



Description

The RF41-20 is a 4", full-range, blind-mount, in-ceiling speaker which delivers true high-efficiency and performance across the operating bandwidth. The full-range driver design delivers maximum frequency response (71 Hz - 22 kHz, ± 10 dB) in a compact design. Mounting hardware is included and features fast and easy retrofit connections. For easy ordering, stocking, and installation, the RF41-20 includes a five-position tap switch for 25, 70.7, and 100 V applications with a transformer bypass position. Grilles are optional and come in white only.

RF41-20 PRODUCT SPECIFICATIONS

System Type	4", full-range, in-ceiling, raw frame, sealed (20 W transformer for 25/70.7/100 V or transformer bypass)
Impedance (Nominal) ¹	8 Ω
Sensitivity dB @ 2.83 V / 1 M	88.5 dB
Sensitivity dB @ 1 W / 1 M ²	88.5 dB
Frequency Response (± 3 dB) ³	155 Hz - 22 kHz
Frequency Response (± 10 dB) ³	71 Hz - 22 kHz
Max. Program Power ⁴	40 W
Max. Continuous Power RMS ⁵	20 W
Max. Power SPL @ 1 M ⁶	101.5 dB
Coverage Angle (± 6 dB @ 2 kHz)	145°
Coverage Angle (± 6 dB @ 10 kHz)	53°
Coverage Angle (Avg. from 2-10 kHz)	110°
Directivity Factor (Q)	4.9 (averaged 100 Hz - 10 kHz) 4.6 (2 kHz)
Directivity Index (DI)	5.7 dB (averaged 100 Hz - 10 kHz) 6.6 dB (2 kHz)
Tap Selector	Five-position rotary switch with transformer bypass position
Transducer: Full-Range Driver	102 mm (4") treated paper cone, cloth surround
Low-Frequency Voice Coil	20 mm 0.79"
Enclosure Material	Injection molded ABS baffle, separate back can
Grille	White metal grille (AC-GRL-RF41)
Inputs	Spring terminals
Colors	White only
Diameter	209.8 mm 8.3"
Overall Height	68.83 mm 2.71"
Visible Diameter	320 mm 12.6"
Visible Height	6.4 mm 0.3"
Mounting Hole Diameter	192 mm 7.56"
Weight	1.6 kg 3.5 lbs
Optional Accessories	White metal grille (AC-GRL-RF41)
Packaging	One per box
Certifications	CE, RoHS

Features

- One full-range 4" (102 mm) treated fiber woofer with cloth surround.
- Easy-access five-position tap switch for 25/70.7/100 V and transformer bypass position plus spring terminals allow for rapid ordering, stocking, and installation.
- Engineered for installation with limited plenum space or retrofit applications.
- Reduced amplification costs and maximum efficiency with 88.5 dB sensitivity and 8 Ω impedance.
- Superior voice intelligibility with an average coverage angle of 110° (2-10 kHz, independently verified).
- Fits standard 8" back cans for retrofits.
- High-quality white paint finish grille.
- Optional accessories: white metal grille (AC-GRL-RF41) sold only in packs of 4.

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

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

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
20 W	101.5 dB	20 W	101.5 dB	2.5 W	92.5 dB
10 W	98.5 dB	10 W	98.5 dB		
5 W	95.5 dB	5 W	95.5 dB		
2.5 W	92.5 dB				

Applications

Developed specifically to retrofit into a standard 8" back can, the RF41-20 is ideal for retrofits in hotels, retail stores, restaurants, airports, churches (under eaves) or boardrooms. Indeed, the RF41-20 series is engineered for installations where high-efficiency and rapid installation are critical attributes. For applications requiring additional bass response, SoundTube's CM1001d subwoofer provides true low-end response down to 41 Hz.

Patented 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

SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data is 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

Independent Data Acquisition and Verification

All data for SoundTube speakers is independently collected from and verified by NWAALabs (www.nwaalabs.com) using their proprietary MACH testing system. All data is 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 102 mm (4") full-range transducer. The

low-frequency voice coil diameter shall be 20 mm (0.79"). The transducer shall have a treated fiber cone material with cloth surround.

Performance specifications of a typical production unit shall be as follows: usable frequency range shall extend from 71 Hz - 22 kHz (± 10 dB). The loudspeaker shall be available with selectable 25/70.7/100 V and transformer bypass tap switch. Rated power capacity of the components and network shall be at least 20 W continuous (RMS) and conform to EIA-426-B testing. Maximum SPL shall be 101.5 dB. The RF41-20 ships with an electro-acoustic sub assembly and ABS baffle.

Installation for the speaker shall be by four-screw into an industry standard back can. Wiring shall be by a spring terminal.

Optional accessories include the AC-GRL-RF41 painted metal grille may be added. The optional grille ships in packs of four, and is available in white.

The unit is factory preset to the 70.7 V, 20 W operating mode, with a tap switch located on the front baffle.

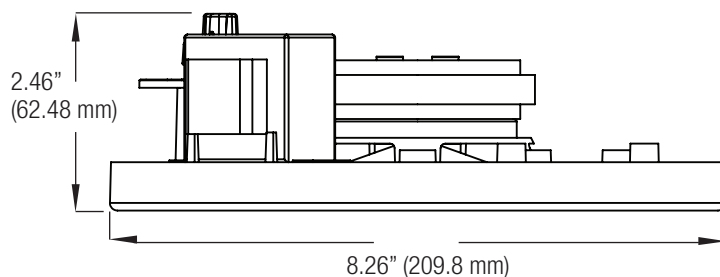
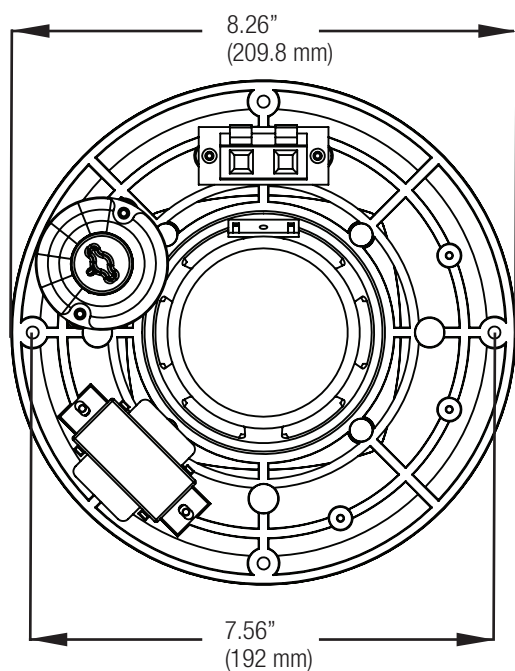
The system shall be the SoundTube RF41-20 for both low and high impedance applications.

SoundTube®

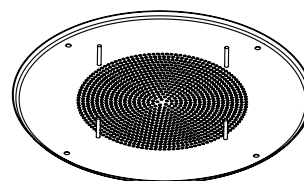
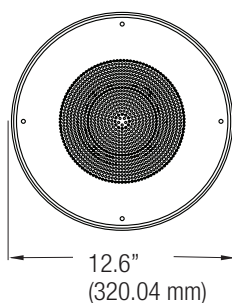
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All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics.

Mechanical Drawings



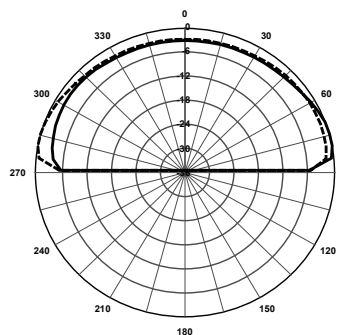
Optional Accessories



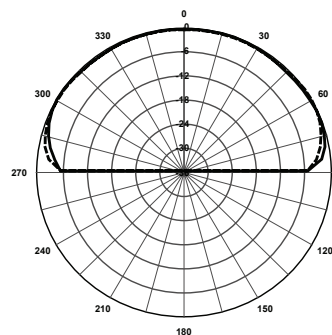
Grille (AC-GRL-RF41 Available in 4-pack only)

Plots

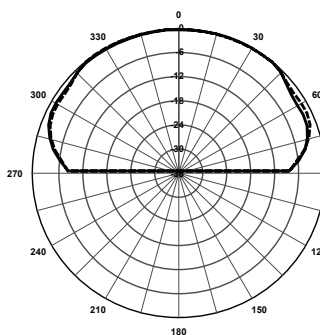
125 Hz



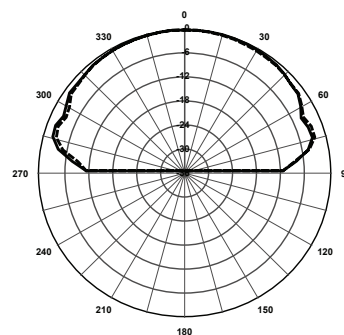
250 Hz



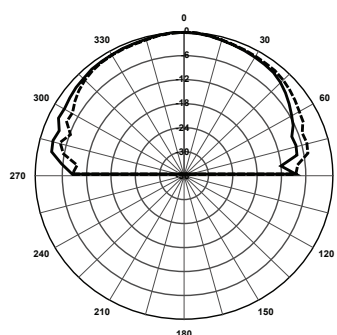
500 Hz



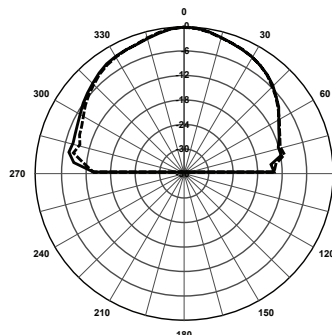
1,000 Hz



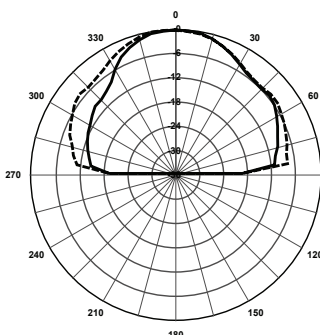
2,000 Hz



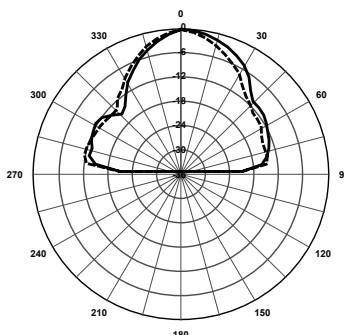
4,000 Hz



8,000 Hz

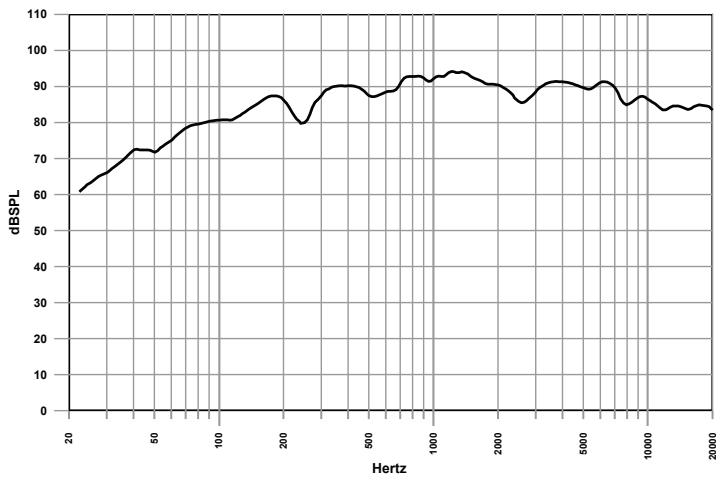


10,000 Hz

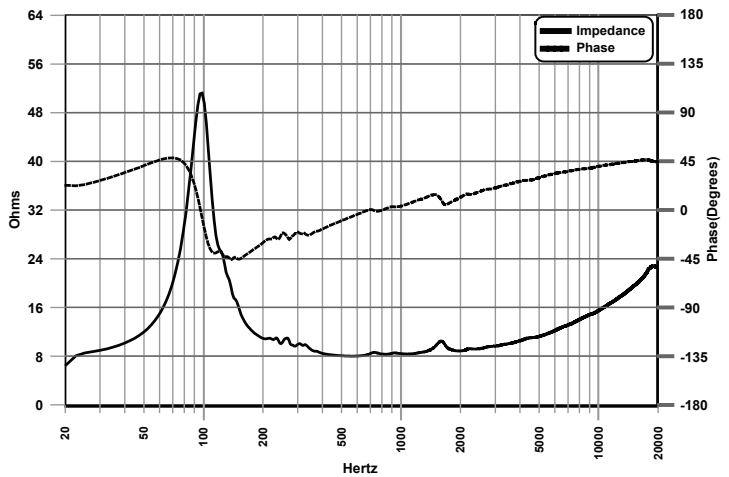
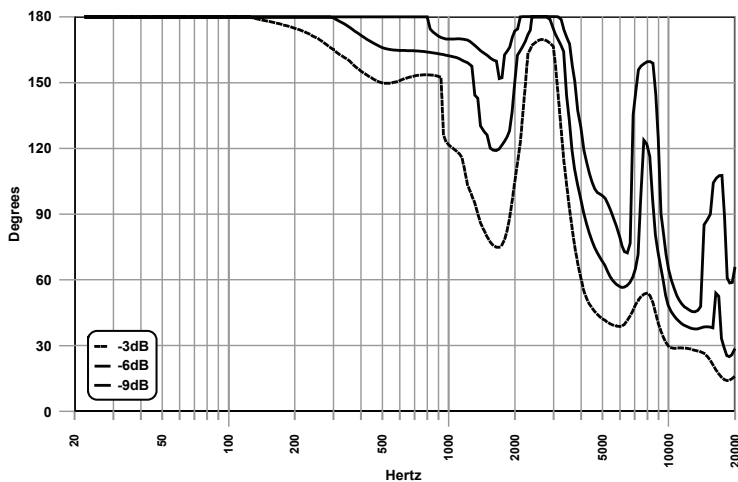


Graphs

Frequency Response



Phase/Impedance Response

Vertical Beamwidth (± 6 dB)

Directivity Index (DI)

