

# S P E C I F I C A T I O N S



## ILS™ 1594

**Frequency Response, 1 Meter  
On-axis, Swept-sine in Anechoic  
Environment:**

52 Hz - 20 kHz ( $\pm 3$  dB)

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

40 Hz

**Power Handling:**

**Full Range:**

750W continuous  
1,500W program  
3,000W peak

**Low Frequency Section:**

600W continuous  
1,200W program  
2,400W peak

**High Frequency Section:**

100W continuous  
200W program  
400W peak

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

**Full Range:**

95.0 dB SPL, (2.83V input)

**Low Frequency Section:**

98.0 dB SPL, (2.83V input)

**High Frequency Section:**

107.0 dB SPL, (2.83V input)

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

**Full Range:**

123.8 dB SPL continuous  
129.8 dB SPL peak

**Low Frequency Section:**

125.8 dB SPL continuous  
131.8 dB SPL peak

**High Frequency Section:**

127.0 dB SPL continuous  
133.0 dB SPL peak

**Radiation Angle Measured at -6dB**

**Point of Polar Response:**

**500 Hz – 1.6 kHz:**

Horiz. 90° +/- 15°  
Vert. 105° +/- 15°

**1.6 kHz - 5 kHz:**

Horiz. 90° +/- 15°  
Vert. 55° +/- 10°

**5 kHz - 16 kHz:**

Horiz. 70° +/- 10°  
Vert. 40° +/- 5°

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

12.04 +/- 5.66

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

10.29 dB +/- 2.19 dB

**Transducer Complement:**

**Low Frequency Section:**

1x 15 in. Woofer, Vented  
1508-8 Cu

**High Frequency Section:**

1x 1.6 in. exit/100mm voice coil  
compression driver on Quadratic  
Throat Waveguide™  
44 XT (w/o adapter) on a CH-942qt

**Box Tuning Frequency:**

**Low Frequency Section:**

50 Hz

**Harmonic Distortion:**

**1% Rated Power**

**2nd Harmonic:**

100 Hz: 1.15%  
1 kHz: 0.32%



**PEAVEY**  
ARCHITECTURAL ACOUSTICS®

**3rd Harmonic:**

100 Hz: 0.26%

1 kHz: 0.45%

**10% Rated Power**

**2nd Harmonic:**

100 Hz: 4.60%

1 kHz: 1.59%

**3rd Harmonic:**

100 Hz: 1.04%

1 kHz: 0.64%

**Crossover Frequency**

(internal passive):

**Low Frequency - High Frequency:**

1,300 Hz

**Time Offset:**

Low Frequency: 0.00 ms

High Frequency: 0.31 ms

**Impedance (Z):**

**Full Range:**

Nominal: 8.0 Ω

Minimum: 7.1 Ω

**Low Frequency:**

Nominal: 8.0 Ω

Minimum: 7.4 Ω

**High Frequency:**

Nominal: 8.0 Ω

Minimum: 6.0 Ω

**Input Connections:**

2x Neutrik® Speakon® NL4MD &

1x 5-position barrier strip

**Enclosure Materials & Finish:**

3/4 in. poplar plywood finished in

exterior grade hardened black

paint

**Mounting Provisions:**

(12) 3/8"-16 threaded mounting suspension points (3 each top & bottom and 2 each sides & back).

Use only forged shoulder machinery eye-bolt, Mil Spec MIL51937-3.

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

**Front:**

33.75 in. x 19.38 in. x 21.75 in.

857 mm x 492 mm x 552 mm

**Rear:**

33.75 in. x 8.63 in. x 21.75 in.

857 mm x 219 mm x 552 mm

**Net Weight:**

96 Lbs. (43.6 kg)

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

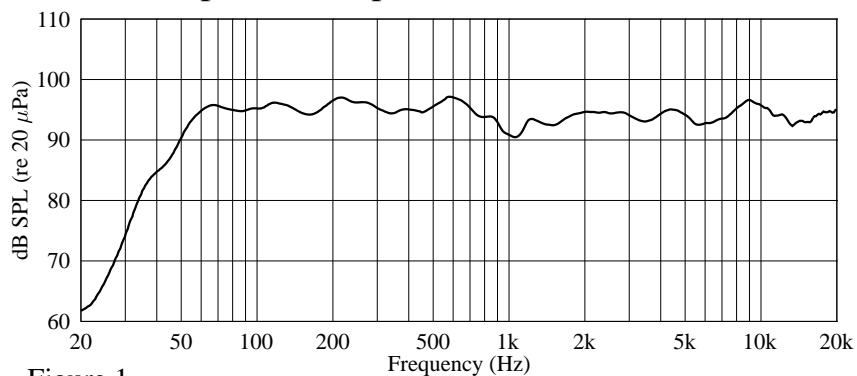


Figure 1

**Impedance**

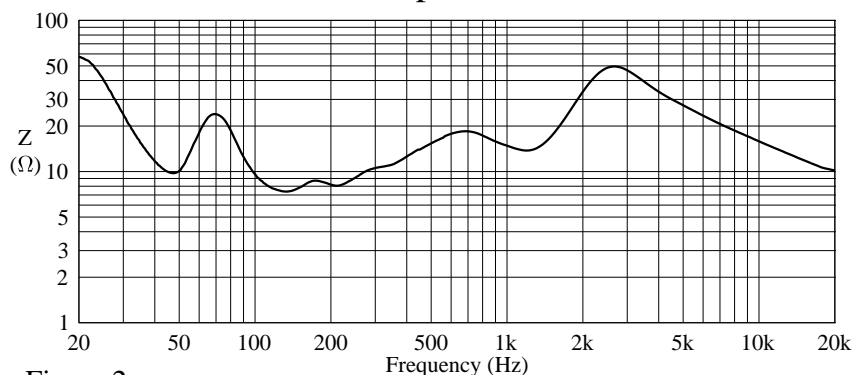


Figure 2

**Beamwidth**

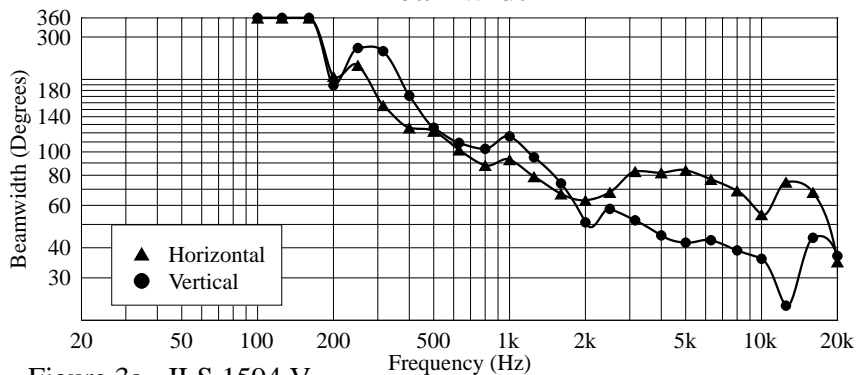


Figure 3a - ILS 1594 V

**Beamwidth**

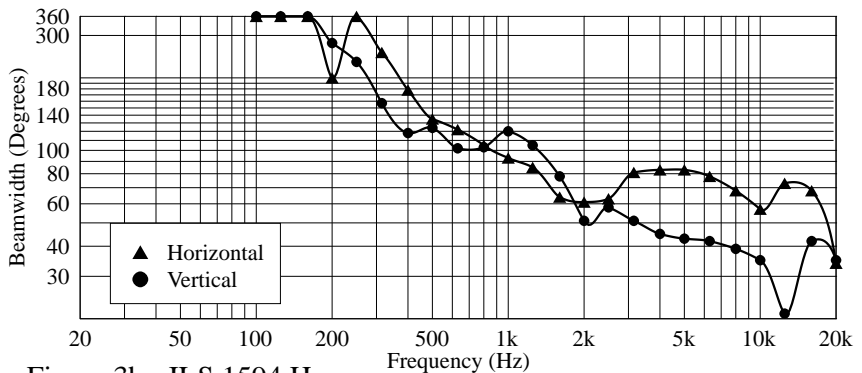


Figure 3b - ILS 1594 H

**Features**

- 50 Hz to 20 kHz bandpass
- 4" diaphragm, 1.6" exit, Ferrofluid equipped high frequency compression driver
- Patented Quadratic Throat Waveguide™
- Carefully tailored directivity patterns
- Flexible suspension provisions
- Robust power handling capabilities
- Passive crossover included
- Bi-amplified crossover provisions

**Applications**

- Stadiums
- Arenas
- Multi-Purpose Facilities
- Cruise Ships
- Theme Parks
- Houses of Worship
- Live Music Venues
- Hotel Meeting Rooms
- Conference Facilities
- Theaters
- Auditoriums
- Civic Centers
- Judicial Facilities
- Gymnasiums
- Performing Arts Centers

**Description**

The new Peavey ILS 1594V (vertical) and ILS 1594H (horizontal) loudspeaker systems are two-way, vented, low frequency enclosures using a 15" low frequency driver paired with a 90° (horizontal) by 40° (vertical) high frequency waveguide. The HF section employs a 1.6 exit/100 mm voice coil compression driver mounted on one of Peavey's revolutionary new Quadratic Throat Waveguides. In the ILS 1594H unit, the waveguide is rotated to provide a corresponding beamwidth which may be employed in low ceiling type applications. Both versions of the ILS 1594 have a full range sensitivity of 95 dB SPL – (1 Watt/1 meter) and a maximum output of 130 dB at 1 meter (full range).

The Peavey ILS 1594 is a high performance loudspeaker system for use in demanding sound reinforcement applications. The robust construction of the ILS 1594 provides power handling capacities of 750W continuous, 1.5 kW program and 3 kW peak (full range). The unit may be operated using the internal 1,300 Hz passive crossover or

**Q & Directivity Index**

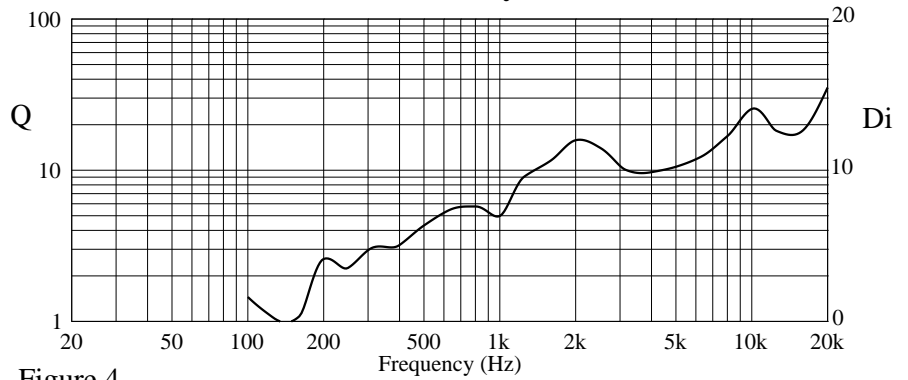


Figure 4

**Harmonic Distortion : 10% Rated Power**

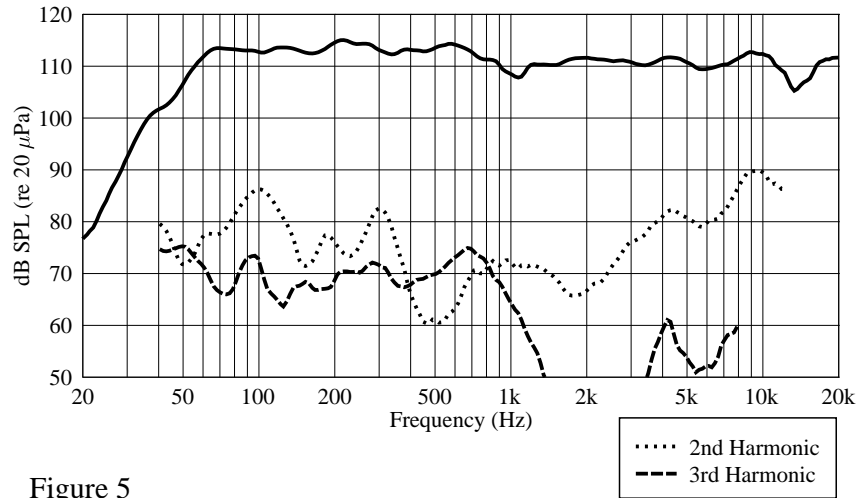


Figure 5

**Harmonic Distortion : 1% Rated Power**

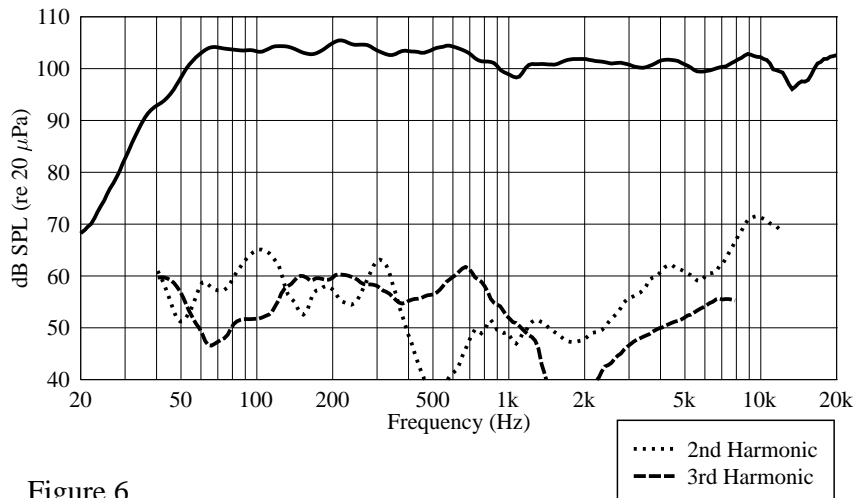


Figure 6

may be biamplified. Twelve 3/8" x 16 threaded mounting suspension points (3 each top and bottom and 2 each sides and back) allow a variety of suspension configurations. Multiple units may be mounted to form a vertical/horizontal array [see limitations under mounting instructions]. Both versions of the ILS 1594 are solidly constructed of 3/4" void-free, poplar plywood and finished with an exterior grade hardened black paint.

### **Frequency Response**

This measurement is useful in determining how accurately a given unit reproduces an input signal. The frequency response of the ILS 1594 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 ILS 1594 combine to give a smooth frequency response from 52 Hz - 20 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 ILS 1594 exhibit a desirable beamwidth and directivity (figure 3 & 4) suitable for sound reinforcement applications.

### **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 5 & 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**

Caution: Before attempting to suspend this speaker, consult a certified structural engineer. The speaker can fall from improper suspension, resulting in serious injury and property damage. Other enclosures may be suspended below one ILS 1594. However, the combined weight of additional enclosures and all cables, clamps and other hardware must not exceed 304 pounds. The ILS 1594 weighs 96 pounds and the maximum combined weight suspended from the uppermost mounting bracket assemblies must not exceed 400 pounds. Maximum enclosure angle is 45°. Use only the correct mating hardware. All associated rigging is the responsibility of others.

### **Architectural & Engineering Specifications**

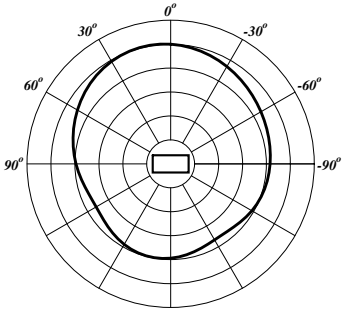
The loudspeaker system shall have an operating bandwidth of 52 Hz - 20kHz. The nominal output level shall be 95.0 dB when measured at a distance of one meter with an input of one Watt. The nominal impedance shall be 8.0 Ohms. The maximum continuous power handling shall be 750 Watts, maximum program power of 1,500 watts and a peak power input of at least 3,000 Watts, with a minimum amplifier headroom of 3 dB. The nominal radiation geometry shall be 80 degrees in the horizontal plane and 65 degrees in the vertical plane. The outside dimensions shall be 33.75 inches high by 19.38 inches wide by 21.75 inches deep. The weight shall be 96 pounds. The loudspeaker system shall be an Architectural Acoustics model ILS 1594.

This product is manufactured under U.S. patents 6,059,069 and 6,064,745.

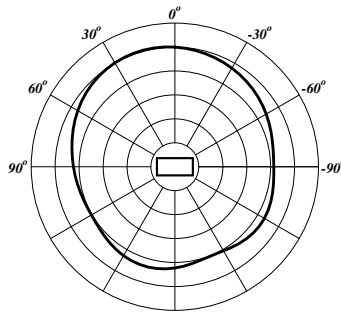
### **Three + Two Year Limited Warranty NOTE:**

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 39301-2898.

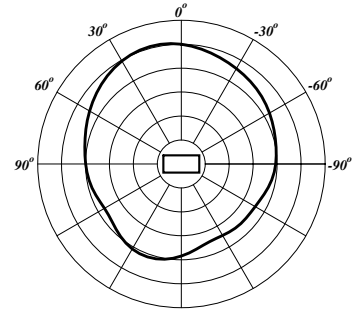
**ILS 1594H**  
**Horizontal Polar Patterns 6 dB per Division**



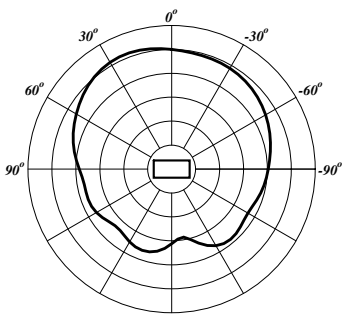
200 Hz



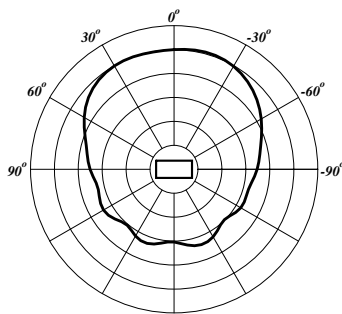
250 Hz



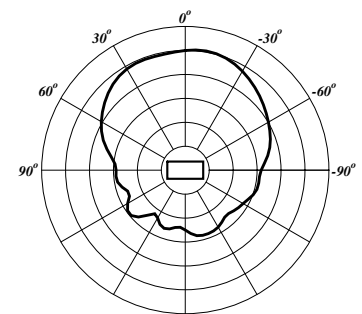
315 Hz



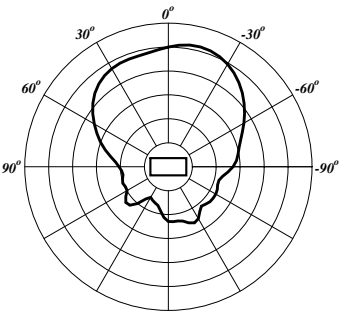
400 Hz



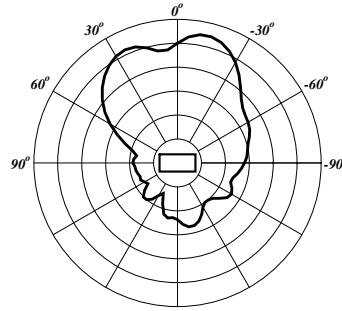
500 Hz



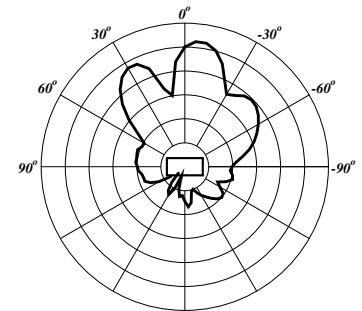
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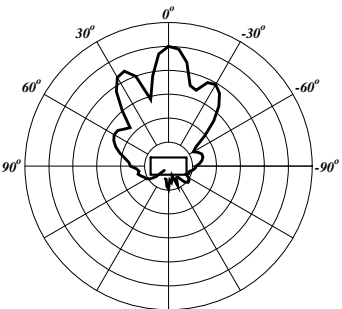
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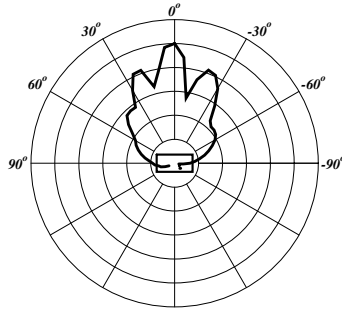
1 kHz



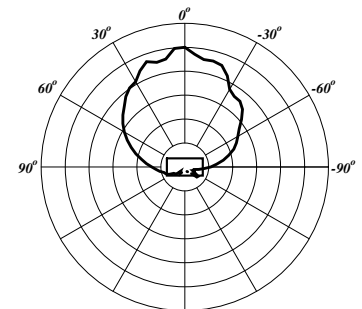
1.25 kHz



1.6 kHz

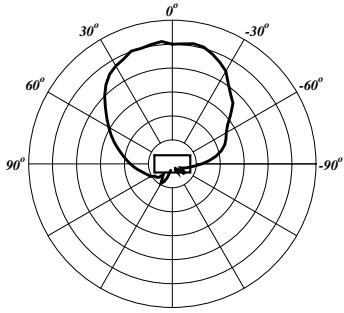


2 kHz

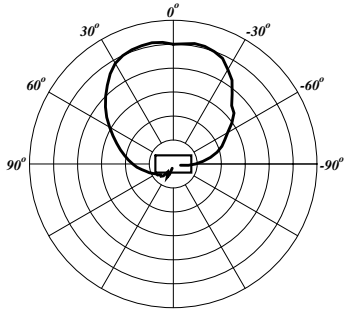


2.5 kHz

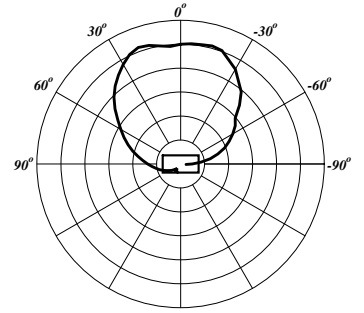
**ILS 1594H**  
**Horizontal Polar Patterns 6 dB per Division**



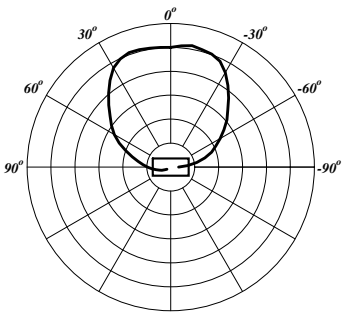
**3.15 kHz**



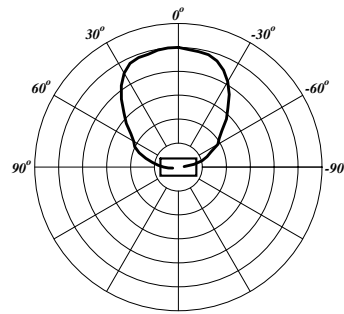
**4 kHz**



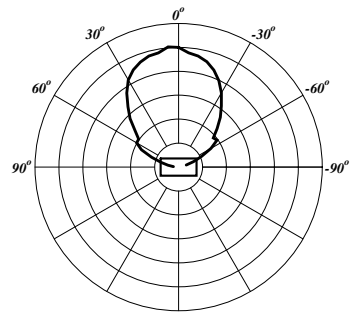
**5 kHz**



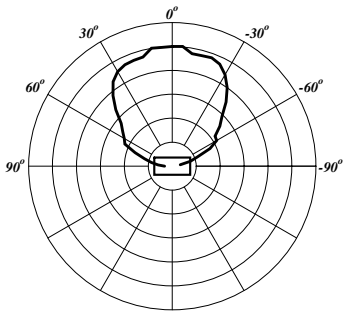
**6.3 kHz**



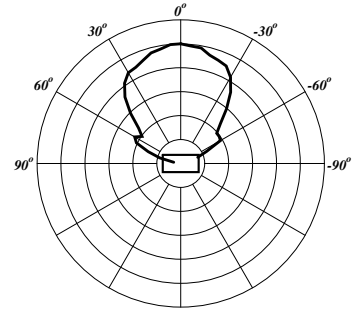
**8 kHz**



**10 kHz**

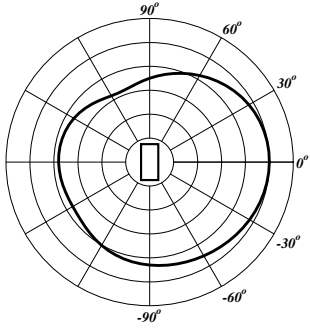


**12.5 kHz**

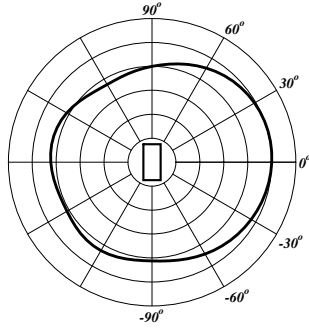


**16 kHz**

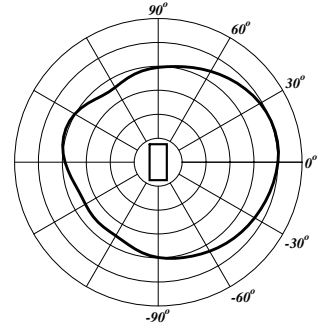
**ILS 1594H**  
**Vertical Polar Patterns 6 dB per Division**



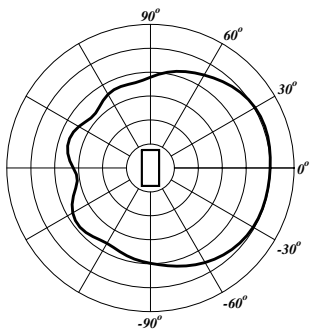
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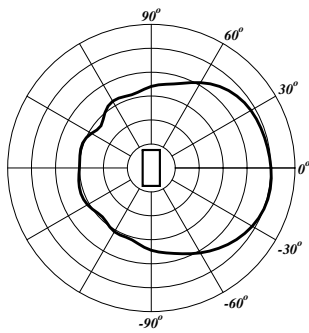
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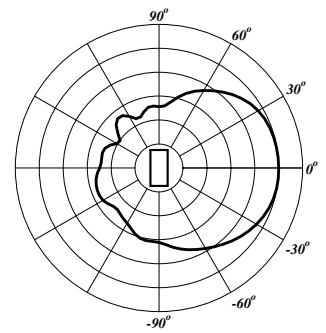
315 Hz



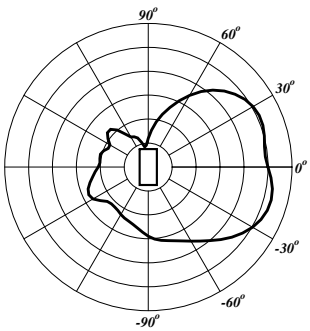
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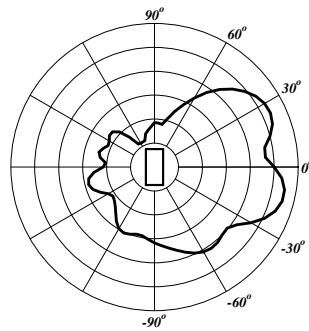
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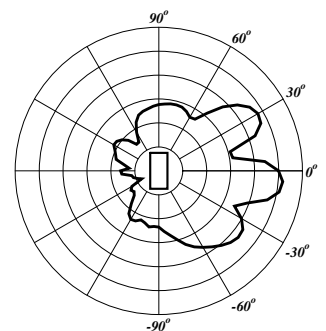
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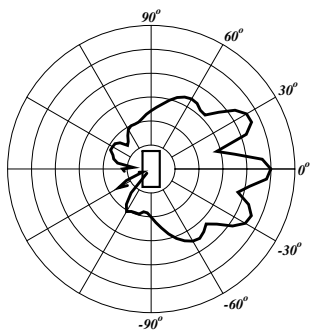
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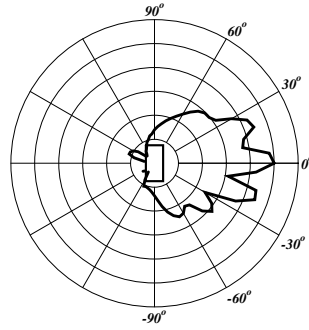
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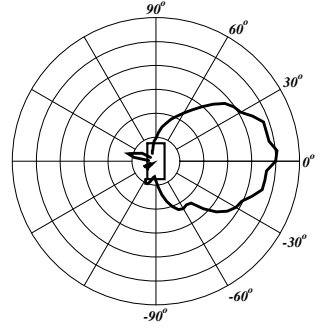
1.25 kHz



1.6 kHz

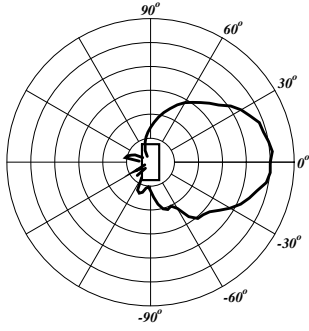


2 kHz

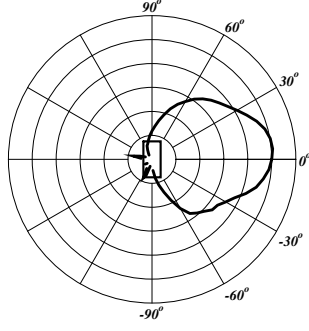


2.5 kHz

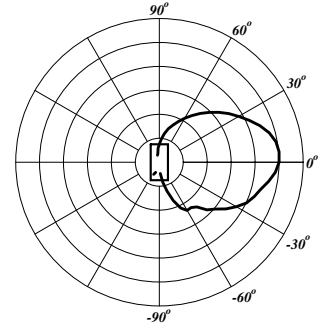
**ILS 1594H**  
**Vertical Polar Patterns 6 dB per Division**



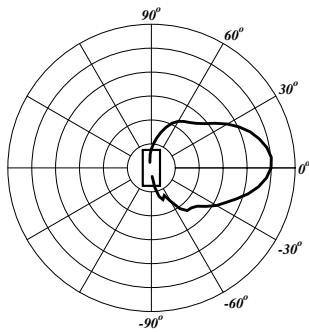
**3.15 kHz**



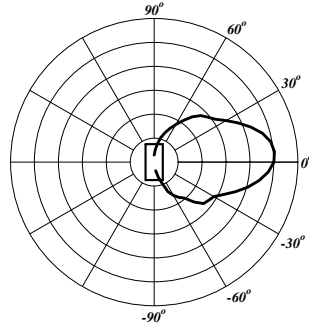
**4 kHz**



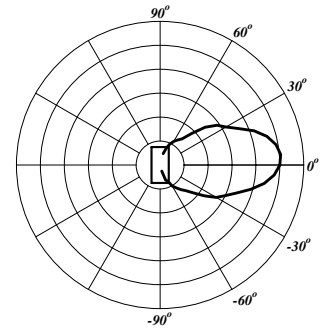
**5 kHz**



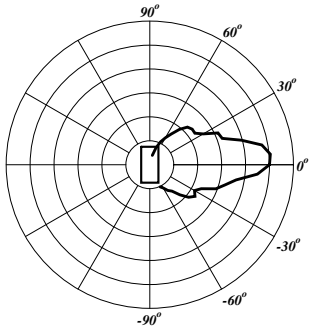
**6.3 kHz**



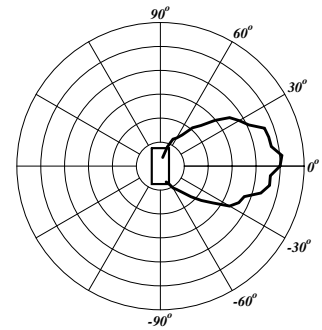
**8 kHz**



**10 kHz**



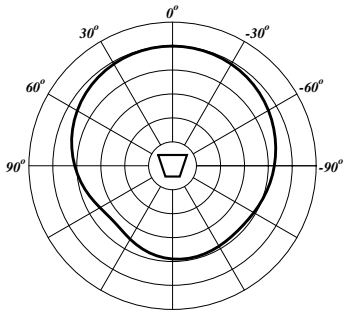
**12.5 kHz**



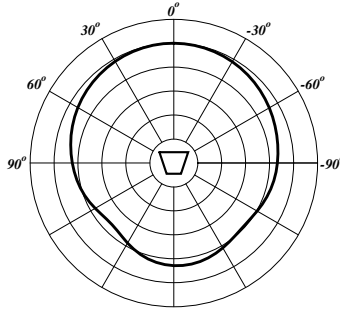
**16 kHz**



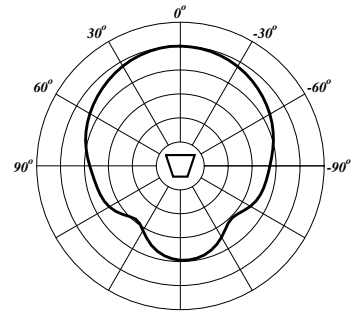
**ILS 1594V**  
**Horizontal Polar Patterns 6 dB per Division**



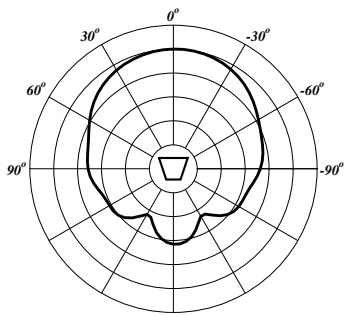
200 Hz



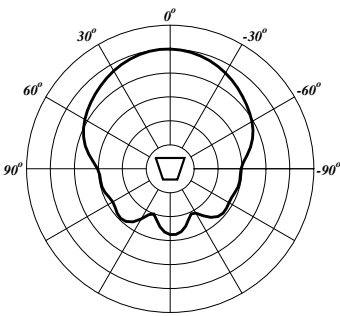
250 Hz



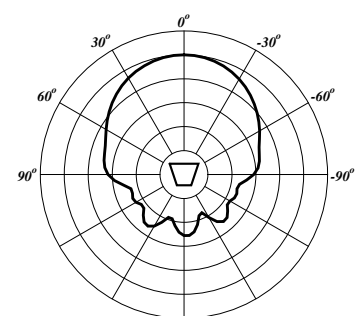
315 Hz



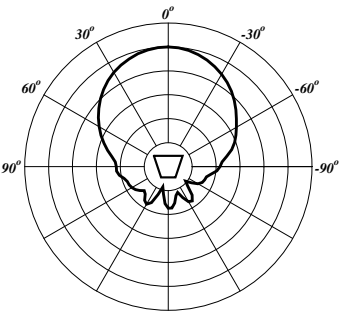
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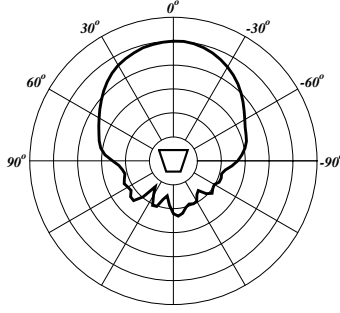
500 Hz



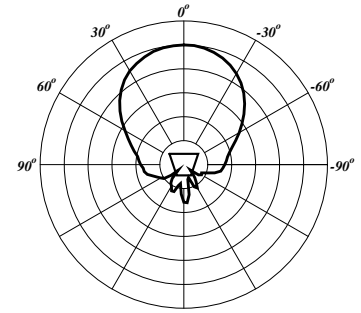
630 Hz



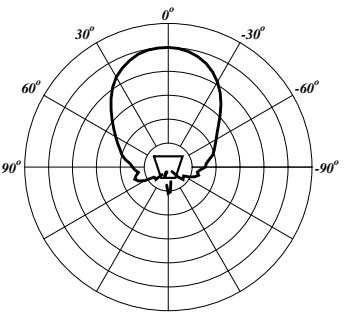
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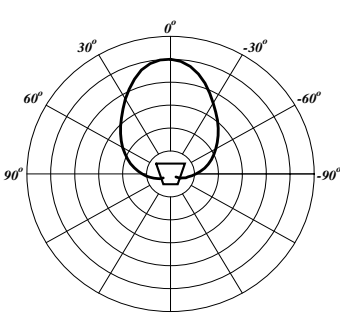
1 kHz



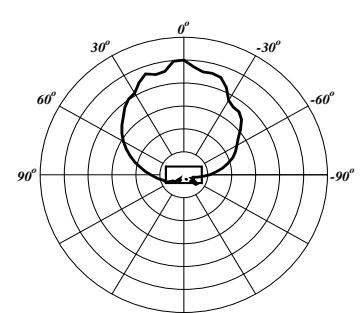
1.25 kHz



1.6 kHz

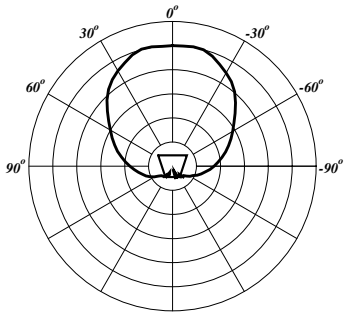


2 kHz

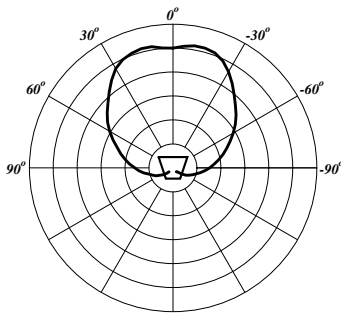


2.5 kHz

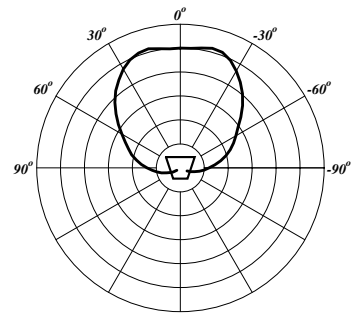
**ILS 1594V**  
**Horizontal Polar Patterns 6 dB per Division**



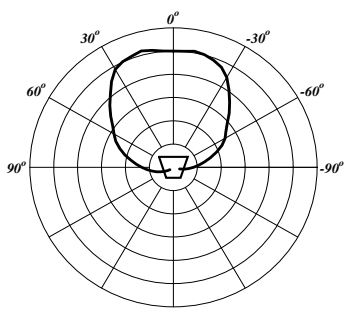
**3.15 kHz**



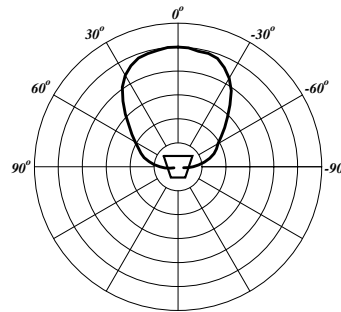
**4 kHz**



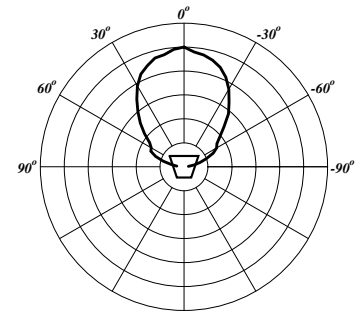
**5 kHz**



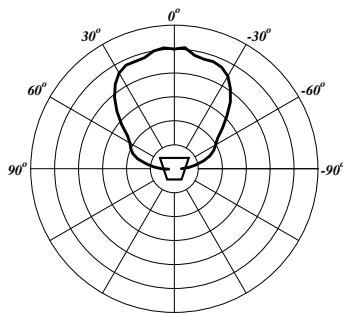
**6.3 kHz**



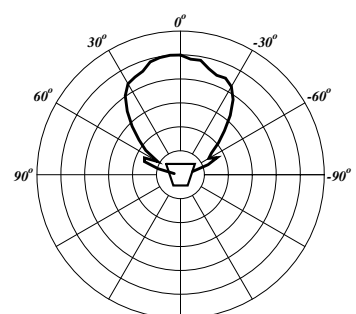
**8 kHz**



**10 kHz**

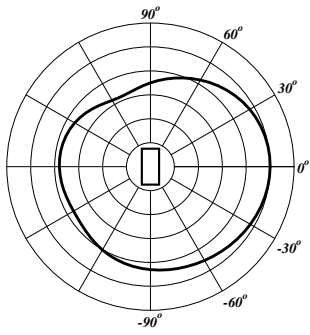


**12.5 kHz**

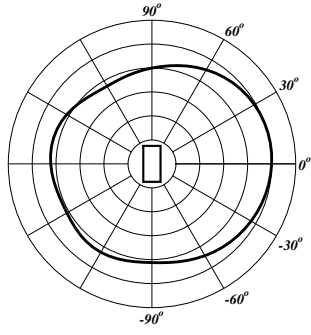


**16 kHz**

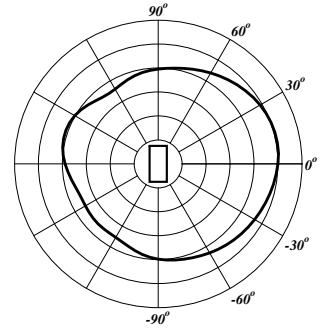
**ILS 1594V**  
**Vertical Polar Patterns 6 dB per Division**



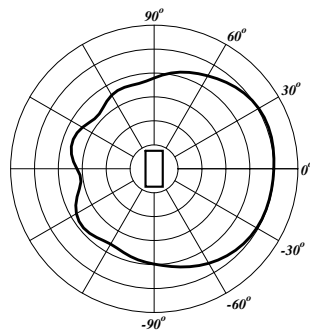
200 Hz



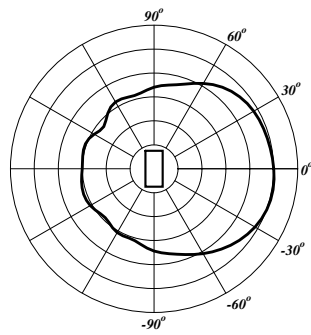
250 Hz



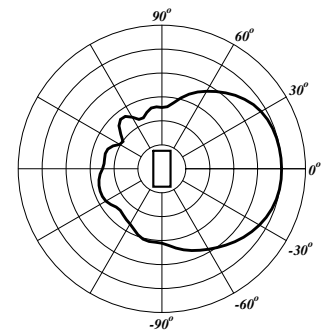
315 Hz



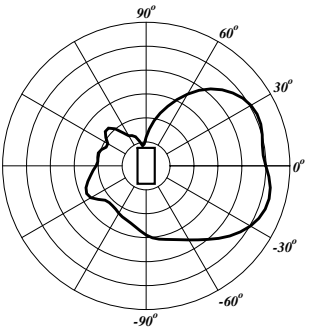
400 Hz



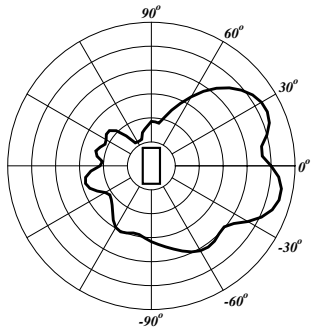
500 Hz



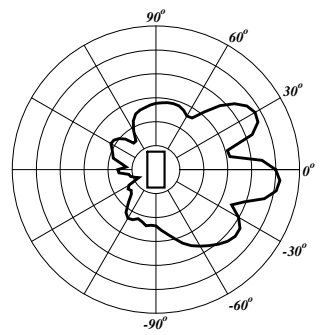
630 Hz



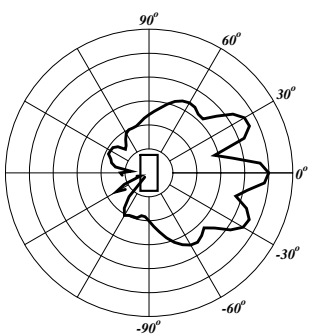
800 Hz



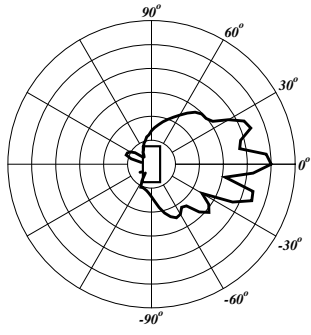
1 kHz



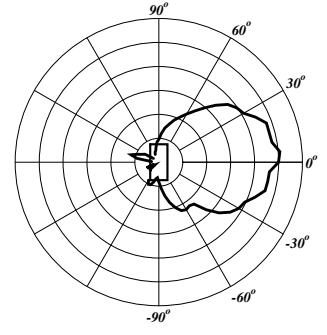
1.25 kHz



1.6 kHz

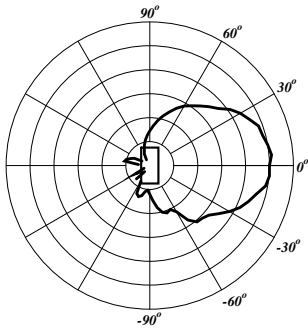


2 kHz

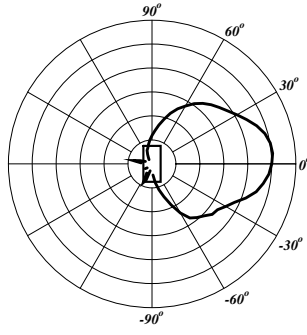


2.5 kHz

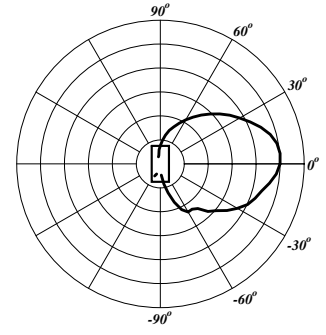
**ILS 1594V**  
**Vertical Polar Patterns 6 dB per Division**



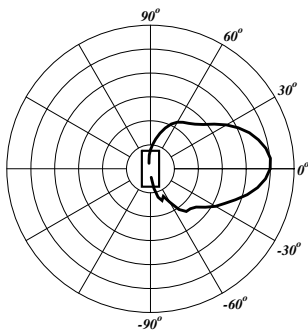
3.15 kHz



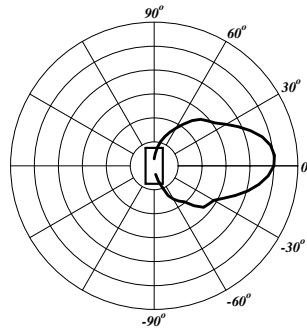
4 kHz



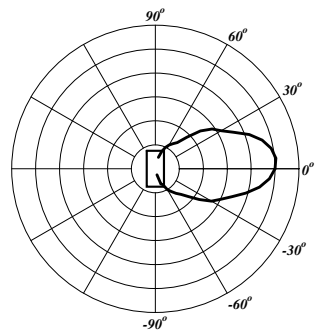
5 kHz



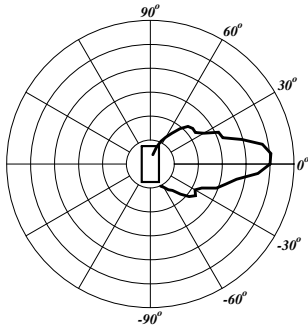
6.3 kHz



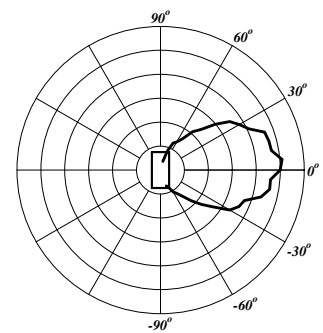
8 kHz



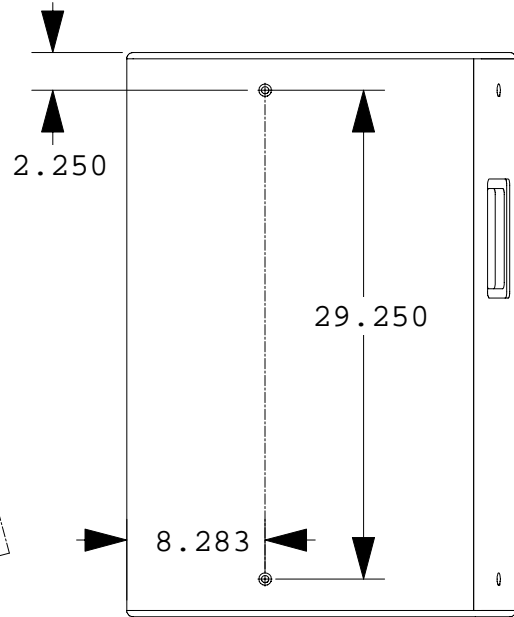
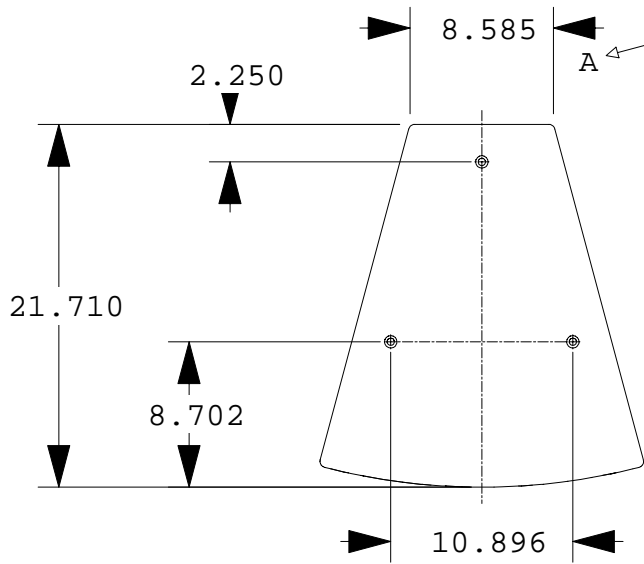
10 kHz



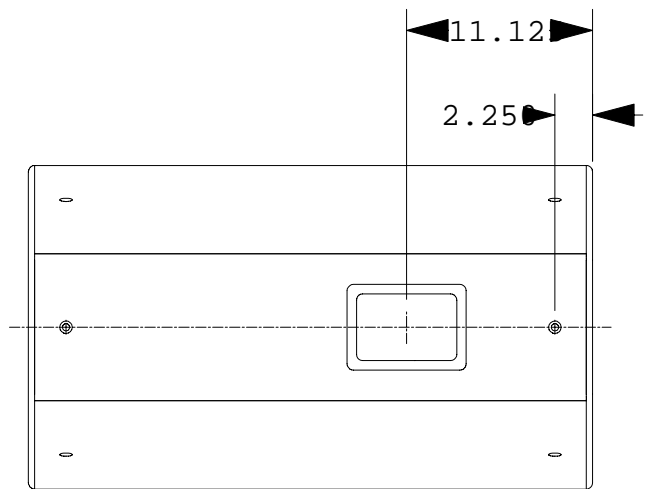
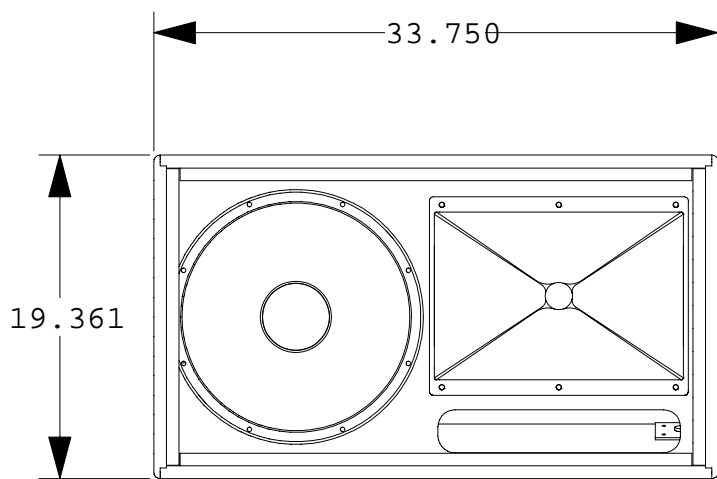
12.5 kHz



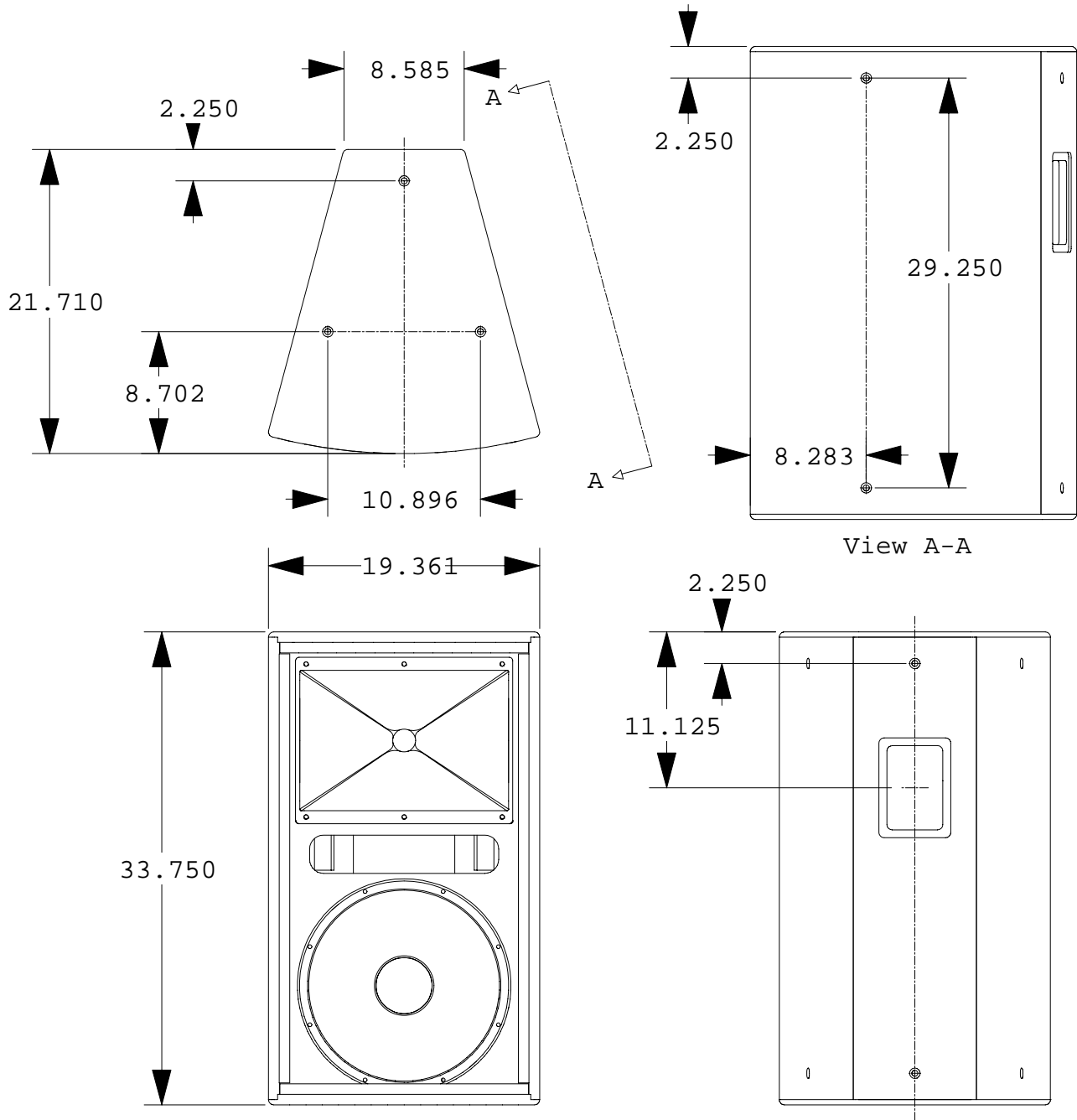
16 kHz



View A-A



ILS 1594 H



ILS 1594 V

# ILS™ 1594 INPUT



A PRODUCT OF PEAVEY ELECTRONICS CORP.

## FULL RANGE

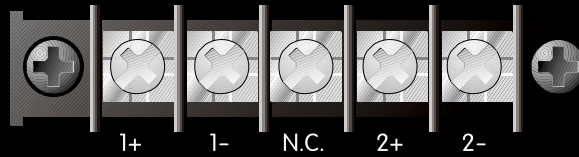
1+(+), 1-(-)  
2+(NC), 2-(NC)



## BIAMP

1+: LF+  
1-: LF-  
2+: HF+  
2-: HF-

ALL CONNECTORS ARE WIRED IN PARALLEL INTERNALLY.  
CHANGE INTERNAL JUMPER FOR BIAMP OR FULL RANGE  
OPERATION.



### FULL RANGE

750W RMS CONT.  
8 OHMS

### BIAMP

LF: 600W RMS CONT.  
8 OHMS  
HF: 100W RMS CONT.  
>1.0 kHz  
8 OHMS

**WARNING:** CONSULT SPEC SHEET FOR FULL SUSPENSION RATINGS. DO NOT EXCEED 400 lbs. OR 45 DEGREE ANGLE

BUILT UNDER U.S. PATENT NOS.  
6,059,069 AND 6,064,745



Features and specifications subject to change without notice.

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(601) 483-5376 • FAX (601) 486-1678 • <http://aa.peavey.com>



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