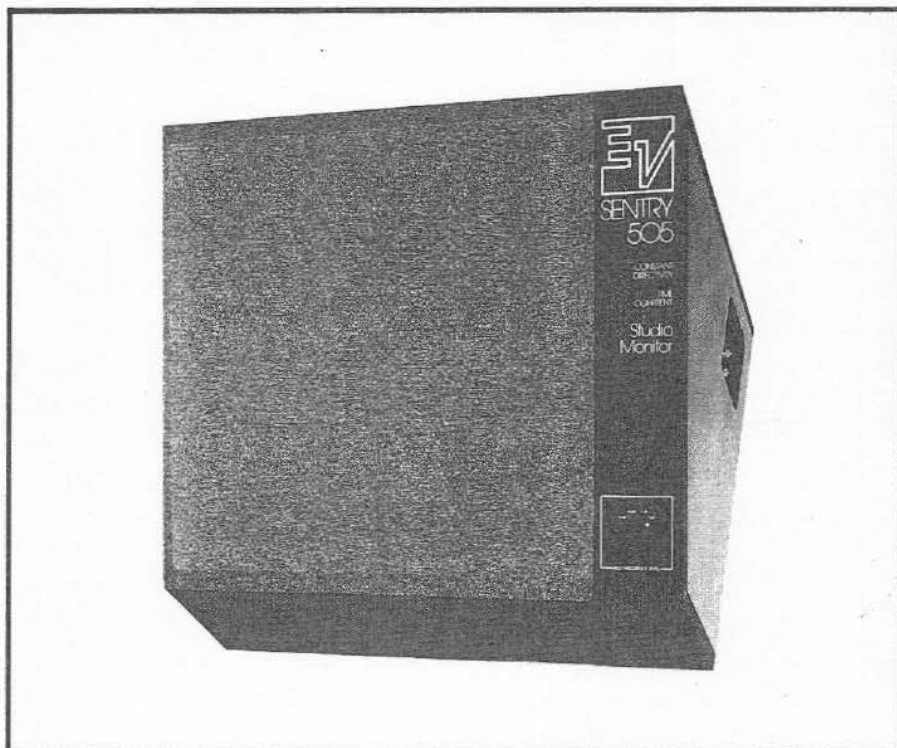




Electro-Voice®

a MARK IV company

Sentry® 505 Professional Monitor System

SPECIFICATIONS

Frequency Response, 1 Meter on Axis,
Anechoic Environment, Swept One-Third-
Octave Pink Noise ± 3 dB:*
40 to 18,000 Hz

Quarter-Space Reference Efficiency:
2%

Dispersion Angle Included by 6-dB Down
Points, Octave Bands of Random Noise,
250 to 10,000 Hz Horizontal & Vertical:
110° $\pm 30^\circ$
10,000 to 20,000 Hz Horizontal & Vertical:
60° $\pm 15^\circ$

Maximum Midband Acoustic Output Power:
2.0 watts

Crossover Frequency:
1,500 Hz

Sound Pressure Level at 1 Meter, 1 Watt,
Anechoic Environment, 300-2,000 Hz
Average:
96 dB

Phase Variation 300 Hz to 3,000 Hz:
 $\pm 30^\circ$

Long-Term Average Power-Handling
Capacity (at 8 ohms) (40 to 4,000 Hz):**
100 watts

Short-Term Power Handling Capacity (10
milliseconds) (40 to 4,000 Hz):
400 watts

Nominal Impedance:
8.0 ohms

Minimum Impedance:
6.0 ohms

Control:
4-position, tweeter attenuation from flat to
-9 dB in 3-dB steps

Dimensions,

30° from Vertical:
49.5 cm (19.50 in.) high,
65.1 cm (25.63 in.) wide
Top: 47.6 cm (18.75 in.) deep
Bottom: 19.1 cm (7.50 in.) deep
60° from Vertical:
47.6 cm (18.75 in.) high,
65.1 cm (25.63 in.) wide
Top: 49.5 cm (19.50 in.) deep

Net Weight:
60 lb

Accessories:
SEQ low-frequency step-down kit

*See Response Curve Figure 1.

**Consistent with our usual practice, this
rating is based on very rigorous test con-
ditions. Please see Power Handling
Capacity Section for a further explana-
tion of these test conditions.

DESCRIPTION

The Electro-Voice Sentry® 505 monitor
speaker system has been "human
engineered" for the broadcast/recording
studio engineer. The no-nonsense design
meets the needs of professionals by
combining these characteristics: high
efficiency with extended low-frequency
response, high-power capacity across the
entire frequency range, uniform frequency
response and constant directivity, all in a
well thought-out, attractive package.

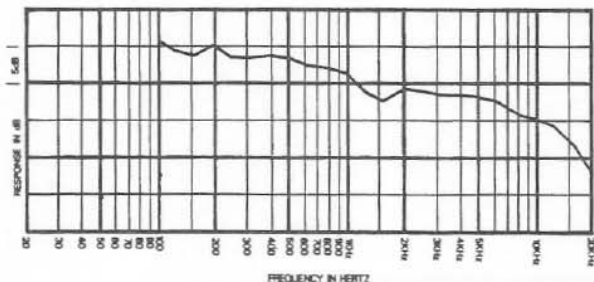
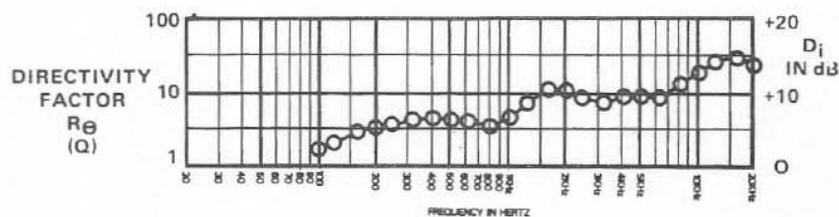
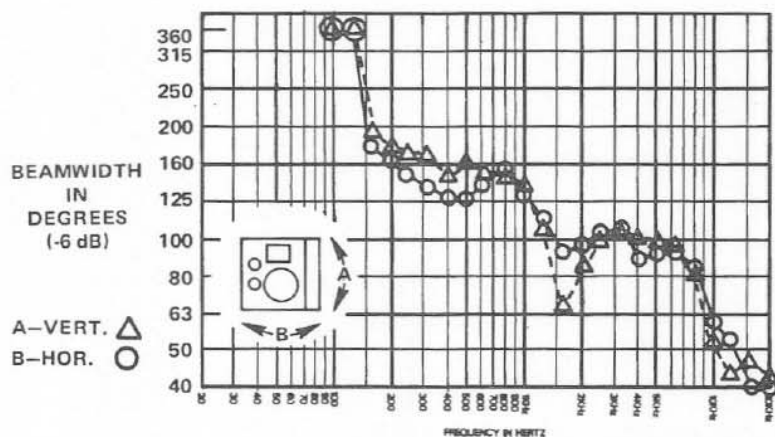
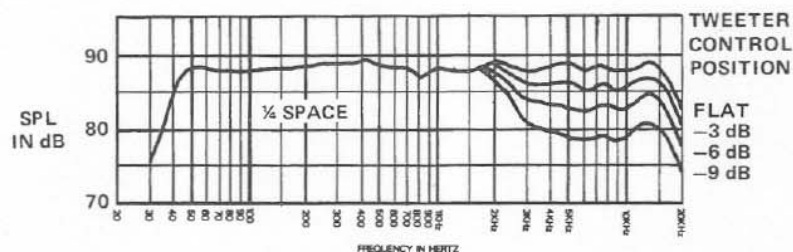
The Sentry 505 employs a Super-Dome™
tweeter capable of handling 25 watts of input
power (many tweeters operate in the 5-watt

range), while faithfully reproducing program
material with response out to 18 kHz.
Accidental high-frequency blasts from tape
head contact in rewind/fast-forward mode
are much less likely to destroy the tweeter.

The Super-Dome tweeter is coupled to a
high frequency, dispersion controlling
"director". This unique coupling of a direct
radiator to a directivity-controlling device
channels the acoustic output into a
controlled spatial zone. As an additional
benefit, it increases the effective power
handling ability of the tweeter in its lower 1½
octaves.

The low-frequency section of the Sentry 505
is a 12-inch direct radiator woofer. The
combination of high excursion capability,
long over-hung coil, and vented enclosure
provides low distortion at high output levels.
The vented design also yields the unusual
combination of small size, extended bass
response, and high efficiency. Such
performance is unattainable in systems that
are not based on the design principals of
A.N. Thiele¹.

Box and woofer parameters have been spec-
ifically considered in combination to provide
flat low-frequency response when the system
is used in a quarter-space environment (at
the junction of two large planes; i.e., at the
ceiling/wall corner). Any other system which
is designed for proper sonic balance free
standing or mounted against a wall will over-
emphasize low frequencies when placed in
the restricted environment of the quarter-
space. But the Sentry 505 is specifically



suited for quarter-space placement and, in fact, must be used in quarter-space to achieve specified low-frequency performance.

Since the acoustic centers of the drivers are in relative alignment, the critical midband frequencies (through the crossover area) are produced with minimal phase distortion.

The Sentry 505 is housed in a highly functional cabinet wrapped in a special, scratch-resistant, matte black vinyl. Installation of the system on a wall can be accomplished with the mounting brackets included with this system. It is possible to mount the Sentry 505 so that the drivers are angled at 60° or 30° from vertical. (Specific installation instructions are given at the end of this sheet.)

LOUDSPEAKER RESPONSE DUE TO THE ACOUSTICAL ENVIRONMENT

Several factors determine the overall response of a speaker system in a listening environment. The physical characteristics of the room itself, and the placement of speakers and listener all affect the SPL capability, frequency response, and stereo imaging of the system. However, since the physical arrangement of the Sentry 505 baffle provides smooth coupling with the adjacent planes of the quarter-space, and since the on-axis radiation of the systems can be angled directly at the listener, many of these adverse effects will be minimized by the Sentry 505.

CONSTANT-DIRECTIVITY SPEAKER SYSTEM

In the Sentry 505 the careful selection of coverage angle, woofer size and crossover frequency results in the creation of a special system type — a constant-directivity system. The result is a well-defined, horizontal and vertical coverage zone of acoustic output in the critical frequency range from 500 to 10,000 Hz. This special characteristic means uniform and dependable coverage without "hot spots" or dead zones at certain frequencies. By combining constant directivity and flat frequency response, the Sentry 505 system delivers essentially flat power response and uniform sound coverage throughout the critical four octaves of midrange frequencies. This is an important and extraordinary feature of the Sentry 505 system.

The constant directivity characteristics of the Sentry 505 enhance the stereo imaging capabilities of the system. Furthermore, off-axis degradation of frequency response cannot be independently corrected through supplementary equalization. Therefore, uniform directivity and smooth on-axis response are highly desirable characteristics of a speaker system designed for critical listening.

POWER HANDLING CAPACITY

There is no generally accepted standard for testing a loudspeaker's power capacity. Often, various power handling specifications are meaningless because they fail to indicate the nature of the test signal and/or how this test signal relates to actual use. The 100-watt specification for the Sentry 505 is based on filtered random noise (FM interstation noise and tape hiss are common forms of random noise), which is fed to the speaker for an extended time.

Random noise testing is used because, like real music and speech program material, it contains many frequencies at once. Low frequencies, which cause large excursions of the woofer suspension, are present as well as midbass frequencies which contribute mainly to woofer voice-coil heating. Thus, the woofer is simultaneously tested for mechanical fatigue and voice-coil overheating. Similarly, the tweeter is tested for both mechanical and thermal failure at appropriate power levels.

The test signal actually used in development testing of the Sentry 505 is shown in Figure 6. The Sentry 505 will survive 100 watts of this rigorous input for at least 15 hours without failure of any component or permanent change in performance.

This power handling specification applies to long-term application of power. However, the Sentry 505 will handle short-term (10 milli-second) peak inputs at least 6 dB above its long-term average capacity. This means that if the average power level were 100 watts, peak powers of 400 watts would be accommodated.

CROSSOVER NETWORK

The integral crossover network is a 12-dB/octave type with crossover occurring at 1500 Hz. All inductors are air-core and all capacitors are polyester film. Special attention has been given to assure conservative power handling capabilities of crossover elements. Acoustic phase coherence has been maintained through the crossover region.

The Sentry 500 has a four-position high-frequency control with attenuation capability ranging from acoustically flat to -9 dB in 3-dB steps. This control allows for compensation in different room environments. It is located on the front panel for easy access.

EXTENDED LOW-FREQUENCY RESPONSE

The SEQ step-down kit will allow the extension of the system's 3-dB-down point (f_3) to 28 Hz. (The port plug supplied with the kit must be used.) The kit will provide the necessary equalization and appropriate shift in box tuning to extend the low-frequency output of the system by $\frac{1}{2}$ octave.

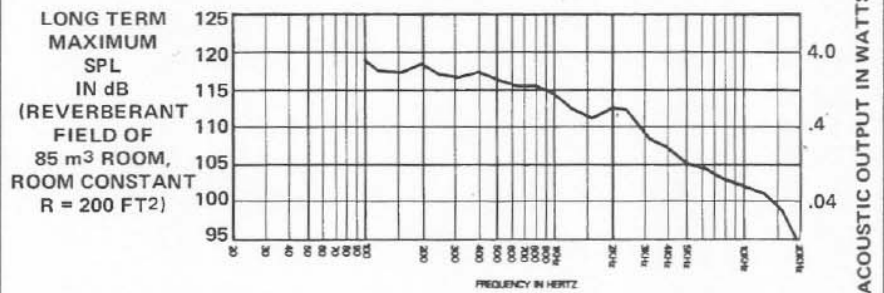


FIGURE 5 — Maximum Acoustic Output

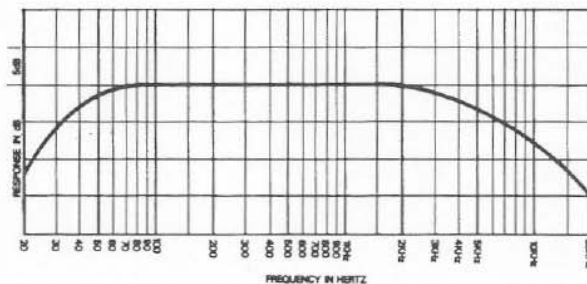


FIGURE 6 — Random Noise Spectrum for Testing Sentry 505

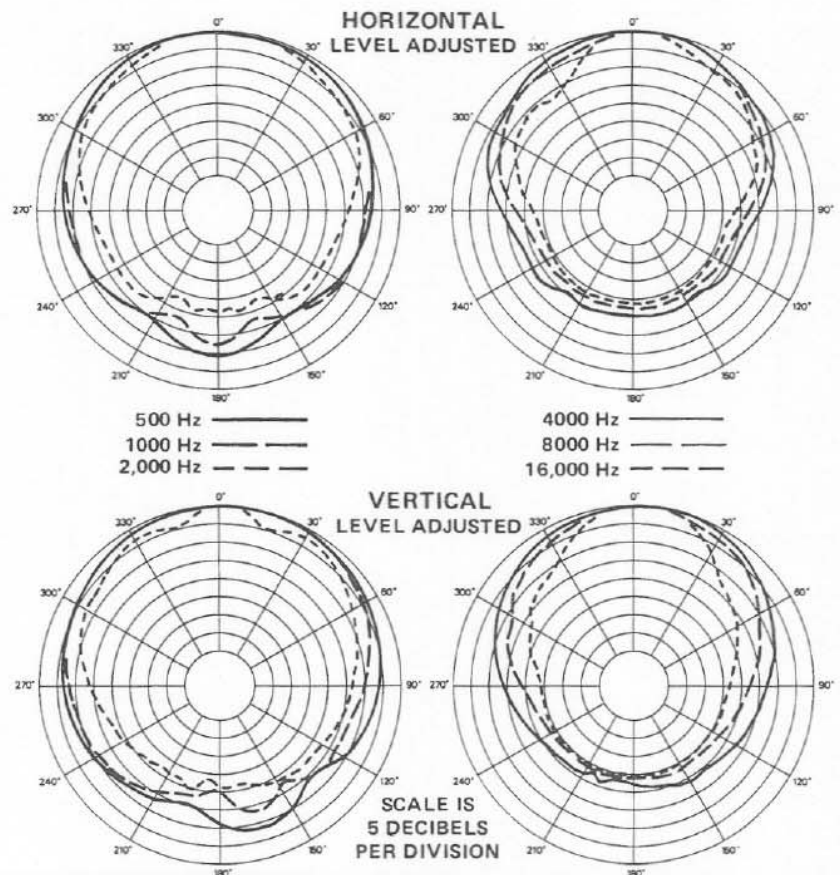
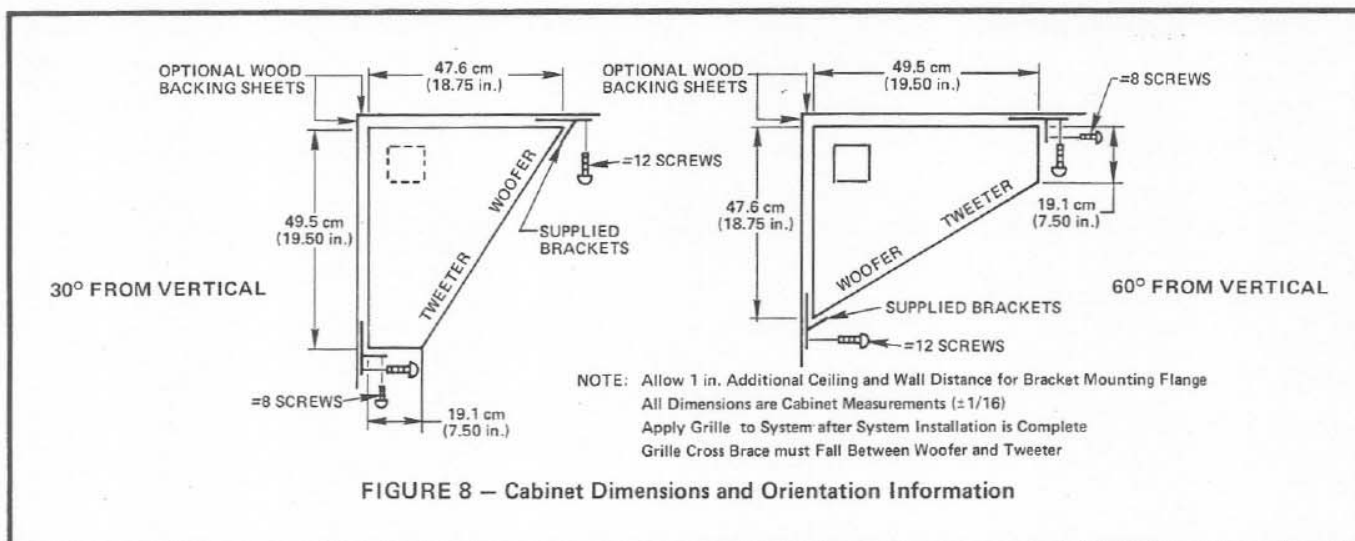


FIGURE 7 — Sentry 505 Polar Response (System Long Axis Vertical)



Installation using the mounting brackets. Mounting a system of this size and bulk will require careful installation by the user. The mounting brackets must be secured into structurally sound wall and ceiling construction, such as studs, joists or rafters. If the required spacing of the brackets precludes the fastener's ability to find solid wall or ceiling structure, a $\frac{3}{4}$ -inch plywood or particle board piece may be fastened to the surface and the brackets mounted to the board.

The user will need to drill holes in the brackets at the proper spacing for assembly to the mounting surfaces. We recommend use of #12 (clearance hole is $\frac{7}{32}$) or larger screw. Bracket holes have been provided for stabilizing the system on the brackets. Wood screws which are $\frac{3}{4}$ inch maximum length are sufficient to permanently secure the system to the brackets.

We suggest that both brackets be installed on the mounting surfaces and the system slid into position from the end. If space does not permit this method, mount the "T" shaped bracket first and have someone hold the system in place while installing the other bracket to the mounting surface.

NOTE: In all cases, the safest use of the brackets will be achieved when the brackets hold the system as snug as possible to both mounting surfaces.

Refer to Figure 8 for dimensional and orientation information. Choose the appropriate cabinet orientation to provide the best geometry for on-axis radiation at the listening position. Also note that the "squareness" of your mounting surfaces will impact the

specific dimensions used to locate the brackets. The thickness of the brackets must be taken into account in the specific dimensioning you use from wall surfaces.

WARRANTY (Limited)

Electro-Voice Speakers and Speaker Systems (excluding active electronics) are guaranteed for five years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish, appearance items, burned coils, or malfunction due to abuse or operation under other than specified conditions, including cone and/or coil damage resulting from improperly designed enclosures, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. A list of authorized warranty service agencies is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

1. A.N. Thiele, "Loudspeakers in Vented Boxes: Part 1," J. Audio Engineering Society, Vol. 19, No. 5, p.p. 386-387 (1971)

Specifications subject to change without notice.



ELECTRO-VOICE, INC., 600 Cecil Street, Buchanan, Michigan 49107

MANUFACTURING PLANTS AT ■ BUCHANAN, MI ■ NEWPORT, TN ■ SEVIERVILLE, TN ■ OKLAHOMA CITY, OK ■ GANANOQUE, ONT.
 ©Electro-Voice Inc. 1991 ■ Litho in U.S.A. Part Number 530307—123

a MARK IV company