SOUNDTUBE

# CM800i

In-Ceiling Speaker

## CM800i PRODUCT SPECIFICATIONS

| | |
|---|---|
| System Type | 8” coaxial, in-ceiling, ported (66 W transformer for 25, 70.7, 100 V or transformer bypass) |
| Impedance (Nominal) [1] | 8 Ω |
| Sensitivity dB @ 2.83 V / 1 M | 90 dB |
| Sensitivity dB @ 1 W / 1 M [2] | 90 dB |
| Frequency Response (± 3 dB) [3] | 97 Hz - 22 kHz |
| Frequency Response (± 10 dB) [3] | 71 Hz - 22 kHz |
| Max. Program Power [4] | 250 W |
| Max. Continuous Power RMS [5] | 125 W |
| Max. Power SPL @ 1 M [6] | 111 dB |
| Coverage Angle (±6 dB @ 2 kHz) | 140° |
| Coverage Angle (±6 dB @ 10 kHz) | 110° |
| Coverage Angle (Averaged 2-10 kHz) | 120° |
| Directivity Factor (Q) | 3.8 (Avg. 100 Hz - 10 kHz) \| 4 (2 kHz) |
| Directivity Index (DI) | 6 dB (Avg. 100 Hz - 10 kHz) \| 4 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”) convex titanium tweeter with waveguide |
| Low-Frequency Voice Coil | 30.4 mm \| 1.2” |
| Crossover Frequency | 3 kHz |
| Network Type: Low Pass | 12 dB per octave, 2nd order |
| Network Type: High Pass | 12 dB per octave, 2nd order |
| Enclosure Material | Drawn aluminum backcan with ABS baffle |
| Motor-board | Cast aluminum |
| Grille | Steel with powder-coat finish |
| Inputs | 4-pin, 5.08 mm Euroblock for individual or daisy chain connection |
| Backcan Diameter | 296.7 mm \| 11.7” |
| Backcan Height | 201.7 mm \| 7.9” |
| Visible Diameter | 374.9 mm \| 14.8” |
| Visible Height | 27.4 mm \| 1.1” |
| Min. / Max. Ceiling Thickness | 6.4 mm \| 0.25” - 48.5 mm \| 1.91” |
| Weight | 5.7 kg \| 12.5 lbs |
| Included Accessories | Tile bridge, conduit plate, Euroblock connector, installation aid |
| Optional Accessories | Pre-construction bracket (AC-CM8-PCB), junction box (AC-CMi-JBOX) |
| Certifications | CE, RoHS, UL1480A, UL2043 |

## Description

The CM800i is an 8”, two-way, blind-mount in-ceiling, speaker design that delivers extended low-end response (71 Hz) and optimal off-axis performance (2-10 kHz, independently verified). SoundTube’s proprietary BroadBeam® waveguide tweeter delivers consistent high-performance audio across the operating bandwidth.

The CM800i speaker design incorporates a low-profile grille, proprietary motor-board and six-position tap switch with transformer bypass position. Mounting hardware is included and features a fast and secure constant-tension, fixed-wing mounting system.

## Features

- Patented BroadBeam® waveguide technology delivers a consistent BroadBeam dispersion pattern for maximum coverage area per speaker (2-10 kHz, independently verified)
- One 8” (203 mm) polypropylene woofer and one 1” (25.4 mm) convex titanium tweeter with FerroFluid cooling mounted to a proprietary cast-aluminum baffle and heat sink
- Rapid installation blind-mount, fixed-wing mounting mechanism with constant-tension design affixing to ceiling thicknesses ranging from 0.25” (6.4 mm) to 1.91” (48.5 mm)
- Easy access six-position selectable tap switch for 25, 70.7, and 100 V applications with transformer bypass position
- Separate tool-free magnetic grille and bezel assembly with integrated safety cable for ease of install and in-field painting
- Steel grille with protective powder-coated finish for lasting durability
- Average sensitivity of 90 dB offers high-output capabilities and reduced amplification costs
- UL1480A and UL2043 approved
- High-quality black or white paint finish. Custom paint colors optional
- Included accessories: tile bridge, Euroblock connector, conduit plate, and paint mask
- Optional accessories: color-coded (purple) pre-construction bracket (AC-CM8-PCB), and junction box (AC-CMi-JBOX)

[1] Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance
[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
[6] Max output based on max continuous power

SOUNDTUBE

# CM800i

In-Ceiling Speaker

## Transformer Taps

| 70.7 V | Output | 100 V | Output | 25 V | Output |
|---|---|---|---|---|---|
| 66 W | 108 dB | 66 W | 108 dB | 5 W | 97 dB |
| 35 W | 105.5 dB | 33 W | 105.5 dB | 2.5 W | 94 dB |
| 19 W | 103 dB | 19 W | 103 dB | 1.25 W | 91 dB |
| 10 W | 100 dB | 10 W | 100 dB | 0.75 W | 89 dB |
| 5 W | 97 dB | | | | |

## Applications

Designed for in-ceiling background to foreground SPL applications, the CM800i delivers a broad dispersion pattern, true low-end response and high sensitivity. The CM800i is ideal for casinos, convention centers, nightclubs, bars, fitness centers, airports, corporate venues, churches, and other in-ceiling applications requiring background to foreground SPL. For applications where additional bass is required, SoundTube's CM1001d-T subwoofer provides additional low-end response down to 41 Hz.

## Patented 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.

## BroadBeamHP® Wide Dispersion Technology

SoundTube's proprietary BroadBeam technology incorporates a high-frequency waveguide mated with a 1" convex aluminum tweeter. The BroadBeam high-frequency waveguide delivers a consistent dispersion pattern across the upper registers of the frequency spectrum (2-10 kHz, independently verified). The result is an audio system requiring fewer speakers with higher intelligibility, offering reduced power needs, shorter installation time and cost savings on shipping and labor.

## 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.

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 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 a 203 mm (8") low-frequency transducer and a 25.4 mm (1") high-frequency transducer with a crossover network installed in the ported enclosure. The low-frequency voice coil diameter shall be 30.4 mm (1.2").

Performance specifications of a typical production unit shall be as follows: Usable frequency response shall extend from 71 Hz - 22 kHz (±10 dB, half space). Measured sensitivity (2.83 V, 1 M) shall be at least 90 dB. The speaker shall have a nominal impedance of 8 Ω. The speaker shall be available for 25, 70.7, and 100 V modes and shall include a six-position tap switch with a transformer bypass position. The frequency dividing network shall have a crossover frequency of 3 kHz with slopes of 12 dB per octave (2nd order). Rated power capacity shall be at least 125 watts continuous (RMS) and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be 111 dB.

Installation for the speaker shall be by two-screw, blind-mount, constant-tension winged assembly and shall attach to ceiling thicknesses ranging from 6.4 mm (0.25") to 48.5 mm (1.91"). A secondary attachment point has been included on the back of the unit. The external wiring input connector shall be a 4-pin, 5.08 mm Euroblock for 8 Ω or distributed systems and shall accept from 10 - 22-gauge wire.

The maximum backcan dimensions shall be no more than 201.7 mm (7.9") in height by 296.7 mm (11.7") in diameter. The maximum visible dimensions shall be no more than 27.5 mm (1.1") in height by 375 mm (14.76") in diameter. The backcan shall be constructed of aluminum.

The system shall include a 21-gauge galvanized steel support backing plate (tile bridge) to reinforce the ceiling material and tile support rails. The maximum tile bridge dimensions shall be no more than 600.1 mm (23.62") in length by 428.2 mm (16.86") in width and 10.4 mm (0.41") in height with a 325.1 mm (12.8") cutout for speaker mounting.

The grille can be constructed of powder-coated steel with an ABS baffle for lasting performance. The affixed grille and bezel shall be mounted to the speaker enclosure (backcan) via magnetic attachment and included safety leash. Also included is a paint mask /installation aid for in-field painting (also serves as a hand-hold during mounting).

The unit has an optional color-coded (purple) pre-construction bracket (AC-CM8-PCB) that shall be compatible with an optional junction box (AC-CMi-JBOX). A 2-foot, 18-gauge wire whip and Euroblock connector shall be included with the junction box. The maximum dimensions of the pre-construction bracket shall be no more than 635 mm (25") in length by 457.2 mm (18") in width and 127 mm (5") (includes affixed junction box) with a 326.1 mm (12.85") cutout for speaker mounting.

# CM800i

In-Ceiling Speaker

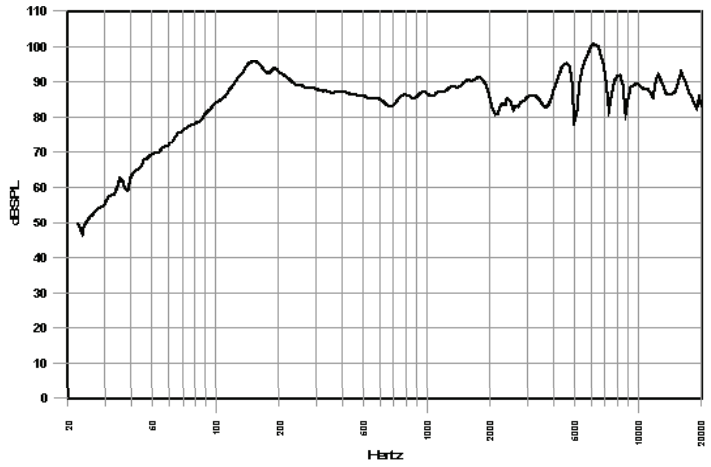
The system shall be the SoundTube CM800i for both low- and high-impedance applications.


**SoundTube®**
13720 W. 109th St.
Lenexa, KS 66215
Phone: 913.663.5600
Fax: 913.663.3200
Toll Free: 855.663.5600
www.mseaudio.com

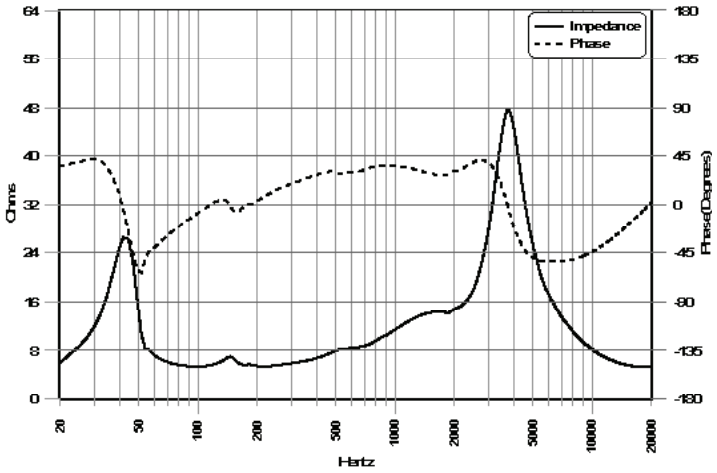

All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics.

## Graphs

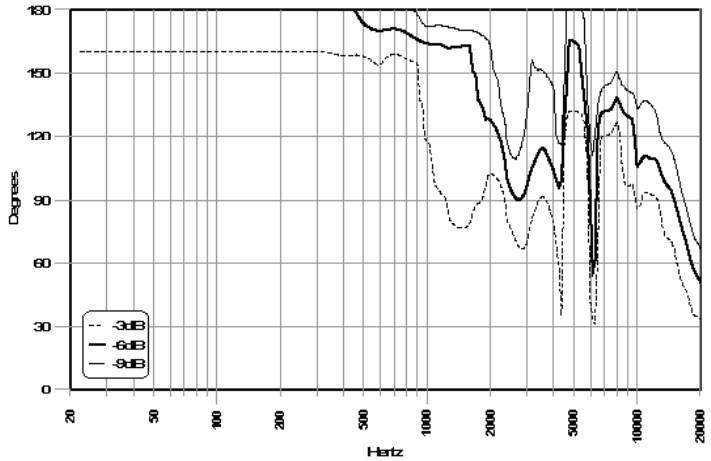
Frequency Response



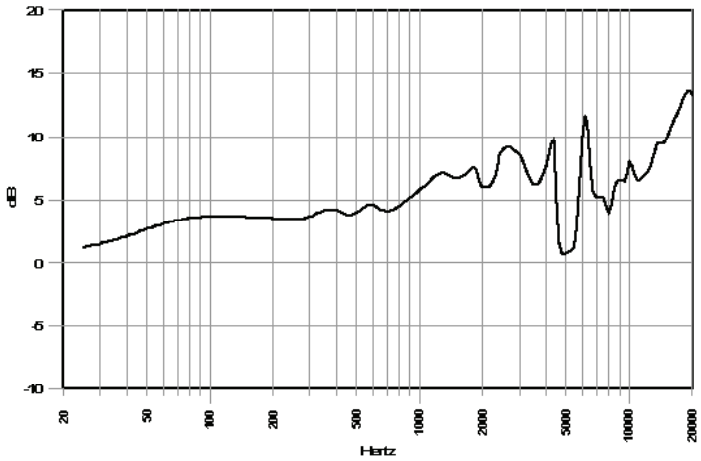

Phase/Impedance Response




Vertical Beamwidth (±6 dB)




Directivity Index (DI)




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

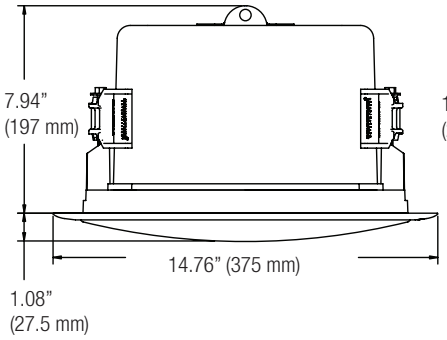
SOUNDTUBE

# CM800i

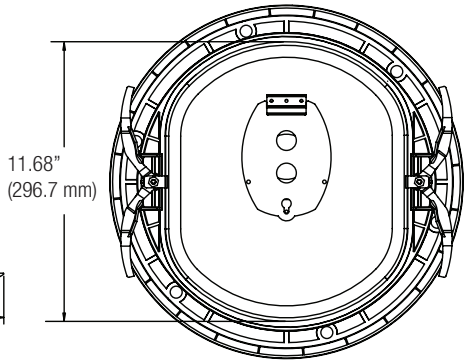
In-Ceiling Speaker

## Mechanical Drawings

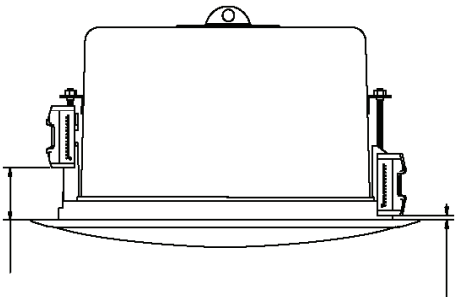
Side



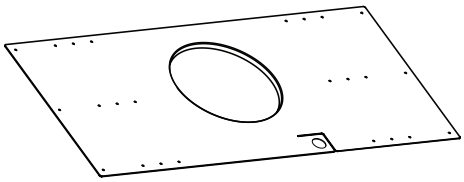

Top



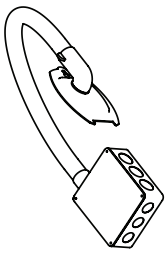

Minimum/Maximum Ceiling Thickness




Optional Accessories

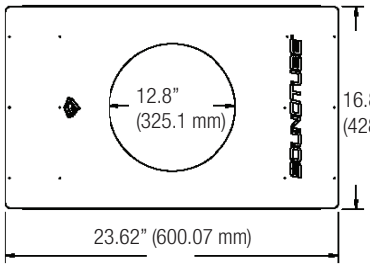


Pre-Construction Bracket
(AC-CM8-PCB)

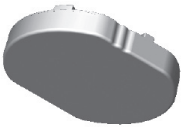


Junction Box
(AC-CMi-JBOX)

Included Accessories



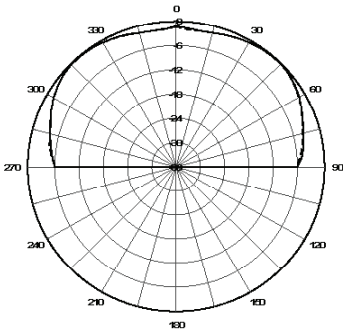

Tile Bridge



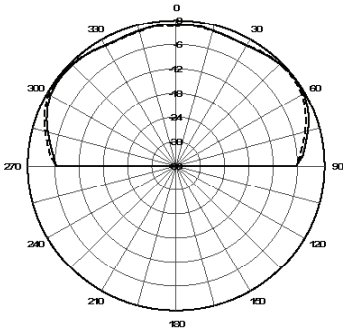
Paint Mask

## Plots

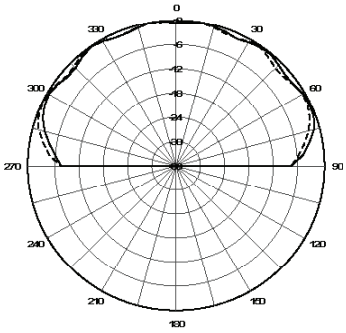
125 Hz



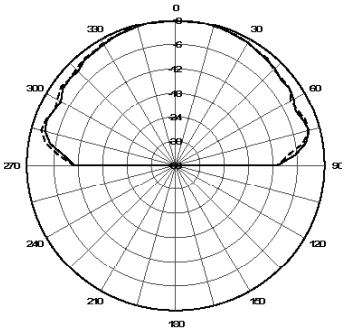
250 Hz



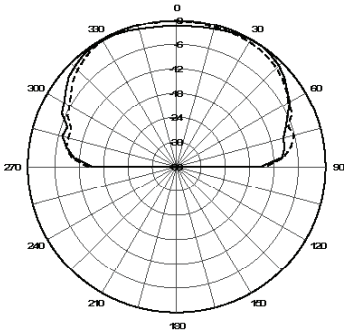
500 Hz



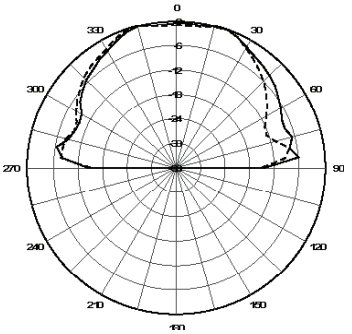
1,000 Hz



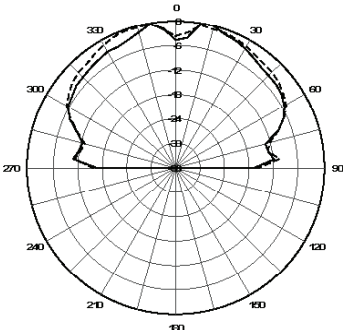
2,000 Hz



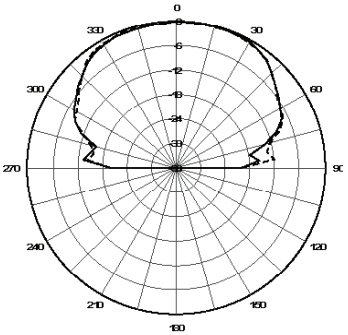
4,000 Hz



8,000 Hz



10,000 Hz



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

**Horizontal**
**Vertical**