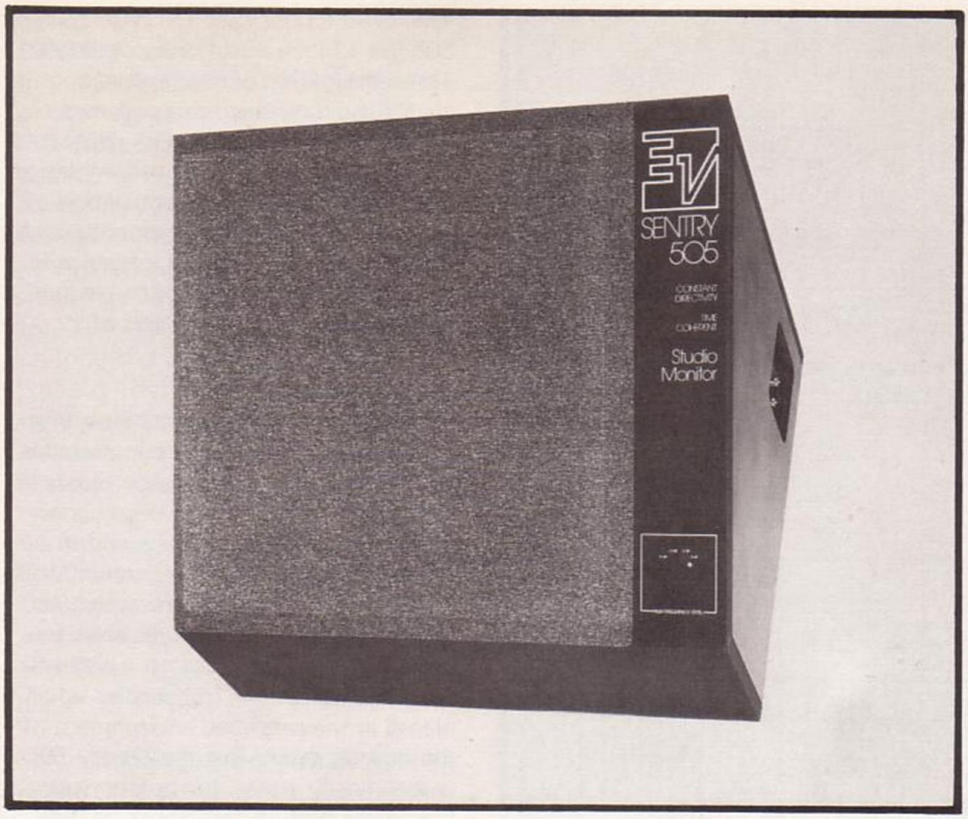

Electro-Voice®
a gulton company

Sentry® 505
Professional Monitor System

SPECIFICATIONS:

Frequency Response, 1 Meter on Axis, Quarter-Space, 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 horizontal & vertical:
110° ± 30°
10,000 to 20,000 Hz horizontal & vertical:
60° ± 15°
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-3,000 Hz:
± 30°

*See Response Curve Figure 1.

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 lbs
Accessories:
SEQ low-frequency step-down kit

** Consistent with our usual practice, this rating is based on very rigorous test conditions. Please see Power Handling Capacity Section for a further explanation 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 1-1/2 octaves.

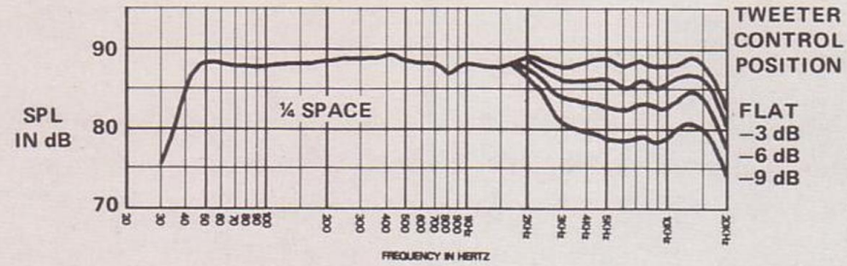

FIGURE 1 – Axial Frequency Response
4 Volts/10 Feet

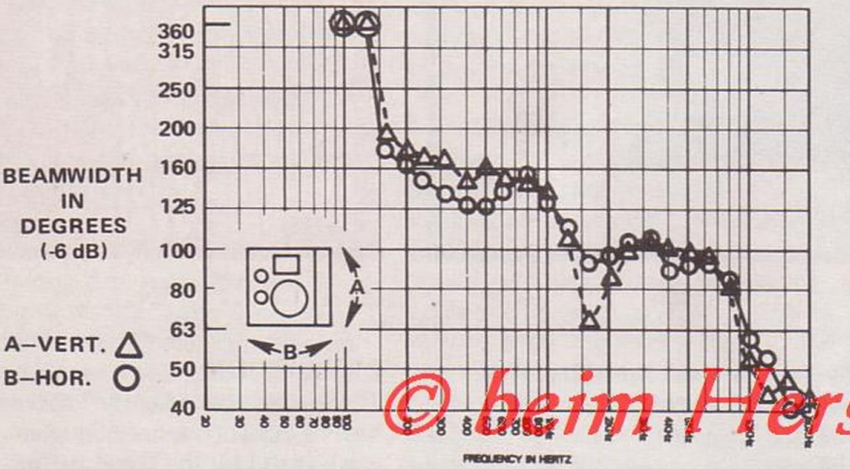

FIGURE 2 – Beamwidth vs Frequency
Whole Space (Anechoic)

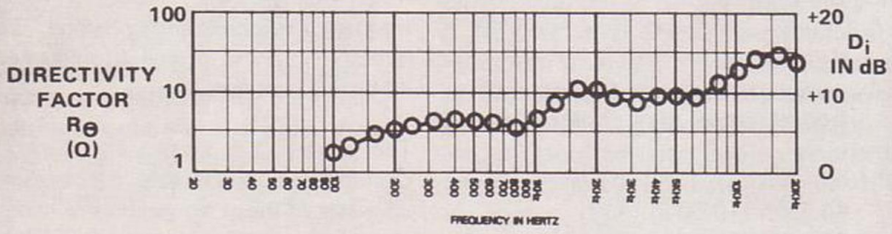

FIGURE 3 – Directivity vs Frequency
Whole Space (Anechoic)

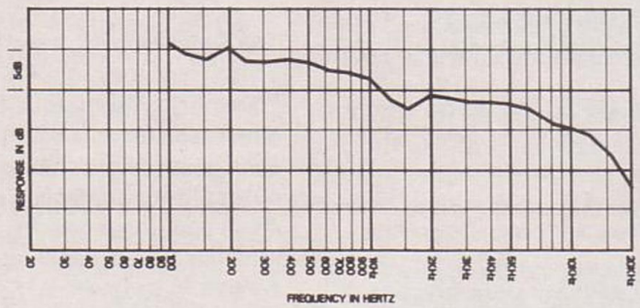

FIGURE 4 – Power Output vs Frequency

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. Thiele[1]

Box and woofer parameters have been specifically 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 cross-over 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 the 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 system 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 cross-over 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 inter-station 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 mid-bass 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.

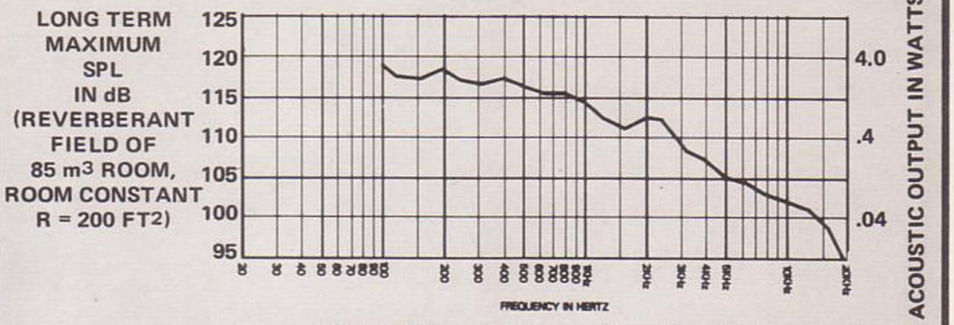

FIGURE 5 — Maximum Acoustic Output

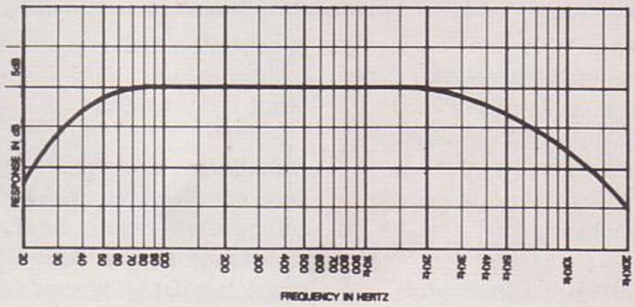

FIGURE 6 — Random Noise Spectrum for Testing Sentry 505

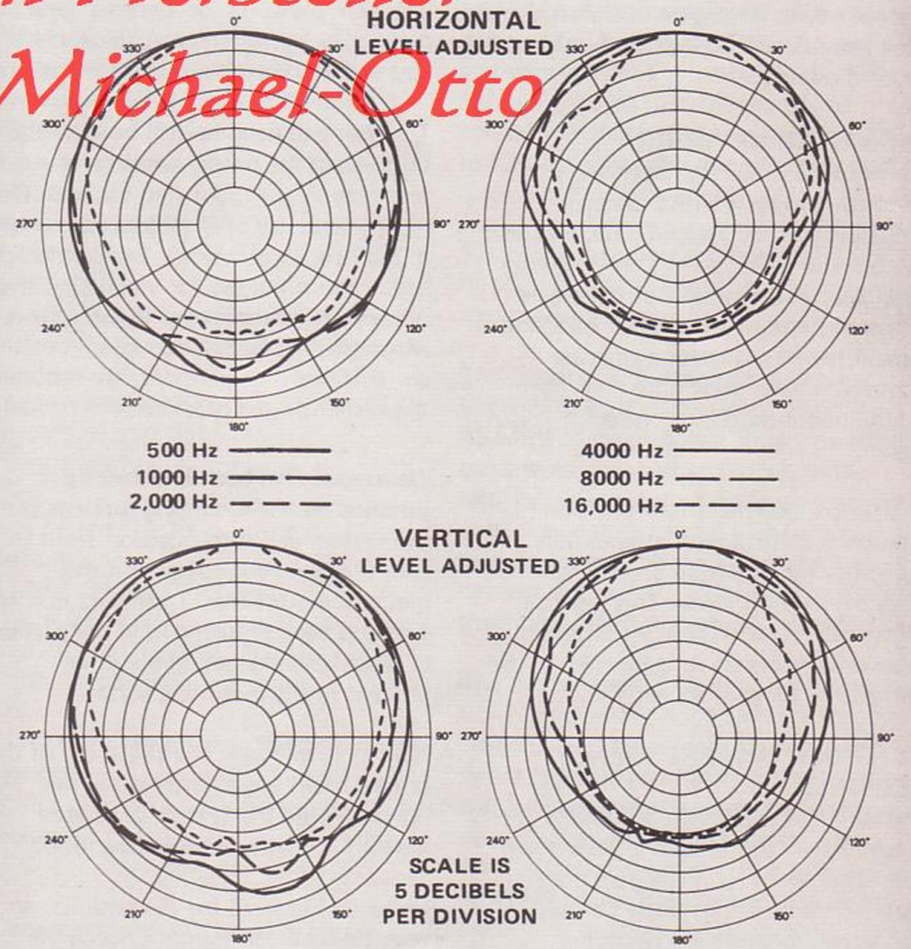

FIGURE 7 — Sentry 505 Polar Response (System Long Axis Vertical)

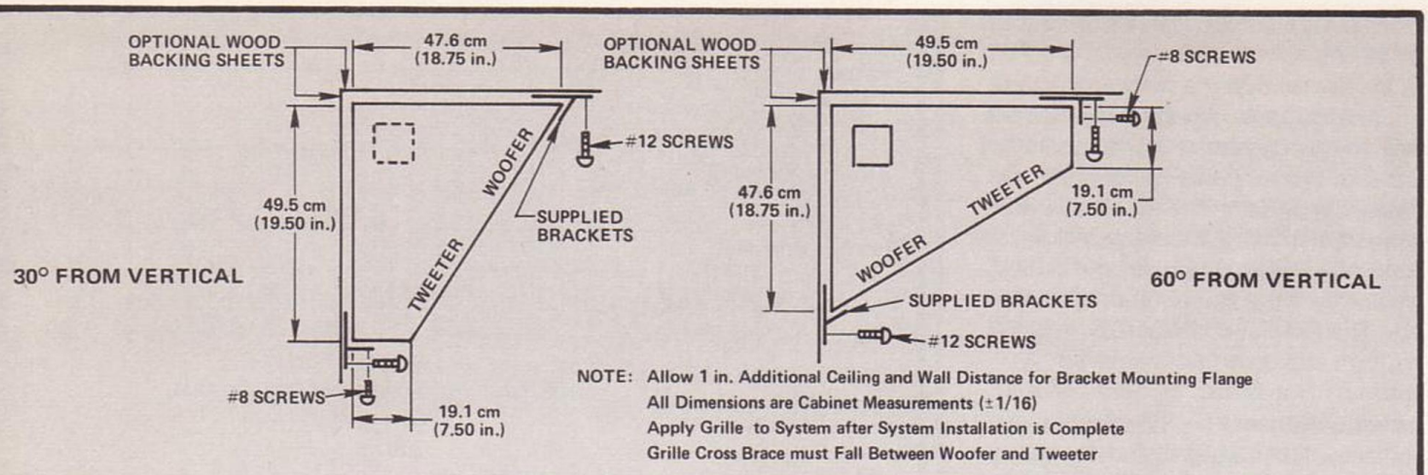

FIGURE 8 — Cabinet Dimensions and Orientation Information

The test signal actually used in developmental 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 millisecond) 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 505 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 compension 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 1/2 octave.

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 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 7/32) or larger screw. Bracket holes have been provided for stabilizing the system on the brackets. Wood screws which are #8 x 3/4 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 Sentry Loudspeakers and accessories 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 cover finish or appearance items or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For shipping address and instructions on return of Electro-Voice products for repair and locations of authorized service agencies, please write: Service Department, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone: 616/695-6831), or Electro-Voice West, 8234 Doe Avenue, P. O. Box 3297, Visalia, CA 93277 (Phone: 209/651-7777).

Electro-Voice also maintains complete facilities for non-warranty service.

Specifications subject to change without notice.

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

Part Number 530307 — 306
a Gulton COMPANY **ELECTRO-VOICE, Inc., 600 CECIL ST., BUCHANAN, MICH. 49107**
MANUFACTURING PLANTS AT ■ BUCHANAN, MICH. ■ NEWPORT, TENN. ■ SEVIERVILLE, TENN. ■ GANANOQUE, ONT. ■ LITHO IN U.S.A.