

RF122-150

Raw Frame Speaker
Technical Information for System Engineers



SOUNDTUBE
ENTERTAINMENT



Specifications: RF122-150

System Type	12-inch, coaxial, in-ceiling, raw frame, high SPL (150-watt transformer for 25/70.7/100-volt or transformer bypass position)
Impedance (nominal) ¹	8 ohms
Sensitivity dB @ 2.83 V/1 m	98.0 dB
Sensitivity dB @ 1 W/1 m ²	98.0 dB
Frequency Response (-3 dB) ³	93 Hz - 18 kHz
Frequency Response (-10 dB) ³	50 Hz - 22 kHz
Max. Program Power ⁴	300 W
Max. Continuous Power RMS ⁵	150 W
Max. Power SPL @ 1 m ⁶	120.0 dB
Coverage Angle (-6 dB @ 2 kHz)	70°
Coverage Angle (-6 dB @ 10 kHz)	85°
Coverage Angle (averaged 2 - 10 kHz)	100°
Directivity Factor (Q)	5.5 (averaged 100 Hz - 10 kHz) 12.6 (2 kHz)
Directivity Index (DI)	11 dB (averaged 100 Hz - 10 kHz) 12.6 dB (2 kHz)
Tap Selector	Six-pin Euroblock with transformer bypass position
Transducer - Low-Frequency Driver	305 mm (12.0 in.) treated fiber cone, treated cloth surround
Transducer - High-Frequency Driver	35 mm (1.375 in.) mylar compression driver with waveguide
Low-Frequency Voice Coil	50.8 mm (2.0 in.)
Crossover Frequency	2.2 kHz
Network Type: Low Pass	24 dB per octave, 4th order
Network Type: High Pass	24 dB per octave, 4th order
Inputs	Six-pin, 5.08 mm Euroblock
Colors	Black
Height (SM= Height)	205.2 mm (8.08 in.)
Diameter (SM= Width)	316.0 mm (12.44 in.)
Visible Diameter	304.8 mm (12.0 in.)
Visible Height	6.4 mm (0.25 in.)
Mounting Hole Diameter	279.4 mm (11.0 in.)
Weight	5.5 kg (12.0 lbs.)
Shipping Weight	7.3 kg (16.0 lbs.)
Packaging	One per box
RoHS	Approved

Transformer Taps

	70.7 V	Output	100 V	Output	25 V	Output
¹ Impedance listed per IEC 60268-5						
² 1 W 1 m sensitivity determined using nominal impedance	150 W	120.0 dB	150 W	120.0 dB	19 W	111.0 dB
³ Frequency response measured in half or full space as dictated by speaker mounting configuration	75 W	117.0 dB	75 W	117.0 dB	9.5 W	108.0 dB
⁴ Max program power is 3 dB above max continuous power	38 W	114.0 dB	38 W	114.0 dB	4.8 W	105.0 dB
⁵ Continuous power rating, EIA-426-B test	19 W	111.0 dB			2.4 W	102.0 dB
⁶ Max output based on max continuous power						

¹ Impedance listed per IEC 60268-5

² 1 W 1 m sensitivity determined using nominal impedance

³ Frequency response measured in half or full space as dictated by speaker mounting configuration

⁴ Max program power is 3 dB above max continuous power

⁵ Continuous power rating, EIA-426-B test

⁶ Max output based on max continuous power

Key Features

- BroadBeamHP® waveguide technology delivers a consistent dispersion pattern for maximum coverage (2 to 10 kHz, independently verified) and intelligibility.
- One 12.0 in. (305 mm) treated fiber cone with a cloth surround mounted concentrically with 1.375 in. (35 mm) mylar compression driver with waveguide.
- High power handling and high output for foreground music, or paging.
- Engineered for retrofit and new construction applications using industry-standard 12-inch backboxes which are 1 cubic foot or larger (backbox not included).
- High quality crossover components and transformer for low saturation and less than 1 dB insertion loss.
- Reduced amplification and high-efficiency output with 98 dB sensitivity and 120 dB max. SPL.
- A 150-watt transformer with a six-pin Euroblock connector for in-field pre-wiring and easy tap selection.
- Euroblock connector allows for tap selections ranging from 2.4 W (25 V) to 150 W (70.7 V and 100 V) with a transformer bypass position.
- High-quality black paint finish.

Description

The RF122-150 is a 12-inch, coaxial, raw-frame speaker with proprietary Broad-BeamHP® dispersion characteristics. The RF122-150 is engineered for installations into 1 cubic foot (or larger) industry-standard 12-in backboxes. Delivering true high-SPL performance, the RF122-150 incorporates a 12-inch treated fiber cone and one 35 mm (1.375 in.) mylar compression driver delivering a frequency response from 50 Hz – 22 kHz (-10 dB). For simple ordering, stocking and installation, the RF122-150 includes a six-pin Euroblock connection for 25-, 70.7- and 100-volt applications with a transformer bypass position.

Applications

Developed specifically for high-power PA and sound reinforcement applications including convention centers, ballrooms, malls, gymnasiums, arenas, stadiums, ice rinks, nightclubs and retrofit applications with industry-standard 12-inch backboxes.



Patented SoundTube Technologies

SoundTube Entertainment and the MSE Audio Group constantly develop new technologies which enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. and international patents, which explicitly cover SoundTube dome, enclosure and dispersion technologies. The MSE Audio Group actively defends its patents in order to protect SoundTube resellers and end-users.

Technical Data and Specification Tools

Technical Data

SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data are available from SoundTube Entertainment or at www.soundtube.com.

Technical data and downloads include:

EASE™ data – 3-D polar plots.

EASE™ Address – 2-D modeling for distributed systems

Autodesk® Revit® software

Tech Sheets – Technical information and architectural specs for system engineers

SoundTubeSPEC™ – Proprietary speaker placement software

Data Acquisition

All data for SoundTube speakers are independently collected from and verified by NWAA Labs (www.nwaalabs.com) using their proprietary MACH testing system. All data are collected and analyzed according to ASTM, ISO and AES standards using EASERA, TEF and MLSSA. Full balloon data including both phase and magnitude is compiled into a variety of formats including EASE 4.x, GLL and CLF.

Architectural Specifications

The loudspeaker shall consist of one 305 mm (12.0 in.) low-frequency transducer and one 35 mm (1.375 in.) high-frequency transducer with a frequency-dividing network. The low-frequency voice coil diameter shall be

50.8 mm (2.0 in.). The low-frequency transducer shall have treated fiber cone material with a treated cloth surround. The high-frequency transducer shall be constructed of mylar material.

Performance specifications of a typical production unit shall be as follows: Useable frequency range shall extend from 50 Hz - 22 kHz (-10 dB). The loudspeaker shall be available with a 150-watt transformer with 25-, 70.7-, 100-volt input options and a transformer bypass position. Rated power capacity of the components and network shall be at least 150 watts RMS and conform to EIA-426-B testing.

Installation for the speaker shall be by eight screws into any standard 12-inch backbox with mounting screws provided by enclosure (backcan) manufacturer. Wiring shall be by a six-pin Euroblock connector.

The system shall be the SoundTube RF122-150 for both low- and high-impedance applications.

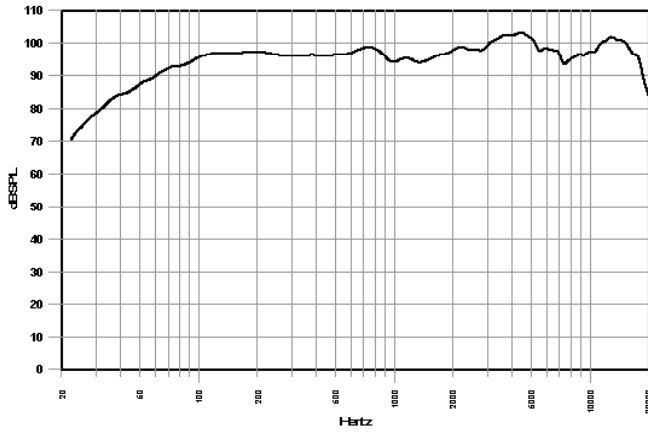
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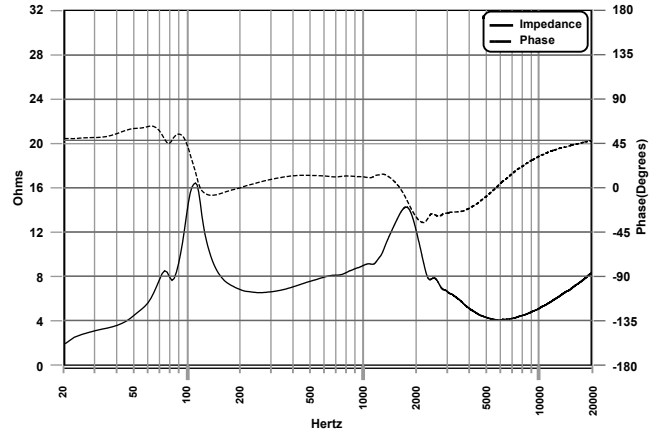
All SoundTube products come with a 5-year limited warranty.

Graphs and Plots

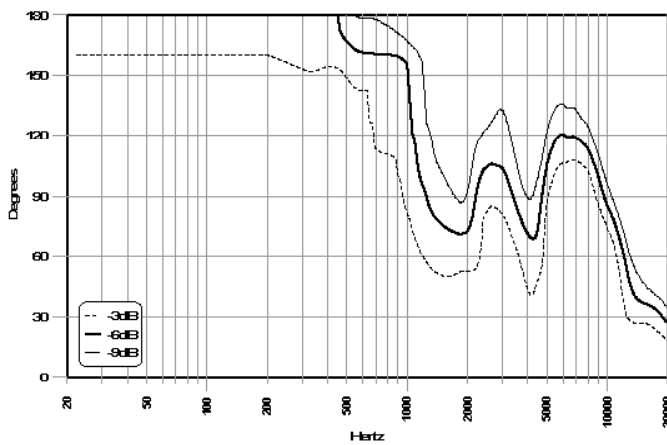
Frequency Response



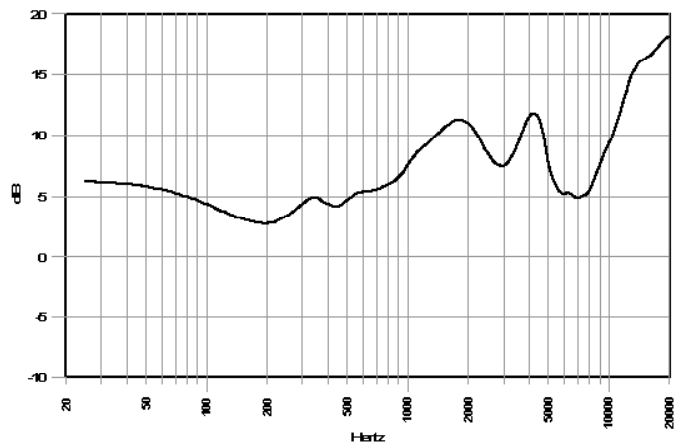
Phase/Impedance Response



Vertical Beamwidth (-6 dB)

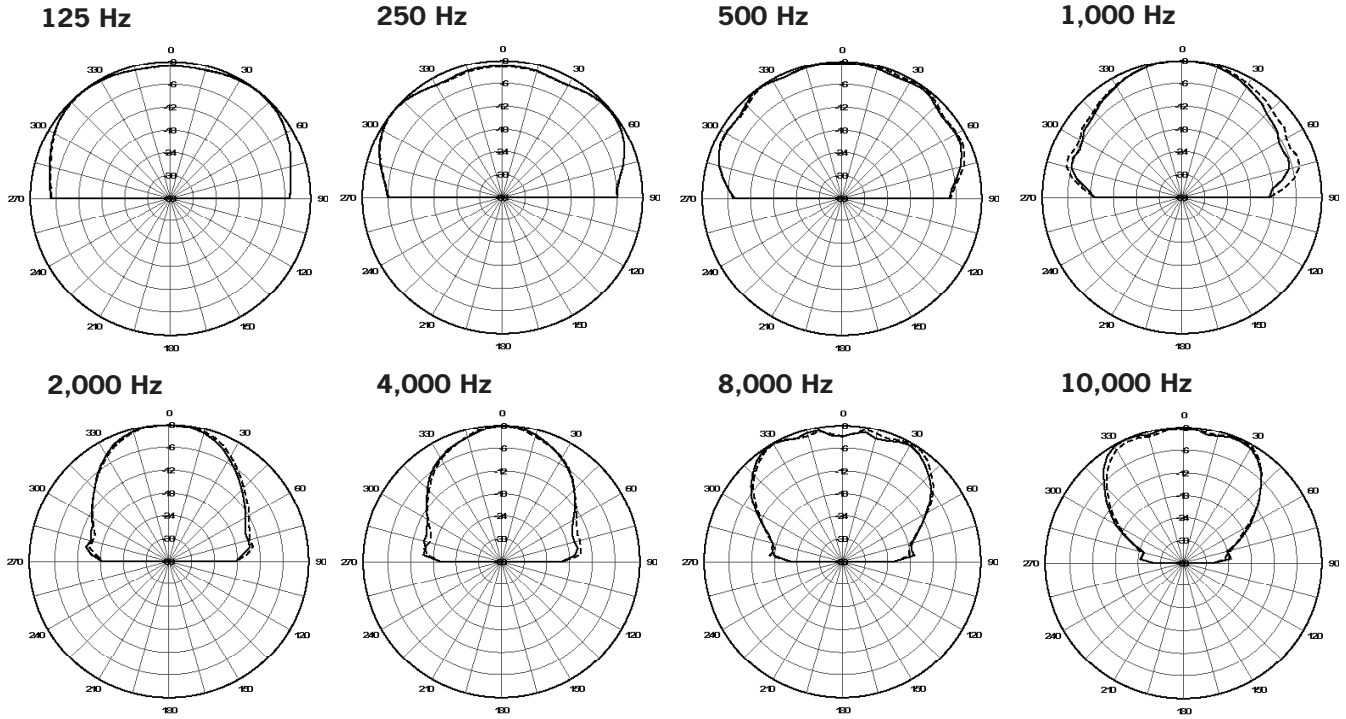


Directivity Index (DI)



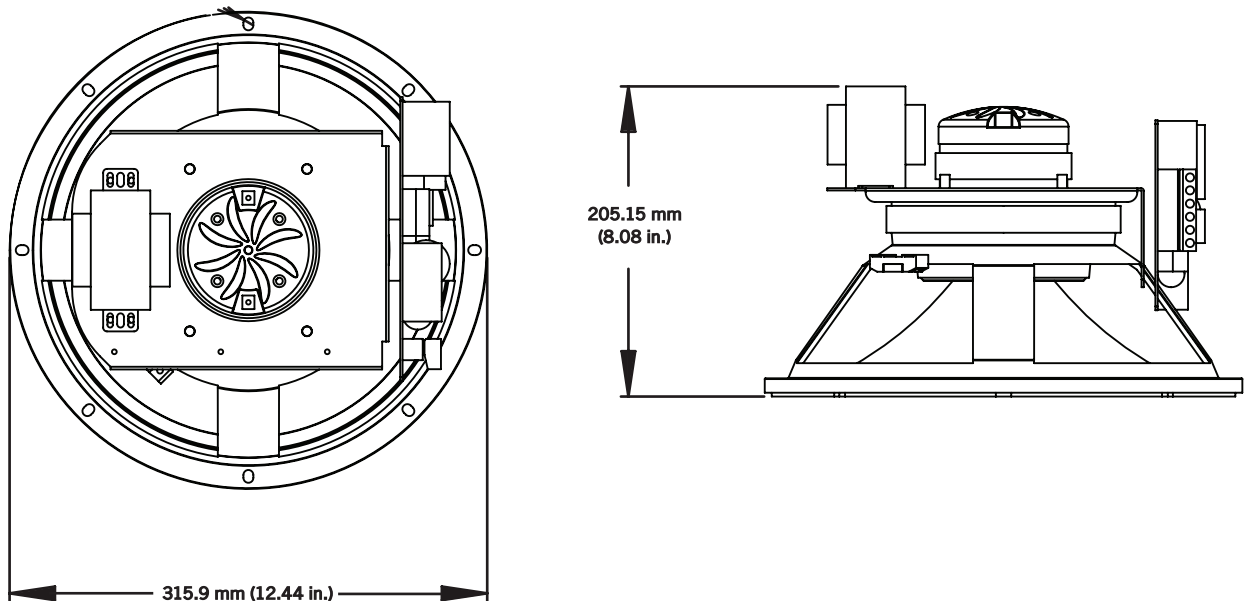
Polar Plots

— Horizontal
 - - - Vertical



Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at www.soundtube.com

Mechanical Drawings



SoundTube Entertainment manufactures a complete line of speakers for:
Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing

All SoundTube products are designed and engineered in the USA.