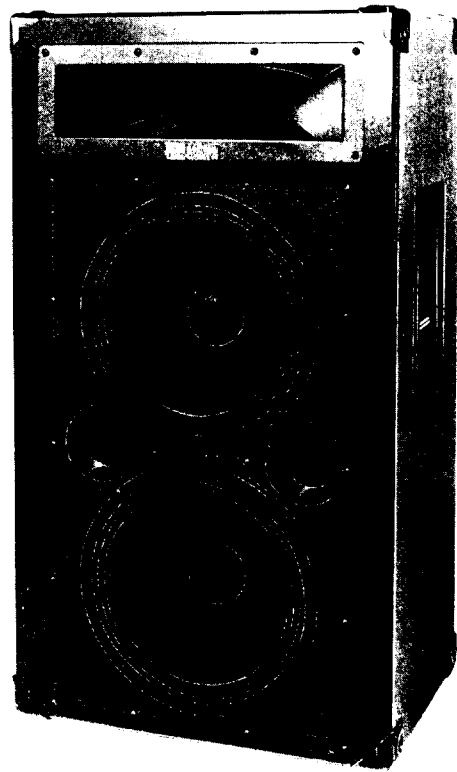


# Forsythe Series FR222

High Output  
Nearfield Full  
Range System



## Basic Design Features

The FR222 is a unique product offering a combination of exceptionally high output capabilities, wide bandwidth and compact size. Most systems of comparable size use a single 15 inch woofer and a horn high frequency driver. The FR222 departs from the standard design by using two 12 inch drivers for the low frequency section. This enables the FR222 to offer 4 to 8 dB more output than comparable systems.

## Applications

The FR222's unique combination of high output, wide bandwidth and compact size make it ideal for use in medium size sound reinforcement, high level audio/video presentations, motion picture sound or any application where high sound pressure levels are required with high quality. The FR222 is also well suited for use with a sub-woofer system (EAW SB300 or BH440) where deep bass down to the 30 Hz region is required, as in high level dance systems.

## Advanced Crossover Design

Crossover development at EAW is a long and painstaking process. Design parameters are mathematically calculated, and continuously adjusted during extensive listening and precision acoustic measurement evaluations. The final engineering design is then built into a large run of systems, and each one is tested for production variations. The design is then modified to compensate for these variations. At each step in this process the filters are optimized to provide maximal electrical damping and minimum phase response, while providing a smooth transition between drivers. The resulting crossover is a third order design incorporating non-symmetrical slopes for crossover equalization.

## Ultimate Quality In Construction

To guarantee that production crossovers achieve their design specifications, we individually test each crossover component and the final product to be within 3% of the original design values. This intensive effort in the FR222's crossover results in the elimination of crossover induced distortion, typically the highest source of distortion in compact systems.

# Eastern Acoustic Works

## Low Frequency Section

The FR222's dual 300 mm (12 in) high pressure die cast drivers are loaded into a 140 liter vented box incorporating EAW's exclusive bi-frequency tuning system, resulting in strong response down to 40 Hz, without external eq. This technique makes use of two vents, each tuned to a different frequency, effectively lowering the usable low frequency limit of the system. This is accomplished without the response ripples normally associated with super low frequency tunings. The bi-frequency tuning system also significantly reduces distortion at high sound pressure levels.

## High Frequency Section

RCF's new N481 compression driver on the H3709 flush front constant horizontal coverage horn provides smooth response from 1,500 Hz to beyond 18,000 Hz. This unique driver utilizes a composite material diaphragm with integral surround. The diaphragm is made in-house by RCF using a proprietary molding technique that places radial ridges in the diaphragm for greater structural integrity. The result is extended high frequency response with unmatched power handling.

Additionally, a "space age" magnetic fluid is placed in the voice coil gap which increases heat dissipation. The result is a further improvement in thermal power handling. Another benefit of the magnetic fluid is the elimination of cavity resonances. The mass of the fluid takes up space in the gap, stopping any resonances that would normally occur.

## Architect's and Engineer's Specifications

The loudspeaker system shall be of the two-way type, incorporating two 12-inch low frequency loudspeakers in a vented enclosure and a 1.75-inch diaphragm compression driver mounted on a constant horizontal coverage horn. The system shall meet the following performance criteria: Frequency range: 38 to 18k Hz; Pressure sensitivity: 102 dB SPL; Power handling: 500 watts in accordance with AES standard; Horizontal coverage: 90 degrees between -6 dB points. The crossover shall be a third order design incorporating asymmetrical slopes providing driver equalization.

The cabinet shall be constructed of void-free cross-grain-laminated birch plywood and coated with catalyzed polyurethane finish. All the drivers shall be protected with a perforated steel grill coated in vinyl.

The loudspeaker system shall be the Eastern Acoustic Works Forsythe Series model FR222.

# Forsythe Series FR222

## Specifications

MODEL:	FR222
Frequency Response	
+ 3 dB:	50 to 15,000 Hz
- 10 dB:	38 to 18,000 Hz
Axial Sensitivity:	102 dB SPL
Half Space Efficiency:	5.3 %
Power Handling	
Sine Wave:	300 watts
AES Standard:	500 watts
Nominal Impedance:	4 ohms
Coverage Angles	
Horizontal:	90 degrees
Vertical:	50 degrees
Maximum SPL:	129 dB SPL
Maximum Acoustic Output:	26.5 acoustic watts
Transducer Complement	
Low Frequency:	RCF PRO L112/565 300mm Cone
High Frequency:	RCF N481 45mm Driver H3709 HF Horn
Crossover Data:	
Type:	Third Order Equalized
Slope:	18 dB per octave
Frequency:	1,500 Hz
Enclosure Type:	Vented
Enclosure Volume:	140 liters (4.8 ft <sup>3</sup> )
Construction:	Cross-Grain- Laminated Birch
Finish:	Catalyzed Polyurethane
Dimensions:	35" H x 19"W x 19" D
Weight:	198 Kg (90 lbs)

**Eastern Acoustic Works**