



Specifications: RF41-20

System Type	4-inch, full-range, in-ceiling, raw frame, sealed (20-watt transformer for 25/70.7/100-volt or transformer bypass).
Impedance (nominal) ¹	8 ohm
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)	55°
Coverage Angle (averaged from 2 to 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 (4.0 in.) treated paper cone, cloth surround
Low-Frequency Voice Coil	20.0 mm (0.79 in.)
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 (8.26 in.)
Overall Height	68.83 mm (2.71 in.)
Visible Diameter	320.0 mm (12.60 in.)
Visible Height	6.4 mm (0.25 in.)
Mounting Hole Diameter	192.0 mm (7.56 in.)
Weight	1.6 kg (3.5 lbs.)
Shipping Weight	1.8 kg (4.0 lbs.)
Optional Accessories	White metal grille (AC-GRL-RF41)
Packaging	One per box
Regulatory - CE	Approved
RoHS	Approved

Transformer Taps

	70.7 V	Output	100 V	Output	25 V	Output
¹ Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance	20 W	101.5 dB	20 W	101.5 dB	1 W	89.5 dB
² 1 W 1 m sensitivity determined using nominal impedance	10 W	98.5 dB	10 W	98.5 dB	0.63 W	86.5 dB
³ Frequency response measured in half or full space as dictated by speaker mounting configuration	5 W	95.5 dB	5 W	95.5 dB	0.31 W	83.5 dB
⁴ Max program power is 3 dB above max continuous power	2.5 W	92.5 dB				

⁵ Continuous power rating, EIA-426-B test

⁶ Max output based on max continuous power

Key Features

- One full-range 4.0 in. (102 mm) treated fiber woofer with cloth surround.
- Easy-access five-position tap switch for 25/70.7/100-volt and transformer bypass position plus spring terminals allow for rapid ordering, stocking and installation.
- Engineered for installations with limited plenum space or retrofit applications.
- Reduced amplification costs and maximum efficiency with 88.5 dB sensitivity and 8 ohm impedance.
- Superior voice intelligibility with an average coverage angle of 110° (2 – 10 kHz, independently verified).
- Fits standard 8-inch backcans for retrofits.
- High-quality white paint finish grille.
- Optional accessories: White metal grille (AC-GRL-RF41) sold only in packs of 4.

Description

The RF41-20 is a 4-inch, 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-volt applications with a transformer bypass position. Grilles are optional and come in white only.

Applications

Developed specifically to retrofit into a standard 8-inch backcan, 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 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 102 mm (4.0 in.) full-range transducer. The low-frequency voice coil diameter shall be 20.0 mm (0.79 in.). The transducer shall have a treated fiber cone material with cloth surround.

Performance specifications of a typical production unit shall be as follows: Useable frequency range shall extend from 71 Hz - 22 kHz, -10 dB. The loudspeaker shall be available with selectable 25/70.7/100-volt and transformer bypass tap switch. Rated power capacity of the components and network shall be at least 20 watts 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-volt, 20-watt 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.

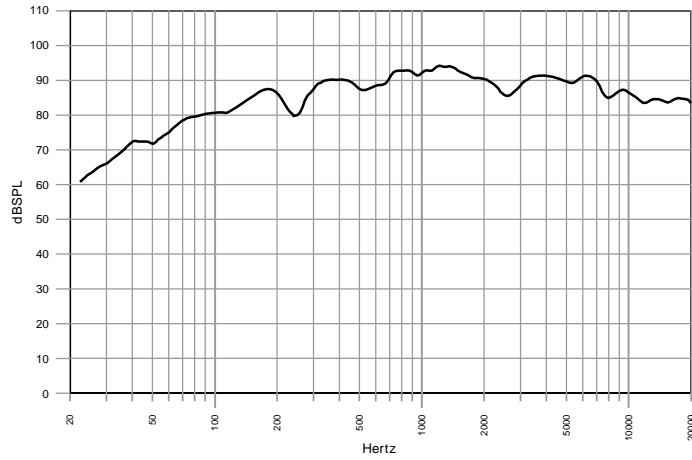
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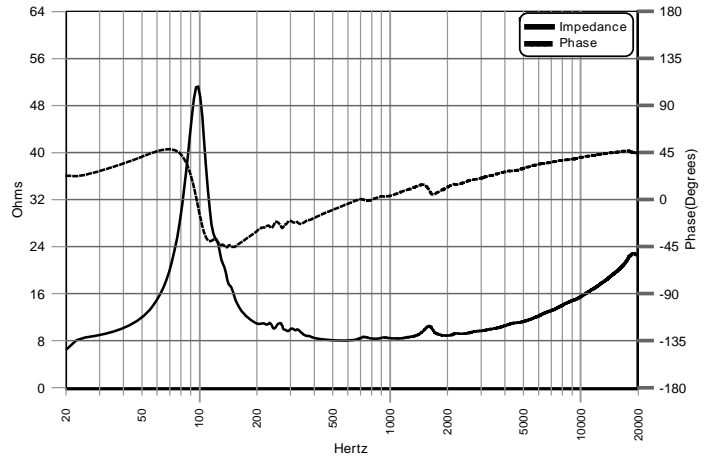
All SoundTube products come with a 5-year limited warranty.

Graphs and Plots

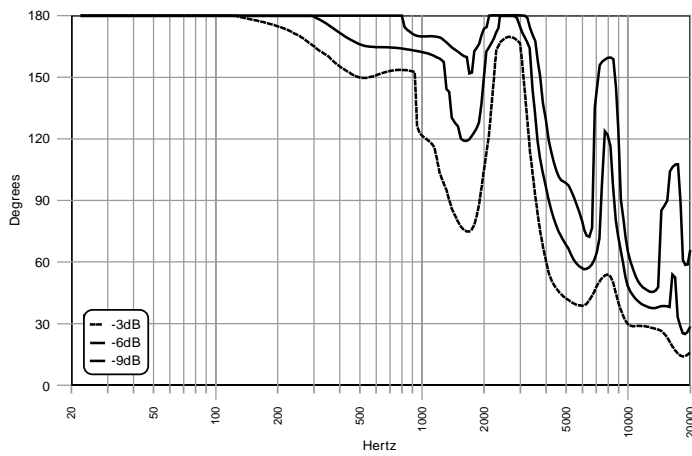
Frequency Response



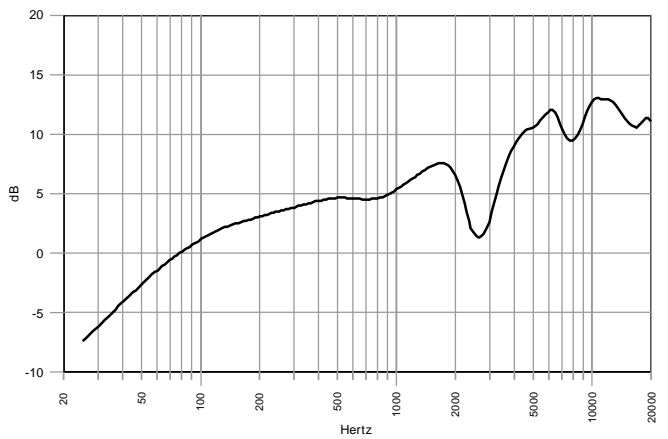
Phase/Impedance Response



Vertical Beamwidth (-6 dB)



Directivity Index (DI)



Polar Plots

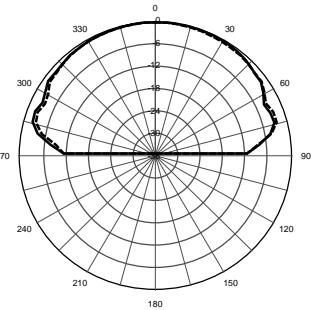
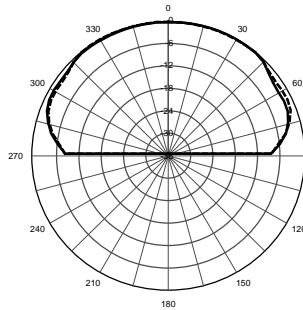
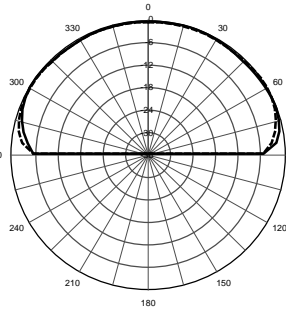
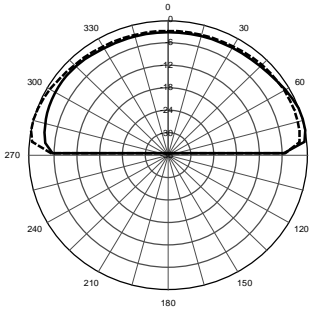
— Horizontal
 - - - Vertical

125 Hz

250 Hz

500 Hz

1,000 Hz

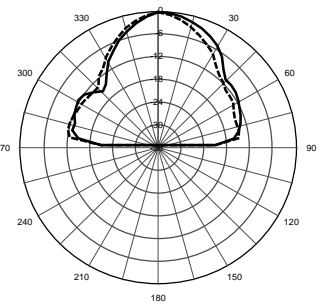
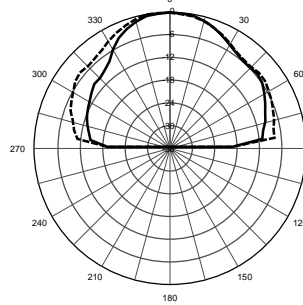
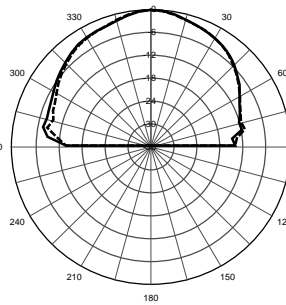
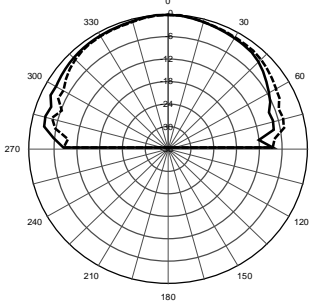


2,000 Hz

4,000 Hz

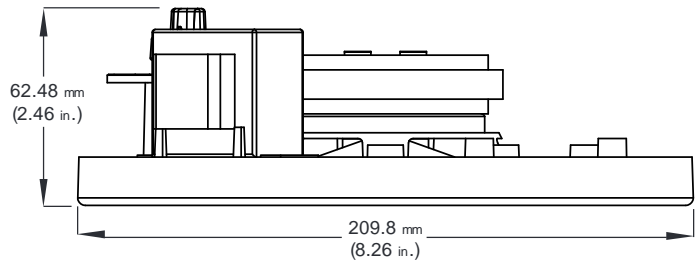
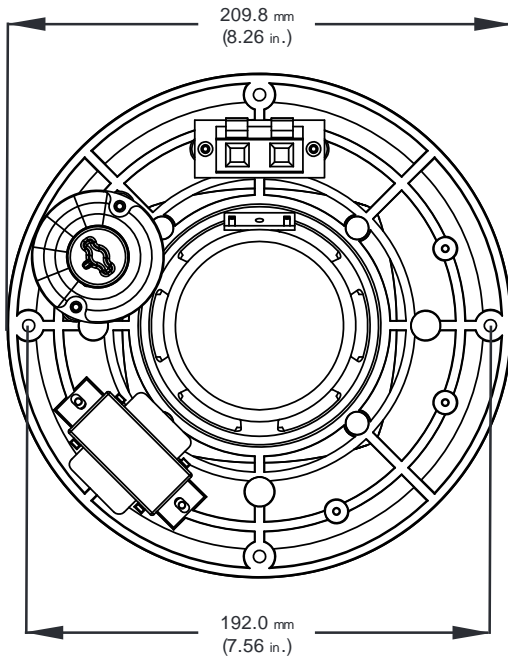
8,000 Hz

10,000 Hz

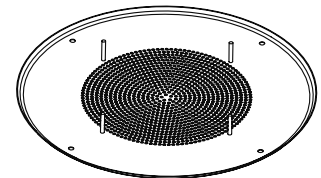
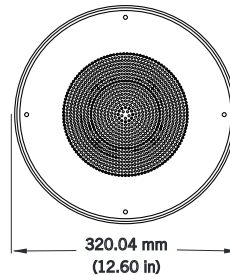


Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at www.soundtube.com

Mechanical Drawings



Optional Accessories



Grill (AC-GRL-RF41 Available in 4-Pack only)

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.