

# PEAVEY ELECTRONICS

## SP™ 7G

Sound Reinforcement  
Enclosure with 44XT™

### SPECIFICATIONS

**Frequency Response, 1 meter on-axis,  
swept-sine in anechoic environment:**

50 Hz to 18 kHz ( $\pm 3$  dB)

**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

Passive Low/Mid Frequency Section:

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

High Frequency Section:

80 W continuous (25.3 V RMS)  
160 W program  
320 W peak

**Sound Pressure Level, 1 Watt, 1 meter  
in anechoic environment:**

Full Range:

99.0 dB SPL, (2.00 V input)

Low/Mid Frequency Section:

99.0 dB SPL, (2.00 V input)

High Frequency Section:

108.0 dB SPL, (2.83 V input)

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

Full Range:

126.8 dB SPL continuous  
132.8 dB SPL peak

Low/Mid Frequency Section:

127.5 dB SPL continuous  
133.5 dB SPL peak

High Frequency Section:

127.0 dB SPL continuous  
133.1 dB SPL peak

**Radiation Angle, measured at -6 dB  
point of polar response:**

500 Hz to 1.6 kHz:

Horizontal 90° +/- 10°  
Vertical 105° +/- 25°



1.6 kHz to 5 kHz:

Horiz. 90° +/- 10°  
Vert. 65° +/- 30°

5 kHz - 16 kHz:

Horiz. 55° +/- 15°  
Vert. 40° +/- 5°

**Directivity Factor, Q (Mean):**

14.89 +/- 10.51

**Directivity Index, Di (Mean):**

10.86 dB +/- 2.70 dB

**Transducer Complement:**

Low Frequency Section:

1 x 15in. Woofer, Vented  
1505-8KADT Black Widow

Mid Frequency Section:

1 x 15in. Woofer, Vented  
1505-8KADT Black Widow®

High Frequency Section:

1.6 in. Exit / 100mm Voice Coil 44XT™  
Compression Driver on CH® 7 CD  
Horn

**Box Tuning Frequency:**

Low Frequency Section: 50 Hz

**Crossover Frequency (internal  
passive):**

Low Frequency - Mid Frequency:

350 Hz

Mid Frequency - High Frequency:

2,000 Hz

**Recommended Active Crossover  
Frequency Region and Slope:**

Mid Frequency - High Frequency:

1,200 Hz at 18 dB/octave

**Time Offset:**

Low Frequency: 0.00 ms  
High Frequency: 0.70 ms

**Impedance (Z):**

Full Range:

Nominal: 4.0  $\Omega$   
Minimum: 3.9  $\Omega$

Passive LF/MF:

Nominal: 4.0  $\Omega$   
Minimum: 3.9  $\Omega$

High Frequency:

Nominal: 8.0  $\Omega$   
Minimum: 8.0  $\Omega$



**PEAVEY**

### Input Connections:

2x 1/4" input jacks, 2x 1/4" biamp jacks

### Enclosure Materials and Finish:

3/4" OSB, Finished in Black Carpet

### Dimensions (H x W x D):

#### Front:

53.50 in. x 21.50 in. x 27.50 in.  
1359 mm x 546 mm x 699 mm

#### Rear:

53.50 in. x 13.13 in. x 27.50 in.  
1359 mm x 333 mm x 699 mm

### Net Weight:

149 Lbs. (67.7 kg)

### Features

- Two 1505-8KADT Black Widow woofers
- 44XT™ compression driver
- Sound Guard™ 44XT™ high frequency protection circuit
- Trapezoidal enclosure design
- Built-in pocket casters for easy transport

### DESCRIPTION

The Peavey SP™ 7G is a newly designed quasi-three-way speaker system comprised of two 15" Black Widow woofer/midrange, and a 44XT compression driver coupled to a CH 7 constant directivity horn.

As with all SP full-range speakers, this unit can be driven in full-range or biamp mode simply by plugging into the desired jack on the input plate. The SP 7G has a trapezoidal shaped cabinet, rather than the more traditional rectangular shape. This allows cabinet arrays to be constructed more easily. This shape also greatly reduces the build-up of internal standing waves. Standing waves are internal amplitude peaks that occur due to reflections within the cabinet at frequencies related to the internal square dimensions of the cabinet. The trapezoidal shape resists the formation of standing waves by causing the internal reflections to cancel rather than reinforce each other. This ensures a minimum of mid-bass and mid-range coloration of the reproduced sound due to standing waves within the cabinet.

The SP 7G is constructed of very high quality 3/4" Oriented Strand Board (OSB), which is a void-free, medium density, and wood-species specific material. (This material should not be confused with lesser quality materials which possess internal properties of OSB, and are commonly known as "chip-board" or "wafer-board". These chip- or wafer-board materials use

inferior wood species, or a mixture of species which compromise strength, have poor screw-retention, and have low-resistance to warpage.) The SP 7G OSB cabinet is finished with Peavey's durable black carpet. Polymer corners are also added to provide further protection to the cabinet. A powder-coated expanded metal grill covers the lower section of the front of the cabinet to protect the low-frequency drivers from unforeseen impacts.

Sound Guard 44XT, Peavey's proprietary circuit for high frequency driver protection, has been included as an integral part of the cross-over for the SP 7G. The input signal is routed through the Sound Guard 44XT circuit in both full-range and biamp modes of operation. When the high frequency drive level to the SP 7G exceeds a predetermined threshold, the Sound Guard 44XT circuit is engaged. This subtly decreases the signal level going to the 44XT so that it will not be damaged due to long term over-powering. Short duration transients will not be attenuated by Sound Guard 44XT and have the potential to damage the 44XT driver. The Sound Guard 44XT circuit is dynamic in operation, and will only attenuate the signal more in relation to the amplitude of the signal, very similar to a compressor. This is accomplished through the use of a dynamically resistive component in conjunction with the non-linear resistance characteristics of a specific tungsten light bulb. Should the bulb in your Sound Guard 44XT ever burn out, a replacement may be obtained from an Authorized Peavey Service Center. However, if a Peavey replacement bulb is not readily available, then an automotive type 1156 bulb may be temporarily substituted.

### FREQUENCY RESPONSE

This measurement is useful in determining how accurately a given unit reproduces an input signal. The frequency response of the SP 7G 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 7G combine to give a smooth frequency response from 50 Hz to 18 kHz.

### DIRECTIVITY

Beamwidth is derived from the -6 dB points from the polar plots (see figure 3) which are measured in a whole space

anechoic environment. Q and Directivity Index are plotted for the on-axis measurement position. 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 7G exhibit a desirable beamwidth and directivity (figure 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 - 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 & ENGINEERING SPECIFICATIONS

The loudspeaker system shall have an operating bandwidth of 50 Hz to 18 kHz. The nominal output level shall be 99.0 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 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 75 degrees in the horizontal plane and 65 degrees in the vertical plane. The outside dimensions shall be 53.50 inches high by 21.50 inches wide by 27.50 inches deep. The weight shall be 149 pounds. The loudspeaker system shall be a Peavey model SP 7G.

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

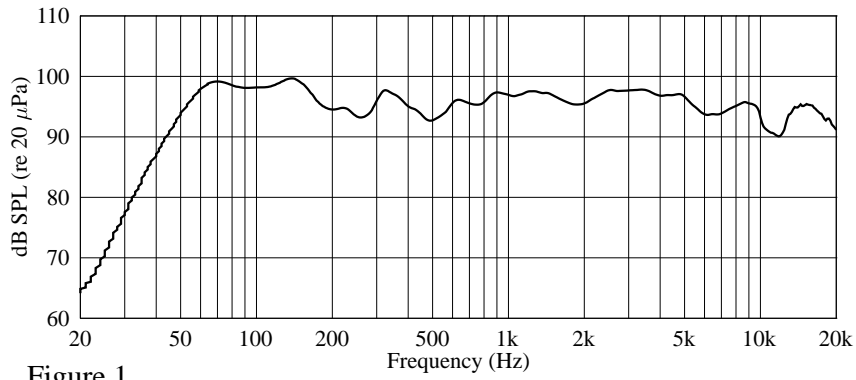


Figure 1

### Impedance

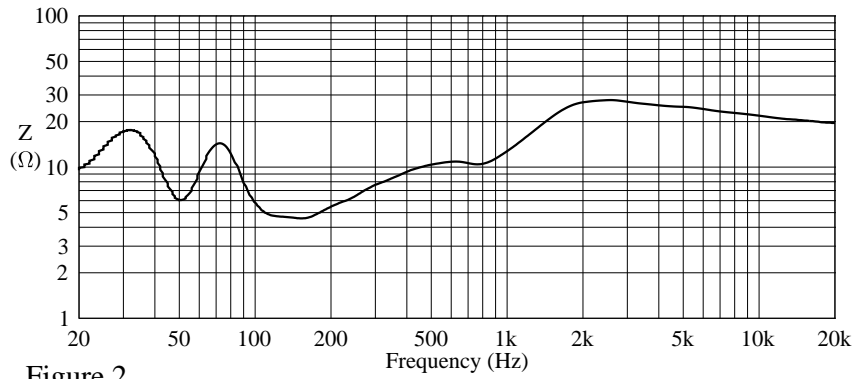


Figure 2

### Beamwidth

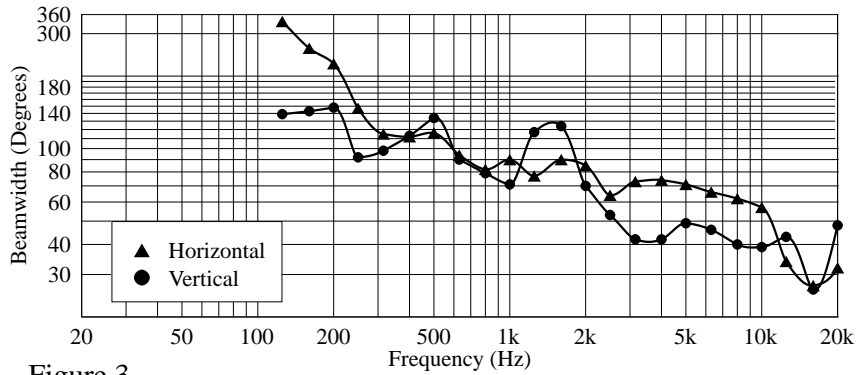


Figure 3

### Q & Directivity Index

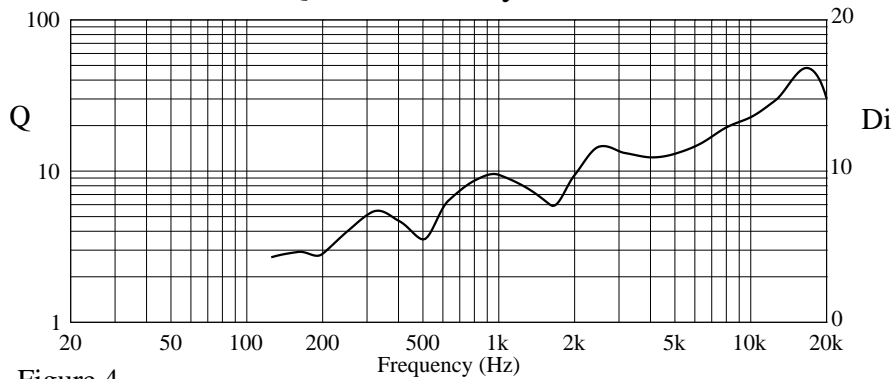
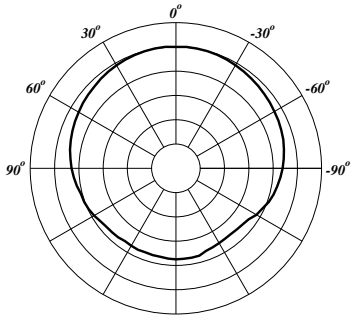


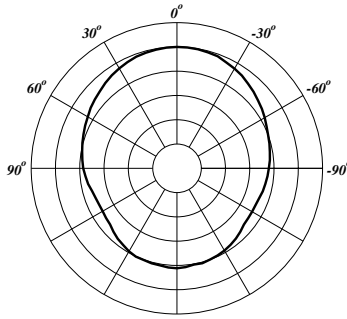
Figure 4

# HORIZONTAL POLAR PATTERNS

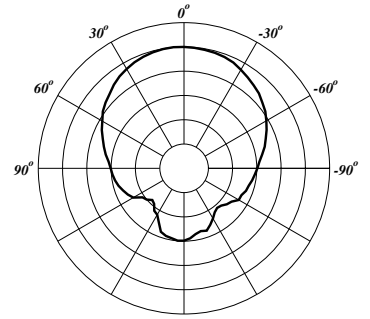
1/3 octave averaged, plotted on ISO 1/3 octave centers from 200 Hz to 20 kHz



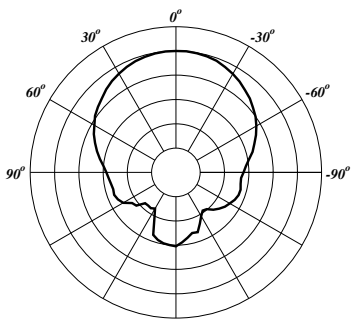
200 Hz



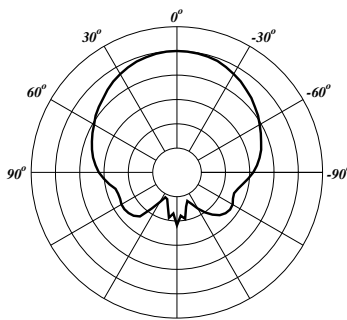
250 Hz



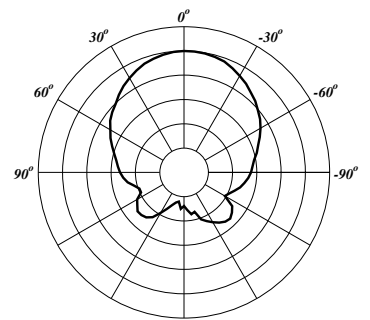
315 Hz



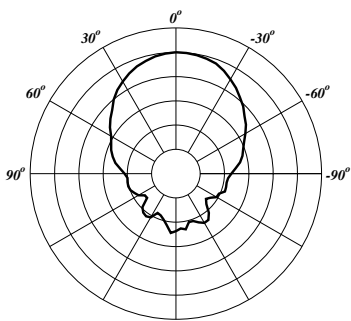
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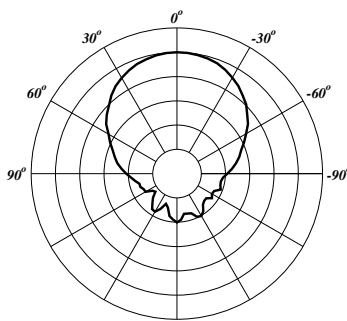
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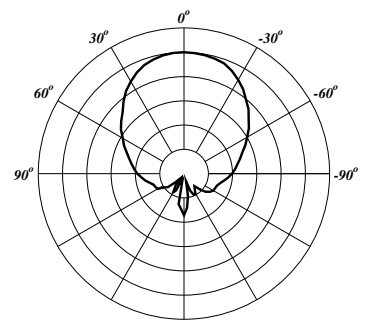
630 Hz



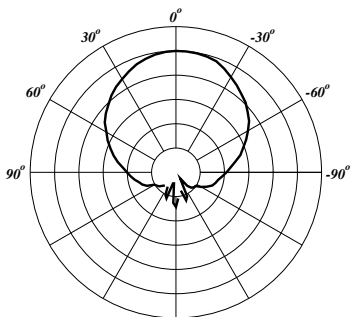
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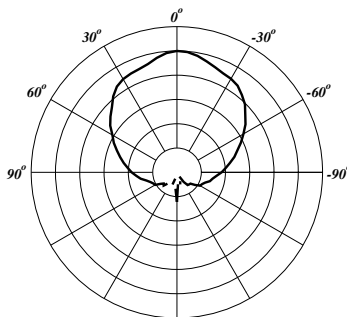
1 kHz



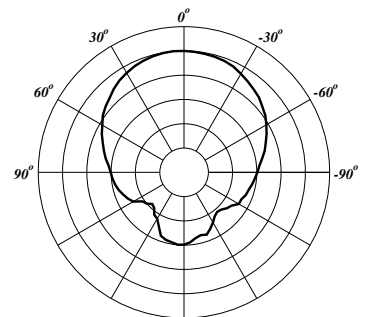
1.25 kHz



1.6 kHz



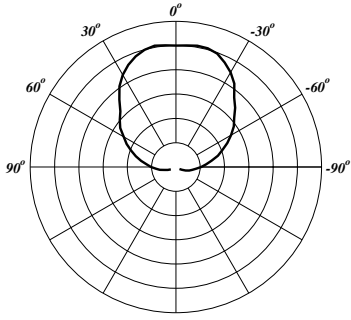
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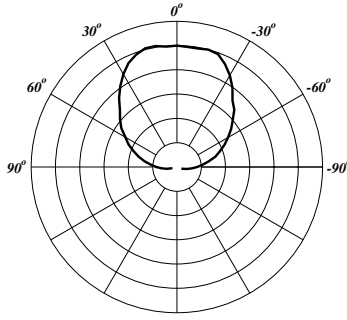
2.5 kHz

# HORIZONTAL POLAR PATTERNS

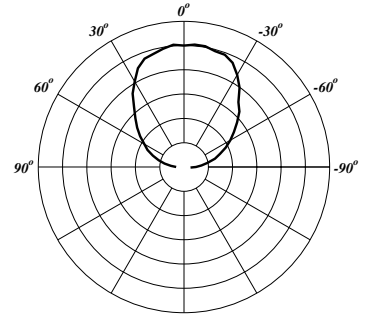
1/3 octave averaged, plotted on ISO 1/3 octave centers from 200 Hz to 20 kHz



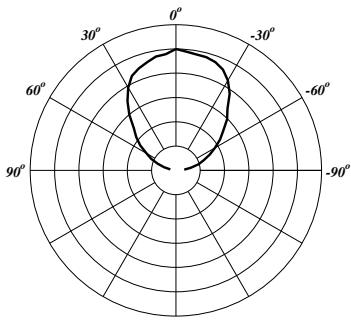
3.15 kHz



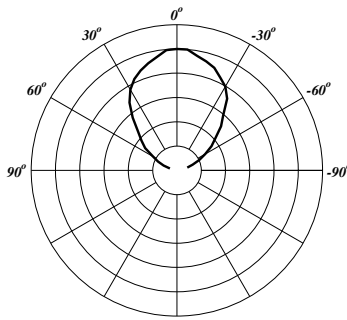
5 kHz



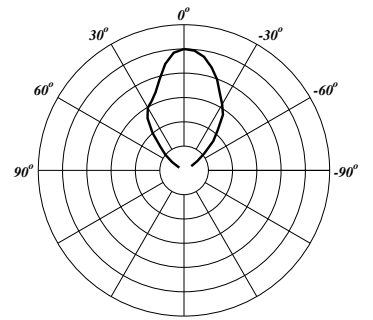
6.3 kHz



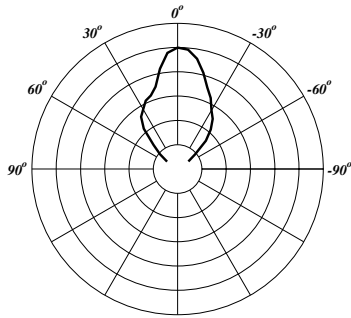
8 kHz



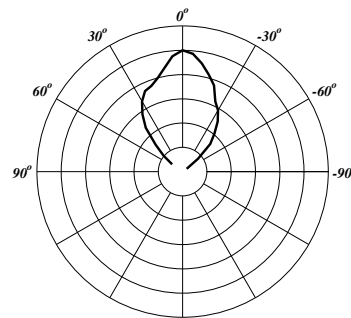
10 kHz



12.5 kHz



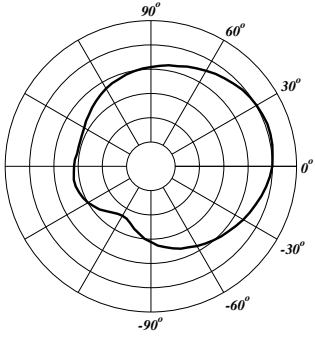
16 kHz



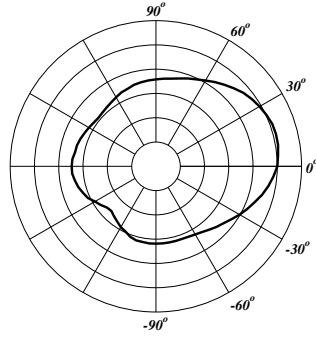
20 kHz

# VERTICAL POLAR PATTERNS

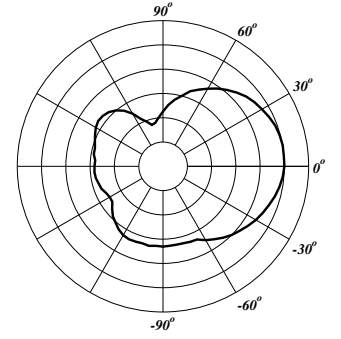
1/3 octave averaged, plotted on ISO 1/3 octave centers from 200 Hz to 20 kHz



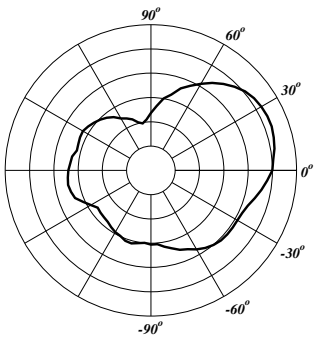
200 Hz



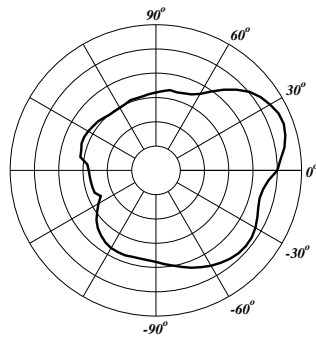
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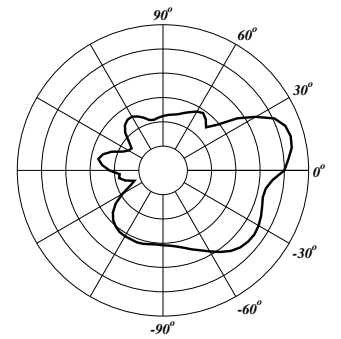
315 Hz



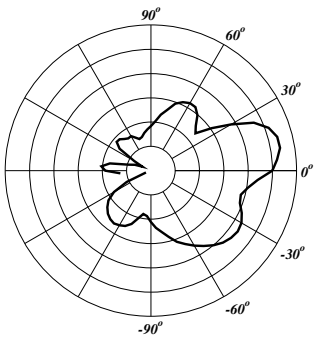
400 Hz



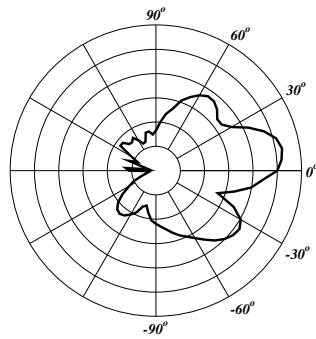
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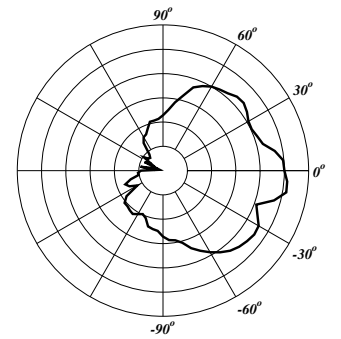
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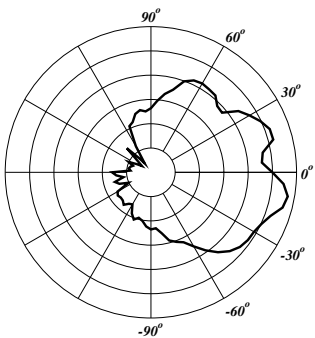
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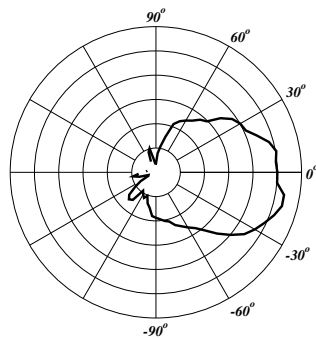
1 kHz



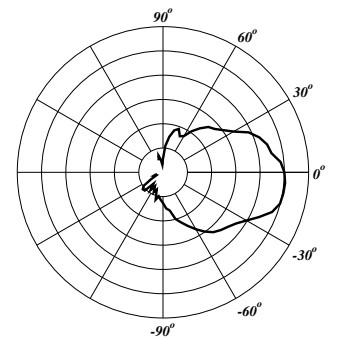
1.25 kHz



1.6 kHz



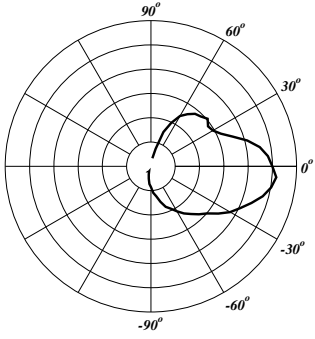
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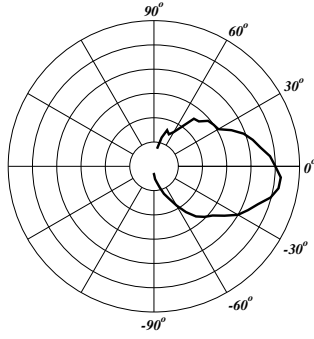
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# VERTICAL POLAR PATTERNS

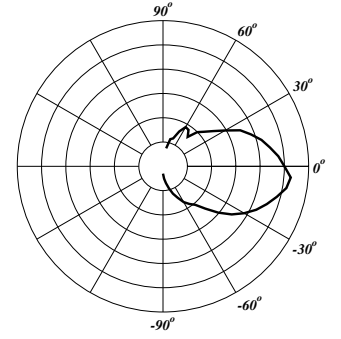
1/3 octave averaged, plotted on ISO 1/3 octave centers from 200 Hz to 20 kHz



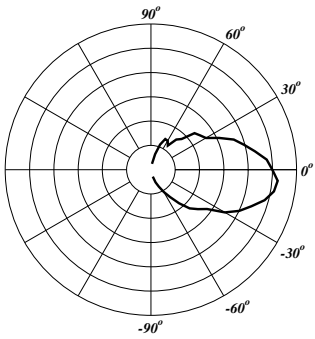
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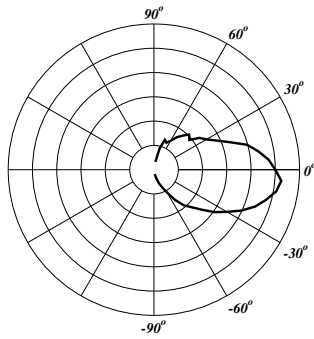
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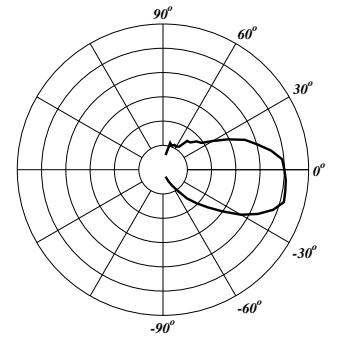
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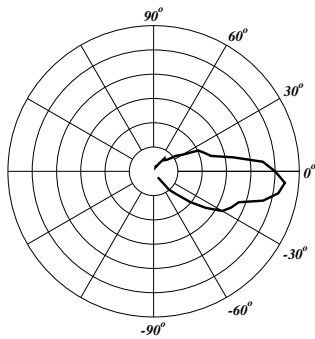
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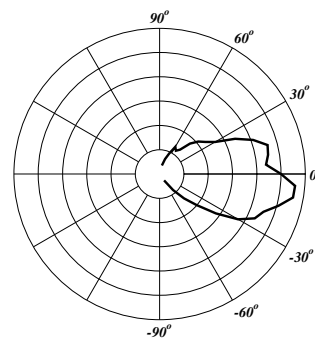
10 kHz



12.5 kHz



16 kHz



20 kHz



Features and specifications subject to change without notice.

Peavey Electronics Corporation • 711 A Street • Meridian • MS • 39301  
(601) 483-5365 • FAX (601) 486-1278 • [www.peavey.com](http://www.peavey.com)



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