

# CM62-BGM

## In-Ceiling Speaker

Preliminary Technical Information for System Engineers



### Preliminary Specifications: CM62-BGM

Tile bridge included

|  |   |
|--|---|
| System Type                              | 6.5-inch coaxial, in-ceiling, ported (32-watt transformer for 25/70.7/100-volt or transformer bypass) |
| Impedance (nominal) <sup>1</sup>         | 16 ohm  |
| Sensitivity dB @ 2.83 V/1 m              | 85.0 dB   |
| Sensitivity dB @ 1 W/1 m <sup>2</sup>    | 88.0 dB   |
| Frequency Response (-3 dB) <sup>3</sup>  | 80 Hz - 20 kHz  |
| Frequency Response (-10 dB) <sup>3</sup> | 60 Hz - 22 kHz  |
| Max. Program Power <sup>4</sup>          | 100 W   |
| Max. Continuous Power RMS <sup>5</sup>   | 50 W  |
| Max. Power SPL @ 1 m <sup>6</sup>        | 105.0 dB  |
| Coverage Angle (-6 dB @ 2 kHz)           | 180°  |
| Coverage Angle (-6 dB @ 10 kHz)          | 40°   |
| Coverage Angle (averaged 2-10 kHz)       | 80°   |
| Directivity Factor (Q)                   | 5.1 (averaged 100 Hz - 10 kHz) ; 5.0 (2 kHz)  |
| Directivity Index (DI)                   | 6.2 dB (averaged 100 Hz - 10 kHz) ; 7.0 dB (2 kHz)  |
| Tap Selector                             | Six-position rotary switch with transformer bypass position   |
| Transducer - Low-Frequency Driver        | 165 mm (6.5 in.) Polypropylene cone, rubber surround  |
| Transducer - High-Frequency Driver       | 25 mm (1.0 in.) Silk dome tweeter   |
| Low-Frequency Voice Coil                 | 25.4 mm (1.0 in.)   |
| Crossover Frequency                      | 4.0 kHz   |
| Network Type: Low Pass                   | 12 dB per octave, 2nd order   |
| Network Type: High Pass                  | 6 dB per octave, 1st order  |
| Enclosure Material                       | Drawn steel backcan with ABS baffle   |
| Grille                                   | Painted steel   |
| Inputs                                   | Ceramic terminal connector  |
| 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 (0.035 in.) - 40.6 mm (1.6 in.)  |
| Weight                                   | 3.6 kg (8.0 lbs.)   |
| Shipping Weight                          | 4.1 kg (9.0 lbs.)   |
| Packaging                                | One per box   |
| Included accessories                     | Tile bridge, UL-listed flex conduit clamp, paint shield   |
| Optional accessories                     | Pre-construction bracket (AC-CM6-8EZ-PCB)   |
| Regulatory - UL                          | UL 1480 and 2043 pending  |
| Regulatory - CE                          | Approved  |
| RoHS                                     | Approved  |

#### Transformer Taps

| 70.7 V Output | 100 V Output  | 25 V Output   |
|---------------|---------------|---------------|
| 32 W 105.0 dB | 32 W 105.0 dB | 4 W 96.0 dB   |
| 16 W 102.0 dB | 16 W 102.0 dB | 2 W 93.0 dB   |
| 8 W 99.0 dB   | 8 W 99.0 dB   | 1 W 90.0 dB   |
| 4 W 96.0 dB   | 4 W 96.0 dB   | 0.5 W 87.0 dB |
| 2 W 93.0 dB   |               |               |

<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

### Preliminary Technical Information

- One 6.5 inch (165 mm) polypropylene woofer with rubber surround and one 1.0 inch (25.4 mm) silk dome tweeter.
- BeamRing™ technology for mid-range clarity and smooth off axis performance
- Easy-access six-position tap switch for 25/70.7/100-volt and transformer bypass settings allows for easy ordering, stocking and installation.
- Tuned port on baffle for added musicality and bass response down to 64 Hz (-10 dB).
- Reduced amplification costs and maximum efficiency of 85.0 dB sensitivity, 16 ohm impedance.
- Incorporates a painted steel grille for lasting durability.
- Adaptable to material thicknesses ranging from 0.035 inch (0.9 mm) to 1.6 inch (40.6 mm).
- UL 1480 and 2043 pending.
- High-quality black or white painted finish. Custom colors available.
- Included accessories: Tile bridge, UL listed 0.5 inch conduit clamp, paint shield.
- Optional accessories: Color-coded (green) pre-construction bracket (AC-CM6-8EZ-PCB).

### Description

The CM62-BGM is a 6.5-inch coaxial two-way blind-mount in-ceiling speaker which delivers true high-efficiency and performance across the operating bandwidth. By incorporating a 6.5-inch polypropylene driver with a rubber surround and a 1-inch silk dome tweeter in a drawn steel backcan with a tuned port, this speaker delivers maximum frequency response (60 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, as well as a six-position tap switch for 25-, 70.7- and 100-volt applications with a transformer bypass position.

### Applications

Developed specifically for paging and background music applications where cost, quality and fit are paramount, the CM62-BGM is ideal for hotels, education, hospitals, retail stores, restaurants, airports, churches or boardrooms. Indeed, the entire CM-BGM 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 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. 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](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 NWAALabs ([www.nwaalabs.com](http://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 165 mm (6.5 in.) low-frequency transducer and one 25 mm (1.0 in.) high-frequency transducer with a frequency-dividing network installed in a ported enclosure. The low-frequency voice coil diameter shall be 25.4 mm (1.0 in.). The low-frequency transducer shall have a polypropylene cone material with a 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: Useable frequency range shall extend from 60 Hz - 22 kHz (-10 dB). The loudspeaker shall be available with selectable 25/70.7/100-volt and transformer bypass tap switch. The frequency dividing network shall have a crossover frequency of 4.0 kHz. Rated power capacity of the components and network shall be at least 50 watts continuous RMS and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be at least 105.0 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 connector, color coded tile bridge (to match color-coded backcan), 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, 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 inches to 1.60 inches. 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 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 32-watt setting in the 70.7-volt operating mode, with a tap switch located on the front baffle.

The system shall be the SoundTube CM62-BGM for both low- and high-impedance applications.

### SoundTube Entertainment

6430 North Business Park Loop  
Park City, Utah 84098

Phone 435.647.9555

Fax 435.647.9666

Toll Free 800.647.TUBE

[www.soundtube.com](http://www.soundtube.com)

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

---

# CM62-BGM

## In-Ceiling Speaker

Preliminary Technical Information for System Engineers



**SOUNDTUBE**  
ENTERTAINMENT

---

Frequency Response

Phase/Impedance Reponse

---

Vertical Beamwidth

Directivity Index (DI)

---

# CM62-BGM

## In-Ceiling Speaker

Preliminary Technical Information for System Engineers



**SOUNDTUBE**  
ENTERTAINMENT

### Polar Plots

———— Horizontal  
- - - - - Vertical

125 Hz

250 Hz

500 Hz

1,000 Hz

2,000 Hz

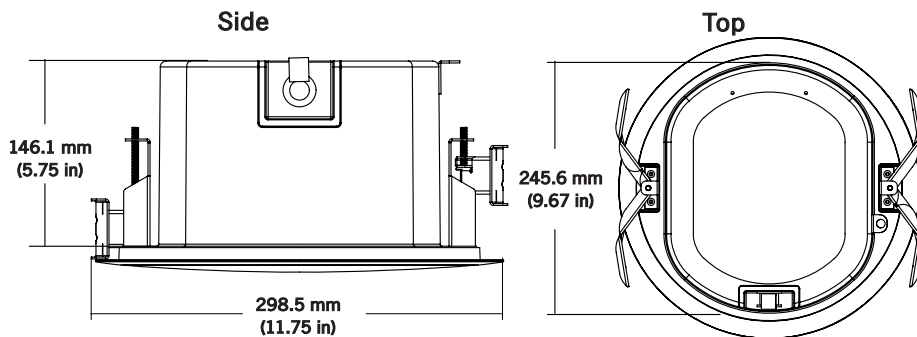
4,000 Hz

8,000 Hz

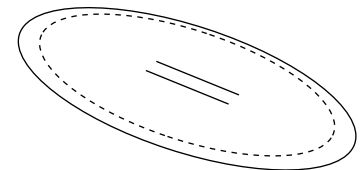
10,000 Hz

Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at [www.soundtube.com](http://www.soundtube.com)

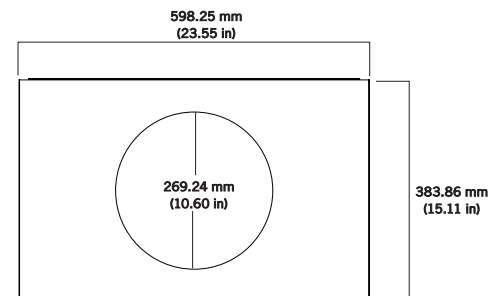
### Mechanical Drawings



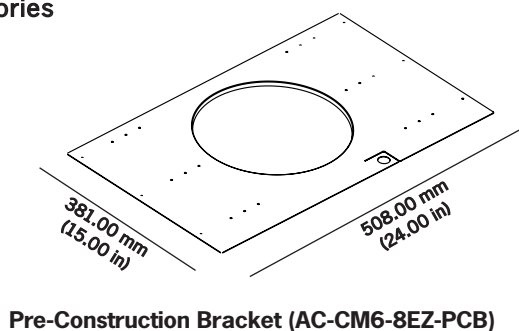
### Included Accessories



### Paint Mask



### Optional Accessories



### Tile Bridge

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.