CM82-EZs

In-Ceiling Speaker
Technical Information for System Engineers

Specifications: CM82-EZs

Tile bridge included

System Type	8-inch coax, in-ceiling, sealed (64-watt transformer for 25/70.7/100-volt or 16-ohm-direct)
Impedance (nominal) [1]	16 ohm
Sensitivity dB @ 2.83 V/1 m	85 dB
Sensitivity dB @ 1 W/1 m [2]	88 dB
Frequency Response (- 3 dB) [3]	109 Hz - 18 kHz
Frequency Response (-10 dB) [3]	82 Hz - 22 kHz
Max. Program Power [4]	128 W
Max. Continuous Power RMS [5]	64 W
Max. Power SPL @ 1 m [6]	106.0 dB
Coverage Angle (-6 dB @ 2 kHz)	105°
Coverage Angle (-6 dB @ 10 kHz)	35°
Coverage Angle (averaged 2-10 kHz)	105°
Directivity Factor (Q)	5.2 (averaged 100 Hz - 10 kHz) ; 6.8 (2 kHz)
Directivity Index (DI)	5.5 dB (averaged 100 Hz - 10 kHz) ; 8.3 dB (2 kHz)
Tap Selector	Six-position rotary switch with 16 ohm direct
Transducer - Low-Frequency Driver	203 mm (8 in.) Polypropylene cone, butyl rubber surround
Transducer - High-Frequency Driver	25.4 mm (1.0 in.) Silk 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	Painted steel
Inputs	18-gauge hard wired leads
Colors	Black or white
Backcan Diameter	245.6 mm (9.67 in.)
Backcan Height	95.3 mm (3.75 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	3.2 kg (7.0 lbs.)
Shipping Weight	4.1 kg (9.0 lbs.)
Packaging	One per box
Included accessories	Tile bridge, UL-listed flex conduit clamp, paint shield, cutout template, two wire nuts
Optional accessories	Pre-construction bracket (AC-CMEZ6/8-PCB); junction box (AC-CM-EZ-JBOX)
Regulatory - UL	UL 1480 and 2043 approved
Regulatory - CE	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
64 W	106.5 dB	64 W	106.5 dB	8 W	97.5 dB
32 W	103.5 dB	32 W	103.5 dB	4 W	94.5 dB
16 W	100.5 dB	16 W	100.5 dB	2 W	91.5 dB
8 W	97.5 dB	8 W	97.5 dB	1 W	88.5 dB
4 W	94.5 dB			0.5 W	85.5 dB

Key Features

- Engineered for applications with limited plenum space incorporating a SoundTube-specific shallow backcan with an installed depth of 3.5 inches.
- One 203 mm (8 in.) polypropylene woofer with butyl rubber surround and one 25.4 mm (1.0 in.) silk tweeter.
- Reduced amplification costs and maximum efficiency of 88.0 dB sensitivity, 16 ohm impedance and a sealed enclosure.
- Superior voice intelligibility with an average coverage angle of 105° (independently verified, 2 – 10 kHz).
- Easy-access six-position tap switch for 25/70.7/100-volt and 16 ohm settings allows for easy ordering, stocking and installation.
- Incorporates a painted steel grille with rust inhibitor for lasting durability.
- UL 1480 and 2043, cUL, CE (EMC Directive 89/366/EEC, EN55020, EN55013) approved.
- Adaptable to ceiling thicknesses ranging from 0.9 mm (0.04 in.) to 40.6 mm (1.60 in).
- Included accessories: tile bridge, UL-listed 0.5-inch conduit clamp, paint shield and two wire nuts.
- Optional accessories: color-coded (green) pre-construction bracket (AC-CMEZ6/8-PCB) and junction box (AC-CM-EZ-JBOX).
- High-quality black or white painted finish. Custom colors available.

Description

The CM82-EZs 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 (82 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 and optional pre-construction bracket, six-position tap switch for 25-, 70.7- and 100-volt applications with voice-coil-direct position.

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Applications

Developed specifically for paging and background music applications where cost, quality and fit are paramount, the CM82-EZs is ideal for hotels, education, hospitals, retail stores, restaurants, airports, churches or boardrooms. Indeed, the entire CM-EZ series is engineered for installations where high efficiency and rapid installation are critical attributes. For applications requiring additional bass response, SoundTube's CM1001d-T and SM1001p subwoofers provide 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 and Verification

All data for SoundTube speakers is independently collected from and verified by NWAA Labs (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 203 mm (8.0 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 material with a 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 82 Hz - 22 kHz, -10 dB. The loudspeaker shall be available with selectable 25,- 70.7-, and 100-volt modes with a voice-coil-direct position. 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 106.5 dB.

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 connector, color coded tile bridge (to match color-coded backcan label), grille, wire nuts, cut-out template and paint shield, the integrated CM82-EZs in-ceiling speaker is engineered for high performance and rapid installation in plenum spaces. The CM82-EZs incorporates a secondary attachment point for added security and meeting code where required.

Installation for the CM82-EZs 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 hardwired using wire nuts accepting up to three 18-gauge wires.

The CM82-EZs is factory preset to the 64-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-EZs for both low- and high-impedance applications.

SoundTube Entertainment

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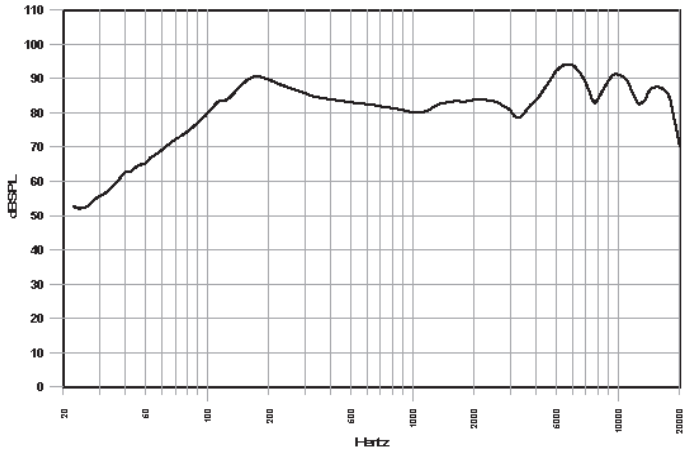
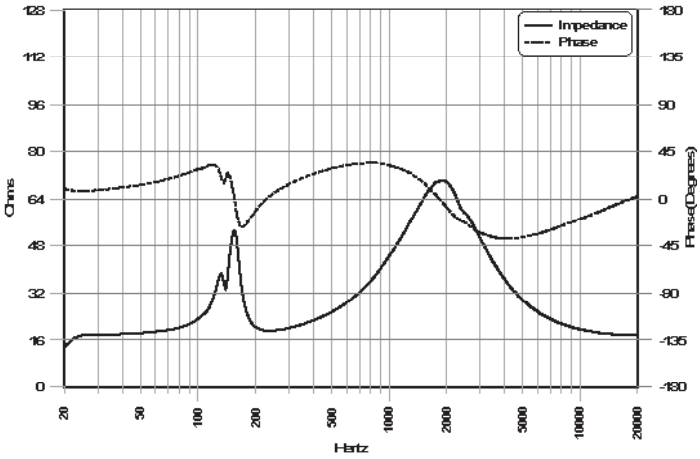
All SoundTube products come with a 5-year limited warranty.

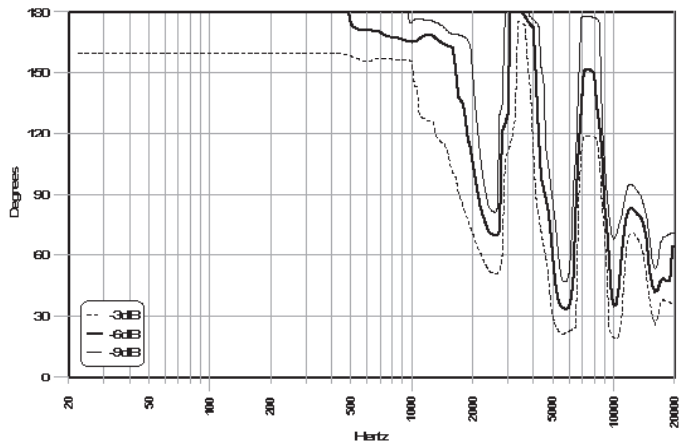
Frequency Response



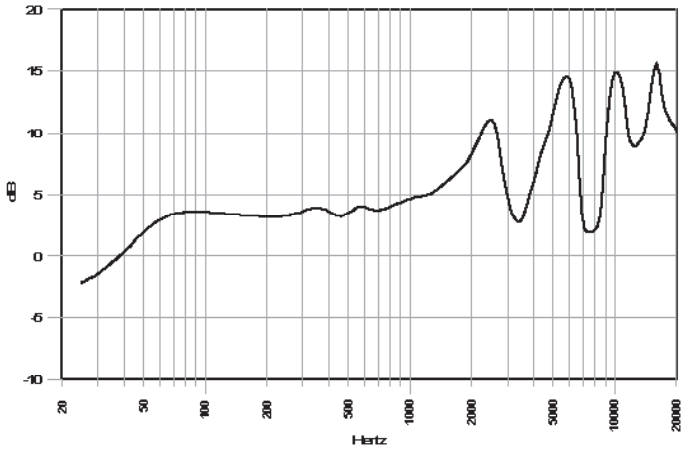
Phase/Impedance Reponse



Vertical Beamwidth



Directivity Index (DI)



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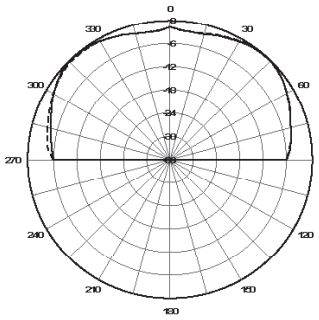
SOUNDTUBE ENTERTAINMENT

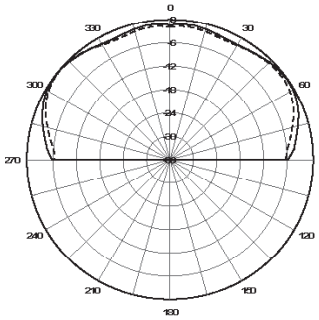
Polar Plots

Horizontal
Vertical

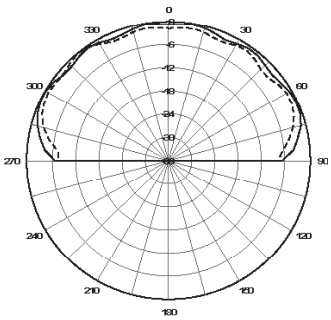
125 Hz



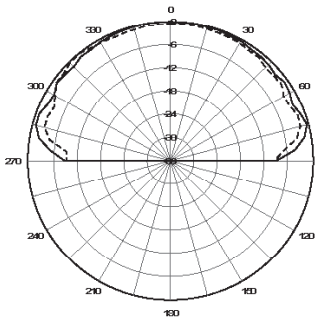
250 Hz



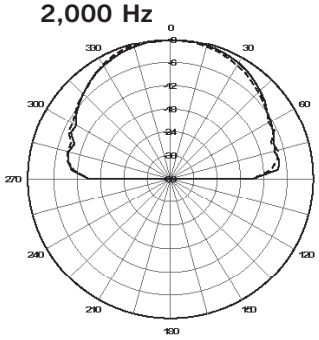
500 Hz



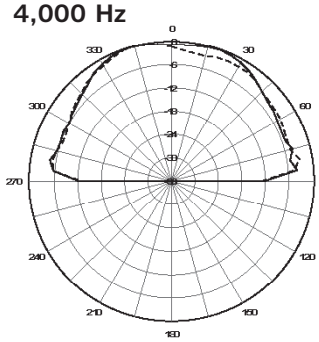
1,000 Hz



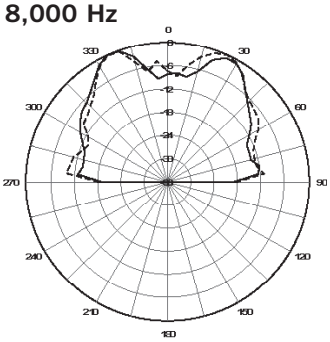
2,000 Hz



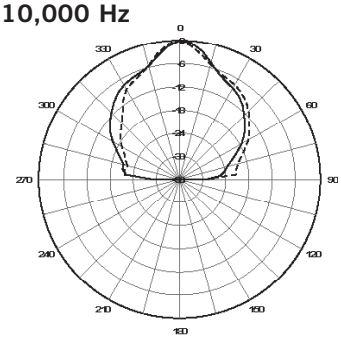
4,000 Hz



8,000 Hz



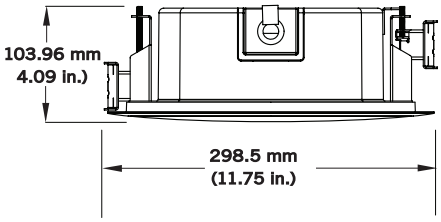
10,000 Hz



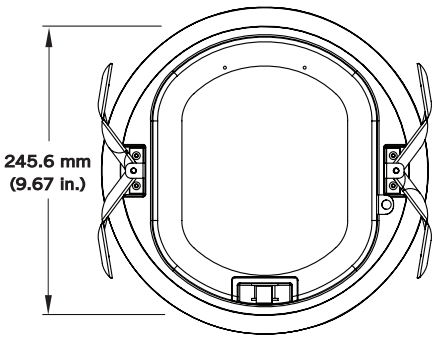
Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at **www.soundtube.com**

Mechanical Drawings

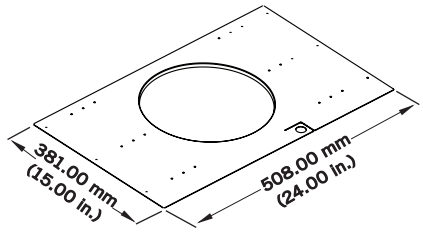
Side



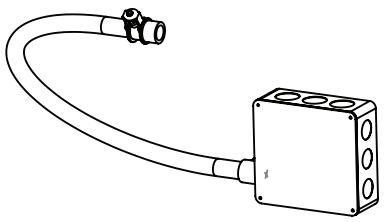
Top



Optional Accessories

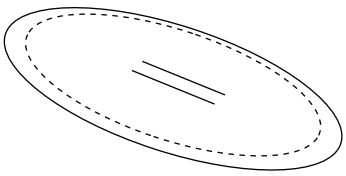


Pre-Construction Bracket (AC-CMEZ6/8-PCB)

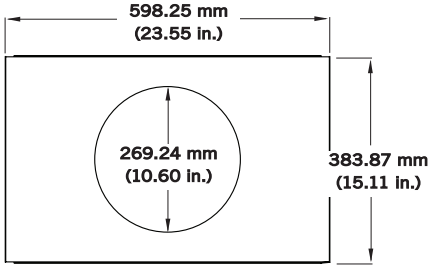


Junction Box (AC-CM-EZ-JBOX)

Included Accessories



Paint Mask



Tile Bridge

SoundTube Entertainment manufactures a complete line of speakers for:
Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing