- Two-way, full-range/bi-ampable SR 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 Baltic birch enclosure, 20% lighter than SP 2X
- Stand-mount adapter

Description

The new SP 2 features the Peavey Quadratic Throat Waveguide and an enclosure made from Baltic birch plywood. The SP 2 is a two-way speaker system comprised of the new 15" Black Widow BWX SF series woofer with a Kevlar®/Carbon Fiber-impregnated cone and an Rx22 compression driver loaded onto the constant directivity waveguide.

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. It is constructed of nine-ply Baltic birch and covered with a durable black carpet. Use of the Baltic birch plywood provides an enclosure that is 20% lighter than the previous SP 2X. The enclosure corners are reinforced with metal corners, and a black powder-coated, perforated metal grille covers the lower half of the system to protect the woofer from external damage. 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/Carbon Fiber-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" Rx22 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 is aimed at the audience instead of over their heads. This reduces ceiling reflections, ensuring greater clarity and gain before feedback. The Rx22 driver features the Radialinear Planar Phase Correction System (U.S. Patent #6,064,745), which provides a smoother 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 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 of 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.

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 30.75 inches high by 20.56 inches wide by 23.00 inches deep. The weight shall be 71 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)

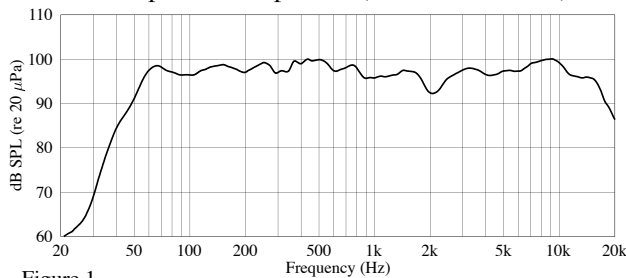


Figure 1

Impedance

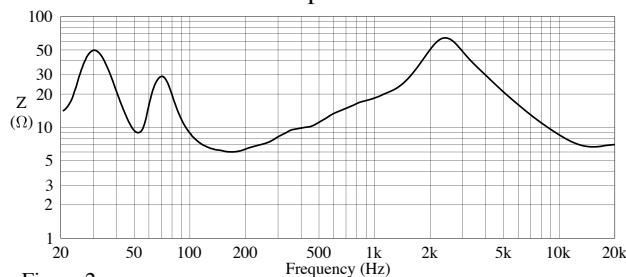


Figure 2

Harmonic Distortion : 1% Rated Power

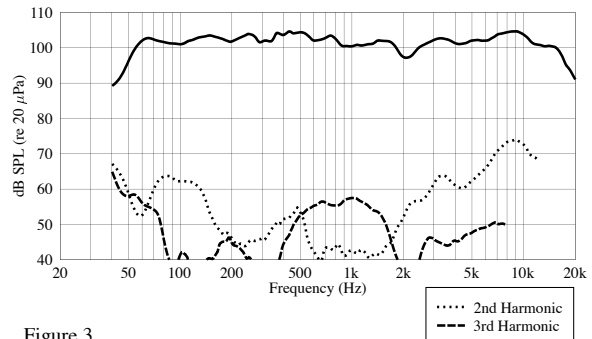


Figure 3

Harmonic Distortion : 10% Rated Power

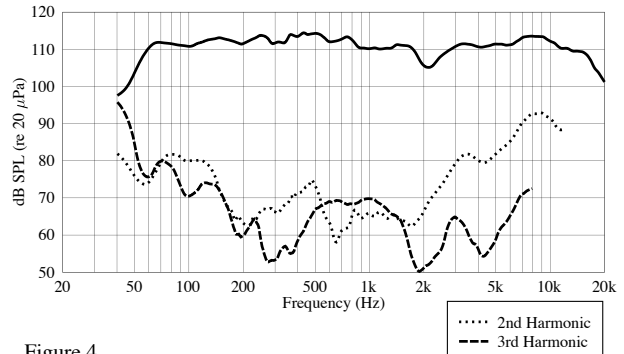
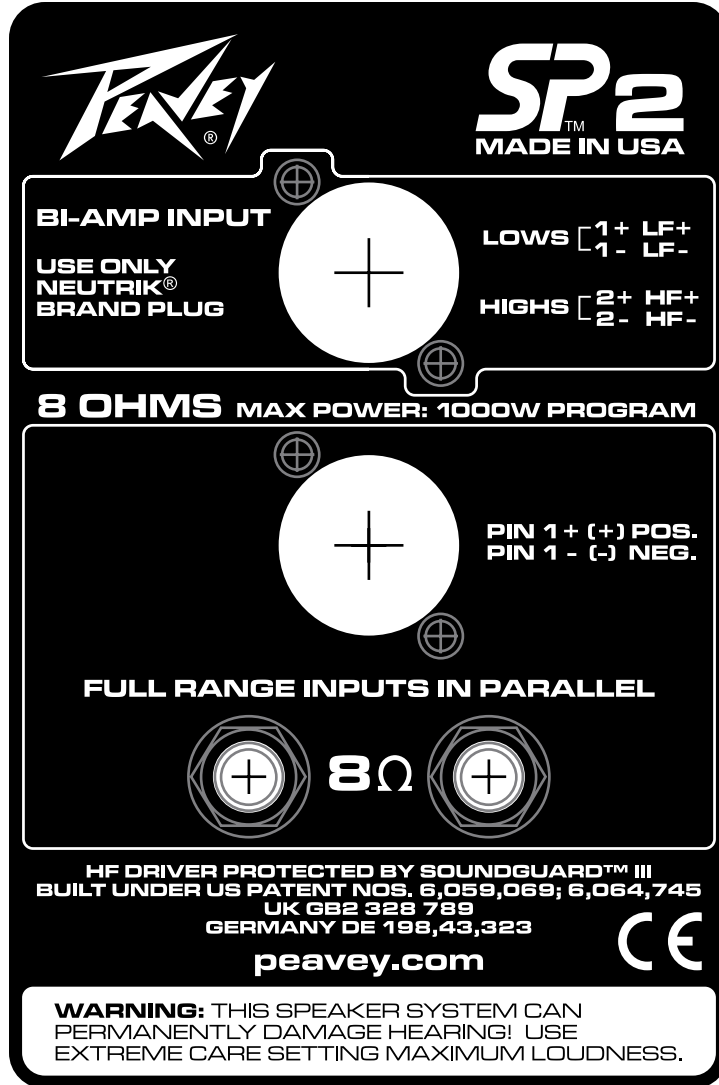


Figure 4



The image shows a black rectangular label for a Peavey SP2 speaker. At the top left is the Peavey logo, and at the top right is 'SP2 MADE IN USA'. The label is divided into several sections: 1. 'BI-AMP INPUT' section with a large white circle containing a plus sign, instructions to 'USE ONLY NEUTRIK® BRAND PLUG', and terminal connections for 'LOWS' (1+ LF+, 1- LF-) and 'HIGHS' (2+ HF+, 2- HF-). 2. '8 OHMS MAX POWER: 1000W PROGRAM' section with another large white circle containing a plus sign and terminal polarity instructions: 'PIN 1 + (+) POS.' and 'PIN 1 - (-) NEG.'. 3. 'FULL RANGE INPUTS IN PARALLEL' section with two smaller circular terminal symbols and '8Ω' between them. 4. A section with patent information: 'HF DRIVER PROTECTED BY SOUNDGUARD™ III BUILT UNDER US PATENT NOS. 6,059,069; 6,064,745 UK GB2 328 789 GERMANY DE 198,43,323'. 5. The website 'peavey.com' and a CE mark. 6. A 'WARNING' section at the bottom: 'WARNING: THIS SPEAKER SYSTEM CAN PERMANENTLY DAMAGE HEARING! USE EXTREME CARE SETTING MAXIMUM LOUDNESS.'

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Features and specifications subject to change without notice.

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