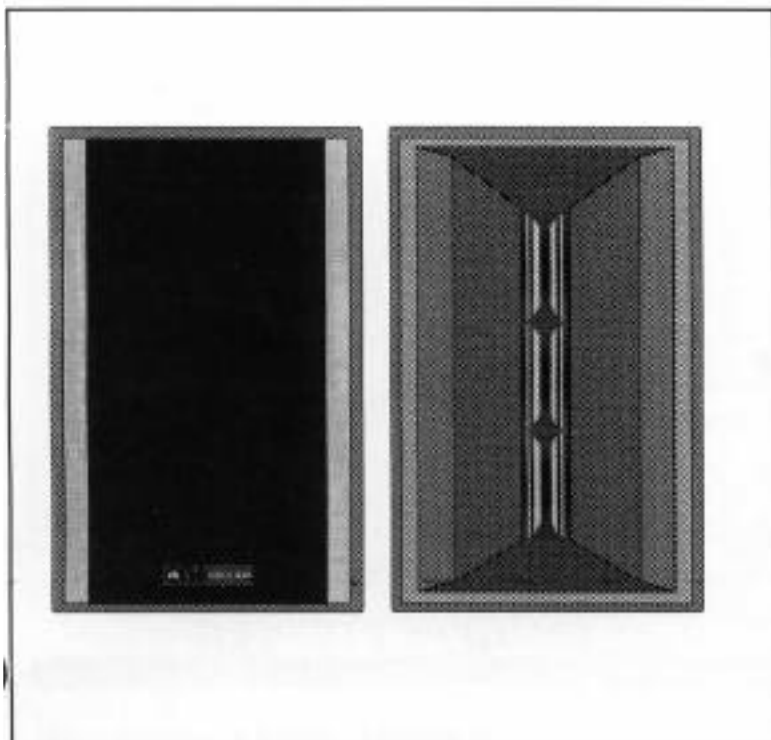




RENKUS-HEINZ MODEL CE-3 M/H

TSC SERIES

CoEntrant LONG THROW SPEAKER



EXCLUSIVE COENTRANT DESIGN (Pat. Pend.)

Provides true point source performance with outstanding resolution and tonal clarity

136 dB SPL LEVEL LONG THROW DESIGN

Multiple high power drivers, CoEntrant design produces a continuous program SPL of 136 dB

CONSTANT BEAMWIDTH HORN

performs as a point source with flat power response through crossover for consistent tonal balance

TIGHTLY CONTROLLED 60° X 40° COVERAGE

CoEntrant Waveguide Technology provides wide band control with constant Q through crossover

SIX 1" HIGH FREQUENCY DRIVERS

Six 1" drivers, phase coherent couplers provide high level, crystal clear highs out to 20 kHz.

ADVANCED TSC SYSTEM CONTROLLER

provides crossover, equalization, loudness compensation and overload protection

Exclusive CoEntrant Design

The CE-3 M/H is a long throw 60° by 40° loudspeaker system that delivers an amazingly high 136 dB SPL level for a cabinet of its small size. It features the revolutionary new CoEntrant Waveguide Technology recently developed by Renkus-Heinz. The CoEntrant design with its compound throat and shared mid/high frequency horn provides true point source performance with natural signal alignment and tightly controlled dispersion from 250 Hz to 20 kHz. A member of the TSC loudspeaker family, the CE-3 M/H is packaged in an easy to array 20° trapezoidal enclosure that delivers stunning clarity, definition and detail at very high SPL with controlled, even coverage in either large arrays or in small stacks.

True Point Source Performance

The CE-3 M/H's unique CoEntrant design ensures proper signal alignment and constant directivity and Q through crossover. This enables the CE-3 to provide tonal balance and resolution not attainable from other designs. Six 6.5" carbon fiber mid range drivers and six extended range high frequency drivers mounted in a close coupled CoEntrant array feed a single large format mid/high frequency horn to complete the picture. They add virtually distortion free performance from 250 Hz to 20 kHz to the CE-3 M/H's credentials.

Horn Loaded Low Frequency Section

A matching CE-3 LOW low frequency enclosure features dual 12" woofers in an efficient horn loaded, band pass design that has the same acoustic origin as the CE-3 and CE-3 M/H assuring signal alignment. It provides excellent directional control and solid bass down to 60 Hz. A matching, horn loaded, dual 15" sub, the C-3 SUB and a number of 18" subs are also available when needed for applications that need high levels of low frequency energy.

TSC Series Controller

The X310-TSC Controller used with the CE-3 M/H features advanced electronic crossovers and new protective circuitry; also provides system equalization, signal alignment and loudness compensation.

Choice of Rigging Methods

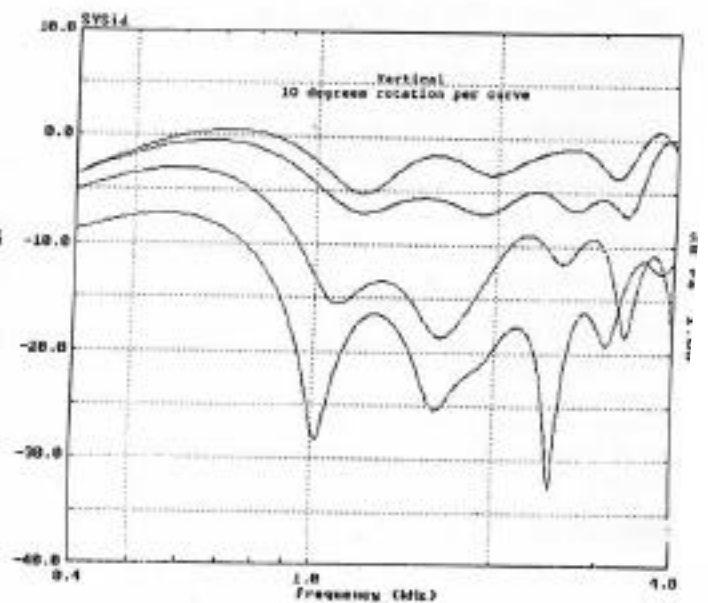
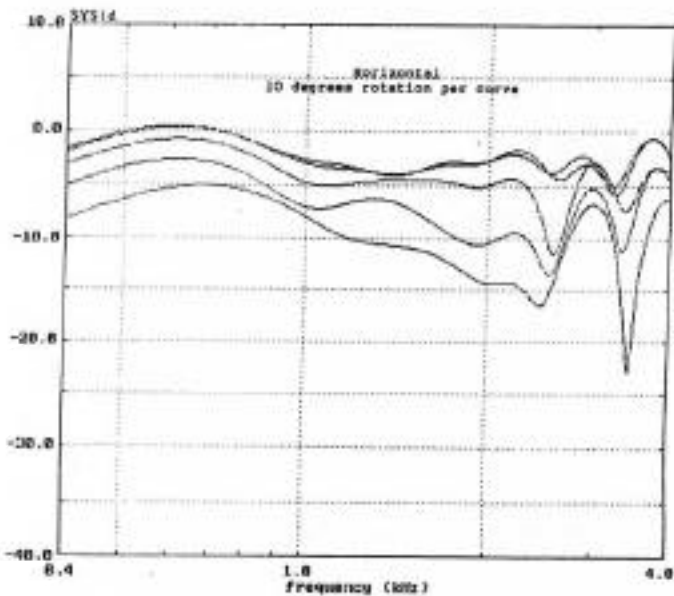
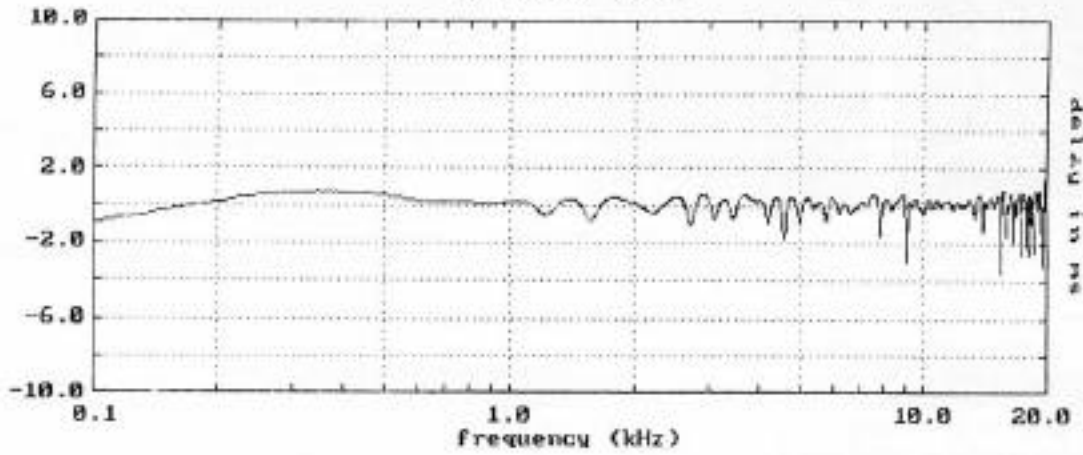
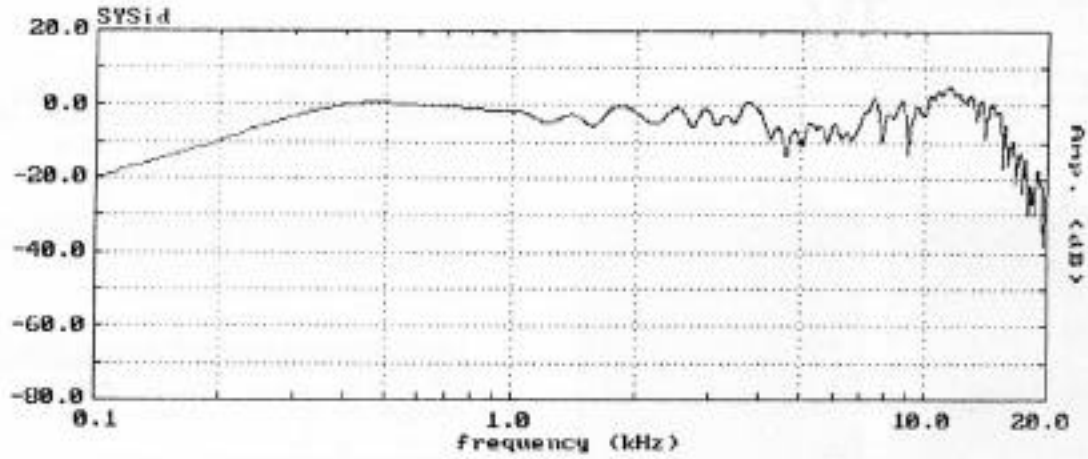
Side mounted Aeroquip tracks offer metal-to-metal reliability and are ideal for large arrays. Recessed top and bottom fly points are also available upon request.

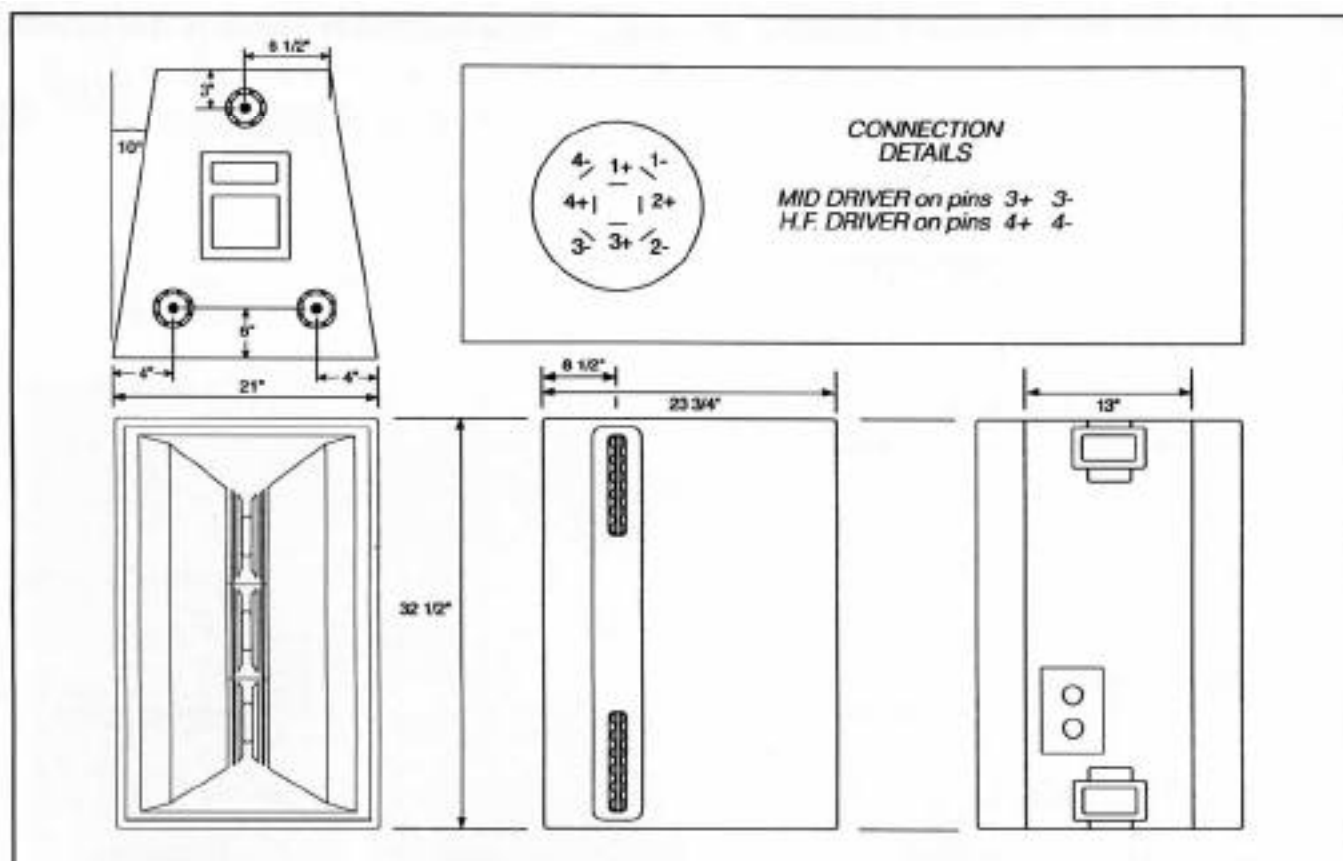
Optional Dolly / Protective Front Cover

A skillfully designed dolly and associated cap/protective cover allows the CE-3 M/H to be easily moved about, while also offering protection against physical damage.

PERFORMANCE DATA

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 avers: 10; Fmax: 25.000 kHz; dly: 6.000 ns; Noise_type:Chirp group delay
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TECHNICAL HIGHLIGHTS

The *CoEntrant Waveguide Technology* employed in the CE-3 M/H represents a major break through in high performance, high output level loudspeaker design technology. All other known design approaches have inherent weaknesses that either severely limit their performance or handicap the designer in his efforts to develop the ideal loudspeaker. Skillful design can partially overcome or mask some of these problems, but the final result is still a compromise and represents less than an ideal solution.

Two-way systems using large format horns represent a cost effective solution for high level speech reinforcement systems, but the compromises involved in their design are generally not acceptable for high quality music reproduction. Three-way systems using large format mid range drivers and horns solve many of the problems associated with two-way systems, but have drawbacks of their own. They tend to be large and bulky and difficult to work with; signal alignment, especially in large arrays or clusters, is a problem; and the end result is quite often far from perfect.

Coaxial horn designs overcome many of these problems, but shadowing, signal alignment and loss of directivity control at crossover now present new challengers and compromises to the designer.

The *CoEntrant Waveguide Technology* developed for the CE-3 overcomes these problems. Its compound throat and common (shared) mid/high frequency horn design

completely eliminates shadowing. There is no separate high frequency horn mounted in the throat of the mid frequency horn, so there can be no shadowing. Mid and high frequency signal alignment also ceases to become a problem. The *CoEntrant* design creates a virtual point source at the apparent apex of the common mid/high frequency horn assuring natural signal alignment and wide band point source performance. And, finally, since the mid and high frequencies share a common horn, the directivity discontinuities introduced at crossover by having two horns are completely eliminated.

In summary, *CoEntrant Waveguide Technology* provides natural signal alignment, true point source performance, constant directivity and Q through the crossover region and no shadowing effects. As a result, the CE-3 M/H offers wide range, high level performance, true point source coherence and resolution and tightly controlled coverage over a wide frequency range with consistent tonal balance. And, all from just one compact, easy to fly and array cabinet.

The CE-3 M/H with its 60° by 40° long throw coverage pattern was designed to be used with the CE-3 LOW to form an extremely high power two-box 3-way system. It's 20° trapezoidal shape, wide band, tightly controlled dispersion and point source performance all lend themselves to seamless performance in large multi cabinet arrays. The CE-3 M/H also complements the CE-3 and the medium throw C-3 in large, multi-cabinet arrays. The CE-3 M/H is identical in size to the C-3 and CE-3 and arrays easily with them.

CE-3 M/H TECHNICAL SPECIFICATIONS
All specifications are with associated controller

SENSITIVITY:	113 dB (1w/1m)	GRILLE:	Perforated metal grille with moisture resistant foam insert
MAXIMUM SPL:	136 dB continuous program 142 dB peak	OPTIONS:	Carrying handles (standard) No handles (add suffix NH)
FREQUENCY RESPONSE:	250 Hz to 20,000 Hz	CONNECTOR OPTIONS:	Neutrik NL9MPPR, or blank plate for customer supplied connectors
HIGH FREQUENCY DRIVERS:	Six model SSD 1800-16	FINISH OPTIONS:	Black paint (standard) Natural (unfinished) (add suffix N) Weather resistant (add suffix WR)
TYPE:	Compression, 1" throat,	FLYING HARDWARE OPTIONS:	
SYSTEM IMPEDANCE:	2.7 ohms	FLY POINTS:	Model FP-3 factory installed Three aircraft type pan ring fittings with steel back plates and locking type nuts. Includes steel reinforcement of enclosure
RECOMMENDED AMPLIFIER POWER:	450 to 600 watts into 2.7 ohms	LOCATION:	Specify top, bottom, or top and bottom
MID FREQUENCY DRIVERS:	Six model SSL 6.5-2	AEROQUIP TRACK:	Model FT2-C3 factory installed
TYPE:	6.5" carbon fiber cone driver	LOCATION:	Side mounted
SYSTEM IMPEDANCE:	2.7 ohms	DIMENSIONS:	32.5" H x 21" W x 23.75" D (82.5 cm x 53 cm x 60.5 cm)
RECOMMENDED AMPLIFIER POWER:	600 - 900 watts into 2.7 ohms	NET WEIGHT:	162 Lbs.
HIGH / MID FREQUENCY HORN TYPE:	Large format constant beamwidth	ASSOCIATED EQUIPMENT:	X310-TSC 3-way Controller C-3 DOLLY Dolly/Protective Cover
DISPERSION:	60° by 40°		
CROSSOVER POINTS:	250 Hz and 2.2 kHz		
ENCLOSURE CONSTRUCTION:	13 ply hardwood, heavily braced		

ARCHITECTS AND ENGINEERS SPECIFICATIONS

The loudspeaker shall be a high power, long throw *CoEntrant* system, Renkus-Heinz model CE-3 M/H or approved equal. Conventional 2-way systems or coaxial horn systems will not be considered as equal.

The loudspeaker system shall consist of six 6.5" carbon fiber cone MF drivers and six, extended range 1" HF drivers coupled to a single mid/hi frequency horn, all mounted in a single 20° trapezoidal enclosure. The speaker shall provide 60° horizontal by 40° vertical coverage. Its high frequency power handling capacity shall be no less than 600 w @ 2.7 ohms, mids 900 w @ 2.7 ohms. Sensitivity shall be no less than 113 dB @ 1w,1m with a maximum continuous SPL of at least 136 dB and a frequency response of 250 Hz to 20 kHz.

The enclosure shall be trapezoidal in shape and constructed from 13 ply birch, heavily braced and lined with fiberglass to suppress resonances.

The finish shall be (black epoxy resin) (natural) (weather resistant). Connectors shall be (8-pin Neutrik) (blank plate for customer supplied connectors).

The loudspeaker shall be no larger than 32.5" high and 21" wide, be no deeper than 23.75", and weigh no more than 162 Lbs. A matching perforated metal grille backed with protective foam shall be included. The enclosure shall be equipped with handles [and 3 factory installed aircraft type pan ring fittings with steel backing plates on the (top) (bottom) (top and bottom) and include steel angle iron enclosure reinforcement] [and side mounted Aeroquip track fittings].

The speaker system shall be designed for use with an associated controller, Renkus-Heinz Model X310-TSC or approved equal. The controller shall provide fixed crossover points at 500 Hz and 2.2 kHz, loudness compensation, response equalization and protection from overload damage.

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