



## CM82-BGM-II PRODUCT SPECIFICATIONS

System Type	8" coaxial, in-ceiling, ported (64 W transformer for 25/70.7/100 V or transformer bypass)
Impedance (Nominal) <sup>1</sup>	16 Ω
Sensitivity dB @ 2.83 V/1 M	81.4 dB
Sensitivity dB @ 1 W/1 M <sup>2</sup>	84.5 dB
Frequency Response (±3 dB) <sup>3</sup>	56 Hz - 20 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>	102.5 dB
Coverage Angle (±6 dB @ 2 kHz)	105°
Coverage Angle (±6 dB @ 10 kHz)	40°
Coverage Angle (Averaged 2-10 kHz)	95°
Directivity Factor (Q)	7.6 (Averaged 100 Hz - 10 kHz)   8.2 (2 kHz)
Directivity Index (DI)	6.9 dB (Averaged 100 Hz - 10 kHz)   6.6 dB (2 kHz)
Tap Selector	Six-position rotary switch with transformer bypass position
Transducer - Low-Frequency Driver	203 mm (8") polypropylene cone, butyl rubber surround
Transducer - High-Frequency Driver	25.4 mm (1") silk dome tweeter with BroadBeam Ring™
Low-Frequency Voice Coil	25.4 mm   1"
Crossover Frequency	3.0 kHz
Network Type: Low Pass	12 dB per octave, 2nd order
Network Type: High Pass	12 dB per octave, 2nd order
Enclosure Material	Drawn steel backcan with ABS baffle
Grille	Powder-coated seamless magnetic
Inputs	4-position ceramic terminal connector
Backcan Diameter	245.6 mm   9.6"
Backcan Height	203.2 mm   8"
Visible Diameter	298.5 mm   11.8"
Visible Height	8.6 mm   0.34"
Mounting Hole Diameter	266.7 mm   10.5"
Min - Max Ceiling Thickness	0.9 mm   0.035" - 40.6 mm   1.6"
Weight	4.1 kg   9 lbs
Packaging	One per box
Included Accessories	Tile bridge, UL-listed flex conduit clamp
Optional Accessories	Black Grille, Pre-construction bracket (AC-CMEZ-6/8-PCB)
Certifications	UL1480, UL2043, CE, RoHS

## Description

The CM82-BGM-II is an 8" coaxial two-way blind-mount in-ceiling speaker which delivers true high-efficiency and performance across the operating bandwidth. By incorporating an 8" polypropylene driver with a butyl rubber surround and a 1" silk dome tweeter in a drawn steel backcan with a tuned port, this speaker delivers maximum frequency response (45 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 color-coded (green) pre-construction bracket, as well as a six-position tap switch for 25, 70.7, and 100 V applications with a transformer bypass position.

## Features

- One 8" (203 mm) polypropylene woofer with butyl rubber surround and one 1" (25.4 mm) silk dome tweeter
- BroadBeam Ring™ technology for mid-range clarity and ultra wide off-axis performance
- Easy-access six-position tap switch for 25/70.7/100 V and transformer bypass settings allows for easy ordering, stocking and installation
- Tuned port on baffle for added musicality and bass response down to 45 Hz (±10 dB)
- Reduced amplification costs and maximum efficiency of 85 dB sensitivity, 16 Ω impedance
- Incorporates a powder-coated flangeless magnetic grille for lasting durability and seamless aesthetic (White grille by default, but also available in Black)
- Adaptable to material thicknesses ranging from 0.035" | 0.9 mm to 1.6" | 40.6 mm
- UL1480 and 2043 approved
- Included accessories: tile bridge, UL listed 0.5" conduit clamp, paint shield
- Optional accessories: Color-coded (green) pre-construction bracket (AC-CMEZ-6/8-PCB)

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

<sup>2</sup> 1 W/ 1 M 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

### Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
64 W	102.5 dB	64 W	102.5 dB	8 W	93.5 dB
32 W	99.5 dB	32 W	99.5 dB	4 W	90.5 dB
16 W	96.5 dB	16 W	96.5 dB	2 W	87.5 dB
8 W	93.5 dB	8 W	93.5 dB	1 W	84.5 dB
4 W	90.5 dB				

### Applications

Developed specifically for paging and background music applications where cost, quality and fit are paramount, the CM82-BGM-II is ideal for hotels, education, hospitals, retail stores, restaurants, airports, churches or boardrooms. Indeed, the entire CM-BGM-II series is engineered for installations where high-efficiency, added bass response 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 Technologies

SoundTube, an MSE Audio brand, constantly develops 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. MSE Audio actively defends its patents in order to protect resellers and consumers.

### Technical Data and Specification Tools

SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data is available from SoundTube Entertainment or at [www.soundtube.com](http://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 NWA Labs ([www.nwaalabs.com](http://www.nwaalabs.com)) using their proprietary MACH testing system. All data is 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") low-frequency transducer and one 25.4 mm (1.0") 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"). The low-frequency transducer shall have a 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 ( $\pm 10$  dB). The loudspeaker shall be available with selectable 25/70.7/100 V and transformer bypass tap switch. 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 102.5 dB.

The backcan shall be constructed of galvanized steel with an ABS plastic baffle. The grille shall be constructed of powder-coated plated steel. Shipped complete with UL-listed ex conduit connector, color coded tile bridge (to match color-coded backcan), and grille. 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, or where required by code.

Installation for the speaker shall be by two-screw blind-mount constant-tension fixed-wing assembly and shall attach to ceiling thicknesses ranging from 0.04" to 1.6". The external wiring shall be via 4-position ceramic terminal strip, accepting up to 8-gauge wire.

The maximum backcan dimension shall be no more than 203.2 mm (8") in height by 245.6 mm (9.67") in diameter. The maximum visible dimensions shall be no more than 8.6 mm (0.34") in height by 298.5 mm (11.75") in diameter. The unit is factory preset to the 64 W setting in the 70.7 V operating mode, with a tap switch located on the front baffle.

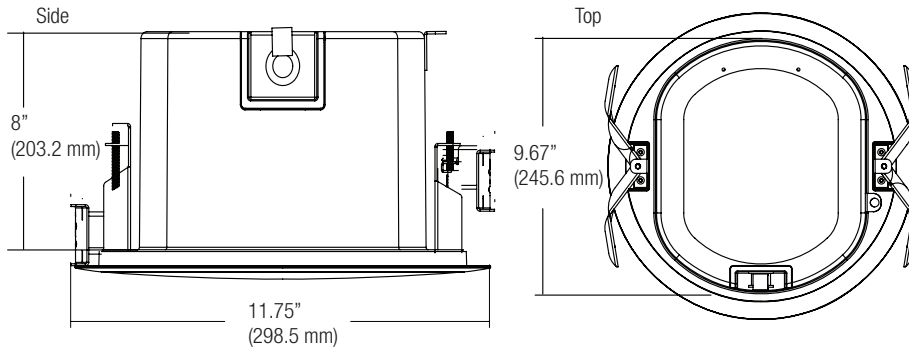
The system shall be the SoundTube CM82-BGM-II for both low- and high-impedance applications.

### SoundTube®

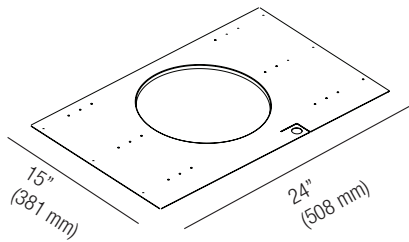
13720 W. 109th St.  
Lenexa, KS 66215  
Phone: 913.663.5600  
Fax: 913.663.3200  
Toll Free: 855.663.5600  
[www.mseaudio.com](http://www.mseaudio.com)

All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics

## Mechanical Drawings

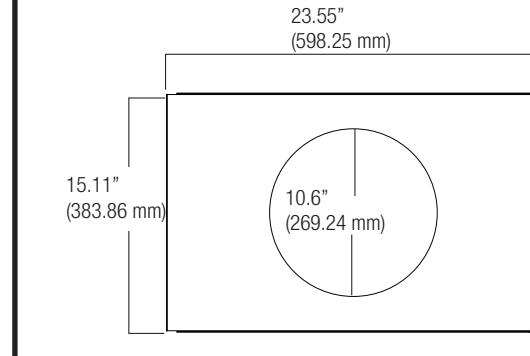


### Optional Accessories

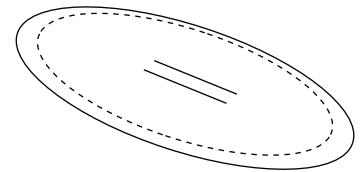


Pre-Construction Bracket  
(AC-CMEZ-6/8-PCB)

### Included Accessories

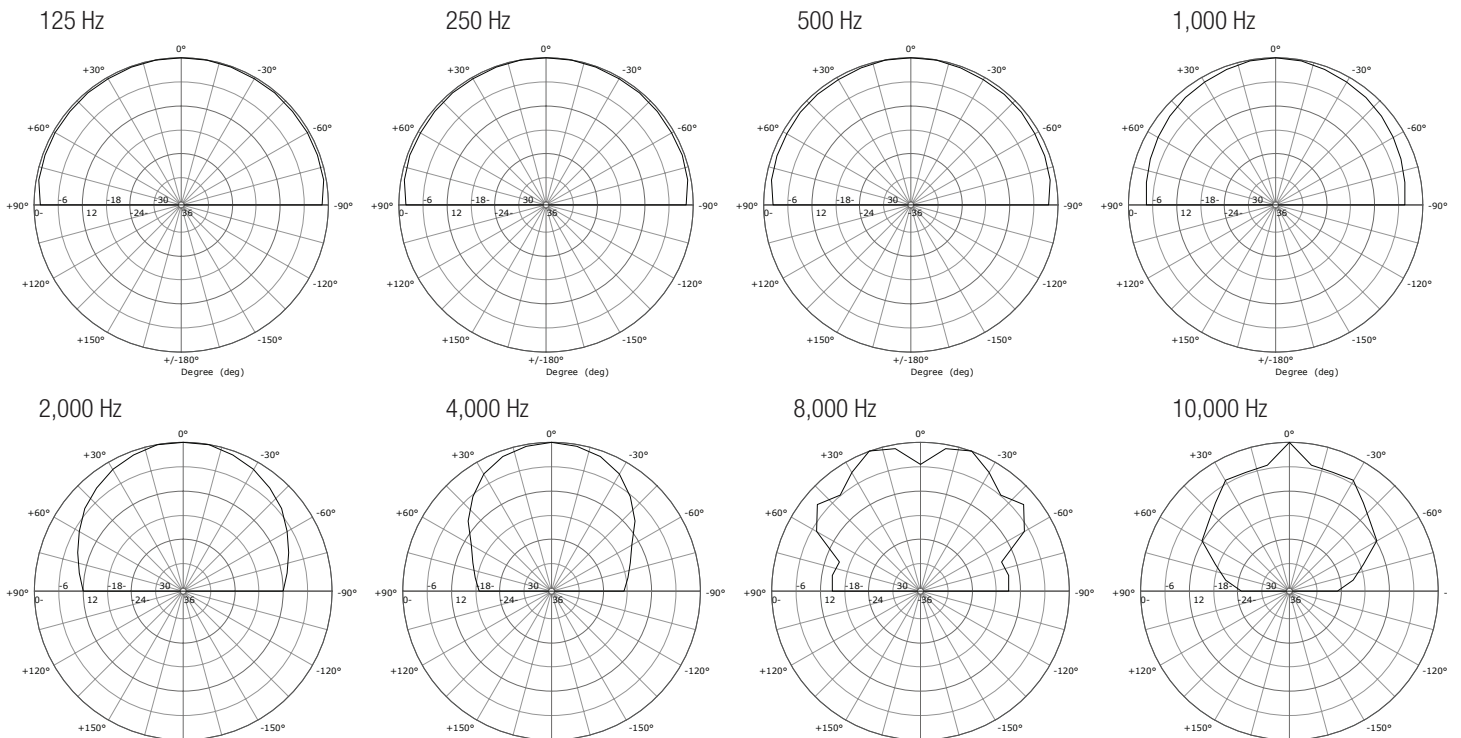


Tile Bridge



Paint Mask

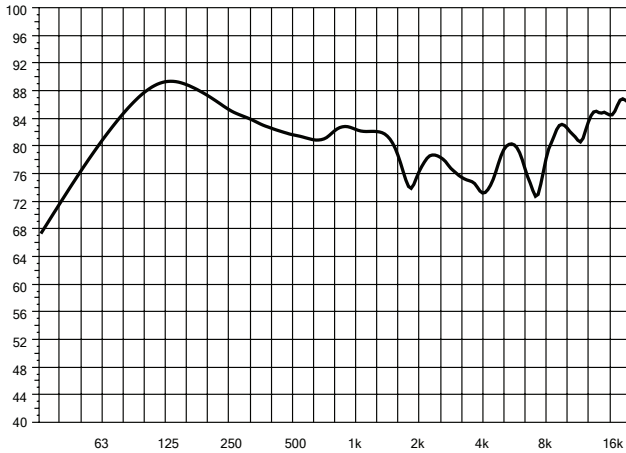
## Plots



## Graphs

### Frequency Response

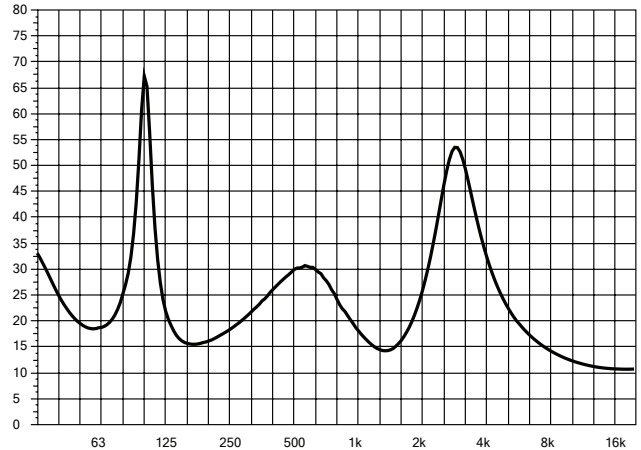
Level (dB SPL)



Frequency (Hz)

### Phase/Impedance Response

Impedance ( $\Omega$ )

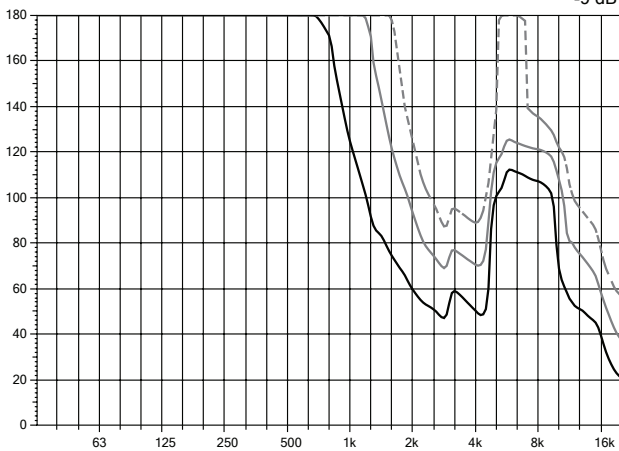


Frequency (Hz)

### Vertical Bandwidth

Angle ( $^\circ$ ) Minimum H/V Beam Width (1/1-oct smoothed)

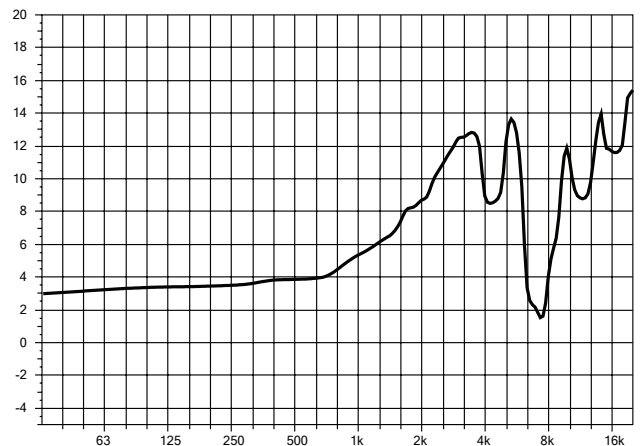
— -3 dB  
— -6 dB  
- - -9 dB



Frequency (Hz)

### Directivity Index (DI)

Level (dB)



Frequency (Hz)