CM82-EZ-FS | In-Ceiling Speaker
Preliminary Technical Information

SOUNDTUBE ENTERTAINMENT

Specifications: CM82-EZ-FS — Tile bridge included

System Type	8-inch coaxial, in-ceiling, sealed (10-watt transformer for 25/70.7/100-volt applications)
Impedance (nominal) [1]	16 ohm
Sensitivity dB @ 2.83 V/1 m	86 dB
Sensitivity dB @ 1 W/1 m [2]	89 dB
Frequency Response (- 3 dB) [3]	92 Hz - 18 kHz
Frequency Response (-10 dB) [3]	65 Hz - 22 kHz
Max. Program Power [4]	128 W
Max. Continuous Power RMS [5]	64 W
Max. Power SPL @ 1 m [6]	99.0 dB
Coverage Angle (-6 dB @ 2 kHz)	105°
Coverage Angle (-6 dB @ 10 kHz)	40º
Coverage Angle (averaged 2-10 kHz)	95°
Directivity Factor (Q)	5.4 (averaged 100 Hz - 10 kHz) ; 7.2 (2 kHz)
Directivity Index (DI)	5.5 dB (averaged 100 Hz - 10 kHz) ; 8.6 dB (2 kHz)
Tap Selector	Five-position rotary switch
Transducer - Low-Frequency Driver	203 mm (8 in.) Polypropylene cone, butyl rubber surround
Transducer - High Frequency Driver	25.4 mm (1.0 in.) silk dome tweeter
Low-Frequency Voice Coil	25.4 mm (1.00 in.)
Crossover Frequency	3.0 kHz
Network Type: Low Pass	6 dB per octave, 1st order
Network Type: High Pass	6 dB per octave, 1st order
Enclosure Material	Drawn steel backcan with ABS baffle
Grille	Steel with painted finish
Inputs	Ceramic terminal strip
Colors	Black or white
Backcan Diameter	245.6 mm (9.67 in.)
Backcan Height	146.1 mm (5.75 in.)
Visible Diameter	298.5 mm (11.75 in.)
Visible Height	8.6 mm (0.34 in.)
Mounting Hole Diameter	266.7 mm (10.50 in.)
Min – Max Ceiling Thickness	0.9 mm (0.04 in.) – 40.6 mm (1.60 in.)
Weight	4.1 kg (9.0 lbs.)
Shipping Weight	4.5 kg (10.0 lbs.)
Included accessories	Tile bridge, UL-listed flex conduit clamp, paint shield,
Optional accessories	Pre-construction bracket (AC-CMEZ6/8-PCB), junction box (AC-CM-EZ-JBOX)
Packaging	One per box
Regulatory - UL	UL 1480 (UUMW) and 2043 listed
Regulatory - CE	Approved
RoHS	Approved

[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

[5] Max output based on max continuous power

[6] Max useable SPL based on testing by NWAA Labs

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
10 W	99.0 dB	10 W	99.0 dB	1.3 W	90.0 dB
5 W	96.0 dB	5 W	96.0 dB	0.7 W	87.0 dB
2.5 W	93.0 dB	2.5 W	93.0 dB	0.4 W	84.0 dB
1.3 W	90.0 dB	1.3 W	90.0 dB	0.2 W	81.0 dB
0.7 W	87.0 dB			0.1 W	78.0 dB

Key Features

- One 8.0 inch (203 mm) polypropylene woofer with butyl rubber surround and one 1.0 inch (25.4 mm) silk dome tweeter.

- Easy-access five-position tap switch for 25/70.7/100-volt settings allows for easy ordering, stocking and installation.

- Reduced amplification costs and maximum efficiency 89.0 dB sensitivity, 16 ohm impedance and a sealed enclosure.

- Superior voice intelligibility with an average coverage angle of 95° (2–10 kHz, independently verified).

- Incorporates a painted steel grille with rust inhibitor for lasting durability.

- Adaptable to ceiling thicknesses ranging from 0.04 inch (0.9 mm) to 1.60 inch (40.6 mm).

- 10 µF capacitor provided on input circuit for use with DC supervision circuits.

- UL 1480 (UUMW) and 2043, cUL, CE (EMC Directive 89/366/EEC, EN55020, EN55013) approved.

- High-quality black or white painted finish. Custom colors available.

- Included accessories: tile bridge, UL-listed 0.5-inch conduit clamp, and paint shield.

- Optional accessories: color-coded (green) pre-construction bracket (AC-CMEZ6/8-PCB) and junction box (AC-CM-EZ-JBOX).

Description

The CM82-EZ-FS is an 8-inch, coaxial, two-way, blind-mount, in-ceiling speaker which delivers true high efficiency and performance across the operating bandwidth. By incorporating an 8-inch polypropylene driver with a butyl rubber surround in a sealed drawn steel backcan, this speaker delivers maximum frequency response (65 Hz – 22 kHz, - 10 dB) in an integrated enclosure design.

Mounting hardware is included and features a constant-tension, fixed-wing mounting system with a 21-gauge "full-metal" steel tile bridge ensuring rapid and secure installation in any sheetrock or drop-tile application. For easy ordering, stocking and installation, this series includes a color-coded (green) tile bridge, optional pre-construction bracket, and five-position tap switch for 25-, 70.7- and 100-volt applications.

Applications

Developed specifically for paging and background music applications where cost, quality and fit are paramount, the CM82-EZ-FS is ideal for hotels, education, healthcare, retail stores, restaurants, airports, churches or boardrooms. Indeed, the entire CM-EZ-FS series is engineered for installations where code requires UL 1480 UUMW listing, yet speech intelligibility, high-efficiency and rapid installation are critical attributes. The CM-EZ-FS series is suitable for use in fire signaling and mass notification systems. For applications requiring additional bass response, SoundTube's CM1001d-T 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

Independent Data Acquisition & Verification

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 203 mm (8 in.) low-frequency transducer and one 25.4 mm (1.0 in.) high-frequency transducer with a frequency dividing network installed in a sealed enclosure. The low-frequency voice coil diameter shall be 25.4 mm (1.0 in.). The low-frequency transducer shall have polypropylene cone with butyl rubber surround. The high-frequency transducer shall be constructed of silk material using a balanced-dome configuration.

Performance specifications of a typical production unit shall be as follows: Usable frequency range shall extend from 65 Hz - 22 kHz, (-10 dB). The loudspeaker shall be available for us in 25-, 70.7-, and 100-volt systems. The frequency dividing network shall have a crossover frequency of 3.0 kHz. Rated power capacity of the components and network shall be at least 64 watts continuous RMS and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be at least 99.0 dB with the 10 W tap.

The backcan shall be constructed of galvanized steel with an ABS plastic baffle. The grille shall be constructed of painted steel treated with a rust-inhibiting paint adhesive. Shipped complete with UL-listed flex conduit clamp, color-coded tile bridge (to match color-coded backcan label), grille, and paint shield, the integrated in-ceiling speaker is engineered for high performance and rapid installation in plenum spaces. The unit incorporates three additional attachment points for added security and meeting code where required.

Installation for the speaker shall be by two-screw, blind-mount, constant-tension, fixed-wing assembly and shall attach to ceiling thicknesses ranging from 0.9 mm (0.04 in.) to 40.6 mm (1.60 in.). The external wiring shall be by 4 position ceramic terminal strip accepting up to 8 gauge wire.

The maximum backcan dimension shall be no more than 146.1 mm (5.75 in.) in height by 245.6 mm (9.67 in.) in diameter. The maximum visible dimensions shall be no more than 8.6 mm (0.34 in.) in height by 298.5 mm (11.75 in.) in diameter. The unit is factory preset to the 10-watt setting in the 70.7-volt operating mode, with a tap switch located on the front baffle.

The system shall be the SoundTube CM82-EZ-FS for both low- and high-impedance applications.

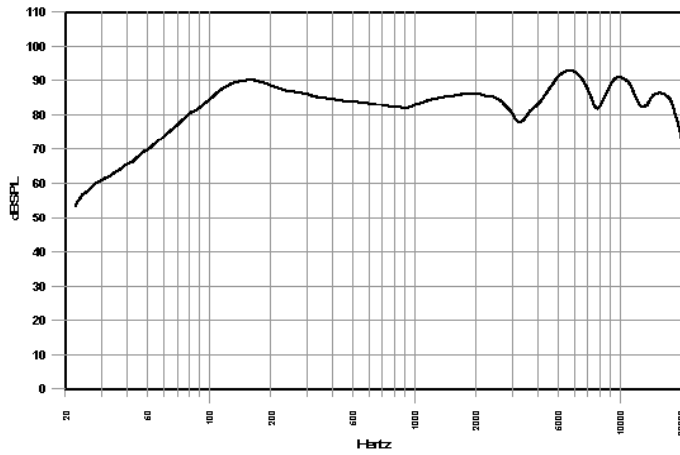## SoundTube Entertainment

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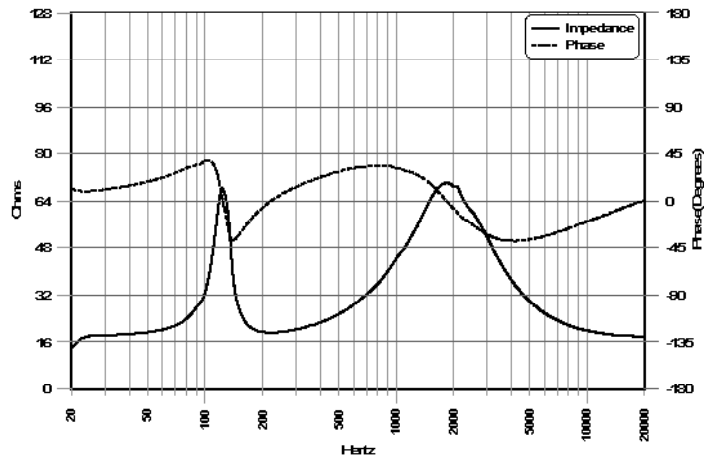**All SoundTube products come with a 5-year limited warranty.**
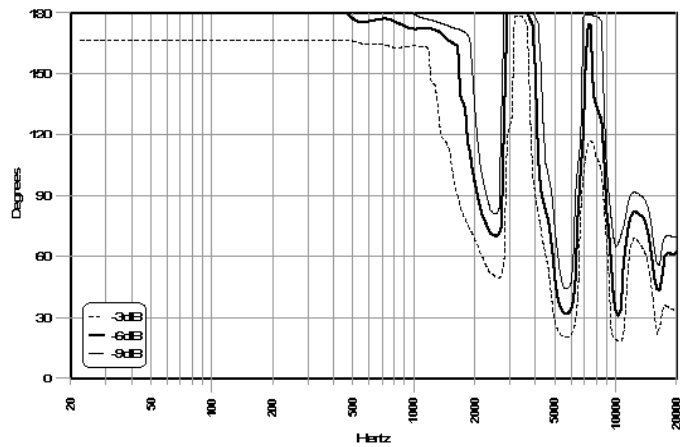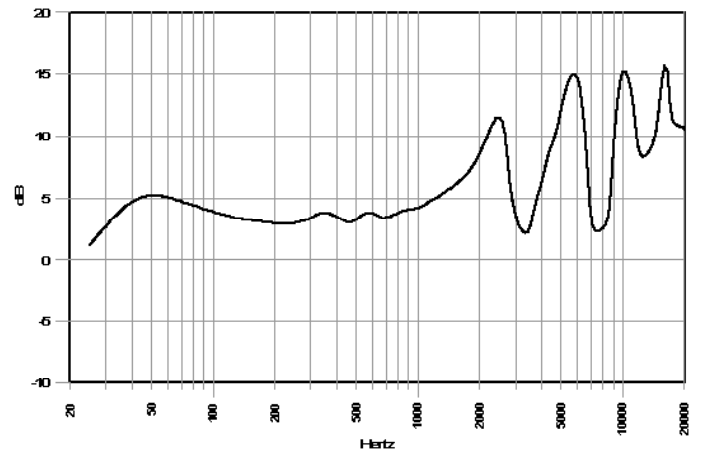
Graphs and Plots

Frequency Response

Phase/Impedance Reponse

Vertical Beamwidth

Directivity Index (DI)

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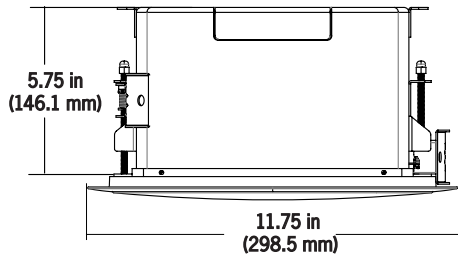
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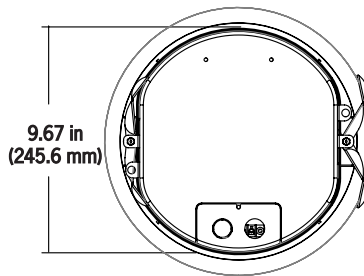
Polar Plots

——— **Horizontal**
- - - - - **Vertical**

125 Hz

250 Hz

500 Hz

1,000 Hz

2,000 Hz

4,000 Hz

8,000 Hz

10,000 Hz
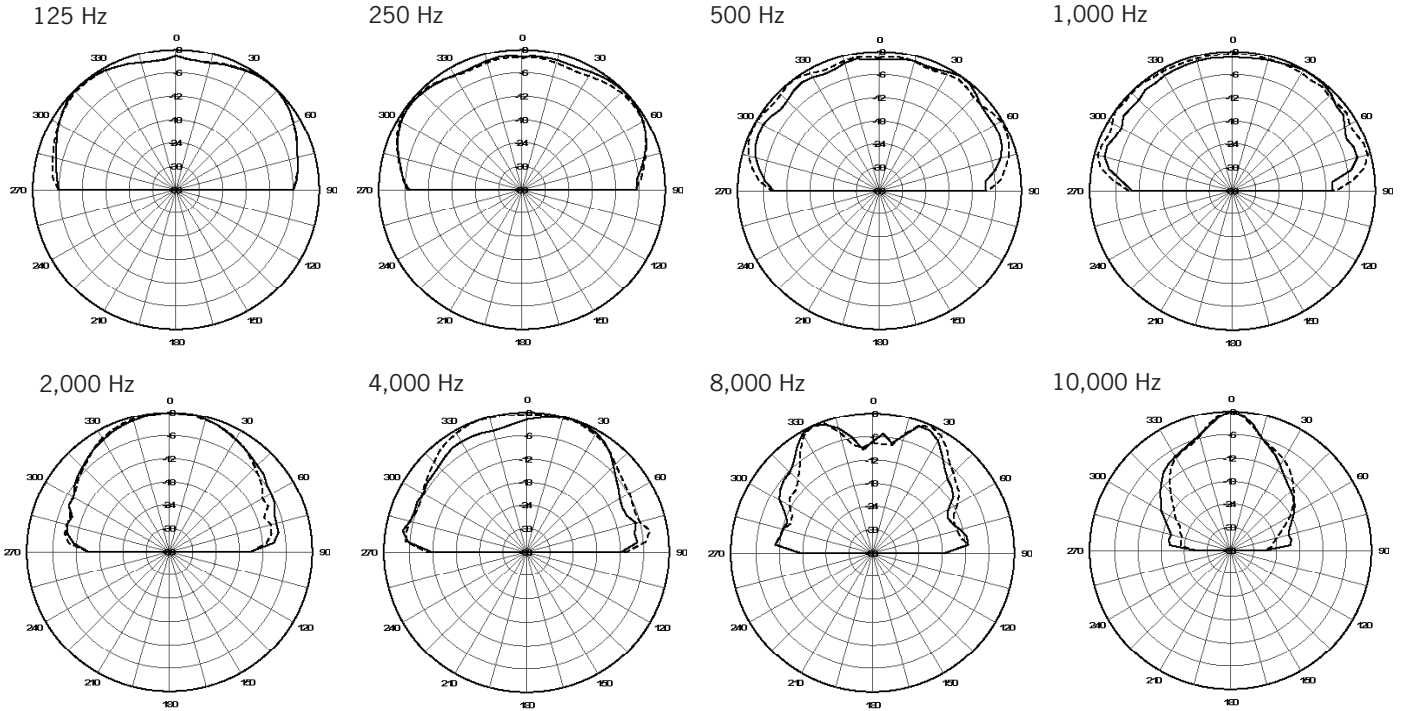
Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at **www.soundtube.com**
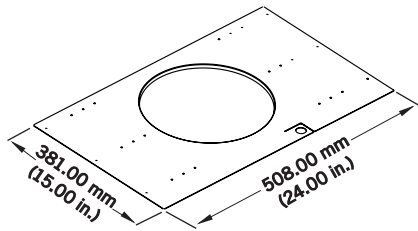
Mechanical Drawings

Side

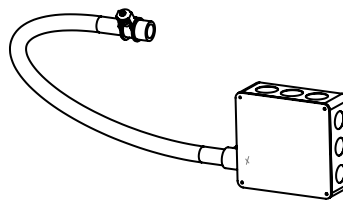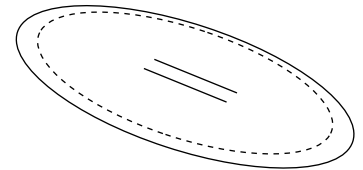5.75 in
(146.1 mm)

11.75 in
(298.5 mm)

Top

9.67 in
(245.6 mm)

Included Accessories

Paint Mask

598.25 mm
(23.55 in.)

269.24 mm
(10.60 in.)

383.86 mm
(15.11 in.)

Tile Bridge

Optional Accessories

381.00 mm
(15.00 in.)

508.00 mm
(24.00 in.)

Pre-Construction Bracket (AC-CMEZ6/8-PCB)

Junction Box (AC-CM-EZ-JBOX)
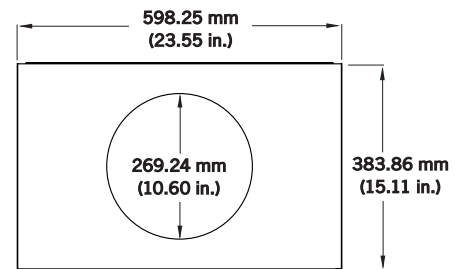
SoundTube Entertainment manufactures a complete line of speakers for:
Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing

All SoundTube products are designed and engineered in the USA.