

SP EAV EY E L E C T R O N I C S S

SP™ 4G

Sound Reinforcement
Enclosure with
Sound Guard™ HF
Protection System

SPECIFICATIONS

**Frequency Response, 1 Meter
On-Axis, Swept-Sine in Anechoic
Environment:**

50 Hz to 17.5 kHz

Low Frequency Cut-Off (-3 dB point):
50 Hz

**Usable Low Frequency Limit
(-10 dB point):**
39 Hz

Power Handling:

Full Range:

600 W continuous (49.0 V RMS)
1,200 W program
2,400 W peak

Bi-amp Low:

700 W continuous (52.9 V RMS)
1,400 W program
2,800 W peak

Bi-amp High:

40 W continuous (17.9 V RMS)
80 W program
160 W peak

**Sound Pressure Level, 1 Watt, 1
Meter in Anechoic Environment:**

Full Range: 100 dB (2.0 V)
Bi-amp Low: 100 dB (2.0 V)
Bi-amp High: 106 dB (2.8 V)

**Maximum Sound Pressure Level
(1 meter):**

Full Range:
127 dB continuous
133 dB peak

Bi-amp Low:

128 dB continuous
134 dB peak

Bi-amp High:

122 dB continuous
128 dB peak

**Radiation Angle Measured at -6 dB
Point of Polar Response:**

500 Hz to 1.6 kHz:
Horizontal: 92° ±13°
Vertical: 83° ±13°



1.6 kHz to 5 kHz:

Horizontal: 83° ±19°
Vertical: 57° ±17°

5 kHz to 16 kHz:

Horizontal: 86° ±3°
Vertical: 39° ±2°

Directivity Factor, Q (Mean):

9.5 ±3.3

Directivity Index, Di (Mean):

9.5 dB ±1.5 dB

Transducer Complement:

Two 1505-8 KADT Black Widow® woofers
One 22XT™ compression driver loaded
by a CH® 941 horn

Box Tuning Frequency:

50 Hz

**Crossover Frequency (internal
passive):**

1.8 kHz

**Minimum Recommended Active
Crossover Frequency and Slope for
Bi-amping:**

1.2 kHz at 18 dB/octave

Time Offset:

0.70 mS (delay Lows)

Impedance (Z):

Full Range Nominal: 4 Ω
Full Range Minimum: 3.9 Ω
Lows Nominal: 4 Ω
Highs Nominal: 8 Ω

Input Connections:

Two paralleled 1/4" phone jacks for
full-range input
One 1/4" phone jack for bi-amp low
frequency input
One 1/4" phone jack for bi-amp high
frequency input

Enclosure Materials and Finish:

3/4" plywood enclosure covered with black
carpet and protective polymer corners
Expanded metal grille to protect the low
frequency driver

Mounting Provisions:

None

Dimensions (H x W x D):

49.25" x 21.50" x 22.75"
(125.1 cm x 54.6 cm x 57.8 cm)

PEAVEY

Net Weight:

135 lbs. (61.4 kg)

FEATURES

- Two 1505-8 KADT Black Widow® woofers
- 22XT™ compression driver
- Sound Guard™ high frequency protection circuit
- Trapezoidal enclosure design
- Built-in pocket casters for easy movement

DESCRIPTION

The redesign of the ever popular SP™ 4 has resulted in the SP™ 4G loudspeaker system. It is a pseudo three-way speaker system comprised of a 15" Scorpion® Plus woofer with a Kevlar® impregnated cone and a 22XT™ compression driver coupled to a CH® 941 constant directivity horn.

This unit can be driven in full-range or bi-amp mode simply by plugging into the desired jack on the input plate. The SP™ 4G has a trapezoidal shaped box, rather than a rectangular shaped box, that allows arrays to be constructed much more easily. 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™ 4G is constructed of 3/4" plywood and is 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.

Sound Guard™, Peavey's proprietary circuit for high frequency driver protection, has been included as an integral part of the crossover for the SP™ 4G. The input signal is routed through the Sound Guard™ circuit in both full-range and bi-amp modes of operation. When the high frequency drive level to the SP™ 4G exceeds a predetermined threshold the Sound Guard™ circuit is engaged. This subtly decreases the signal level going to the 22XT™ so that it will not be damaged due to long-term overpowering. Short duration transients will not be attenuated by Sound Guard™ and have the possibility to damage the 22XT™. The Sound Guard™ circuit is a dynamic circuit that will attenuate the signal more in relation to how large the signal is, very similar to a compressor. This is accomplished through the use of a specially selected, dynamically resistive

Amplitude Response (1W 1m On-Axis)

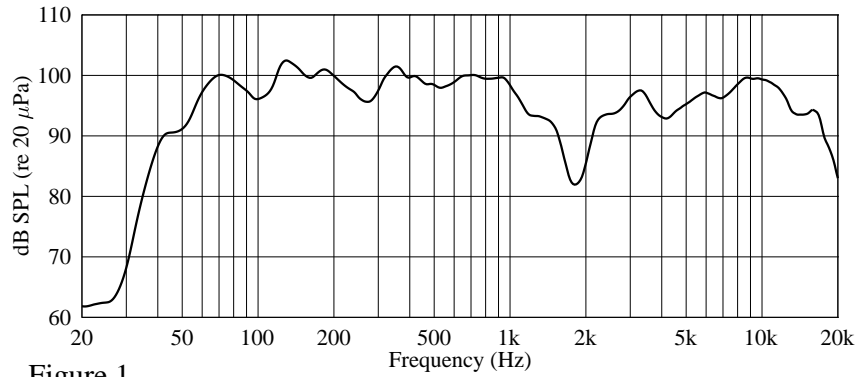


Figure 1

Impedance

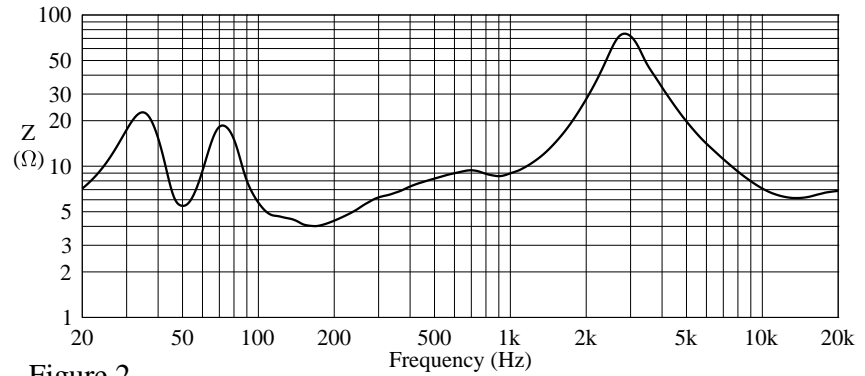


Figure 2

Beamwidth

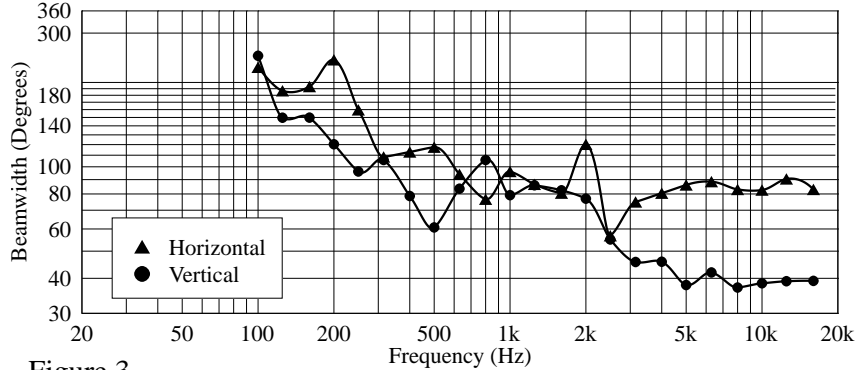


Figure 3

Q & Directivity Index

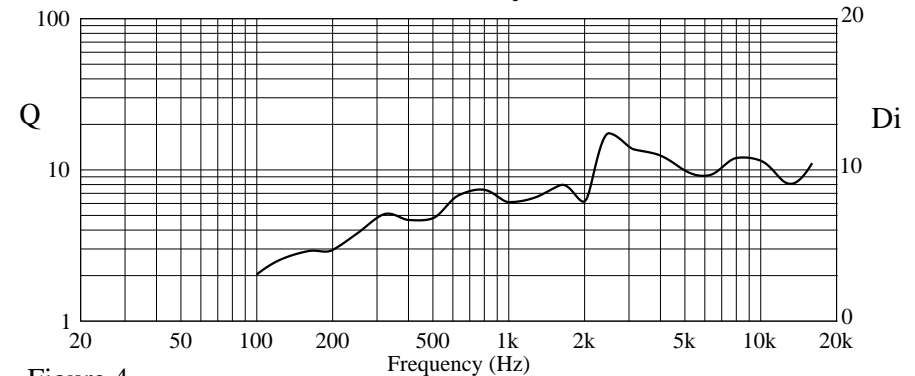
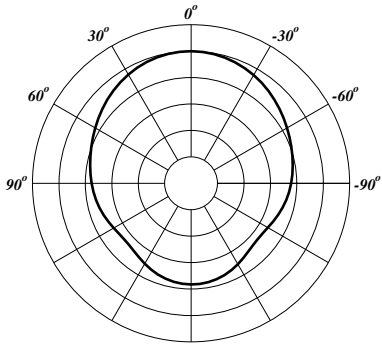


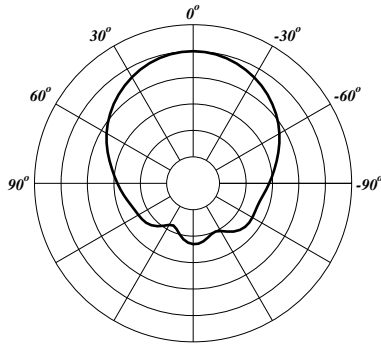
Figure 4

HORIZONTAL POLAR PATTERNS

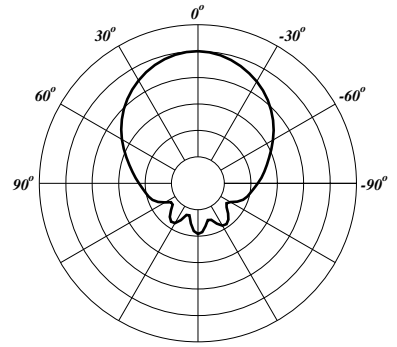
1 octave averaged, plotted on ISO 1 octave centers from 250 Hz to 8 kHz



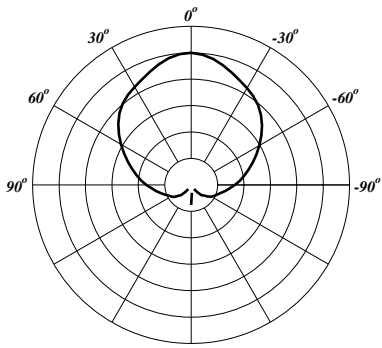
250 Hz



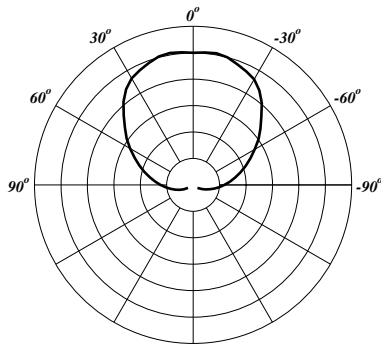
500 Hz



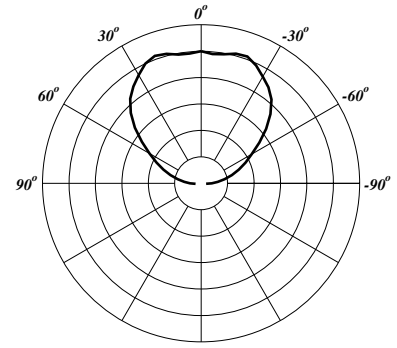
1 kHz



2 kHz

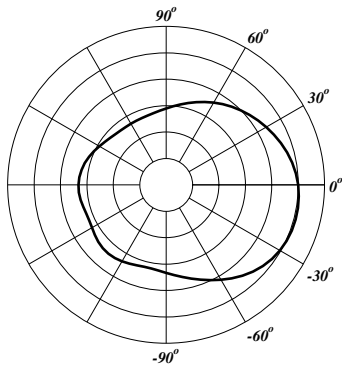


4 kHz

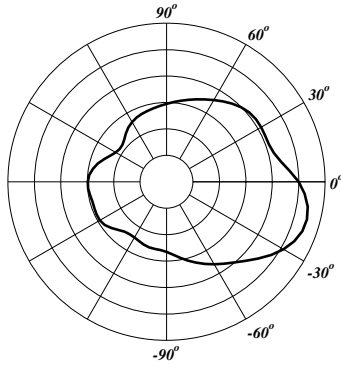


8 kHz

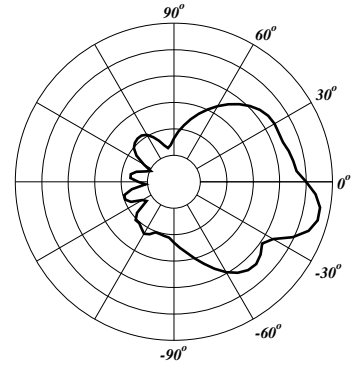
VERTICAL POLAR PATTERNS



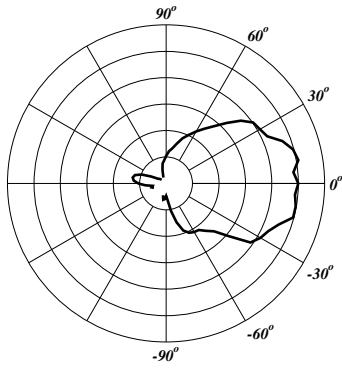
250 Hz



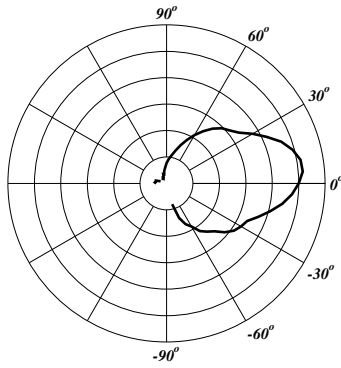
500 Hz



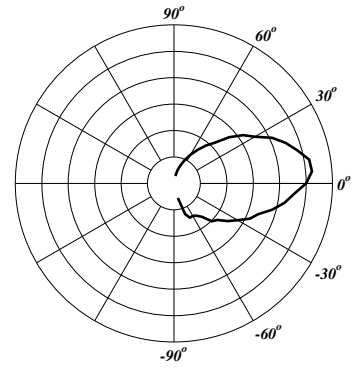
1 kHz



2 kHz



4 kHz



8 kHz

light bulb. If the bulb in your Sound Guard™ 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, an automotive type 1156 bulb may be substituted for temporary use until a Peavey bulb can be obtained.

FREQUENCY RESPONSE

This measurement is useful in determining how accurately a given unit reproduces an input signal. The frequency response of the SP™ 4G is measured at a distance of 1 meter using a 2.0 volt swept-sine input signal. As shown in Figure 1, the selected drivers in the SP™ 4G combine to give a smooth frequency response from 39 Hz to 17.5 kHz.

DIRECTIVITY

Beamwidth and directivity factors are derived from the -6 dB points from the polar plots (see Figure 3), which are measured in a whole space anechoic environment. These are specifications that provide a reference to the coverage characteristics of the unit. These parameters provide insight for proper

placement and installation in the chosen environment. The blending of the components of the SP™ 4G exhibit a desirable beamwidth and directivity (Figures 3 and 4) suitable for sound reinforcement applications.

POWER HANDLING

There are many different approaches to power handling ratings. Peavey Electronics rates this unit's system power handling using a modified form of the AES Standard 2-1984. Utilizing audio band limited (20 Hz to 20 kHz) pink noise with peaks over 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. The test signal contains large amounts of very low frequency energy, effectively simulating the frequency content of live music situations. The full measure of high frequencies in the test signal allow for exposure of the speaker system to synthesized tones that may extend beyond audibility. This rating is contingent on having a minimum of 3 dB of amplifier headroom available so as to ensure that clipping does not occur.

ARCHITECTURAL and ENGINEERING SPECIFICATIONS

The loudspeaker system shall have an operating bandwidth of 39 Hz to 17.5 kHz. The nominal output level shall be 100 dB when measured at a distance of one meter with an input of one watt. The nominal impedance shall be 4 ohms. The maximum continuous power handling shall be 600 watts, maximum program power of 1,200 watts and a peak power input of at least 2,400 watts, with a minimum amplifier headroom of 3 dB. The nominal radiation geometry shall be 87 degrees in the horizontal plane and 60 degrees in the vertical plane. The outside dimensions shall be 49.25 inches high by 21.5 inches wide by 22.75 inches deep. The weight shall be 135 pounds. The loudspeaker system shall be a Peavey model SP™ 4G.

THREE + TWO 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 39302-2898.



Features and specifications subject to change without notice.

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