



Specifications: CM500i

Tile bridge included

System Type	5.25" Coax, in-ceiling, ported (33 Watt transformer for 25/70.7/100 Volt or voice coil/8 Ohm direct)
Frequency Response (-3 dB) ¹	78 Hz - 22 kHz
Low Frequency (-10 dB) ¹	55 Hz - 22 kHz
Max. Program Power	150 Watts
Max. Continuous Power RMS ²	75 Watts
Max. UL Power Rating ³	50 Watts
Max. SPL dB @ 1 M	107.5 dB
Sensitivity dB @ 1W/1M ⁴	88.5 dB
Impedance (nominal)	8 Ohm (nominal value)
Coverage Angle (-6 dB @ 2 kHz)	140°
Coverage Angle (-6 dB @ 10 kHz)	105°
Directivity Factor (Q)	4.82 (Averaged 100 Hz - 10 kHz); 5.78 @ 2 kHz
Directivity Index (DI)	6.21 dB (Averaged 100 Hz - 10 kHz); 7.62 dB @ 2 kHz
Tap Selector	6-Position rotary switch with voice coil/8 Ohm direct

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
33 W	105.5 dB	33 W	105.5 dB	5 W	97.5 dB
17 W	103.0 dB	17 W	103.0 dB	2.5 W	94.5 dB
9 W	100.0 dB	9 W	100.0 dB	1.3 W	91.5 dB
6 W	98.5 dB	6 W	98.5 dB	0.63 W	88.5 dB
3 W	95.5 dB				

Transducers

Low Frequency Driver	1 x 133 mm (5.25 in) Polypropylene cone, butyl rubber surround
High Frequency Driver	25 mm (1.0 in) Convex aluminum tweeter with waveguide
Low Frequency Voice Coil	25 mm (1.0 in)
Crossover Frequency	3 kHz

Network Type

Low Pass	12 dB per octave, 2nd order
High Pass	12 dB per octave, 2nd order
Enclosure Material	Drawn aluminum backcan with ABS baffle
Motor Board	Cast aluminum
Grille	Iridite-plated steel with powder-coat finish
Inputs	4 Pin, 5 mm Euroblock for individual or daisy chain connection
Colors	Black or white
Backcan Diameter	219.2 mm / 8.63 in
Backcan Height	197 mm / 7.75 in
Visible Diameter	271.9 mm / 10.71 in
Visible Height	24.5 mm / .96 in
Weight	3.4 kg / 7.5 lbs
Shipping Weight	10.7 kg / 23.5 lbs (2 per box, includes tile bridges)

Accessories

Included	Tile bridge, Euroblock connector & installation aid
Optional	Pre-Construction Bracket (AC-CM5-PCB), Junction Box (AC-CM-JBOX)
Packaging	2 Per box

¹ Frequency response is measured in half space and includes a low-frequency peak > +3 dB.

² Continuous power rating, EIA-426-B test.

³ UL testing specifies band-limited pink noise over the indicated frequency spectrum.

⁴ 2.83 Volts at a distance of 1 meter.

SoundTube continually develops new product innovations and improvements. Updates to existing products without prior notice are an example of SoundTube's drive for constant improvement.

Key Features

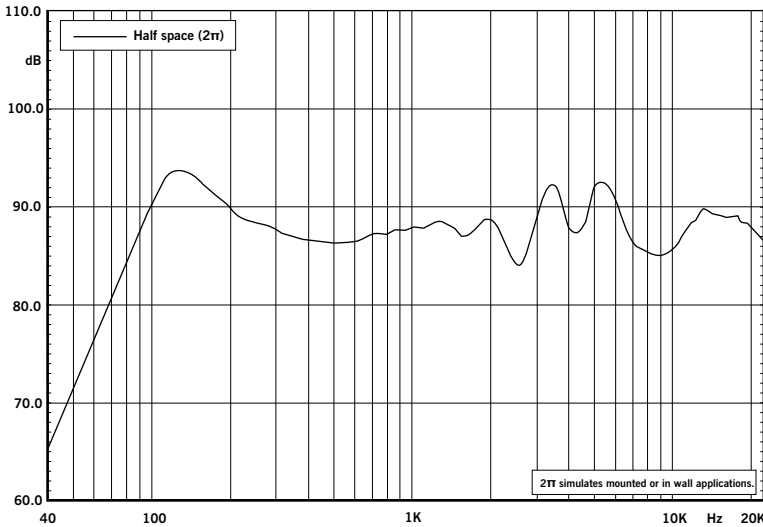
- BroadBeam[®] waveguide technology delivers a consistent dispersion pattern up to 10 kHz for maximum coverage area per speaker (EASE[™] documented).
- One 133 mm (5.25 in) polypropylene woofer and one 25 mm (1.0 in) convex aluminum tweeter with FerroFluid[™] cooling mounted to a proprietary cast-aluminum M5[™] baffle and heat sink.
- Rapid installation blind-mount, fixed-wing mounting mechanism with constant tension design affixing to ceiling thickness tolerances ranging from 6.4 mm (0.25 in) to 42.9 mm (1.69 in).
- Separate tool-free magnetic grille & bezel assembly for ease of install & in-field painting.
- Iridite-plated steel grille with protective powder-coated finish for lasting durability.
- Easy access 6-position selectable tap switch for 25, 70.7 and 100 Volt applications with voice coil/8 Ohm direct simplifies ordering & inventory tracking.
- 88.5 dB average sensitivity offers high-output capabilities & reduced amplification costs.
- UL 1480 rev. 5 & 2043, CE (EMC Directive 89/366/EEC, EN55020, EN55013 & IEC529 approval pending. Milspec 810 approved).
- Included accessories: Tile bridge, Euroblock connector & paint mask.
- Optional accessories: Pre-Construction Bracket, Junction Box and Square Grille for architectural specifications.
- High-quality black or white paint finish. Custom paint colors optional.

Description

The CM500i is a 5.25" 2-way blind-mount in-ceiling speaker that delivers effective low-end response (55 Hz) and optimal off-axis performance (up to 10 kHz, EASE[™] documented). SoundTube's proprietary BroadBeam[®] waveguide tweeter system delivers consistent high-performance audio across the operating bandwidth. The CM500i speaker design incorporates a low-profile grille, proprietary M5[™] motor-board, 6-position tap switch with voice coil/8 Ohm direct. Mounting hardware is included & features a fast & secure constant-tension fixed-wing mounting system.



Frequency Response



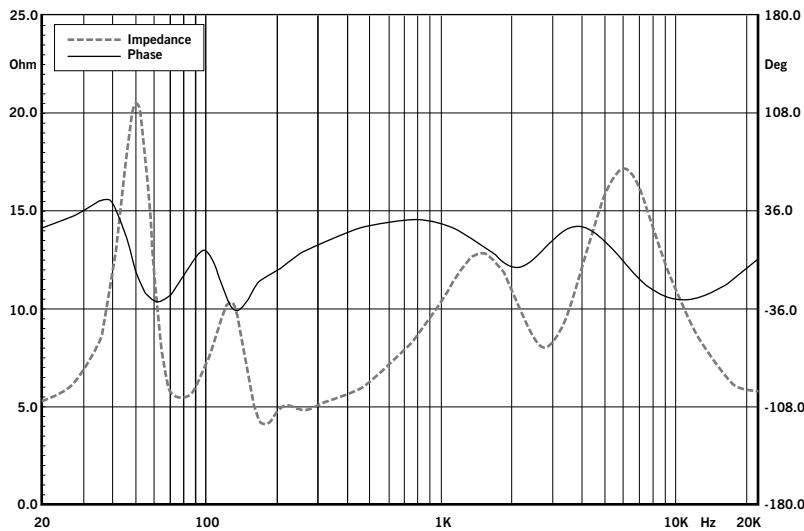
Applications

Designed for in-ceiling background to mid-level SPL applications, the CM500i is ideal for music & paging in courthouses, schools, retail stores, grocery, restaurants, hotels, casinos, museums, conference rooms & churches. For applications where additional bass is required, SoundTube's CM801i 8" subwoofer provides low-end response down to 43 Hz.

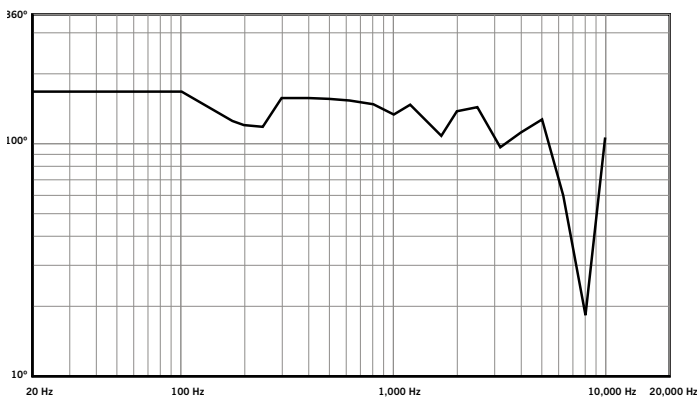
BroadBeam® Wide Dispersion Technology

More than 3 years in development, SoundTube's proprietary BroadBeam® technology incorporates a high-frequency waveguide mated to a 1" convex aluminum tweeter. The BroadBeam® high-frequency waveguide delivers a consistent dispersion pattern across the upper registers of the frequency spectrum (up to 10 kHz, EASE™ documented). The result is an audio system with fewer speakers, reduced power needs, shorter installation time and cost savings on shipping & labor.

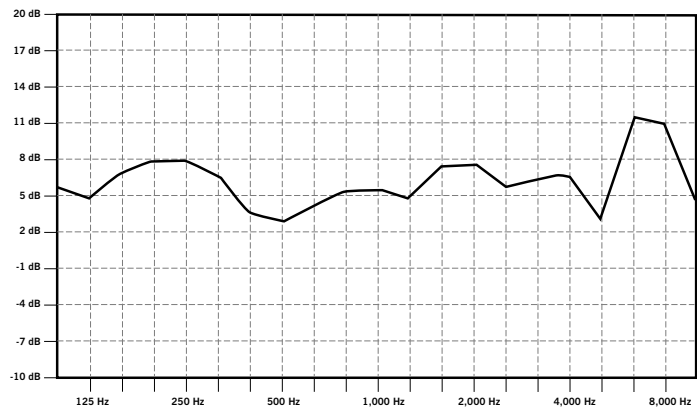
Phase/Impedance Reponse



Beamwidth (-6dB)



Directivity Index (DI)





Patented SoundTube Technologies

SoundTube Entertainment is constantly developing new technologies that enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. & 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.

Data Acquisition

All performance data acquired at SoundTube's Technical Measurement Center (TMC) are analyzed using a

variety of standard measurement techniques, including Measured Length Sequence (MLS) and Time Delay Spectrometry (TDS). Performance, development and data acquisition tools include: Gold Line TEF 20, CLIO, LMS, LEAP, and proprietary modeling software. EASE™ data are acquired through an automated TEF 20/Outline/EASE™ interface.

EASE™ Data – 3-D polar plots.

SoundTubeSPEC™ – Proprietary SoundTube speaker placement software.

Architectural Specifications

The loudspeaker shall consist of a 133 mm (5.25 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 25 mm (1.0 in).

Performance specifications of a typical production unit shall be as follows: Useable frequency response shall extend from 55 Hz – 22 kHz (-10 dB, half space, no external equalization). Measured sensitivity (2.83 Volt input, 1 meter) shall be at least 88.5 dB. The speaker

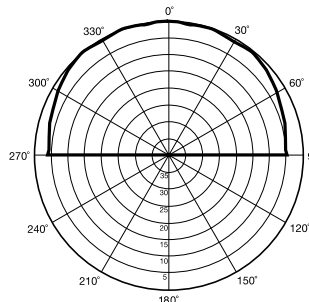
shall have a nominal impedance of 8 Ohms and be available for 25, 70.7 & 100 Volt modes with voice coil/8 Ohm direct. The frequency-dividing network shall have a crossover frequency of 3 kHz with slopes of 12 dB per octave (2nd order) for both low & high pass filters. Rated power capacity shall be at least 75 Watts continuous power (RMS) and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be 107.5 dB.

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

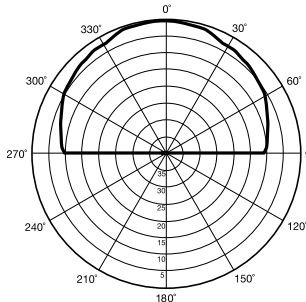
Installation for the CM500i shall be by 2-screw, blind-mount, constant tension winged assembly and shall attach to ceiling thickness tolerances ranging from 6.4 mm (0.25 in) to 42.9 mm (1.69 in). The fixed-wing assembly shall be constructed of glass-filled ABS material. The external wiring input connector shall be a 4-pin, 5 mm Euroblock for 8 Ohm or distributed systems and shall accept from 10 – 22 gauge wire.

Polar Plots

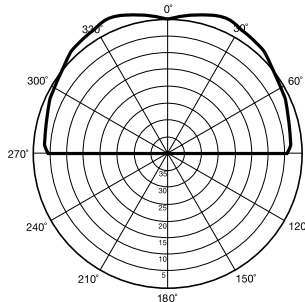
125 Hz



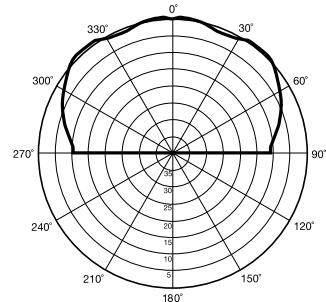
250 Hz



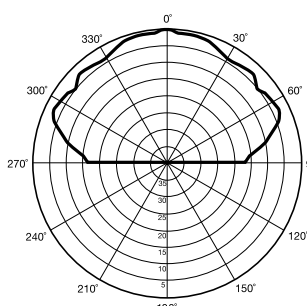
500 Hz



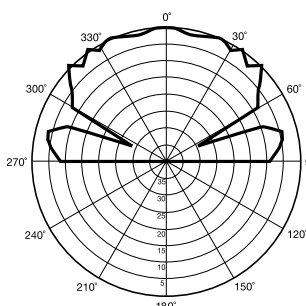
1,000 Hz



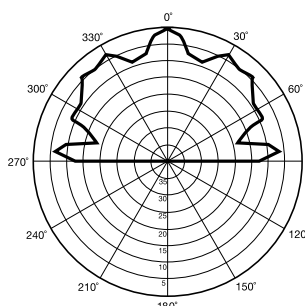
2,000 Hz



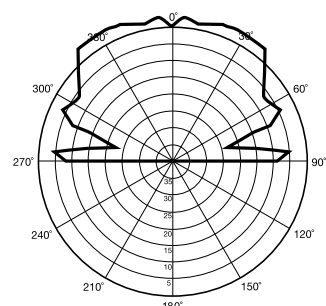
4,000 Hz



8,000 Hz



10,000 Hz



CM500i

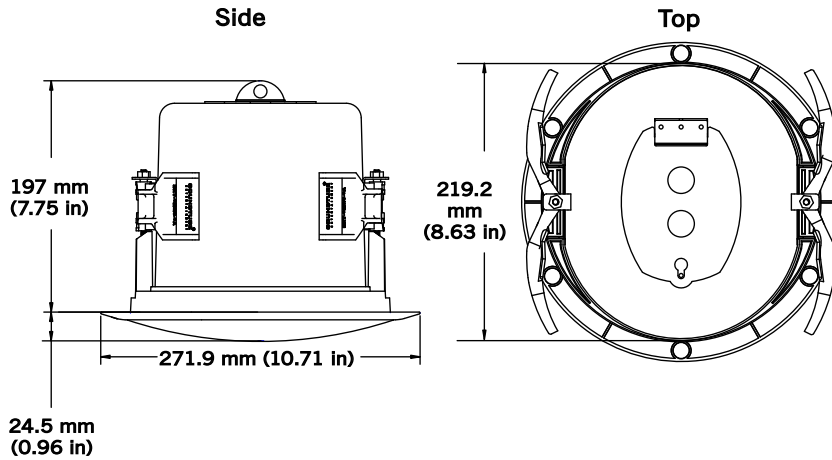
In-Ceiling Speaker

Preliminary Technical Information for System Engineers



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Mechanical Drawings



The maximum backcan dimensions shall be no more than 197 mm (7.75 in) in height by 219.2 mm (8.63 in) in diameter. The maximum visible dimensions shall be no more than 24.5 mm (0.96 in) in height by 271.9 mm (10.71 in) in diameter. The backcan shall be constructed of aluminum.

The system shall include a 16-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) in length by 323.9 mm (12.75 in) in width and 11 mm (0.41 in) in thickness with a 228.6 mm (9.0 in) cutout for speaker mounting.

The grille shall be constructed of an ABS bezel and iridite-plated, powder-coated steel for lasting performance in the elements. The affixed grille and bezel shall be mounted to the speaker enclosure (backcan) via magnetic strip and include safety wire. Also included are a paint mask for in-field painting and an installation aid that serves as a handhold during mounting.

The CM500i has an optional Pre-Construction Bracket (AC-CM5-PCB) that shall be compatible with an optional Junction Box (AC-CM-JBOX). 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 (25.0 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 228.6 mm (9.0 in) cutout for speaker mounting.

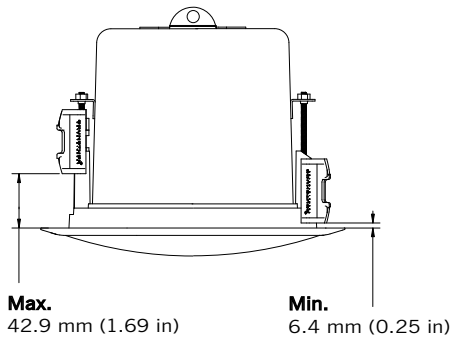
The system shall be the SoundTube CM500i for both low & high impedance applications.

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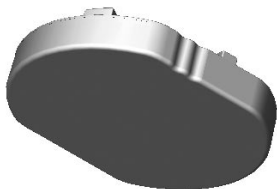
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All SoundTube products come with a 5-year limited warranty.

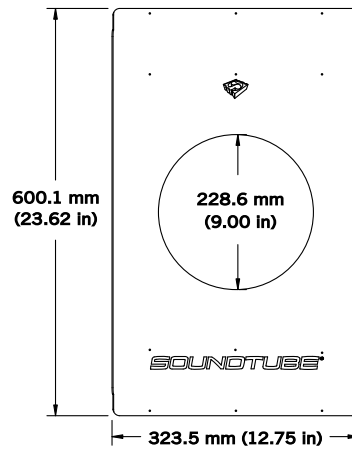
Included Accessories



Fixed Wing Mounting System

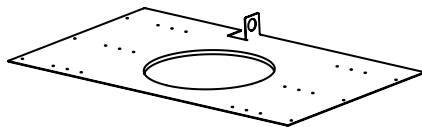


Paint Mask

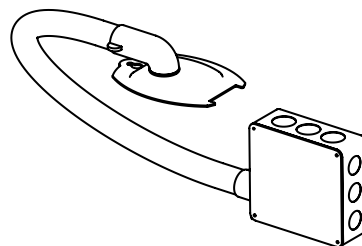


Tile Bridge

Optional Accessories



Pre-Construction Bracket (AC-CM5-PCB)



Junction Box (AC-CM-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.

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