



RENKUS-HEINZ

MODEL C-3

TSC SERIES

3-WAY SPEAKER SYSTEM



FULL RANGE COAXIAL 3-WAY SYSTEM

smooth high level (131 dB SPL) performance from 70 to 20,000 Hz with outstanding clarity and definition

COAXIAL CONSTANT BEAMWIDTH HORN

performs as a point source from 350 to 20,000 Hz; flat power response, signal aligned wave front

WIDE ANGLE COVERAGE

wide angle 80° x 50° horns, 20° trapezoidal enclosure are ideal for front and side fill applications

HORN LOADED LOW FREQUENCY SECTION

Dual 12" woofers in a horn loaded 8th order band pass design provides high efficiency and solid bass

DUAL HIGH FREQUENCY DRIVERS

phase coherent adapter efficiently couples dual extended range HF drivers to a single HF horn

ADVANCED TSC SYSTEM CONTROLLER

provides crossover, signal alignment, loudness compensation and overload protection

Full Range Coaxial 3-Way System

A member of the all new TSC (Total System Concept) loudspeaker family, the C-3 sets new standards in high level sound reproduction, ease of use and reliability for both portable concert sound use and permanent fixed installations. The C-3 integrates the highest quality components with proven technology in an innovative design that delivers an amazingly high (131 dB) output level for a cabinet of its size. Packaged in an easy to array 20° trapezoidal enclosure, the 3-way C-3 system delivers stunning clarity, definition and detail at very high SPL with controlled, even coverage in either large arrays or in single stacks.

Coaxial Constant Beamwidth Horns

Constant beamwidth horns mounted coaxially provide controlled point source coverage from 350 Hz to 20 kHz. The high power 10" mid range driver and associated wooden horn provide a remarkably smooth and natural sound with warmth attainable only from a non-resonant wooden horn. Dual extended range high frequency drivers coupled to a single high frequency horn by a phase coherent adapter provide virtually distortion free high frequency reproduction, even at extremely high output levels.

Horn Loaded Low Frequency Section

Dual 12" woofers in an efficient horn loaded, band pass design provide excellent directional control and solid bass down to 70 Hz, eliminating the need for subs in many applications. Matching, horn loaded, single 18" and dual 18" subwoofers are also available for applications that require high levels of very low frequency energy.

TSC Series Controller

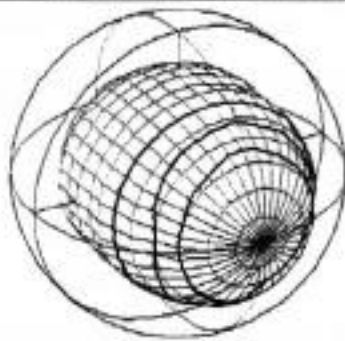
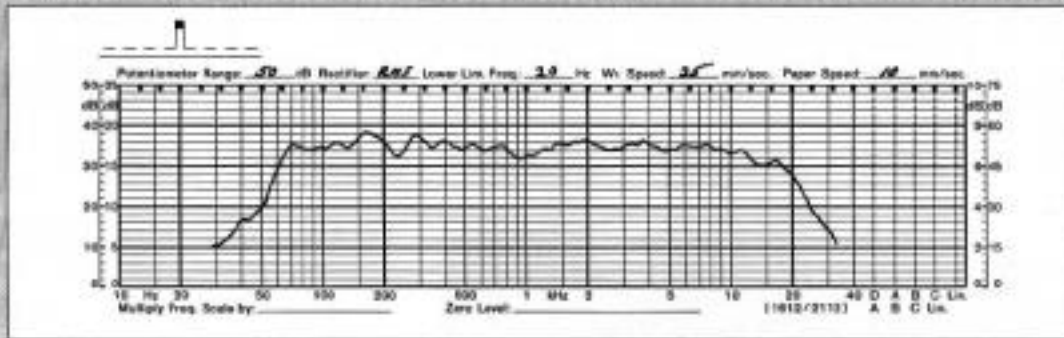
The associated X310-TSC Controller used with the C-3 features advanced electronic crossovers and new protective circuitry; also provides system equalization, signal alignment and loudness compensation.

Choice of Rigging Methods

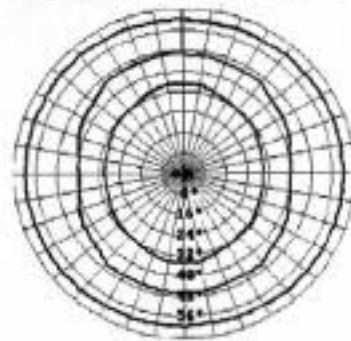
Side mounted Aeroquip tracks offer metal-to-metal reliability and are ideal for large arrays. Recessed top and bottom fly points are often used in smaller systems. C-3 speakers are also available equipped for the later field addition of side mounted Aeroquip tracks.

Optional Dolly / Protective Front Cover

A recessed front grille allows the C-3 to be placed face down on a dolly/protective cover for protection against the weather and physical damage during transportation.

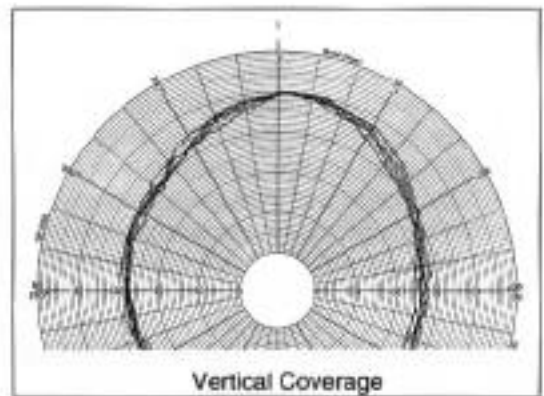
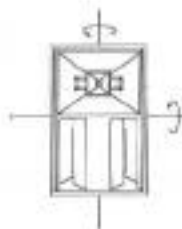
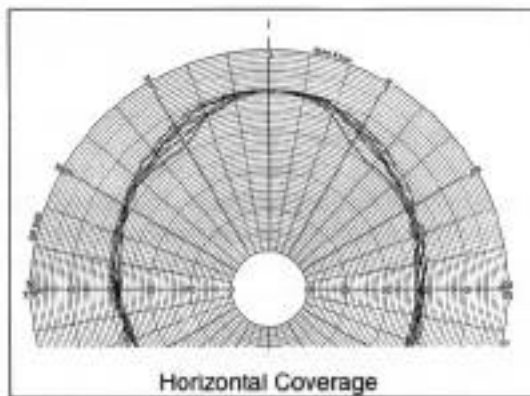
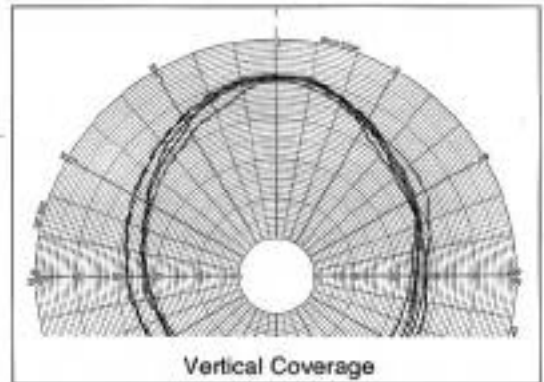
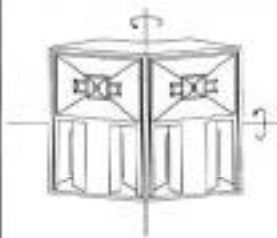
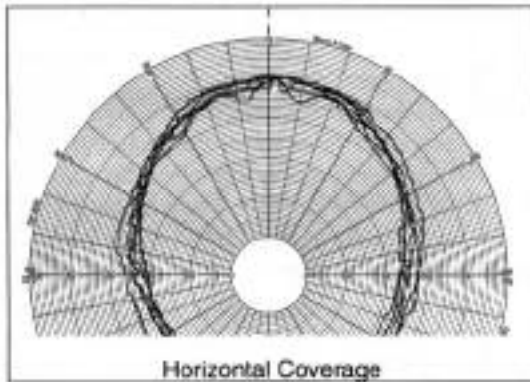


EASE 3-Dimensional Plot @ 2 kHz

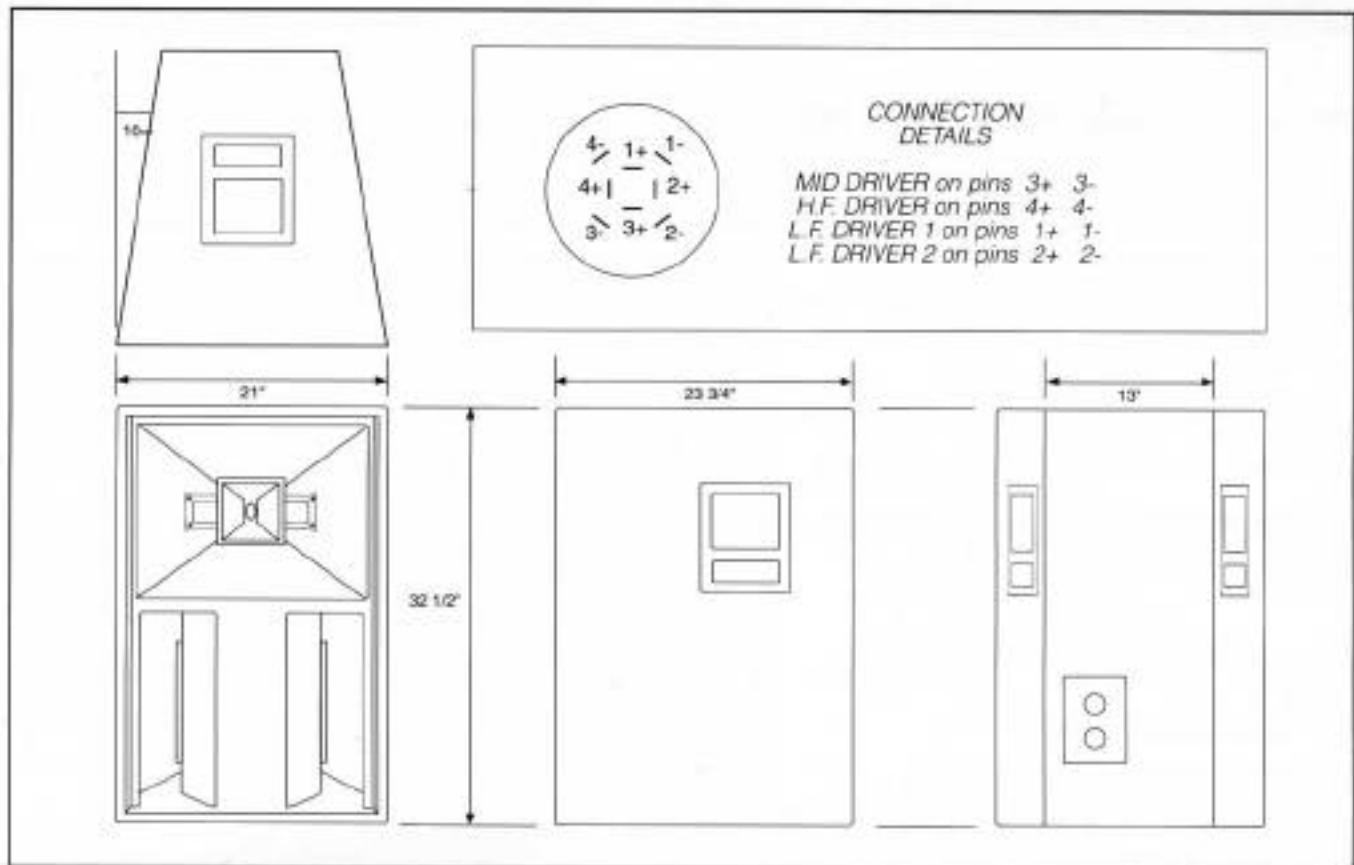


EASE - 3, -6 & -9 dB Contours @ 2 kHz

PERFORMANCE DATA



All polar plots are measured at 2 meters using 1/3 octave band pink noise centered on one octave intervals from 500 Hz to 8 kHz.



APPLICATION INFORMATION

The C-3 is a medium throw (80° H X 50° V) trapezoidal loudspeaker system designed primarily for two specific applications; to complement the long throw C-2 loudspeaker in large arrays or for use as the primary loudspeaker in smaller concert systems and other live entertainment applications.

In large systems, the C-3's compact size, 80° x 50° coverage and nearly identical sonic qualities make it an ideal companion to the long throw C-2 for front and/or side fill applications. These same qualities are just as desirable in smaller venues where long throw cabinets are not needed and the emphasis is on outstanding performance, broad coverage, compactness and ease of arrayability.

In many cases, the C-3's high output level and broad horizontal coverage allow a single pair of C-3s to handle venues that otherwise would need an array or stack of 4 or more cabinets. The C-3's 20° trapezoidal shape and compactness also lend themselves to larger venues requiring either more output level or even broader coverage.

A pair of C-3s, arrayed or stacked side-by-side increases the horizontal coverage pattern from 80° to 100° and adds between 4 to 5 dB to the on axis SPL. When more SPL is needed, but broader coverage is not, stacking two C-3s on top of each other increases the output level by 6 dB and does not significantly affect the horizontal coverage.

There are two methods of stacking two C-3s. The first is to simply place one on top of the other. The second method is

to turn the top cabinet upside down to bring the two mid/high frequency horns as close together as possible. This method produces the maximum on axis SPL. It does not, however, necessarily produce the best spectral balance. The method chosen depends upon the application and personal preference.

Four cabinet arrays or stacks usually are done in a two high by two wide arrangement. The exception to this is single channel central cluster systems where a single four speaker row or tier is commonly used to obtain the wide angle coverage needed. In these systems, when more level is needed, a second row of four is used.

Side mounted Aeroquip tracks which offer great flexibility in array design and metal-to-metal reliability are recommended for flying the C-3. However, the relatively light weight and compact size of the C-3 permit them to be easily flown in arrays using top or top and bottom mounted fly points.

The C-3 is only 21" wide allowing 4 across loading in 90° vans, another very important consideration in many applications.

Renkus-Heinz also custom designs and fabricates complete "Performance Ready" systems. These systems consist of the loudspeakers, the associated power amplifier/controller rack, flight case and all cables. Performance Ready systems are thoroughly factory tested and ready to use when they arrive. Refer to R-H Bulletin AN-3 for more details.

C-3 TECHNICAL SPECIFICATIONS

All specifications are with associated controller

| | | | |
|-------------------------------------|---|---------------------------------|---|
| SENSITIVITY: | 107 dB (1w/1m) | ENCLOSURE CONSTRUCTION: | 13 ply hardwood, heavily braced |
| MAXIMUM SPL: | 131 dB continuous program 137 dB peak | GRILLE: | Perforated metal grille with moisture resistant foam insert |
| FREQUENCY RESPONSE: | 70 Hz to 20,000 Hz (See graph) | OPTIONS: | Carrying handles (standard) No handles (add suffix NH) |
| HIGH FREQUENCY DRIVERS: | Two model SSD 1801-16 | CONNECTOR OPTIONS: | Neutrik NL8MPP, or blank plate for customer supplied connectors |
| TYPE: | Compression, 1" throat, 8 ohms | FINISH OPTIONS: | Black paint (standard) Natural (unfinished) (add suffix N) Weather resistant (add suffix WR) |
| SYSTEM IMPEDANCE: | | FLYING HARDWARE OPTIONS: | |
| RECOMMENDED AMPLIFIER POWER: | 150 to 200 watts into 8 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 |
| HIGH FREQUENCY HORN: | Model CBH 1600-8 | LOCATION: | Specify top, bottom, or top and bottom |
| TYPE: | Constant Beamwidth | AEROQUIP TRACK: | Model FT2-C3 factory installed |
| DISPERSION ANGLE: | 80° H x 50° V | LOCATION: | Side mounted |
| MID FREQUENCY DRIVER: | Model SSL 10-1 | DIMENSIONS: | 32.5" H x 21" W x 23.75" D (82.5 cm x 53 cm x 60.5 cm) |
| TYPE: | 10" cone woofer | NET WEIGHT: | 160 Lbs. |
| IMPEDANCE: | 8 ohms | ASSOCIATED EQUIPMENT: | X310-TSC 3-way Controller C-3 DOLLY Dolly/Protective Cover |
| RECOMMENDED AMPLIFIER POWER: | 200 - 300 watts into 8 ohms | | |
| MID FREQUENCY HORN | | | |
| TYPE: | Constant Beamwidth | | |
| LOW FREQUENCY DRIVERS: | Two model SSL 12 | | |
| TYPE: | 12" cone woofer | | |
| SYSTEM IMPEDANCE: | 2 x 8 ohms | | |
| RECOMMENDED AMPLIFIER POWER: | 200 to 300 watts into 8 ohms (400 to 600 watts total) | | |
| Crossover Points: | 350 Hz & 1600 Hz | | |

ARCHITECTS AND ENGINEERS SPECIFICATIONS

The loudspeaker shall be a coaxial 3-way active system, Renkus-Heinz Model C-3 or approved equal. Non-coaxial, 2-way or passive loudspeaker systems will not be considered as equal.

The loudspeaker system shall consist of a 10" cone driven mid frequency horn, a coaxially mounted 2" constant beamwidth high frequency horn having dual 1" extended range drivers and a phase coherent adapter, and dual horn loaded 12" woofers in an 8th order bandpass design. It shall provide 80° horizontal by 50° vertical coverage; high frequency power handling shall be 200 w @ 8 ohms, mids 300 w @ 8 ohms and lows 600 w @ 4 ohms. Sensitivity shall be no less than 107 dB @ 1w, 1m with a maximum continuous SPL of at least 131 dB and a frequency response of 70 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 160 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 350 Hz and 1600 Hz, signal alignment, response equalization and protection from overload damage.

 **RENKUS-HEINZ INC.** Smart Systems Division

Solligrenda 48
N-2491 Oslo 4, Norway
TEL + 47 271 18 80
FAX + 47 271 18 85

17181 Armstrong Avenue
Irvine, CA 92714
TEL 714/250-0166
FAX 714/250-1035