CM-EZ-II | In-Ceiling Speaker

Technical Information for System Engineers

SOUNDTUBE ENTERTAINMENT

Specifications: CM-EZ-II

Tile Bridge Included

System Type	8-inch coaxial, open-ceiling, sealed (20-watt transformer for 25/70.7/100-volt or transformer bypass position)
Impedance (nominal) [1]	8 ohm
Sensitivity dB @ 2.83 V/1 m	87.5 dB
Sensitivity dB @ 1W/1m [2]	87.5 dB
Frequency Response (- 3 dB) [3]	73 Hz - 19 kHz
Frequency Response (-10 dB) [3]	54 Hz - 22 kHz
Max. Program Power [4]	80 W
Max. Continuous Power RMS [5]	40 W
Max. Power SPL @ 1 m [6]	103.5 dB
Coverage Angle (-6 dB @ 2 kHz)	125°
Coverage Angle (-6 dB @ 10 kHz)	55°
Coverage Angle (averaged 2-10 kHz)	90°
Directivity Factor (Q)	5.1 (averaged 100 Hz - 10 kHz); 5.5 (2 kHz)
Directivity Index (DI) dB	5.9 dB (averaged 100 Hz - 10 kHz; 7.4 dB (2 kHz)
Tap Selector	Six-position rotary switch with transformer bypass position
Transducer - Low-Frequency Driver	203 mm (8.00 in.) polypropylene cone, butyl rubber surround
Transducer - High-Frequency Driver	25 mm (1.00 in.) polypropylene dome tweeter
Low-Frequency Voice Coil	25.4 mm (1.00 in.)
Crossover Frequency	5.6 kHz
Network Type: Low-Pass	6 dB per octave, 1st order
Network Type: High-Pass	6 dB per octave, 1st order
Enclosure Material	Drawn steel backcan with ABS baffle
Grille	Steel with powder-coat finish
Inputs	18-gauge hard-wired leads
Colors	Black or white
Backcan Diameter	231.8 mm (9.13 in.)
Backcan Height	190.5 mm (7.50 in.)
Visible Diameter	273.1 mm (10.75 in.)
Visible Height	5.1 mm (0.20 in.)
Mounting Hole Diameter	247.7 mm (9.75 in.)
Min / Max Ceiling Thickness	12.7 mm (0.50 in.) / 19.1 mm (0.75 in.)
Weight	3.2 kg (7.0 lbs.)
Shipping Weight	3.6 kg (7.9 lbs.)
Packaging	One per box
Included Accessories	Tile bridge, UL-listed flex conduit clamp, paint shield
Optional Accessories	Pre-construction bracket (AC-CM-EZ-PCB), junction box (AC-CM-EZ-JBOX)
UL Approval	UL 1480 (UEAY)- and 2043-approved
CE Approval	Approved
RoHS	Approved

[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

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	1.3 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		
1.25 W	88.5 dB				

Key Features

- One 8 inch (203 mm) polypropylene cone with butyl rubber surround and one 1 inch (25 mm) polypropylene balanced dome tweeter with FerroFluid.
- Integrated backcan with 25/70.7/100-volt tap settings with transformer bypass position for ease of ordering, stocking and installation.
- Snap Cam four-point, spring-loaded mounting system for rapid installation.
- Quick-release mechanism for easy servicing.
- Adaptable to ceiling thicknesses ranging from 12.70 mm (0.5 in.) to 19.05 mm (0.75 in.).
- UL 1480 (UEAY) and 2043 approved.
- High-quality black or white paint finish. Custom colors optional.
- Included accessories: tile bridge, UL-listed flex conduit clamp, paint shield.
- Optional accessories: pre-construction bracket (AC-CM-EZ-PCB), junction box (AC-CM-EZ-JBOX).

Description

The CM-EZ-II is a two-way, blind-mount, in-ceiling speaker. The CM-EZ-II speaker design incorporates an 8-inch polypropylene driver with rubber surround and a 7.3 liter steel backcan for extended frequency response (54 Hz – 22 kHz, - 10 dB). SoundTube's integrated CM-EZ-II design includes unique and patented blind-mount Snap Cam installation technology and a 21-gauge steel tile bridge ensuring rapid and secure installation in any drop-tile ceiling. For easy ordering, stocking and installation, the CM-EZ-II comes with a six-position tap switch for 25-, 70.7- and 100-volt modes with transformer bypass position position.

Applications

Engineered for general background to foreground music and paging applications, the CM-EZ-II is ideal for medical facilities, retail stores, restaurants, airports, churches, conference centers and boardrooms.

Patented SoundTube 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.

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

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 a 203 mm (8.0 in.) low-frequency transducer and one 25 mm (1.0 in.) high-frequency transducer with a frequency dividing network installed in a sealed 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 range shall extend from 54 Hz - 22 kHz (-10 dB). The speaker shall have a nominal impedance of 8 ohms. The loudspeaker shall be available with selectable 25/70.7/100-volt tap switch with transformer bypass position. The frequency-dividing network shall have a crossover frequency of 5.6 kHz. Rated power capacity of the components and network shall be at least 40 watts continuous (RMS).

The backcan dimensions shall be no more than 7.50 in. (190.5 mm) in height by 9.13 in. (231.8mm) in diameter. Visible dimensions shall be no more than .20 in. (5.1 mm) in height by 10.75 in. (273.1 mm) in diameter.

The backcan shall be constructed of plated steel with an ABS plastic bezel. The grille shall be constructed of powder-coated steel. The low-frequency transducer shall have a polypropylene cone material with butyl rubber surround. The high-frequency transducer shall be constructed of polypropylene material using a balanced-dome configuration.

Shipped complete with UL-listed flex conduit clamp, tile bridge, grille, cut-out template and paint shield, the integrated open-ceiling speaker is engineered for high performance and rapid installation in plenum spaces. The unit incorporates a secondary attachment bolt for added security and code satisfaction where required.

Installation for the speaker shall be by four-point blind-mount system using spring-loaded cams and a tile bridge. The speaker's spring-loaded cams are adaptable to stable surfaces including drop tile and sheetrock and can accomodate material thicknesses ranging from 12.70 mm (0.50 in.) to 19.05 mm (0.75 in.). For surfaces thicker than 15.87 mm (0.625 in.), proper installation requires removing the rubber feet on the cam mechanisms. A secondary attachment point has been included on the back of the unit. Refer to the installation instructions found at www.soundtube.com. Designed for both 25/70.7/100-volt or transformer bypass applications, the unit is factory preset to the 70.7 at 20 watts operating mode with a tap switch located on the backcan.

The system shall be the SoundTube CM-EZ-II for both low- and high-impedance applications.

SoundTube Entertainment

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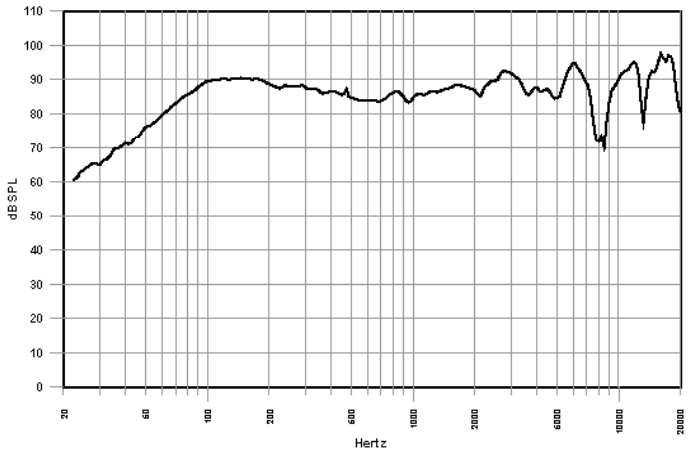
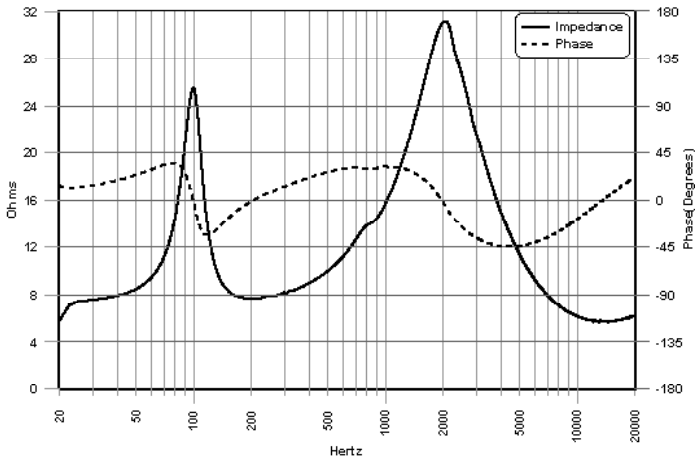
All SoundTube products come with a 5-year limited warranty.

Graphs and Plots

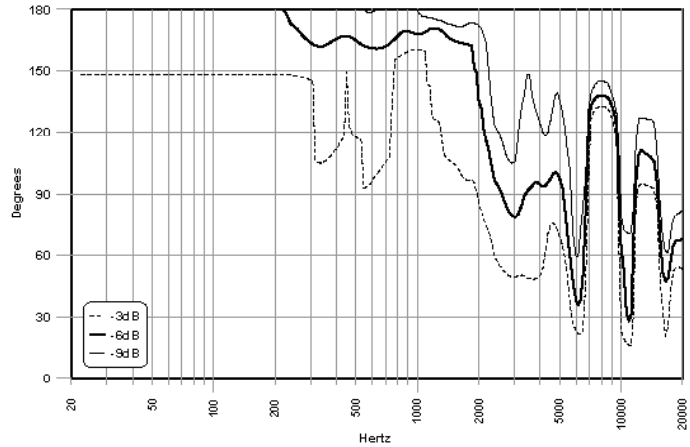
Frequency Response



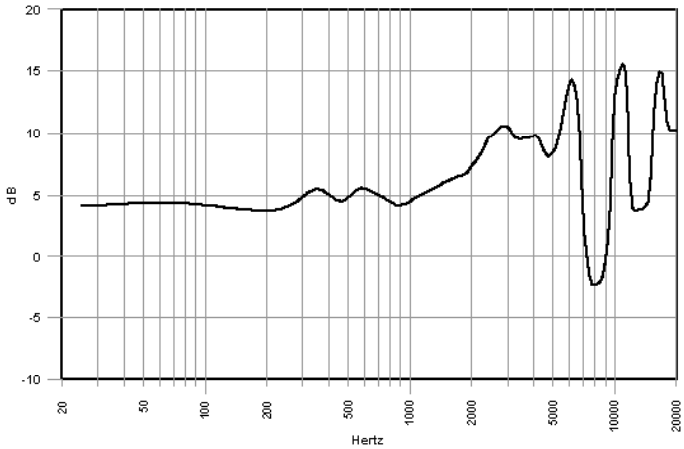
Phase/Impedance Response



Vertical Beamwidth (-6 dB)



Directivity Index (DI)



CM-EZ-II

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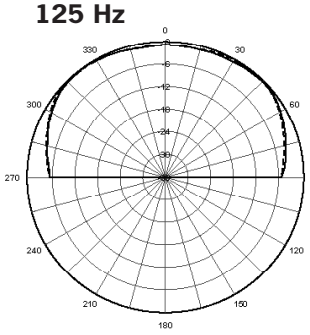
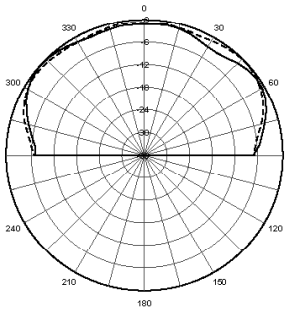
Polar Plots

Horizontal
Vertical

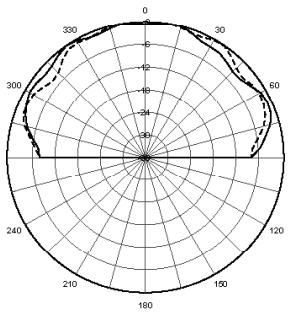
125 Hz



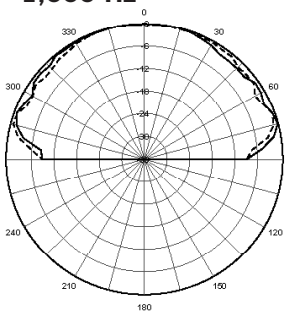
250 Hz



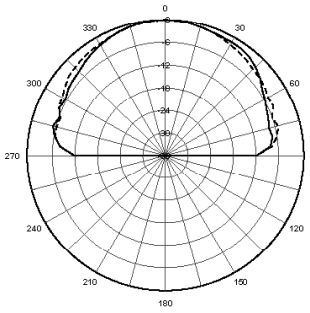
500 Hz



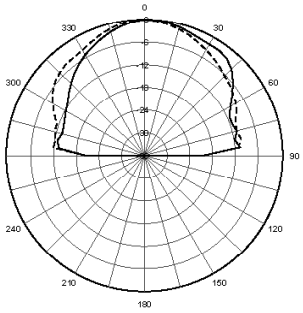
1,000 Hz



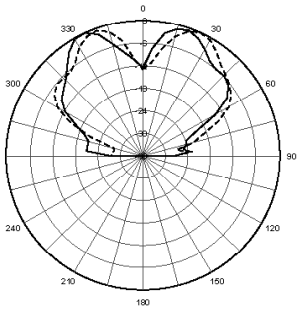
2,000 Hz



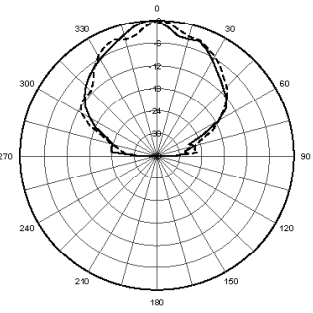
4,000 Hz



8,000 Hz

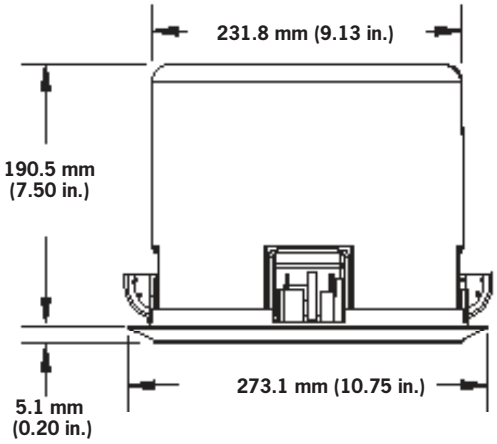


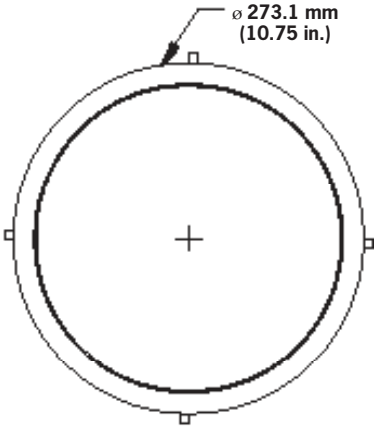
10,000 Hz



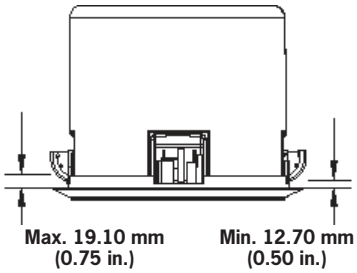
Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at **www.soundtube.com**

Mechanical Drawings

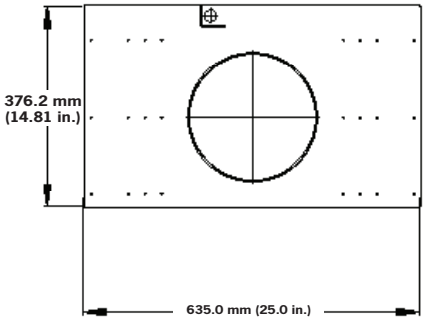


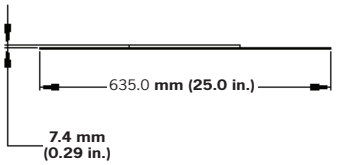


Minimum / Maximum Ceiling Thicknesses



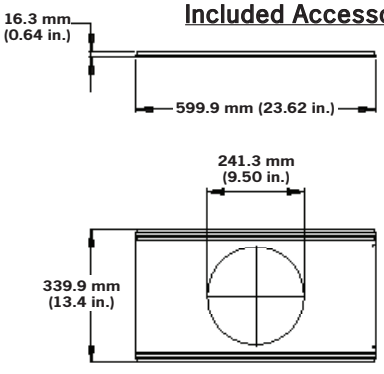
Optional Accessories





Pre-Construction Bracket
(AC-CM-EZ-PCB)

Included Accessories



Tile Bridge

SoundTube Entertainment manufactures a complete line of speakers for:
Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing