SPECS

PEAVEY ELECTRONICS

SP™ 4X

SPECIFICATIONS

Frequency response, 1 meter on-axis, swept-sine in anechoic environment:
51 Hz - 16 kHz (±3 dB)

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

Power handling:
Full Range:
1,000 W continuous
2,000 W program
4,000 W peak
Low Frequency Section:
1,000 W continuous
2,000 W program
4,000 W peak
High Frequency Section:
60 W continuous
120 W program
240 W peak

Sound pressure level, 1 Watt, 1 meter in anechoic environment:
Full Range:
98.0 dB SPL, (2.00 V input)
Low Frequency Section:
99.0 dB SPL, (2.00 V input)
High Frequency Section:
107.0 dB SPL, (2.83 V input)

Maximum sound pressure level (1 meter):
Full Range:
128.0 dB SPL continuous
134.0 dB SPL peak
Low Frequency Section:
129.0 dB SPL continuous
135.0 dB SPL peak
High Frequency Section:
124.8 dB SPL continuous
130.8 dB SPL peak

Transducer complement:
Low Frequency Section:
2x 15 in. Woofer, Vented
1508-8 HE BWX
High Frequency Section:
1x .875 in. exit/51 mm voice coil compression driver on CD horn RX22™ on a CH®-941

Box tuning frequency:
Low Frequency Section:
55 Hz

Harmonic distortion:

1% rated power	
2nd Harmonic:	
100 Hz:	2.40%
1 kHz:	0.19%
3rd Harmonic:	
100 Hz:	0.18%
1 kHz:	0.64%
10% rated power	
2nd Harmonic:	
100 Hz:	7.01%
1 kHz:	0.71%
3rd Harmonic:	
100 Hz:	0.52%
1 kHz:	0.80%

Crossover frequency (internal passive):
Low Frequency - High Frequency:
1,400 Hz

Recommended active crossover frequency region and slope:
Low Frequency - High Frequency:
1,600 Hz at 18 dB/octave

Time offset:

Low Frequency:	0.00 ms
High Frequency:	0.65 ms

Impedance (Z):

Full Range:	
Nominal:	4.0 Ω
Minimum:	3.4 Ω
Low Frequency:	
Nominal:	4.0 Ω
Minimum:	3.1 Ω

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High frequency:

Nominal: 8.0 Ω
Minimum: 6.0 Ω

Input connections:

1x 1/4 in. phone jack (input), 1x 1/4 in. phone jack (thru only) and 1x Neutrik® NL4 Speakon® (biamp only)

Enclosure materials and finish:

3/4" OSB finished in black carpet

Mounting provisions:

This unit is not designed for overhead suspension

Dimensions (H x W x D):

Front:
49.00 in. x 21.00 in. x 22.75 in.
1245 mm x 533 mm x 578 mm
Rear:
49.00 in. x 14.00 in. x 22.75 in.
1245 mm x 356 mm x 578 mm

Net Weight:

125 lbs. (56.8 kg)

Features:

- Quasi three-way, full range/ biampable PA enclosure
- Sound Guard™ HF driver protection circuit
- RX22™ driver with a 2" titanium diaphragm coupled to a CH® 941 90° X 40° constant-directivity horn
- Dual 15" BWX Black Widows® with Kevlar® cones and field replaceable baskets
- SP™ X series trapezoidal cabinet and styling
- External voicing switch
- Neutrik biamp jack

Description

The SP 4X is both a cosmetic and performance redesign of the SP 4G loudspeaker system. This high power handling, two-way loudspeaker system is comprised of a 15" BWX woofer with a Kevlar impregnated cone and an RX22 compression driver coupled to a CH 941 constant directivity horn. This unit can be driven in full-range mode simply by plugging into the 1/4" phone jack on the input plate. A thru-only 1/4" phone jack connector is also provided to allow a second loudspeaker to be connected without making a cable run back to the amplifier. A Neutrik Speakon connector is provided as an input for biamp operation. The trapezoidal design of the enclosure allows arrays to be constructed much more easily than it would be using a rectangular shaped box. This shape also greatly reduces the build-up of standing waves on the inside of the enclosure. This ensures a minimum of mid-bass and mid-range coloration of the reproduced sound due to the cabinet. The SP 4X is constructed of 3/4" OSB and covered with Peavey's durable black carpet. Polymer corners are also a part of the unit to provide added protection to the enclosure. A powder-coated expanded, metal grille covers the lower part of the front of the enclosure to protect the low frequency driver from unforeseen accidents.

A voicing switch on the input cup allows for the selection of two different response settings for the loudspeaker system. The normal position will yield a more flat response. The EQ position will have decreased output in the mid-range and upper mid-range areas. This position may be preferred for some types of program material. The response curve for each position is given in figure 1.

Sound Guard III is the redesign of Peavey's proprietary circuit for high frequency driver protection for the new RX22 compression driver. This is an integral part of the crossover for the SP 4X. The input signal is routed through the Sound Guard III circuit in both full-range and biamp modes of operation. When the high frequency drive level to the SP 4X exceeds a predetermined threshold the Sound Guard III circuit in engaged. The effect that this has is to subtly decrease the signal level going to the RX22 so that it will not be damaged due to long-term overpowering. Short duration transients will not be attenuated by Sound Guard III and have the possibility to damage the RX22. The Sound Guard III circuit is a dynamic circuit that will attenuate the signal more the larger the signal is, very similar to a compressor. This is accomplished through the use of a specially selected dynamically resistive light bulb. If the bulb in your Sound Guard III should ever burn out, a replacement may be obtained from an Authorized Peavey Service Center. However, if a Peavey replacement bulb is not readily available, a Sylvannia SK3 bulb may be located at various loudspeaker or electronics parts stores.

Frequency Response

This measurement is useful in determining how accurately a given unit reproduces an input signal. The frequency response of the SP 4X 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 4X combine to give a smooth frequency response from 51 Hz — 16 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

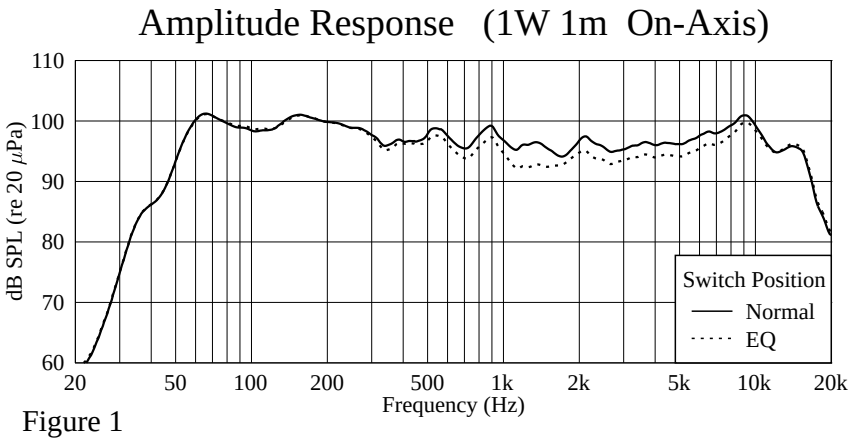


Figure 1

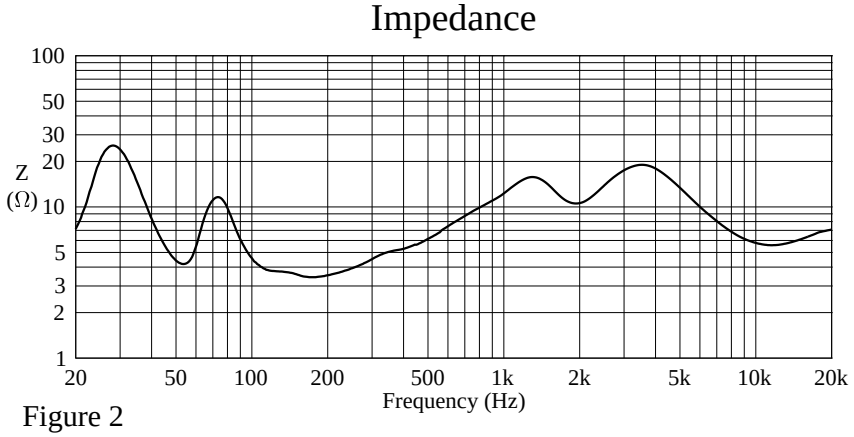


Figure 2

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 5 and 6 for two power levels. Ten percent (10%) of rated input power and either one percent (1%) of rated input power or one 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

Warning: This unit is not designed for overhead suspension

Architectural and Engineering Specifications

The loudspeaker system shall have an operating bandwidth of 51 Hz - 16 kHz. The nominal output level shall be 98.0 dB when measured at a distance of one meter with an input of one Watt. The nominal impedance shall be 4.0 Ohms. The maximum continuous power handling shall be 1,000 Watts, maximum program power of 2,000 Watts and a peak power input of at least 4,000 Watts, with a minimum amplifier headroom of 3 dB. The nominal radiation geometry shall be 90 degrees in the horizontal plane and 40 degrees in the vertical plane. The outside dimensions shall be 49.00 inches high by 21.00 inches wide by 22.75 inches deep. The weight shall be 125 pounds. The loudspeaker system shall be a Peavey model SP 4X.

This product is manufactured under U.S. Patent 6,064,745.

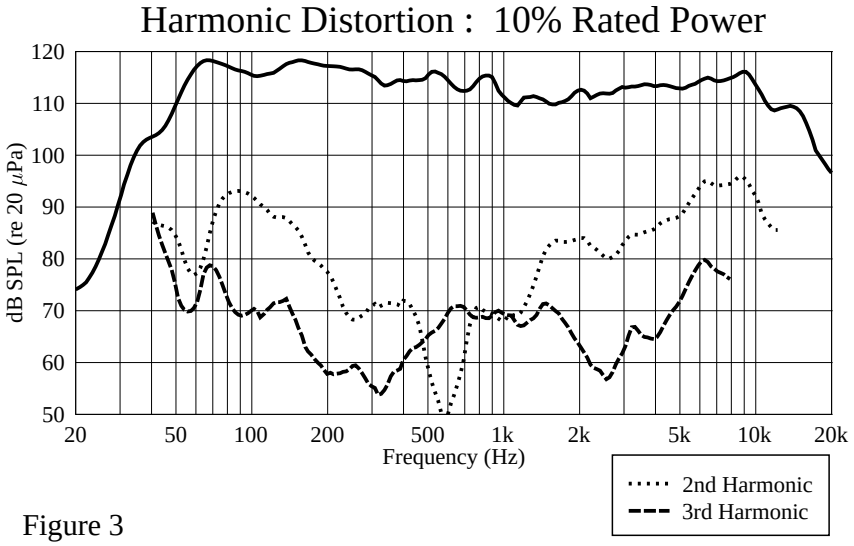


Figure 3

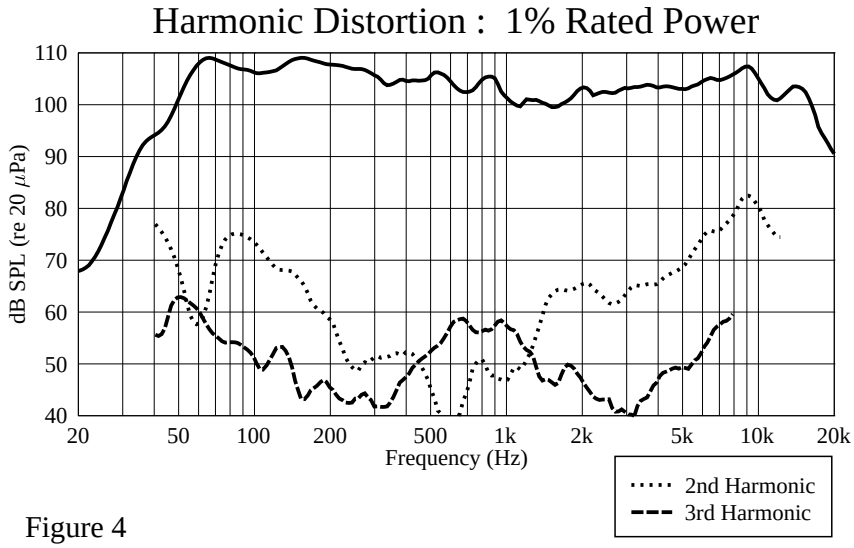
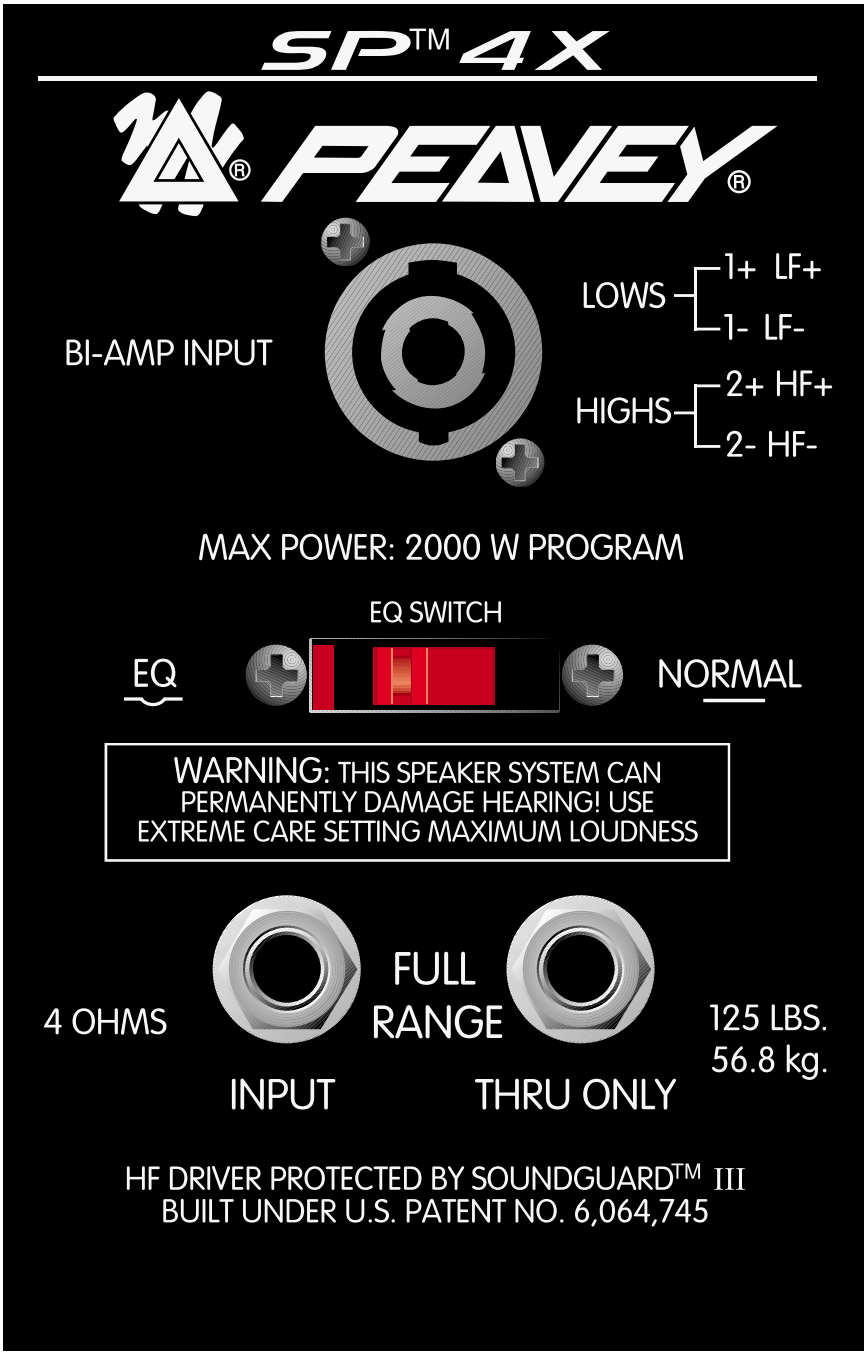


Figure 4

SP™ 4X INPUT



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Features and specifications subject to change without notice.

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