

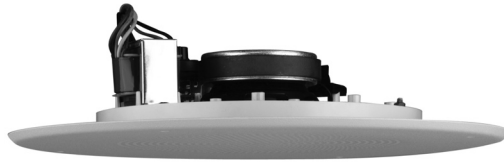
RF41-20

In-Ceiling Speaker

Technical Information for System Engineers



SOUNDTUBE
ENTERTAINMENT



Specifications: RF41-20

System Type	4" Full range, in-ceiling, raw frame (20 Watt transformer for 25/70.7/100 Volt or 8 Ohm direct)
Impedance (nominal)	8 ohm
Sensitivity dB @ 2.83V/1M	92.0 dB
Sensitivity dB @ 1W/1M ¹	92.0 dB
Frequency Response (-3 dB) ²	100 Hz - 22 kHz
Frequency Response (-10 dB) ²	85 Hz - 22 kHz
Max. Program Power ³	40 w
Max. Continuous Power RMS ⁴	20 w
Max. Power SPL @ 1 M ⁵	105.0 dB
Coverage Angle (-6 dB @ 2 kHz)	165°
Coverage Angle (-6 dB @ 10 kHz)	50°
Coverage Angle (Avg. from 2 - 10 kHz)	105°
Directivity Factor (Q)	3.4 (Avg. 100 Hz - 10 kHz) ; 3.3 (2 kHz)
Directivity Index (DI) dB	3.9 (Avg. 100Hz - 10 kHz) ; 5.1 (2 kHz)
Tap Selector	5-Position rotary switch with 8 ohm direct
Transducer - Low Frequency Driver	102 mm (4 in) Treated fiber cone, cloth surround
Transducer - High Frequency Driver	N/A
Low Frequency Voice Coil	20.0 mm / 0.79 in
Inputs	Spring terminals
Colors	N/A
Shipping Weight	4 lb / 1.8 kg
Accessories	
Included	N/A
Optional	White or black grill (AC-GRL-RF41)
Packaging	1 per box
Regulatory - UL	1480 & 2043 Planned

¹ 1w1m sensitivity determined using nominal impedance

² Frequency response measured in half or full space as dictated by speaker mounting configuration

³ Max program power is 3 dB above max continuous power

⁴ Continuous power rating, EIA-426-B test

⁵ Max useable SPL based on testing by NWA Labs

Transformer Taps

70.7 V Output	100 V Output	25 V Output
20 w 105.0 dB	20 w 105.0 dB	2.5 w 96.0 dB
10 w 102.0 dB	10 w 102.0 dB	1 w 93.0 dB
5 w 99.0 dB	5 w 99.0 dB	0.63 w 90.0 dB
2.5 w 96.0 dB		0.31 w 87.0 dB

Preliminary Technical Information Key Features

- Engineered for retrofit applications with industry-standard 8" backcans.
- One full-range 102 mm (4 in) treated fiber woofer with cloth surround.
- Reduced amplification costs and maximum efficiency with 92 dB sensitivity and 8 Ohm impedance.
- Superior voice intelligibility with an average coverage angle of 105° (Independently verified, 2 - 10 kHz).
- Easy-access 5-position tap switch for 25/70.7/100 Volt and 8 Ohm settings plus spring terminals allow for easy ordering, stocking and installation.
- UL 1480 & 2043, cUL, CE (EMC Directive 89/366/EEC, EN55020, EN55013) approval pending.
- Optional accessories: Black or white metal grille (AC-GRL-RF41) sold only in packs of 4.

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 (85 Hz - 22 kHz, -10 dB) in a compact design. Mounting hardware is included and features fast & easy retrofit connections. The RF41-20 is engineered for retrofit applications with industry-standard 8" backcans. For easy ordering, stocking and installation, the RF41-20 includes 5-position tap switch for 25, 70.7 & 100 V applications with voice coil/ 8 Ohm bypass.

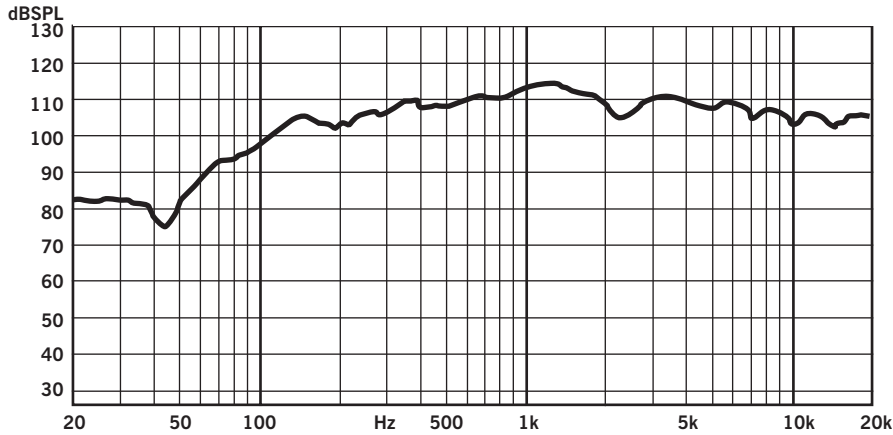
Applications

Developed specifically for the paging and background music applications where cost, quality and fit are paramount, the RF41-20 is ideal for retrofits in hotels, retail stores, restaurants, airports, churches (under eave) or boardrooms. For applications requiring additional bass response, SoundTube's CM1001d subwoofer provides true low-end response down to 50 Hz.

Patented SoundTube



Frequency Response



Technologies

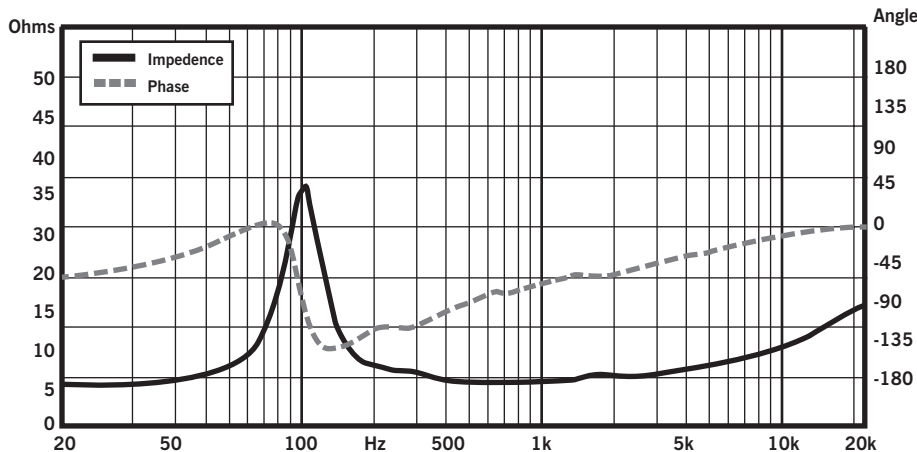
SoundTube Entertainment and the MSE Audio Group constantly develop new technologies which enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. & international patents, which explicitly cover SoundTube dome, enclosure and dispersion technologies. The MSE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

Technical Data and Specification Tools

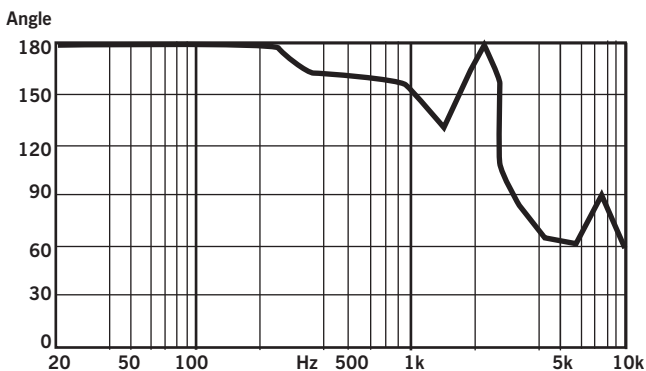
Technical Data

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 and includes **EASE™ Data** – 3-D polar plots and **SoundTubeSPEC™** – Proprietary SoundTube speaker placement software.

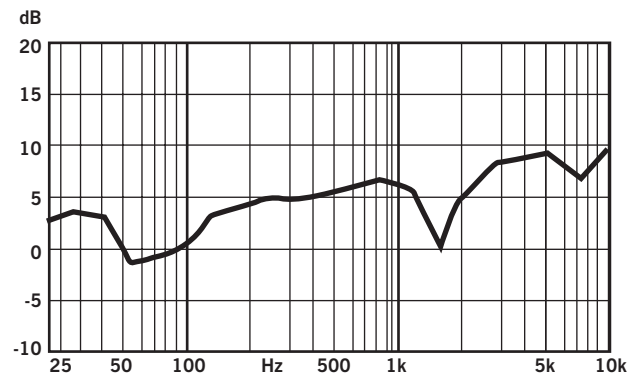
Phase/Impedance Reponse



Beamwidth (-6 dB)



Directivity Index (DI)





Independent Data

Acquisition & 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 analysed 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 in) full-range transducer. The voice coil diameter shall be 20 mm (0.8 in). 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 85 Hz - 22 kHz, -10 dB. The loudspeaker shall be available with selectable 25/70.7/100 Volt and 8 Ohm/voice coil direct tap switch. Rated power capacity of the components and network shall be at least 20 Watts continuous RMS power and conform to EIA-426-B testing.

The RF41-20 ships with an electro-acoustic sub assembly and ABS baffle. Installation for the RF41-20 shall be by 4-screws and includes spring terminals for input leads. As an optional accessory, the AC-GRL-RF41 painted metal grille may be added. The optional grill ships in packs of 4, and is available in black or white

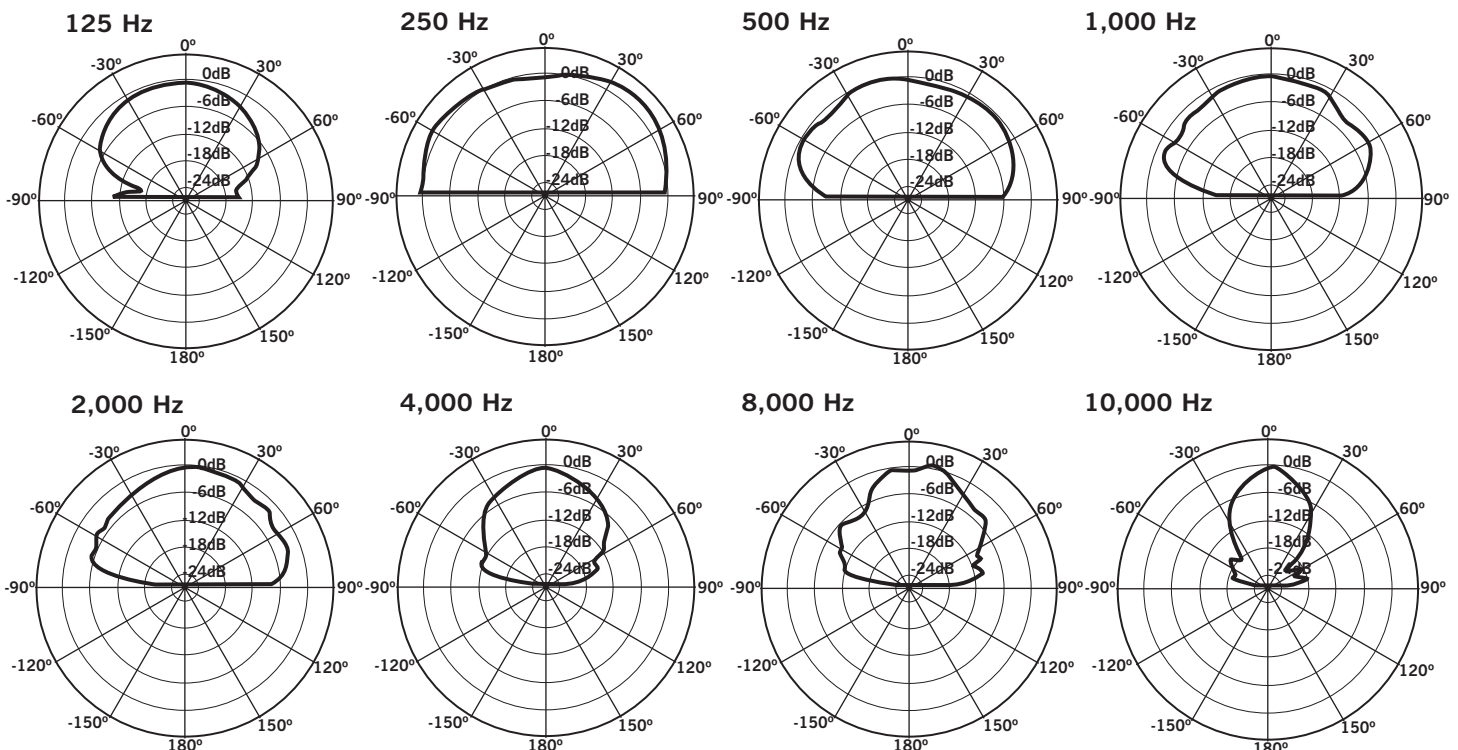
The RF41-20 is factory preset to the 70.7 at 20 Watts operating mode, with a tap switch located on the back of the baffle. The system shall be the SoundTube RF41-20 for both low & high impedance applications.

SoundTube Entertainment

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

Polar Plots



RF41-20

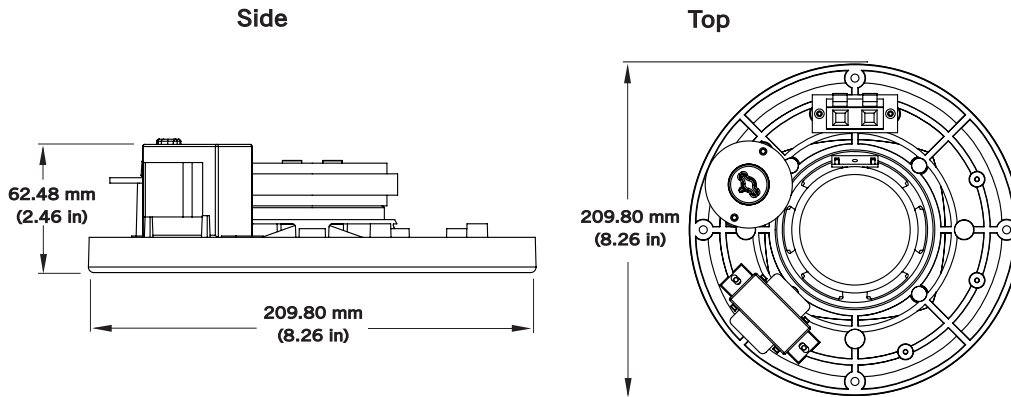
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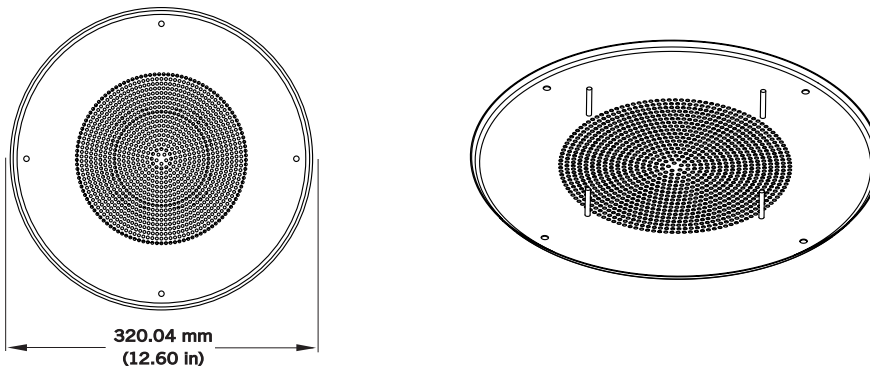


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Mechanical Drawings



Optional Accessories



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