



**Electro-Voice®**  
a gulton company

## Eliminator 10

### 3-Way All-Horn Stage Speaker System

#### SPECIFICATIONS

##### Usable Frequency Response:

60 Hz to 16 kHz

##### Sound Pressure Level:

4 ft at 100 watts input\*

123 dB

10 ft at 1 watt input\*

95 dB

##### Long-Term Average Power Handling Capacity:\*

100 watts

##### Nominal Impedance:

8 ohms

##### Minimum Impedance:

6.8 ohms

##### Crossover Frequencies:

600 Hz & 4000 Hz

##### Beamwidth:

See Figure 3

##### Connections:

Parallel 1/4" phone jacks (allows paralleling of multiple speakers)

##### Enclosure Material:

5/8" plywood

##### Finish:

Black vinyl with aluminum trim

##### Dimensions:

110.2 cm (43.4") high

50.2 cm (19.75") deep

51.3 cm (20.2") wide

##### Shipping Weight:

54.4 kg (120 lb)

\*See POWER HANDLING TEST for input spectrum.

#### DESCRIPTION

The Eliminator 10 is a three-way, all-horn stage speaker system. Designed for the stage or disco, where the extremely high efficiency of a horn system is desirable, the Eliminator 10 offers excellent performance in a small package without the "honky" traditional sound of a horn system.

The Eliminator 10 employs an EVM15L feeding a folded horn for the low end. The heart of the Eliminator 10 is a newly designed midrange horn which was carefully designed to provide exceptionally wide horizontal dispersion. The Electro-Voice 1829 is coupled to the new horn to achieve a fantastic sound for the midrange. The ST350A tweeter with its smooth response and 120° horizontal dispersion provides the high end for the Eliminator 10 system.

For those applications that require it, the Eliminator 10 is bi-ampable. The simple interchange of two 9-pin plugs on the rear connector panel converts the Eliminator 10 for use with a 600 Hz to 800 Hz active low-level crossover (see BI-AMPING). The Electro-Voice XEQ-1 crossover makes a good companion to the Eliminator 10 for this purpose.

The exterior of the Eliminator 10 enclosure is 5/8" black-vinyl-covered plywood. Rubber feet and carrying handles are provided along with protective aluminum trim covering all edges, making the Eliminator 10 ready for the road.

#### FREQUENCY RESPONSE

Data was measured in an anechoic (echoless) environment at 10 feet on axis with 4 volts of swept 1/3-octave random noise. The frequency response curve for the Eliminator 10 is shown in Figure 2.

#### DISPERSION

The polar frequency response curves for the Eliminator 10 are given in Figure 4. The data was taken using octave bands of random (pink) noise. With the speaker system's long axis vertical, both the horizontal (side-to-side) and vertical (up-and-down) polar responses are shown. The measuring microphone was ten feet from the speaker system. From this data, the 6-dB-down points were obtained and beamwidth-versus-frequency plots were made. This information is shown in Figure 3.

#### POWER HANDLING TEST

To our knowledge, Electro-Voice was the first U.S. manufacturer to develop and publish a power test closely related to real-life conditions. First, we use a random noise input signal because it contains many frequencies simultaneously, just like real voice or instrument program. Second, our signal contains more energy at extremely high and low frequencies than typical actual program, adding an extra measure of reliability. Third, the test signal includes not only the overall "long-term average" or "continuous" level — which our ears interpret as loudness — but also short-duration peaks which are many times

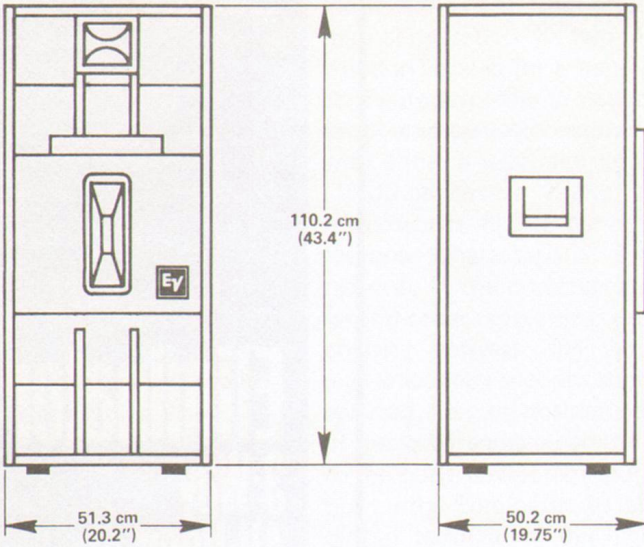


FIGURE 1 – Dimensions

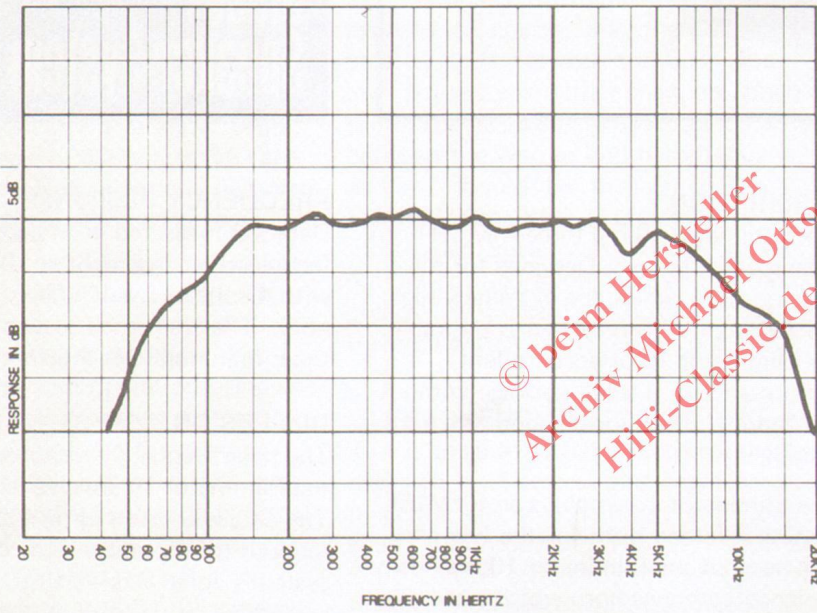


FIGURE 2  
Frequency Response  
(Swept 1/3-Octave-Band Pink Noise,  
4 V at 10 ft on Axis, Half-Space  
Environment)

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Archiv Michael Otto  
HiFi-Classic.de

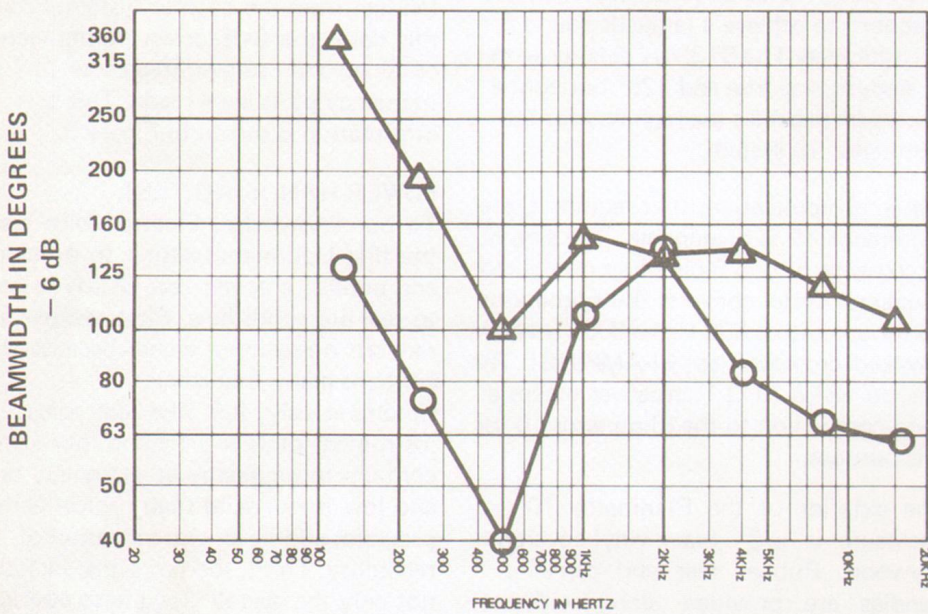


FIGURE 3  
Beamwidth vs. Frequency  
(System Long-Axis Vertical)

○ VERTICAL  
△ HORIZONTAL

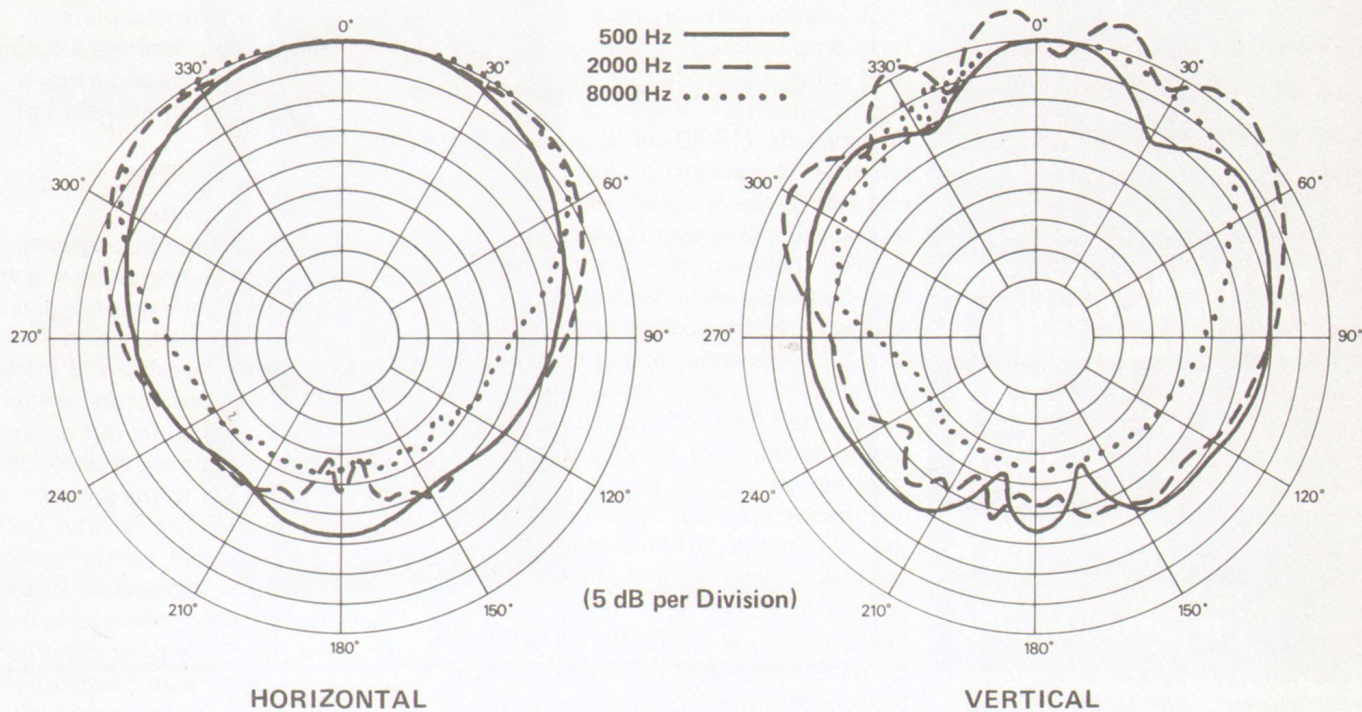


FIGURE 4 — Polar Response  
 (System Long-Axis Vertical,  
 4 V RMS of Octave-Band-Limited  
 Pink Noise in Anechoic Environment  
 10 ft on Axis)

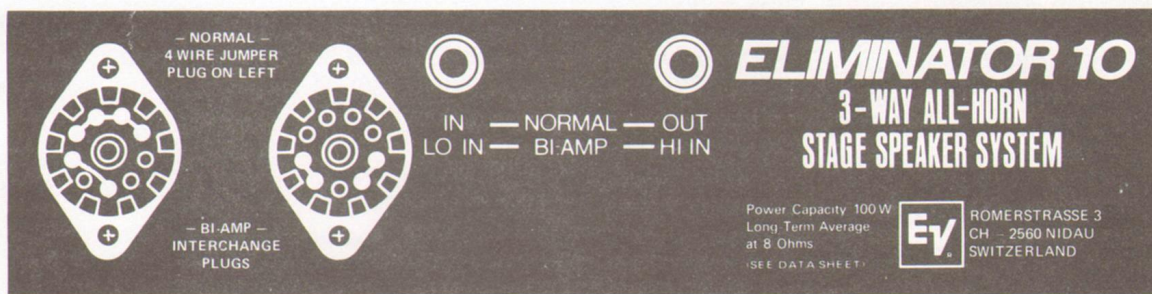


FIGURE 5  
 Rear Connector Panel  
 Showing Normal Configuration

higher than the average, just like actual program. The long-term average level stresses the speaker thermally (heat). The instantaneous peaks test mechanical reliability (cone and diaphragm excursion). Note that the sine wave test signals sometimes used have a much less demanding peak value relative to their average level. In actual use, long-term average levels exist from several seconds on up, but we apply the long-term average for several hours, adding another extra measure of reliability.

The Eliminator 10 has been specifically tested for 24 hours as follows. The output of a pink noise generator is fed to a shaping filter where the frequency spectrum is rolled off at 6 dB per octave beginning at 100 Hz and 10,000 Hz. (Pink noise is a particular type of random noise with equal power in every octave.) This shaped signal is sent to the power amplifier with the long-term average power set at 100 watts into 8 ohms (28.3 volts true RMS). Amplifier clipping sets instantaneous peaks at about 6 dB above the average, or 400 watts (**55 volts peak**). This procedure provides a rigorous test of both thermal and mechanical failure modes.

#### BI-AMPING

The Eliminator 10 may easily be converted for bi-amp operation using a low-level electronic crossover such as the Electro-Voice XEQ-1. On the rear connector panel (see Figure 5) there are two 9-pin plugs and sockets with exposed jumper wires. For normal operation the 4-wire jumper plug is to the left. Reversing the plugs puts the Eliminator 10 in the bi-amp mode with the

low-frequency input located at the left input phone jack and the high-frequency input at the right input phone jack. In normal operation the two input jacks are wired in parallel for a standard in-out configuration. The crossover frequency for bi-amp operation should be 600 Hz with either a second-order Butterworth (12-dB-per-octave slopes) or third-order Butterworth (18-dB-per-octave slopes) response characteristic. For flattest response in the crossover region when a second-order crossover is used, the polarity between the woofer and high-frequency sections should be reversed, i.e., the positive output terminal of the low-frequency amplifier should go to the positive woofer input (phone plug tip) on the Eliminator 10 and negative output terminal of the high-frequency amplifier should go to the positive high-frequency input (phone plug tip) on the Eliminator 10. This instruction assumes, of course, that there is no polarity shift between the high- and low-frequency amplifier channels. When a third-order crossover is used, the polarity between the woofer and high-frequency sections should be the same. The Electro-Voice XEQ-1 crossover in its normal configuration, and appropriate polarity is present with the Phase Reversal switch in the reverse position.

#### HI-FREQUENCY AUTO LIMITING

This is an all solid state electronic device designed by Electro-Voice engineers to meet the special demands of high level sound reinforcement. The Hi-Frequency Auto Limiter efficiently protects the tweeter from overloading by limiting tweeter power input to a predetermined

safe level. The result is virtual absolute driver protection without audible side effects or loss of sound pressure level. This all solid state device responds instantaneously and is not dependent on slow moving mechanical parts. Hi-frequency auto limiting incorporates six solid state devices and a power resistor with appropriate heat sink.

#### WARRANTY (Limited)

Electro-Voice Music Loudspeaker Systems 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 repair information and service locations, please write: Service Department, Electro-Voice, S. A. Romerstrasse 3, CH - 2560 Nidau (Telephone: 032-516833, Telex 349424)

Electro-Voice also maintains complete facilities for non-warranty service of E-V products.

Specifications subject to change without notice.