



## CM800d PRODUCT SPECIFICATIONS

System Type	8" coaxial, in-ceiling, ported (120 W transformer for 25, 70.7, 100 V or transformer bypass)
Impedance (Nominal) <sup>1</sup>	8 Ω
Sensitivity dB @ 2.83 V / 1 M	90.5 dB
Sensitivity dB @ 1 W / 1 M <sup>2</sup>	90.5 dB
Frequency Response (± 3 dB) <sup>3</sup>	73 Hz - 22 kHz
Frequency Response (± 10 dB) <sup>3</sup>	56 Hz - 22 kHz
Max. Program Power <sup>4</sup>	250 W
Max. Continuous Power RMS <sup>5</sup>	125 W
Max. Power SPL @ 1 M <sup>6</sup>	111.5 dB
Coverage Angle (±6 dB @ 2 kHz)	125°
Coverage Angle (±6 dB @ 10 kHz)	95°
Coverage Angle (Averaged 2-10 kHz)	125°
Directivity Factor (Q)	3.8 (Avg. 100 Hz - 10 kHz)   4.9 (2 kHz)
Directivity Index (DI)	5.3 dB (Avg. 100 Hz - 10 kHz)   6.9 dB (2 kHz)
Tap Selector	Five-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 steel backcan with ABS baffle
Motor-board	Cast aluminum
Grille	Steel with powder-coat finish with ABS bezel
Inputs	4-pin, 5.08 mm Euroblock for individual or daisy chain connection
Backcan Diameter	296.7 mm   11.7"
Backcan Height	316.5 mm   12.5"
Visible Diameter	374.9 mm   14.75"
Visible Height	27.4 mm   1.1"
Mounting Hole Diameter	323.9 mm   12.8"
Min. / Max. Ceiling Thickness	6.4 mm   0.25" - 48.5 mm / 1.91"
Weight	10.8 kg   23.8 lbs
Included Accessories	Tile bridge, conduit plate, Euroblock connector, installation aid, and paint mask
Optional Accessories	Pre-construction bracket (AC-CM8-PCB), junction box (AC-CMi-JBOX), GRL-6/8-FLG-BK/WH, safety restraint strap
Certifications	CE, RoHS, UL1480A, UL2043

## Description

The CM800d is an 8", two-way, blind-mount in-ceiling speaker that delivers extended low-end response (56 Hz) and optimal off-axis performance (2-10 kHz, independently verified). SoundTube's proprietary BroadBeam® waveguide tweeter system delivers consistent high-performance audio across the operating bandwidth.

The CM800d speaker design incorporates an extra deep steel backcan (12.5"), a low-profile grille, a proprietary motor-board and a five-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 dispersion pattern for maximum intelligibility and edge-to-edge coverage (2-10 kHz, independently verified)
- A 12.5" (316.5 mm) steel deep-can provides additional bass response
- 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 five-position selectable tap switch for 25, 70.7, and 100 V applications with transformer bypass position
- Separate tool-free magnetic grille and bezel assembly for ease of install and in-field painting
- Steel grille with protective powder-coated finish for lasting durability
- Sensitivity of 90.5 dB offers high-output capabilities and reduced amplification costs
- UL1480A and UL2043 approved
- High-quality black or white paint finish.
- Included accessories: tile bridge, Euroblock connector, conduit plate, paint mask, and installation aid
- Optional accessories: color-coded (purple) pre-construction bracket (AC-CM8-PCB), junction box (AC-CMi-JBOX), low-profile flangeless grille (GRL-6/8-FLG-BK/WH), safety restraint strap

<sup>1</sup> Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance

<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
120 W	111.5 dB	120 W	111.5 dB	15 W	102.5 dB
60 W	108.5 dB	60 W	108.5 dB	8 W	99.5 dB
30 W	105.5 dB	30 W	105.5 dB	3.8 W	96.5 dB
15 W	102.5 dB			1.9 W	93.5 dB

### Applications

Designed for in-ceiling background to foreground SPL applications, the CM800d delivers a broad dispersion pattern, true low-end response, and high sensitivity. The CM800d is ideal for casinos, convention centers, warehouses, nightclubs, gyms, aerobic rooms, airports, super stores, arenas, theme parks, transportation hubs, shipping centers, stadiums, and other 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.

### BroadBeam® Wide Dispersion Technology

SoundTube's proprietary BroadBeam technology incorporates a high-frequency waveguide mated to a 1" convex aluminum tweeter. The BroadBeam high-frequency waveguide technology 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](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 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 56 Hz - 22 kHz ( $\pm 10$  dB, half space). Measured sensitivity (1 W, 1 M) shall be at least 90.5 dB. The speaker shall have a nominal impedance of 8  $\Omega$ . The speaker shall be available for 25, 70.7, and 100 V modes and shall include a five-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 111.5 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"). The fixed-wing assembly shall be constructed of powder-coated steel and include a conduit cover plate. The external wiring input connector shall be a 4-pin, 5.08 mm Euroblock for 8  $\Omega$  or distributed systems and shall accept from 10 - 22-gauge wire.

The maximum backcan dimensions shall be no more than 316.5 mm (12.5") 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 (14.75") in diameter. The backcan shall be constructed of steel.

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. For additional hanging support, one adjustable cable and integrated hook shall also be included.

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 for in-field painting and an installation aid that 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). There is also an optional GRL-6/8-FLG in black or white. An 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") in height (includes affixed junction box) with a 326.1 mm (12.85") cutout for speaker mounting.

The system shall be the SoundTube CM800d for both low- and high-impedance applications.

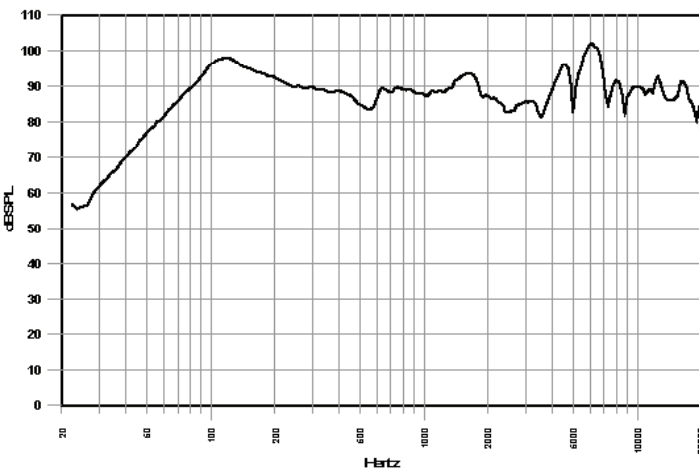
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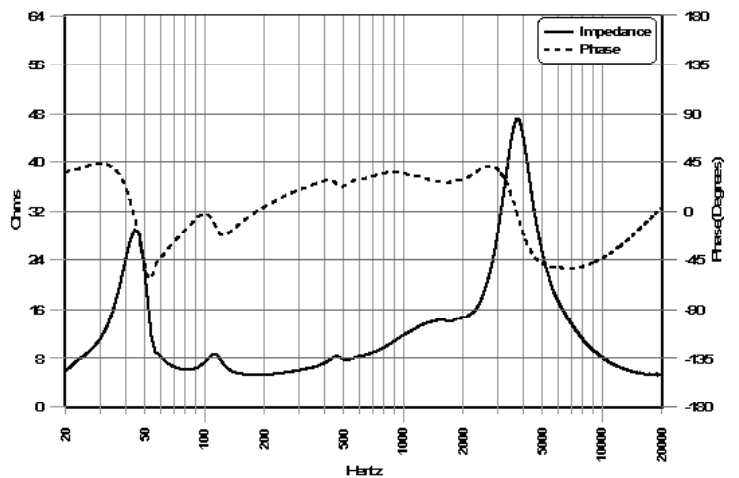
All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics.

**Graphs**

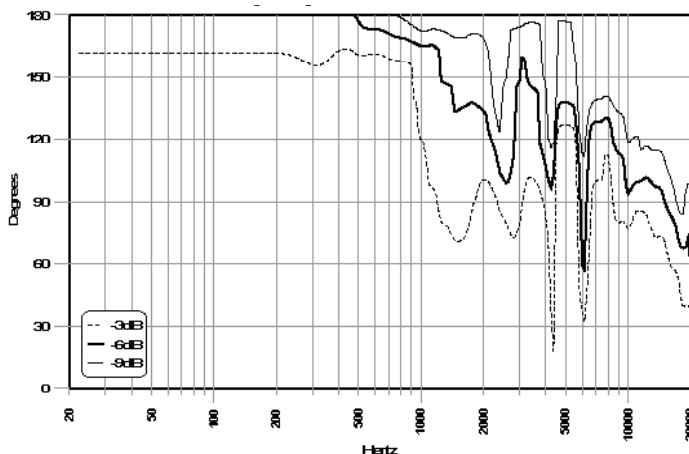
Frequency Response



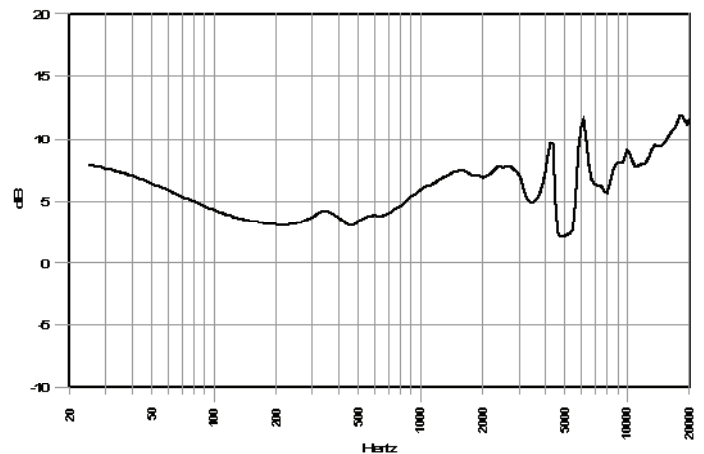
Phase/Impedance Response



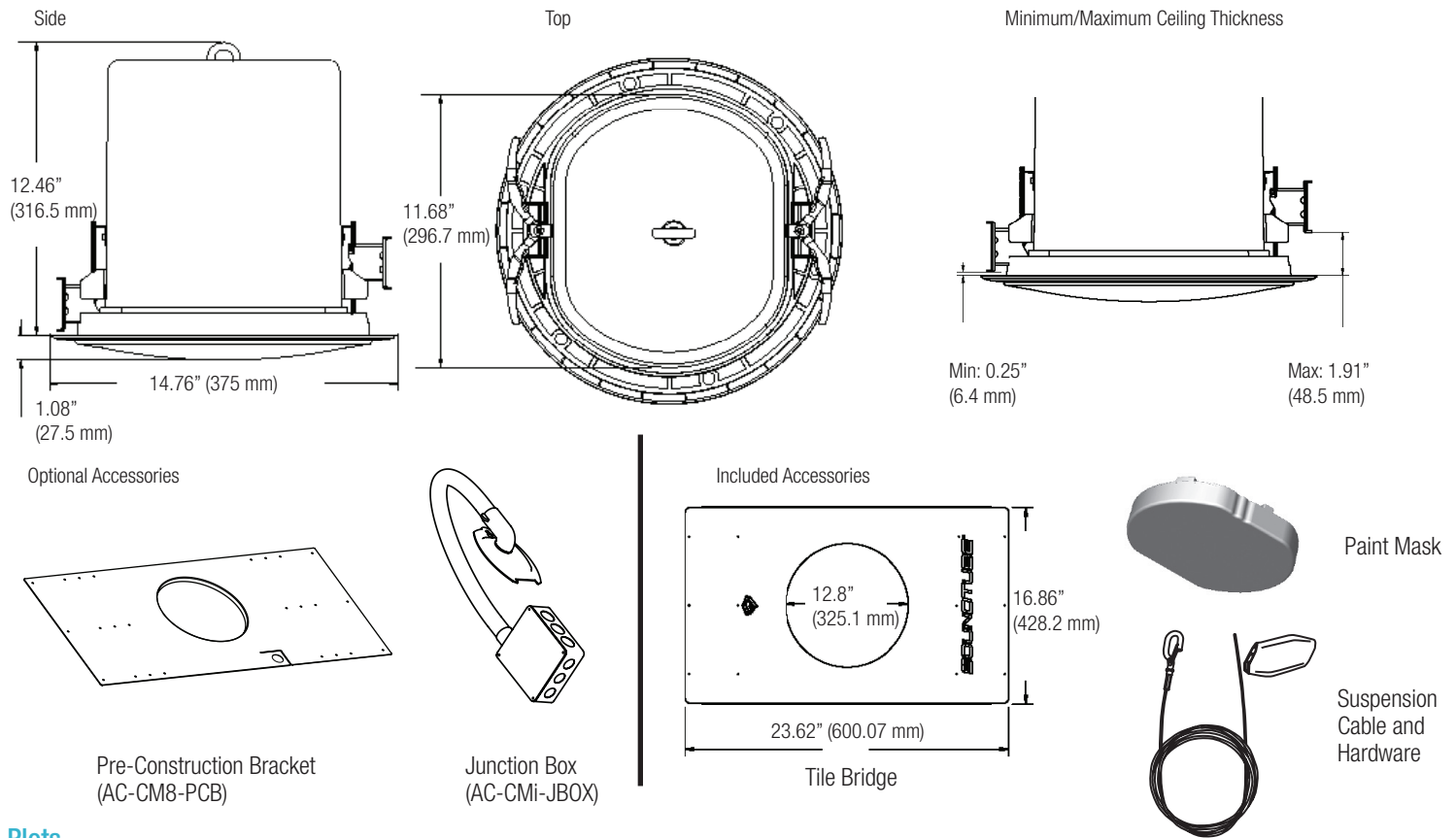
Vertical Beamwidth (±6 dB)



Directivity Index (DI)



## Mechanical Drawings



## Plots

