

# CM82-EZs

## In-Ceiling Speaker

Technical Information for System Engineers



**SOUNDTUBE**  
ENTERTAINMENT



### Specifications: CM82-EZ

Tile bridge included

System Type	8" Coax, in-ceiling, sealed (64 Watt transformer for 25/70.7/100 Volt or 16 Ohm direct)
Impedance (nominal) <sup>1</sup>	16 ohm
Sensitivity dB @ 2.83V/1M	88.3 dB
Sensitivity dB @ 1W/1M <sup>2</sup>	91.3 dB
Frequency Response (-3 dB) <sup>3</sup>	90 Hz - 22 kHz
Frequency Response (-10 dB) <sup>3</sup>	45 Hz - 22 kHz
Max. Program Power <sup>4</sup>	128 w
Max. Continuous Power RMS <sup>5</sup>	64 w
Max. Power SPL @ 1 M <sup>6</sup>	109.4 dB
Coverage Angle (-6 dB @ 2 kHz)	110°
Coverage Angle (-6 dB @ 10 kHz)	50°
Coverage Angle	75° (Avg. 2 - 10 kHz)
Directivity Factor (Q)	4.2 (Avg. 100 Hz - 10 kHz) ; 4.3 (2 kHz)
Directivity Index (DI)	5.6 dB (Avg. 100 Hz - 10 kHz) ; 6.3 DB (2 kHz)
Tap Selector	5-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 mm (1in) Silk tweeter
Low Frequency Voice Coil	25.4 mm / 1.00 in
Crossover Frequency	5.0 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	9.67 in / 245.6 mm
Backcan Height	3.75 in / 95.3 mm
Visible Diameter	11.75 in / 298.5 mm
Visible Height	0.34 in / 8.6 mm
Mounting Hole Diameter	10.50 in / 266.7 mm
Min / Max Ceiling Thickness	0.035 in / 0.9 mm - 1.60 in / 40.6 mm
Weight	9.0 lb
Shipping Weight	10.0 lb
<b>Accessories</b>	
Included	Tile bridge, UL listed flex conduit clamp, paint shield cutout template, wire nuts
Optional	Pre-Construction Bracket (AC-CMEZ6/8-PCB)
Packaging	1 per box
Regulatory - UL	Pending
Regulatory - CE	Approved

<sup>1</sup> Impedance listed per IEC 60268-5

<sup>2</sup> 1w1m sensitivity determined using nominal impedance

<sup>3</sup> Frequency response measured in half or full space as dictated by speaker mounting configuration

<sup>4</sup> Max program power is 3 dB above max continuous power

<sup>5</sup> Continuous power rating, EIA-426-B test

<sup>6</sup> Max output based on max continuous power

<sup>6</sup> Max useable SPL based on testing by NWA Labs

### Transformer Taps

70.7 V Output	100 V Output	25 V Output
64 w 109.5 dB	64 w 109.5 dB	8 w 100.5 dB
32 w 106.5 dB	32 w 106.5 dB	4 w 97.5 dB
16 w 103.5 dB	16 w 103.5 dB	2 w 94.5 dB
8 w 100.5 dB		1 w 91.5 dB

## Preliminary Technical Information

### Key Features

- Engineered for applications with limited plenum space incorporating a SoundTube-specific shallow backcan with an installed depth of 3.5"
- One 203 mm (8 in) polypropylene woofer with cloth surround and one 25.4 mm (1.0 in) silk tweeter.
- Reduced amplification costs and maximum efficiency 91.3 dB sensitivity, 16 Ohm impedance and a sealed enclosure.
- Superior voice intelligibility with an average coverage angle of 77° (Independently verified, 2 - 10 kHz).
- Easy-access 5-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 for lasting durability.
- UL 1480 & 2043, cUL, CE (EMC Directive 89/366/EEC, EN55020, EN55013) approval pending.
- Adaptable to material thicknesses ranging from 0.04 in (0.9 mm) to 1.60 in (40.6).
- Included accessories: Tile bridge, UL listed 0.5" conduit clamp, paint shield & 2 wire nuts.
- Optional accessories: Color-coded pre-construction bracket (AC-CMEZ6/8-PCB) and Junction Box (AC-CM-EZ-PCB).
- High-quality black or white painted finish. Custom colors available.

### Description

The CM82-EZs is a 8" coaxial 2-way blind-mount in-ceiling speaker which delivers true high-efficiency and performance across the operating bandwidth. By incorporating a 8" polypropylene driver with a butyl rubber surround in a sealed drawn steel backcan, this speaker delivers maximum frequency response (45 Hz - 22 kHz, - 10 dB) an integrated enclosure design.

Mounting hardware is included and features a constant-tension 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

**Frequency Response****N/A**

optional pre-construction bracket, 5-position tap switch for 25, 70.7 & 100 V applications with voice coil/16 Ohm bypass.

**Applications**

Developed specifically for the paging and background music applications where cost, quality and fit are paramount, the CM82-EZs is ideal for hotels, retail stores, restaurants, airports, churches (under eave) 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 subwoofer provides true low-end response down to 50 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. & 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

**Phase/Impedance Reponse****N/A****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](http://www.soundtube.com) and

**Beamwidth (-6 dB)****N/A****Directivity Index (DI)****N/A**



includes EASE™ Data – 3-D polar plots and SoundTubeSPEC™ – Proprietary SoundTube speaker placement software. 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 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 mm (1 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 45 Hz - 22 kHz, -10 dB. The loudspeaker shall be available with selectable 25/70.7/100 Volt and 16 Ohm/voice coil direct tap switch. The frequency dividing network shall have a crossover frequency of 5.0 kHz. Rated power capacity of the components and network shall be at least 64 Watts continuous RMS power and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be at least 109.4 dB.

The backcan shall be constructed of galvanized steel with an ABS plastic baffle. The grille shall be constructed of painted steel. Shipped complete with UL-listed flex conduit clamp, color coded tile bridge (to match color-coded backcan), 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-EZ incorporates a secondary attachment point for added security, or where required by code.

Installation for the CM82-EZs shall be by 2-screw blind-mount constant-tension winged assembly and shall attach to ceiling thicknesses ranging from 0.04 in to 1.6 in. The external wiring shall be hardwired using wire nuts accepting up to three 18-gauge wire.

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 & high impedance applications.

### SoundTube Entertainment

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#### Polar Plots

125 Hz

250 Hz

500 Hz

1,000 Hz

**N/A**

2,000 Hz

4,000 Hz

8,000 Hz

10,000 Hz

**N/A**

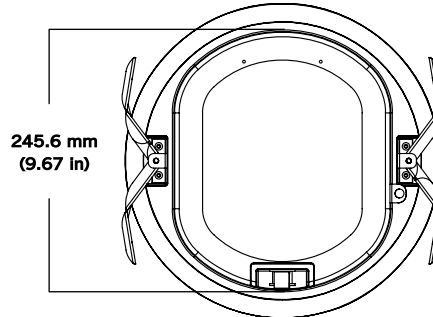
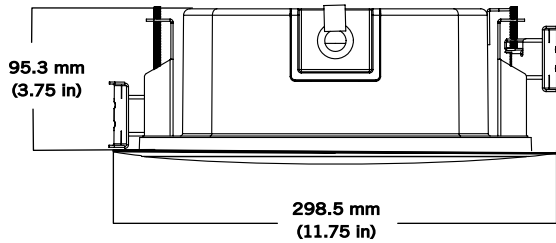


### Mechanical Drawings

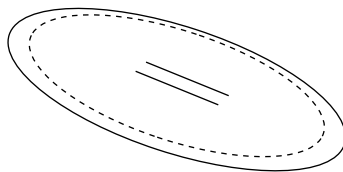
All SoundTube products come with a 5-year limited warranty.

Side

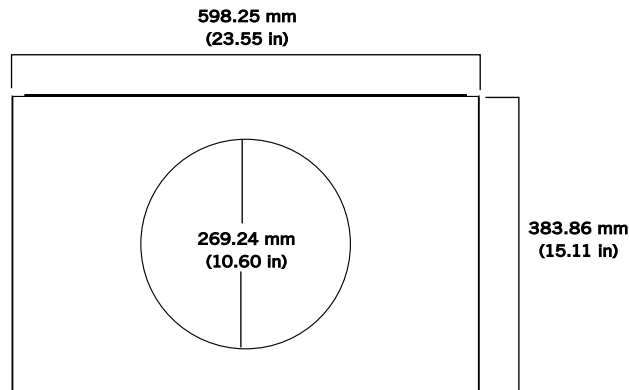
Top



### Included Accessories

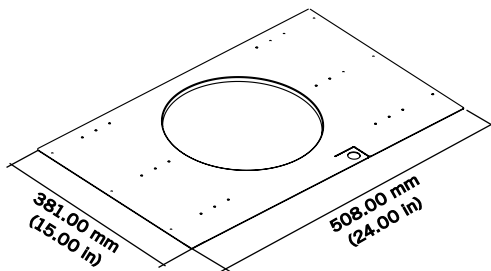


Paint Mask

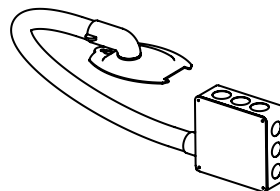


Tile Bridge

### Optional Accesories



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.