



Specifications: CM400i

Tile bridge included

System Type	4-inch, coaxial, in-ceiling, ported (20-watt transformer for 25-, 70.7-, 100-volt or transformer bypass)
Impedance (nominal) ¹	4 ohm
Sensitivity dB @ 2.83 V/1 m	90.0 dB
Sensitivity dB @ 1 W/1 m ²	87.0 dB
Frequency Response (-3 dB) ³	90 Hz - 22 kHz
Frequency Response (-10 dB) ³	75 Hz - 22 kHz
Max. Program Power ⁴	40 W
Max. Continuous Power RMS ⁵	20 W
Max. Power SPL @ 1 m	100.0 dB
Coverage Angle (-6 dB @ 2 kHz)	100°
Coverage Angle (-6 dB @ 10 kHz)	65°
Coverage Angle (Avg. 2 - 10 kHz)	95°
Directivity Factor (Q)	4.6 (avg. 100 Hz - 10 kHz) / 4.3 (2 kHz)
Directivity Index (DI) dB	5.6 dB (avg. 100 Hz - 10 kHz) / 6.3 dB (2 kHz)
Tap Selector	Five-position rotary switch with transformer bypass
Transducer - Low-Frequency Driver	102 mm (4.00 in) polypropylene cone, butyl rubber surround
Transducer - High-Frequency Driver	25 mm (1.00 in) convex aluminum tweeter
Low-Frequency Voice Coil	19.0 mm (0.75 in)
Crossover Frequency	1.8 kHz
Low Pass	12 dB per octave, 2nd order
High Pass	12 dB per octave, 2nd order
Enclosure Material	Drawn steel backcan with ABS baffle
Grille	Powder coated steel with integrated ABS bezel
Inputs	Four-pin, 5.08 mm Euroblock for individual or daisy chain connection
Colors	Black or white
Max. Backcan Diameter	153.7 mm (6.05 in)
Backcan Height	166.4 mm (6.55 in)
Visible Diameter	207.0 mm (8.15 in)
Visible Height	11.9 mm (0.47 in)
Min. Ceiling Thickness	0.6 mm (0.025 in)
Max. Ceiling Thickness	47.5 mm (1.87 in)
Mounting Hole Diameter	167.6 mm (6.60 in)
Weight	2.5 kg (5.5 lbs)
Shipping Weight	3.4 kg (7.5 lbs)
Included Accessories	Tile bridge, Euroblock connector and UL cover plate
Optional Accessories	Pre-construction bracket, AC-CM4-PCB, junction box, AC-CM4-JBOX
Packaging	One per box
Regulatory - CE	Approved
Regulatory - UL	UL 1408 (UEAY) and 2043-approved
RoHS	Approved

Key Features

- One 4.0 inch (102 mm) polypropylene woofer and one 1.0 inch (25 mm) convex aluminum tweeter with FerroFluid cooling.
- Rapid installation blind-mount, fixed-wing mounting mechanism with constant tension design affixing to ceiling thicknesses ranging from 0.025 inch (0.6 mm) to 1.87 inch (47.5 mm).
- Easy access five-position selectable tap switch for 25-, 70.7- and 100-volt applications with transformer bypass position.
- Separate tool-free magnetic grille and bezel assembly for ease of install and in-field painting.
- Powder-coated steel grille for lasting durability.
- 90 dB average sensitivity offers high-output capabilities and reduced amplification costs.
- UL 1480 (UEAY) and 2043 approved.
- High-quality black or white paint finish. Custom paint colors optional.
- Included accessories: Color-coded (orange) tile bridge, paint mask, Euroblock connector and UL cover plate.
- Optional accessories: Color-coded (orange) pre-construction bracket (AC-CM4-PCB) and junction box (AC-CM4-JBOX).

Description

The CM400i is a four-inch, two-way, blind-mount in-ceiling speaker that delivers effective low-end response (75 Hz, -10 dB) and optimal off-axis performance (2 to 10 kHz, independently verified). The CM400i speaker design incorporates a low-profile grille and five-position tap switch with a transformer bypass position. Mounting hardware is included and features a fast and secure constant-tension fixed-wing mounting system.

Applications

Designed for in-ceiling background to mid-level SPL applications, the CM400i is ideal for music and paging in courthouses, schools, retail stores, grocery, restaurants, hospitals, hotels, casinos, museums, conference rooms and churches. For applications where additional bass is required, SoundTube's CM1001d-T or SM1001p 10-inch subwoofers provide additional low-end response down to 41 Hz (-10 dB).

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
20 W	100.0 dB	20 W	100.0 dB	2.5 W	91.0 dB
10 W	97.0 dB	10 W	97.0 dB	1.3 W	88.0 dB
5 W	94.0 dB	5 W	94.0 dB	0.63 W	85.0 dB
2.5 W	91.0 dB			0.31 W	82.0 dB

¹ Impedance listed per IEC 60268-5

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
Max output based on max continuous power



Patented SoundTube Technologies

SoundTube Entertainment is constantly developing new technologies that 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. SoundTube Entertainment 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 and include EASE™ Data—3-D polar plots—and SoundTubeSPEC™—proprietary SoundTube speaker placement software.

Independent Data Acquisition and Verification

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.

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

Architectural Specifications

The loudspeaker shall consist of a 102 mm (4 in.) low-frequency transducer and a 25 mm (1.0 in.) high-frequency transducer with a crossover network installed in the enclosure. The low-frequency voice coil diameter shall be 19 mm (0.75 in.).

Performance specifications of a typical production unit shall be as follows: Useable frequency response shall extend from 75 Hz – 22 kHz (-10 dB, half space). Measured

sensitivity (2.83 volt, 1 meter) shall be at least 90 dB. The speaker shall have a nominal impedance of 4 ohms and be available for 25-, 70.7- and 100-volt modes with transformer bypass position. The frequency-dividing network shall have a crossover frequency of 1.8 kHz with slopes of 12 dB per octave (2nd order) for both low- and high-pass filters. Rated power capacity shall be at least 20 watts continuous (RMS) and conform to EIA-426-B testing. Calculated maximum continuous output at 1 meter shall be 100 dB.

The low-frequency transducer shall have a polypropylene cone with rubber surround. The high-frequency transducer shall be constructed of aluminum.

Installation for the speaker shall be by two-screw, blind-mount, constant tension fixed-winged mounting system and shall attach to ceiling thicknesses ranging from 0.6 mm (0.025 in.) to 47.5 mm (1.87 in.). The fixed-wing assembly shall be constructed of zinc-plated steel. 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 4 ohm or distributed systems and shall accept from 10 – 22 gauge wire.

The maximum backcan dimensions shall be no more than 166.4 mm (6.55 in.) in height by 153.7 mm (6.05 in.) in diameter. The maximum visible dimensions shall be no more than 11.9 mm (0.47 in.) in height by 207.0 mm (8.15 in.) in diameter. The backcan shall be constructed of steel.

The grille shall be constructed of an ABS bezel and powder-coated steel for lasting performance in the elements. The affixed grille and bezel shall be mounted to the speaker enclosure (backcan) via neodymium magnets and include a tool-free safety restraint. For in-field painting, a paint mask is included.

The speaker has an optional color-coded pre-construction bracket that shall be compatible with an optional junction box. An 18-gauge wire whip, Euroblock connector and UL cover plate shall be included with the junction box. The maximum dimensions of the pre-construction bracket shall be no more than 635 mm (25.0 in.) in length by 381 mm (15.0 in.) in width and 128 mm (5.0 in.) (includes affixed junction box) in thickness with a 167.6 mm (6.0 in.) cutout for speaker mounting.

The system shall be the SoundTube CM400i for both low- and high-impedance applications.

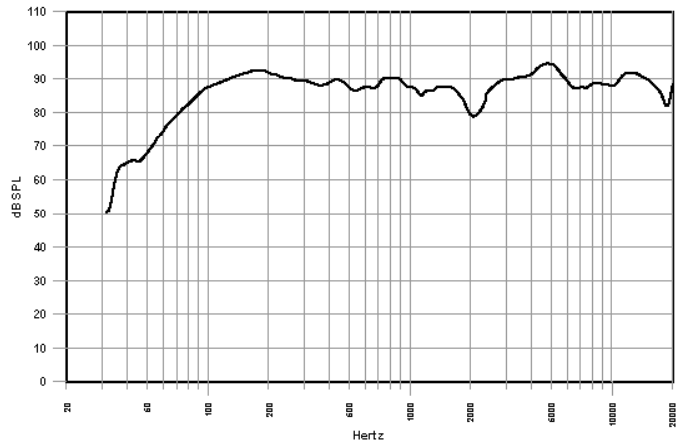
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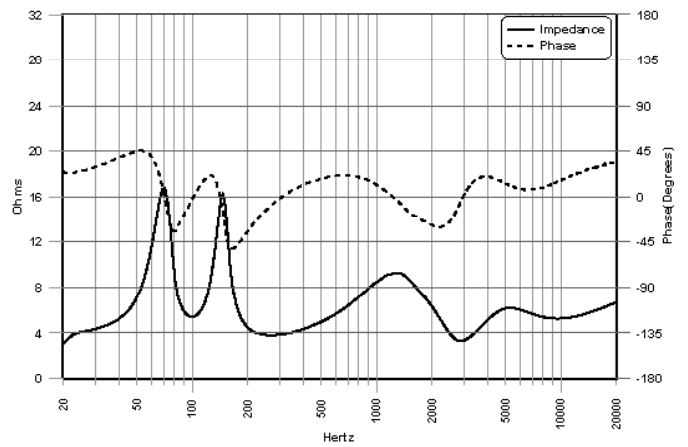
All SoundTube products come with a 5-year limited warranty.

Graphs and Plots

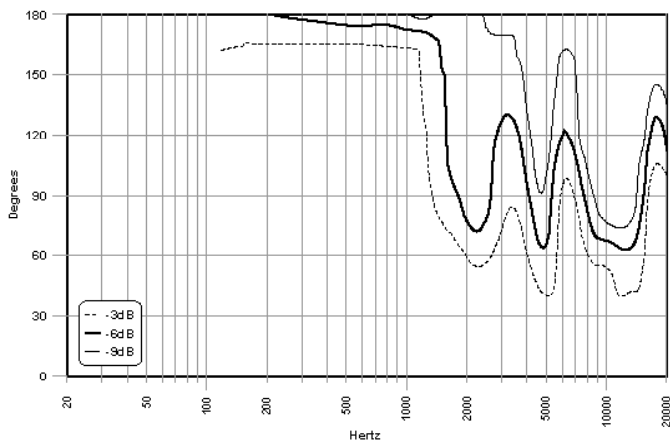
Frequency Response



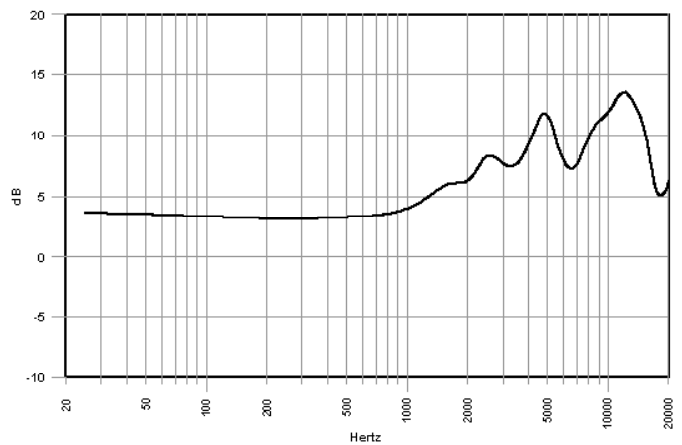
Phase/Impedance Response



Vertical Beamwidth (-6 dB)



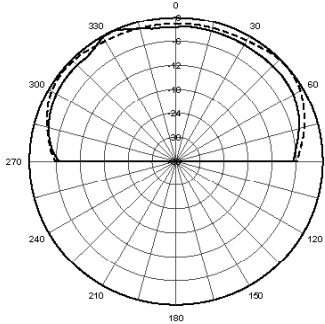
Directivity Index (DI)



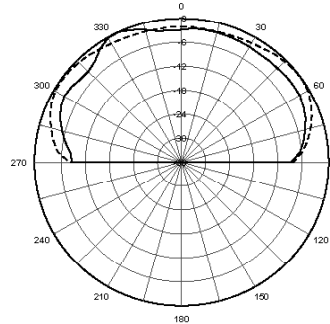
Polar Plots

— Horizontal
 - - - Vertical

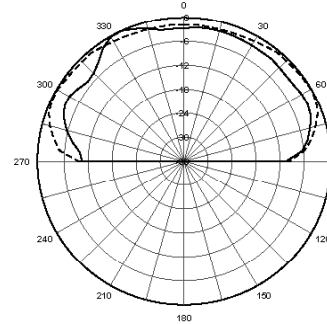
125 Hz



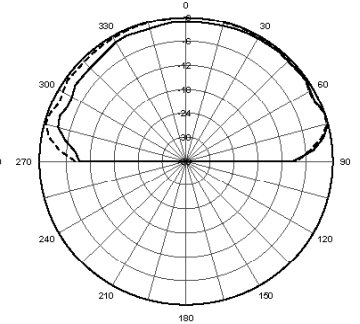
250 Hz



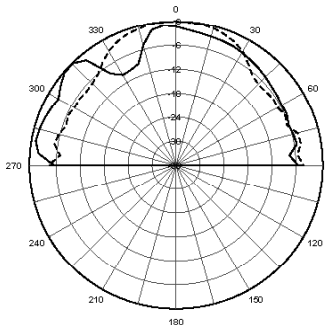
500 Hz



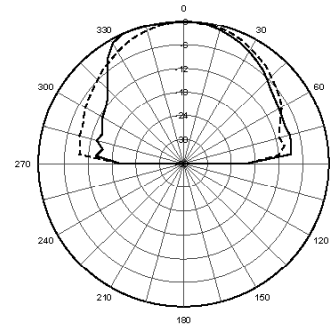
1000 Hz



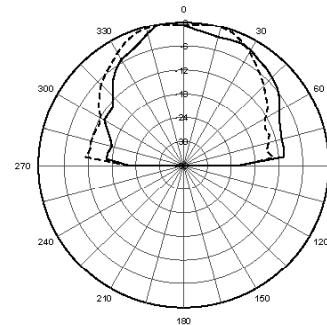
2000 Hz



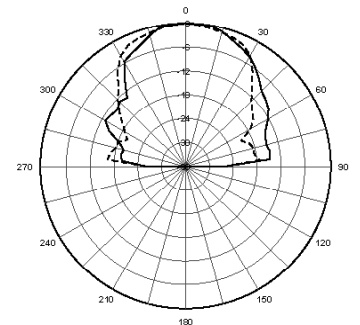
4000 Hz



8000 Hz



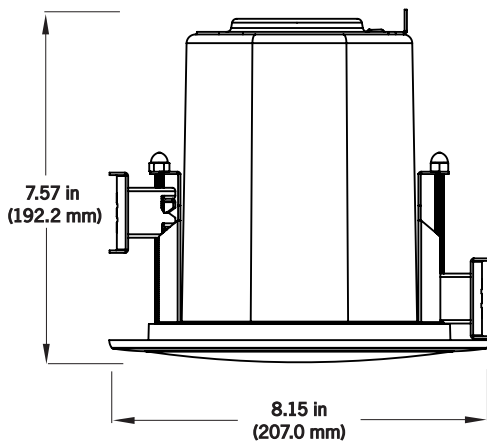
10,000 Hz



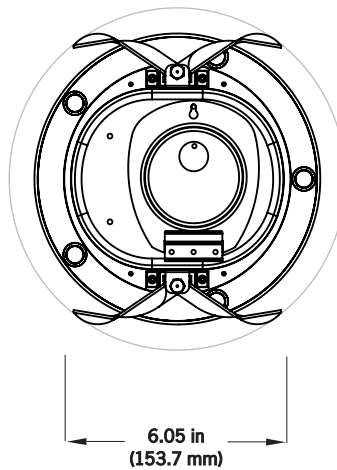
Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at www.soundtube.com

Mechanical Drawings

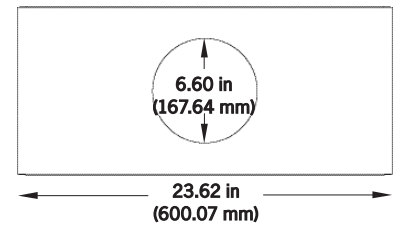
Side



Top

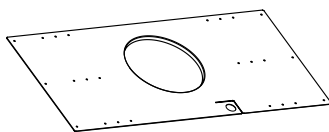


Included Accessories

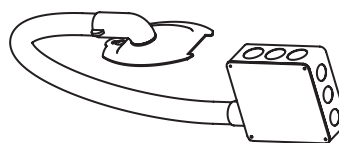


Tile Bridge (AC-CM4-TB)

Optional Accessories



Pre-Construction Bracket (AC-CM4-PCB)



Junction Box (AC-CMi-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.