

### Specifications: RF31-EZ-T

System Type	3-inch, full-range, in-wall, raw frame (10 watt transformer with 25-, 70.7-, 100-volt input options)
Impedance (nominal) <sup>1</sup>	8 ohm
Sensitivity dB @ 2.83 V/1 m	85.0 dB
Sensitivity dB @ 1 W/1 m <sup>2</sup>	85.0 dB
Frequency Response (-3 dB) <sup>3</sup>	170 Hz - 14 kHz
Frequency Response (-10 dB) <sup>3</sup>	82 Hz - 22 kHz
Max. Program Power <sup>4</sup>	20 W
Max. Continuous Power RMS <sup>5</sup>	10 W
Max. Power SPL @ 1 m <sup>6</sup>	95 dB
Coverage Angle (-6 dB @ 2 kHz)	180°
Coverage Angle (-6 dB @ 10 kHz)	50°
Coverage Angle (averaged from 2 to 10 kHz)	120°
Directivity Factor (Q)	4.3 (averaged 100 Hz - 10 kHz); 2.4 (2 kHz)
Directivity Index (DI)	5.4 (averaged 100 Hz - 10 kHz); 3.8 dB (2 kHz)
Transducer - Full-Range Driver	76.1 mm (3.0 in.) Polypropylene driver with butyl rubber surround
Low Frequency Voice Coil	19.0 mm (0.75 in.)
Tap Selector	Five-position terminal block input
Enclosure Material	ABS baffle
Grille	ABS bezel with perforated aluminum grille
Inputs	Five-position terminal block
Colors	White (paintable grille)
Depth	53.6 mm (2.1 in.)
Visible Height	120.7 mm (4.8 in.)
Visible Width	120.7 mm (4.8 in.)
Weight	0.9 kg (2.0 lbs.)
Shipping Weight	1.1 kg (2.4 lbs.)
Packaging	One per box
Included Accessories	White snap-on aluminum grille, paint mask, and four stainless steel mounting screws
Optional Accessories	Black replacement grille (GRL-RF31-BK), theft-resistant stainless steel grille (AC-RF31-TRG)
Regulatory - CE	Approved
Regulatory - UL	UL 1480 (UEAY) approved
RoHS	Approved

70.7 V Output		100 V Output		25 V Output	
10 W	95.0 dB	10 W	95.0 dB	1.3 W	86.0 dB
5 W	92.0 dB	5 W	92.0 dB	0.7 W	83.5 dB
2.5 W	89.0 dB	2.5 W	89.0 dB	0.4 W	81.0 dB
1.3 W	86.0 dB			0.2 W	78.0 dB

<sup>1</sup> Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance

<sup>2</sup> 1 W 1 m sensitivity determined using nominal impedance

<sup>3</sup> Frequency response measured in half or full space as dictated by speaker mounting configuration

<sup>4</sup> Max program power is 3 dB above max continuous power

<sup>5</sup> Continuous power rating, EIA-426-B test

<sup>6</sup> Max output based on max continuous power

### Key Features

- One 3-inch full-range high-excursion, weather-resistant, high-fidelity polypropylene driver with butyl rubber surround and neodymium magnet.
- Integrated 10w transformer
- Rapid installation into dual-gang junction box using four stainless steel screws (junction box not included).
- Ultra-compact design with a total visible footprint of 4.75-inch square.
- Weatherized components for indoor/outdoor applications.
- Corrosion-resistant, powder-coated aluminum grille with snap fit attachment.
- UL 1480 (UEAY) listed.
- High-quality white paint finish grille.
- Included accessories: Paintable white aluminum snap-on grille, paint mask, and four stainless steel mounting screws
- Optional accessories: Black replacement grille (GRL-RF31-BK), theft-resistant stainless steel grille (AC-RF31-TRG).

### Description

The RF31-EZ-T is a premium full-range 3-inch speaker with a 10 W transformer for applications requiring 25, 70, and 100-volt audio solutions. The RF31-EZ-T mounts in most dual-gang junction boxes. The RF31-EZ-T incorporates a low-profile grille with a total visible footprint of 4.75-inch square for ultra-compact installations. All exposed components in the RF31-EZ-T are completely weatherized for indoor and outdoor applications.

### Applications

Engineered for easy installation into industry-standard back boxes, both indoors and out, the RF31-EZ-T is ideal for any installation requiring high efficiency and clear sound including retail outlets, hospitals, government facilities, houses of worship, restaurants, schools, and more. Weatherized components make the RF31-EZ-T perfect for gardens, parks, pool areas, or even a kitchen backsplash. The optional theft-resistant grill (AC-RF31-TRG) makes the RF31-EZ-T ideal for high risk installations including schools, correctional facilities, transportation facilities, hallways, and any location where the public might contact the speaker.



## 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](http://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 NWAALabs ([www.nwaalabs.com](http://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 are compiled into a variety of formats including EASE 4.x, GLL and CLF.

## Architectural Specifications

The loudspeaker transducer shall consist of one full-range 76.2 mm (3.0 in.) polypropylene cone with butyl rubber surround and neodymium magnet. The

low-frequency voice coil diameter shall be 19 mm (0.75 in.).

Performance specifications for a typical production unit shall be as follows: Useable frequency response shall extend from 82 Hz - 22 kHz (-10 dB). Measured sensitivity (2.83 volt input, 1 meter) shall be at least 85.0 dB. The speaker shall have a nominal impedance of 8 ohms. The system shall have an integrated 10 W transformer available with 25-, 70.7-, 100-volt input options. Rated power capacity shall be at least 20 watts continuous (RMS) and conform to EIA-426-B. Maximum continuous power output at 1 meter shall be 95 dB.

Installation for the speaker shall be by four stainless steel screws mounted to a new construction (and some retrofit) dual-gang junction box (junction box not included). The external wiring shall be by terminal block connector.

The system shall be for indoor/outdoor applications.

The grille shall be constructed of powder-coated aluminum for lasting performance and affix to the speaker baffle via snap fit. For theft prevention and durability, an optional stainless steel grille with stainless steel one-way screws is available (AC-RF31-TRG).

The maximum depth shall be no more than 53.6 mm (2.11 in.). The maximum visible dimension shall be no more than 120.7 mm (4.75 in.) in height by 120.7 mm (4.75 in.) in width.

The system shall be the RF31-EZ-T for high voltage applications.

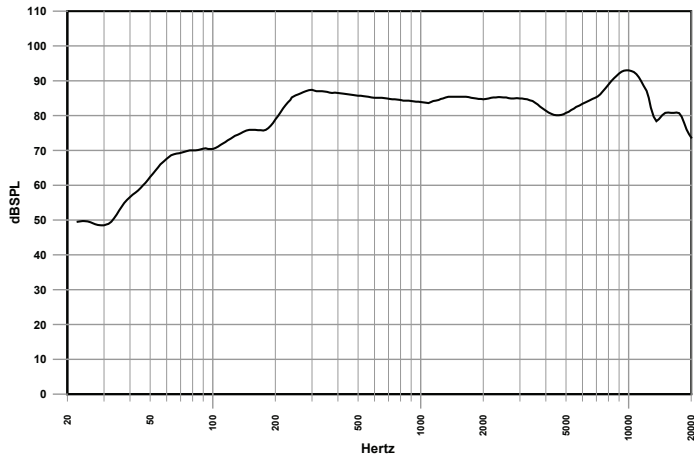
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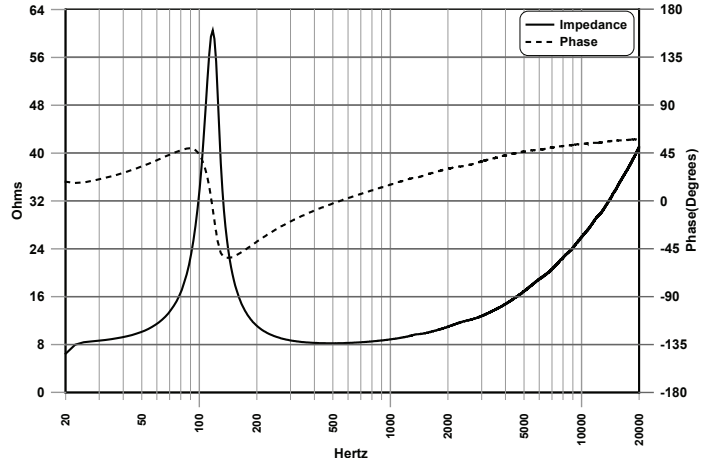
**All SoundTube products come with a 5-year limited warranty.**

Graphs and Plots

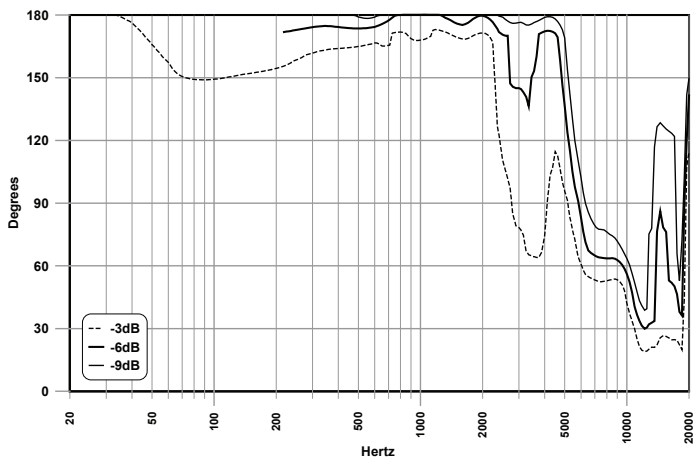
Frequency Response



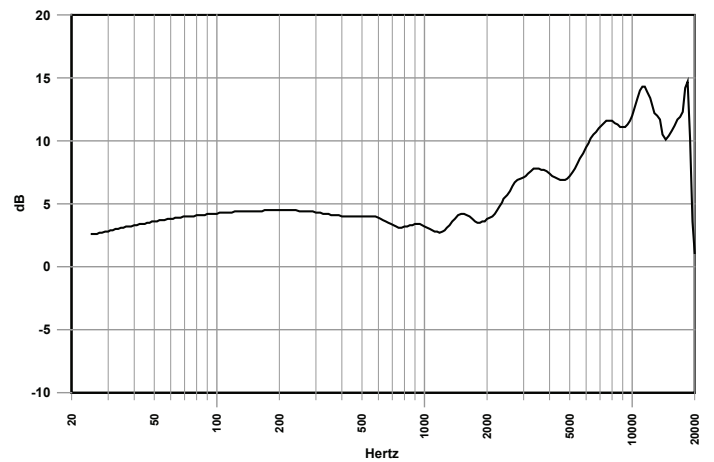
Phase/Impedance Response



Vertical Beamwidth (-6 dB)



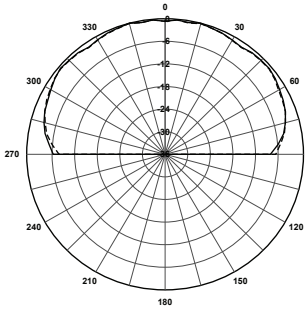
Directivity Index (DI)



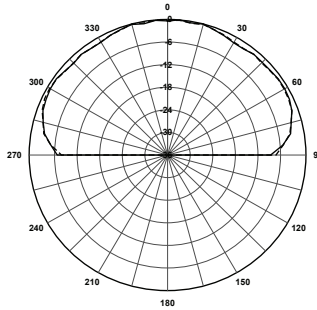
**Polar Plots**

———— Horizontal  
 - - - - - Vertical

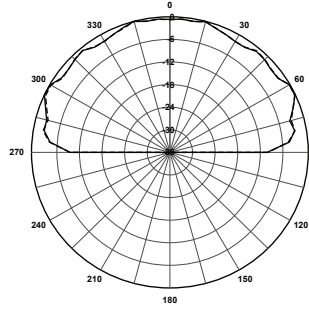
**125 Hz**



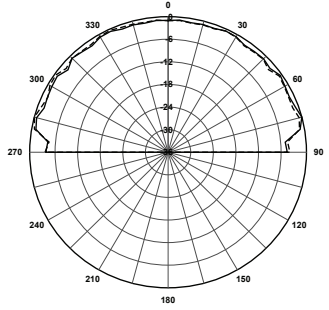
**250 Hz**



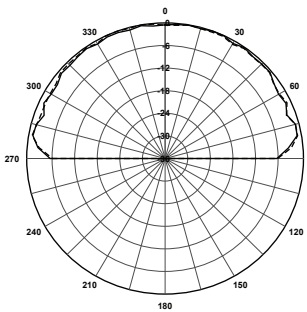
**500 Hz**



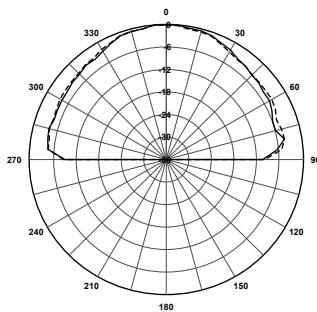
**1,000 Hz**



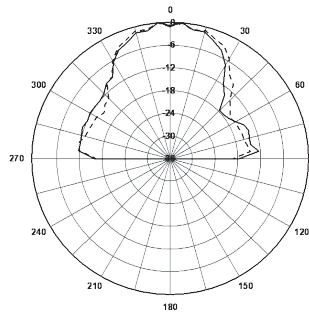
**2,000 Hz**



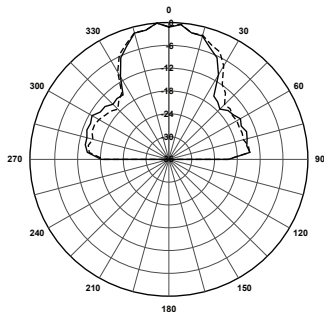
**4,000 Hz**



**8,000 Hz**

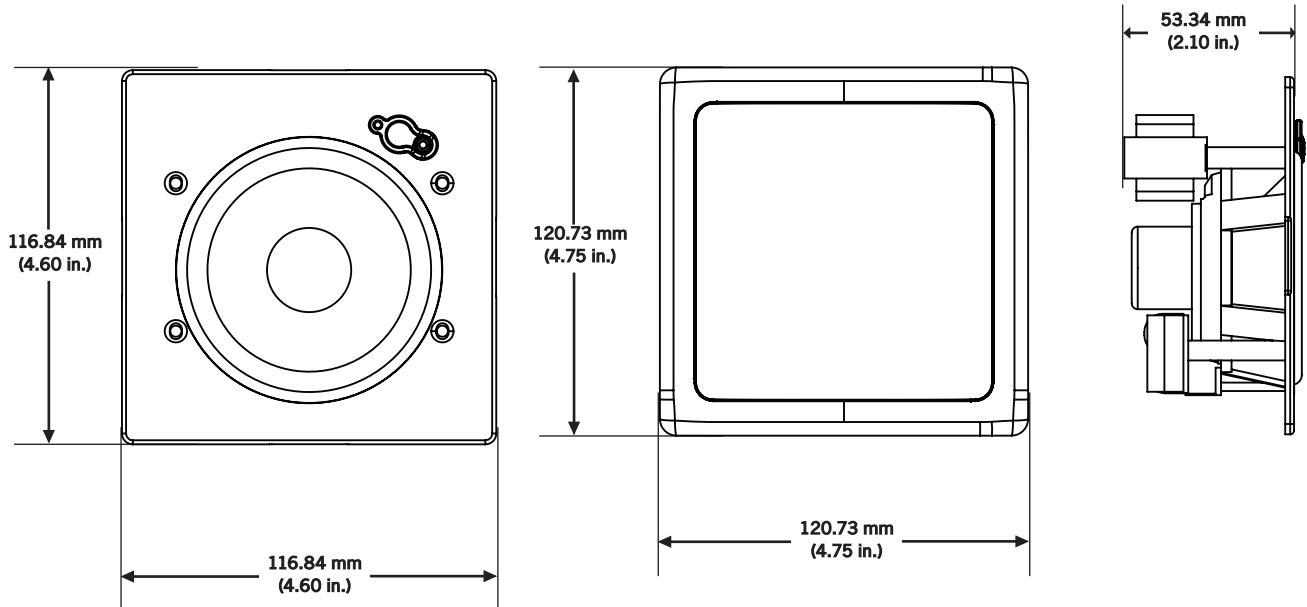


**10,000 Hz**



Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at [www.soundtube.com](http://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.