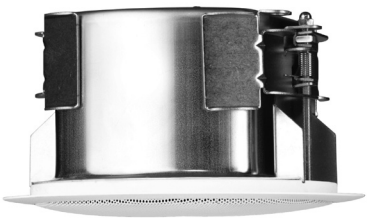
CM42-EZs | In-Ceiling Speaker

Technical Information for System Engineers

SOUNDTUBE ENTERTAINMENT



Specifications: CM42-EZs

Tile bridge included

System Type	4-inch, coax, in-ceiling, sealed (20-watt transformer for 25/70.7/100-volt or voice-coil-direct)
Impedance (nominal)	16 ohm
Sensitivity dB @ 2.83 V/1 m	84.5 dB
Sensitivity dB @ 1 W/1m [1]	87.5 dB
Frequency Response (- 3 dB) [2]	160 Hz - 20 kHz
Frequency Response (-10 dB) [2]	125 Hz - 22 kHz
Max. Program Power [3]	40 W
Max. Continuous Power RMS [4]	20 W
Max. Power SPL @ 1 m [5]	100.5 dB
Coverage Angle (-6 dB @ 2 kHz)	170°
Coverage Angle (-6 dB @ 10 kHz)	95°
Coverage Angle	100° (averaged from 2 - 10 kHz)
Directivity Factor (Q)	4.3 (averaged 100 Hz - 10 kHz); 4.2 (2 kHZ)
Directivity Index (DI) dB	5.7 dB (averaged 100 Hz - 10 kHz); 6.2 dB (2 kHz)
Tap Selector	Six-position rotary switch with voice-coil-direct
Transducer - Low-Frequency Driver	102 mm (4 in.) Treated fiber cone, cloth surround
Transducer - High-Frequency Driver	19 mm (0.75 in.) Silk tweeter
Low-Frequency Voice Coil	12.70 mm (0.50 in.)
Crossover Frequency	5.0 kHz
Network Type: Low-Pass	12dB per octave, 2nd order
Network Type: High-Pass	6 dB per octave, 1st order
Enclosure Alignment	Sealed
Enclosure Material	Drawn steel backcan with ABS baffle
Grille	Painted Steel
Inputs	18-Gauge hard wired leads
Colors	Black or white
Backcan Diameter	146.8 mm (5.78 in.)
Backcan Height	95.3 mm (3.75 in.)
Visible Diameter	190.5 mm (7.50 in.)
Visible Height	8.4 mm (0.33 in.)
Mounting Hole Diameter	165.1 mm (6.50 in.)
Min. / Max. Ceiling Thickness	0.0 mm (0.0 in.) – 38.1 mm (1.5 in.)
Weight	1.8 kg (4.0 lb.)
Shipping Weight	2.3 kg (5.0 lb.)
Included Accessories	Tile bridge, UL-listed flex conduit clamp, paint shield, hole template, wire nuts
Optional Accessories	Pre-construction bracket (AC-CM4-PCB); junction box (AC-CM-EZ-JBOX)
Packaging	One per box
Regulatory - UL	1480- and 2043-approved
Regulatory - CE	Approved

1 1 W 1 m sensitivity determined using nominal impedance

2 Frequency response measured in half or full space as dictated by speaker mounting configuration

3 Max program power is 3 dB above max continuous power

4 Continuous power rating, EIA-426-B test

5 Max output based on max continuous power

6 Max useable SPL based on testing by NWAA Labs

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
20 W	100.5 dB	20 W	100.5 dB	2.5 W	91.5 dB
10 W	97.5 dB	10 W	97.5 dB	1 W	88.5 dB
5 W	94.5 dB	5 W	94.5 dB	0.63 W	85.5 dB
2.5 W	91.5 dB	2.5 W	91.5 dB	0.31 W	82.5 dB
1.25 W	88.5 dB				

Key Features

- Engineered for applications with limited plenum space incorporating a SoundTube-specific shallow backcan with an installed depth of only 3.5 inches.
- One 102 mm (4 in.) treated fiber woofer with cloth surround and one 19 mm (0.75 in.) silk tweeter.
- Reduced amplification costs with maximum efficiency including 87.5 dB sensitivity and 16 ohm impedance.
- Superior voice intelligibility with an average coverage angle of 100° (independently verified, 2 – 10 kHz).
- Easy-access six-position tap switch for 25/70.7/100-volt and 16 ohm settings allows for easy ordering, stocking and installation.
- Cost-effective 16 ohm settings allows for the use of multiples of two, four, or six speakers in a system using a standard amplifier without a transformer.
- Incorporates a painted steel grille for lasting durability.
- cUL 1480 and 2043, CE (EMC Directive 89/366/EEC, EN55020, EN55013) approved.
- Clamping allowance from 0.00 in. (0.0 mm) to 1.50 in. (38.1 mm).
- Included accessories: Tile bridge, UL-listed 0.5-inch flex conduit clamp, paint shield and two wire nuts.
- Optional accessories: Color-coded (orange) pre-construction bracket (AC-CM4-PCB), junction box (AC-CM-EZ-JBOX).
- High-quality black or white painted finish. Custom colors available.

Description

The CM42-EZs is a 4-inch, coaxial, two-way, blind-mount, in-ceiling speaker which delivers true high efficiency and performance across the operating bandwidth. By incorporating a 4-inch treated-fiber driver with cloth surround in a sealed drawn steel backcan, this speaker delivers maximum frequency response (125 Hz – 22 kHz, - 10 dB) in a compact design.

Mounting hardware is included and features a constant-tension winged 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 (orange) tile bridge, optional pre-construction bracket, and a six-position tap switch for 25-, 70.7- and 100-volt applications with voice-coil-direct bypass.

Applications

Developed specifically for the paging and background music applications where cost, quality and fit are paramount, the CM42-EZs is ideal for hotels, retail stores, restaurants, airports, churches (under eave), medical facilities or boardrooms. Indeed, the entire CM-EZ series is engineered for installations where high-efficiency and rapid installation are critical attributes. For applications requiring additional bass response, SoundTube's CM1001d-T subwoofer provides true low-end response down to 50 Hz.

Patented SoundTube Technologies

SoundTube Entertainment and the MSE Audio Group constantly develop 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. 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.

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 are independently collected from and verified by NWAA Labs (www.nwaalabs.com) using their proprietary MACH testing system. All data are 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 one 102 mm (4 in.) low-frequency transducer and one 19 mm (0.75 in.) high-frequency transducer with a frequency dividing network installed in a sealed enclosure. The low-frequency voice coil diameter shall be 13 mm (0.50 in.). The low-frequency transducer shall have a treated fiber cone material with cloth surround. The high-frequency transducer shall be constructed of silk material.

Performance specifications of a typical production unit shall be as follows: Usable frequency range shall extend from 125 Hz - 22 kHz, -10 dB. The loudspeaker shall include a selectable 25/70.7/100-volt and 16 ohm/voice-coil-direct tap switch. The frequency-dividing network shall have a crossover frequency of 5.0 kHz. Rated power capacity of the components and network shall be at least 20 watts RMS and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be at least 100.5 dB SPL.

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 clamp, color-coded tile bridge (to match color-coded backcan), grille, wire nuts, cut-out template and paint shield, the integrated CM42-EZs in-ceiling speaker is engineered for high performance and rapid installation in plenum spaces. The CM42-EZs incorporates a secondary attachment point for added security, or code satisfaction where required.

Installation for the CM42-EZs shall be by two-screw, blind-mount, constant-tension winged assembly with a clamping allowance from 0.00 mm (0.0 in.) to 38.1 mm (1.5 in.). The external wiring shall be hardwired using wire nuts accepting up to three 18-gauge wires.

The CM42-EZs is factory preset to the 20-watt setting in the 70.7-volt mode with a tap switch located on the front baffle. The system shall be the SoundTube CM42-EZs for both low-high-impedance applications.

SoundTube Entertainment

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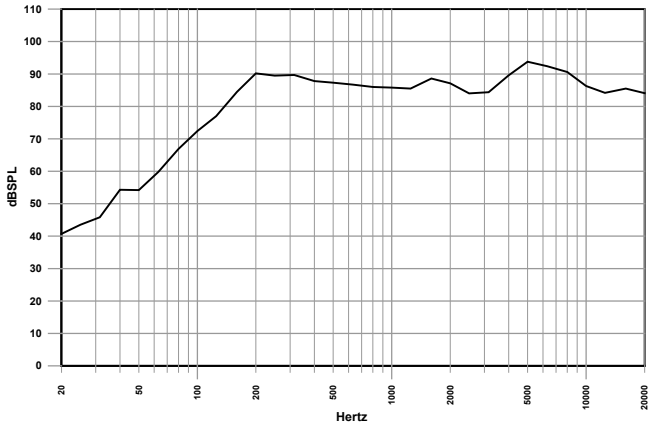
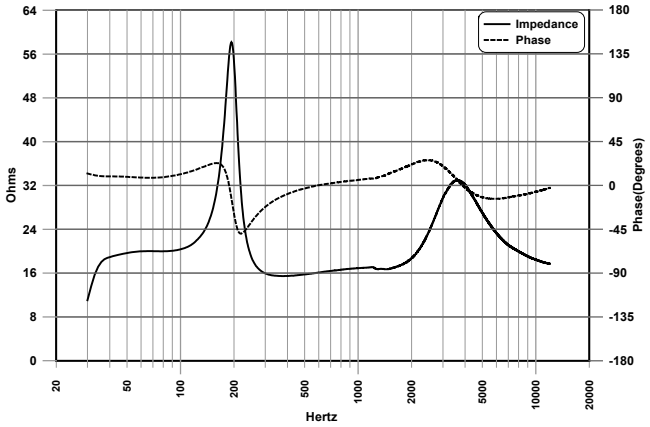
All SoundTube products come with a 5-year limited warranty.

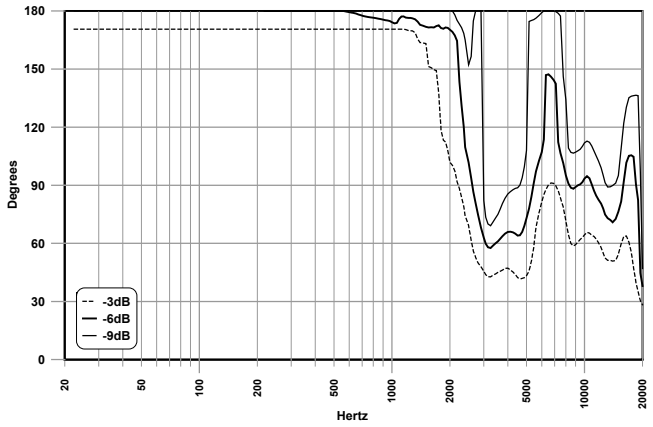
Frequency Response



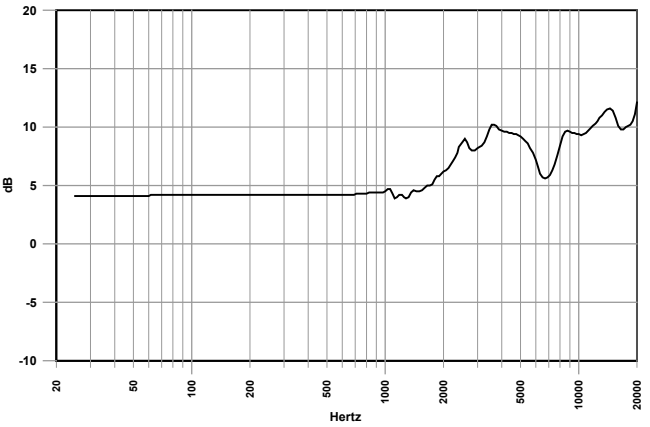
Phase/Impedance Reponse



Beamwidth



Directivity Index (DI)



CM42-EZs | In-Ceiling Speaker

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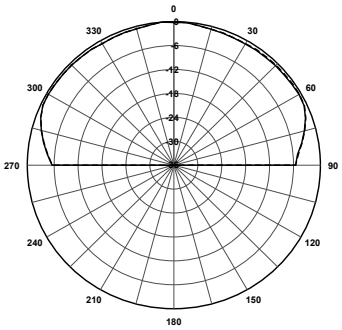
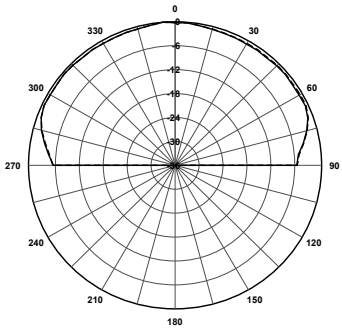
Polar Plots

Vertical
Horizontal

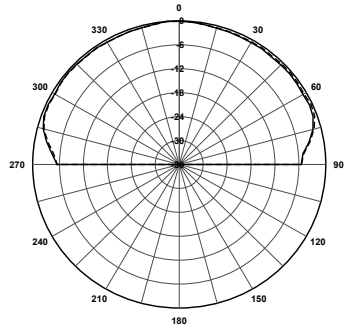
125 Hz



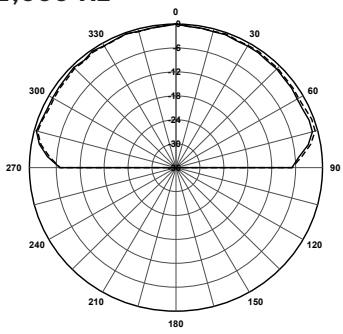
250 Hz



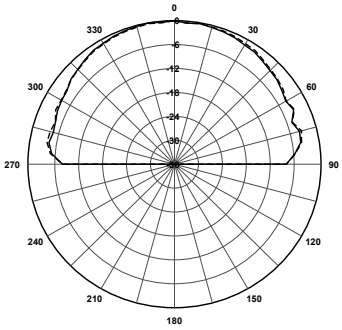
500 Hz



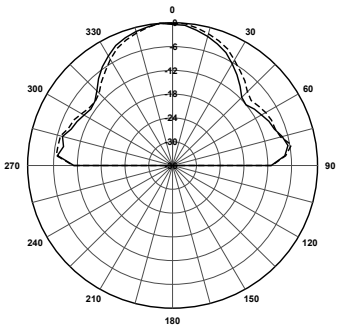
1,000 Hz



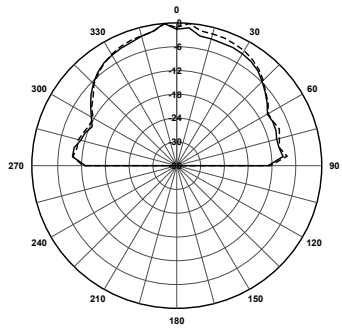
2,000 Hz



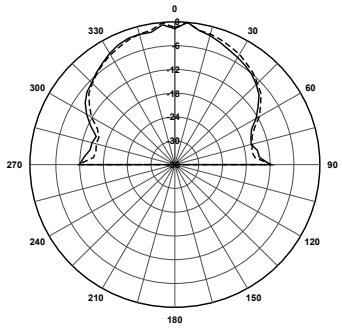
4,000 Hz



8,000 Hz



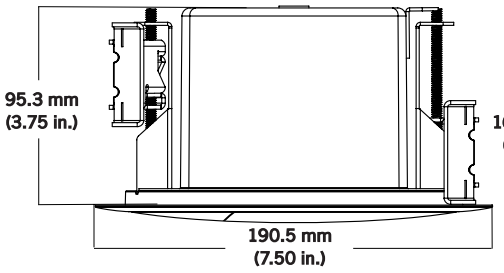
10,000 Hz



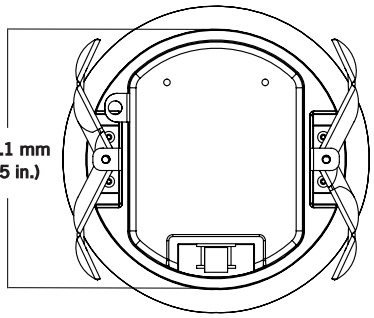
Technical data, EASE™ plots, SoundTube SPEC™ software and product downloads available at **www.soundtube.com**

Mechanical Drawings

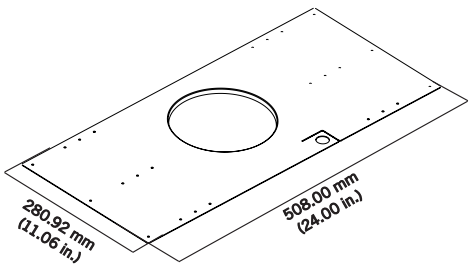
Side



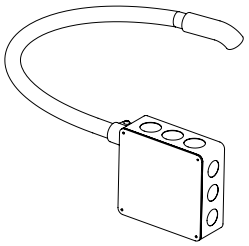
Top



Optional Accesories

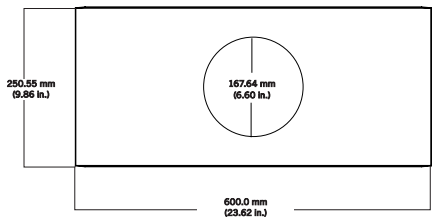


Pre-Construction Bracket (AC-CMEZ42-PCB)

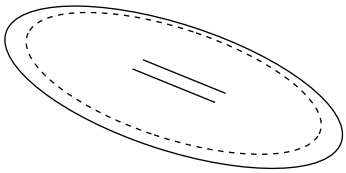


Junction Box (AC-CM-EZ-JBOX)

Included Accessories



Tile Bridge



Hole Template

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.