

# DATA SHEET

## Commercial Ceiling Loudspeakers



# CM10TB

## FULL-RANGE 5.5-INCH CEILING MOUNT LOUDSPEAKER



### FEATURES

- Higher sensitivity with 20% wider coverage pattern than leading competitors
- Designed for use with any Vocia paging system
- Low impedance or 70 V / 100 V operation
- Low-profile, less than 151 mm (6") total depth
- Quick and easy installation
- Conduit knock-outs on the input cover meet plenum air space handling requirements

### APPLICATIONS

#### DISTRIBUTED

Schools and Educational Campuses  
Hospitals · Shopping Malls · Sports Facilities  
Corporate Campuses · Exhibit Halls  
Entertainment Venues · Airports  
Transportation Spaces and Stations

### DESCRIPTION

The standard white, CM10TB provides high quality paging and consistent coverage, when easy installation, price, and performance are paramount. The 5.5-inch full-range driver delivers high sensitivity similar to that found in 8-inch competitors. The CM10TB also delivers wider coverage than competitive products. It installs quickly and provides uniform coverage with excellent sonic properties.

The preassembled back can construction allows quick installation in a ceiling tile or drywall ceiling. A front face wattage selector switch allows quick adjustment of 70V/100V tap levels before installing the grille. The included euroblock terminal facilitate connections under a cover that conforms with the City of Chicago plenum space wiring requirements. New construction bracket accessories support installation in new construction. An optional safety cable accessory multipack makes securing the loudspeaker to the building structure safe and uncomplicated.

Typical applications include paging, and background music in many venues.

### TECHNICAL SPECIFICATIONS<sup>1</sup>

Operating Mode	Passive with selectable low-impedance or 70 V/100 V operation		
Operating Environment	Indoor		
Operating Range (-10 dB) <sup>2</sup>	120 Hz to 20 kHz		
Nominal Beamwidth (H x V)	145°, (conical)		
Transducer	Full-range 1 x 5.5" (140 mm) paper diaphragm driver		
Sensitivity <sup>3</sup>	@ 1 m	94 dB (2.83 V)	94 dB (1 W, 8 Ω)
Nominal Continuous Power Handling <sup>4</sup>	Passive	9 V (10 W @ 8 Ω)	
Nominal Maximum SPL <sup>5</sup> (Processed)	@ 1 m	Continuous 103 dB	Peak 109 dB
Rated Continuous Voltage <sup>6</sup>	9 V (19 dBV)		
Rated Maximum SPL <sup>7</sup> (Processed)	@ 1 m	Continuous 103 dB	Peak 115 dB
Transformer	70 V: 10 W, 5 W, 2.5 W, 1.25 W, 0.625 W; 100 V: 10 W, 5 W, 2.5 W, 1.25 W		
Required Accessories	130 Hz, 12 dB / oct. Butterworth high pass filter; DSP presets for Tesira or ALCs		
Recommended Amplifiers	10 W - 20 W, 8 Ω (9 V - 13 V)		

### PHYSICAL

Input Connection	4-position terminal block
Controls	Wattage / low impedance selector switch
Mounting Provisions	2 mounting clamps with 46 mm (1.8") grip range
Compliance	ETL listed to comply with UL1480, UL2043 and CSA62368-1 Suitable for use in air handling spaces per NFPA 70 and NFPA 90
Dimensions W (diameter) x D	223 mm x 159 mm (8.80" x 6.28")
Weight (loudspeaker only)	2.1 kg (4.6 lbs)
Finish	Refer to the Technical Drawings (page 3)
Models	CM10TB - loudspeaker with White grille

### OPTIONS

Accessories	<b>SPA-NC100:</b> New Construction Brackets <b>SPA-TR100:</b> Trim Rings - allow installation in pre-existing oversized holes <b>SPA-SC100:</b> Safety Cable with WLL of 22.7 kg (50 lbs) @ 5:1 safety ratio
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*Biamp strives to improve its products on a continual basis. Specifications are therefore subject to change without notice.*



A: 9300 S.W. Gemini Drive Beaverton, OR 97008 USA

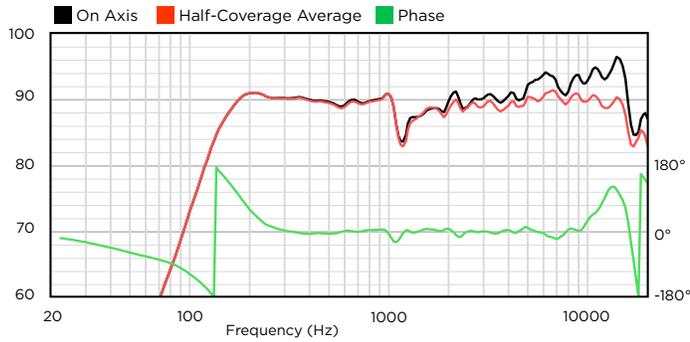
T: +1 503.641.7287

W: www.biamp.com

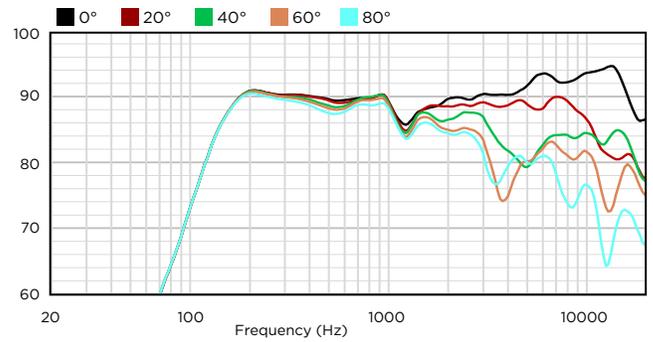
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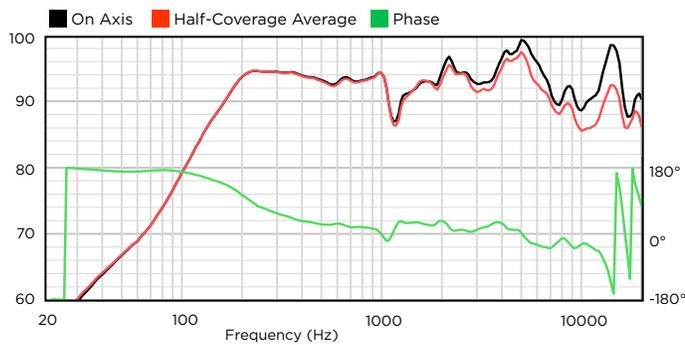
**AXIAL PROCESSED SENSITIVITY (dB SPL)<sup>8</sup>**



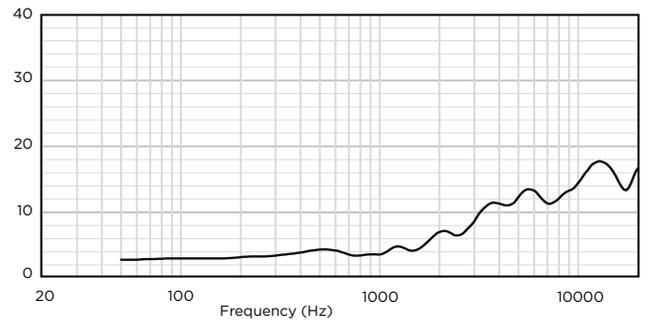
**OFF-AXIS RESPONSE (dB SPL)<sup>9</sup>**



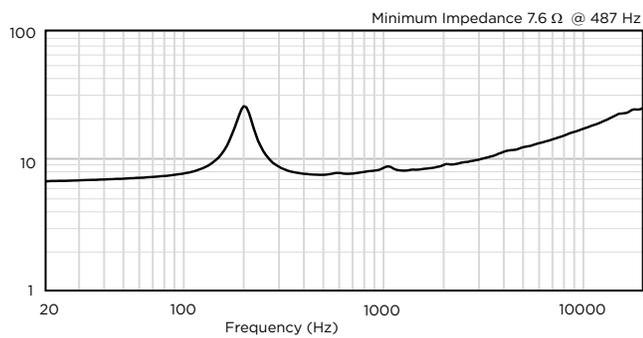
**AXIAL SENSITIVITY (dB SPL)<sup>8</sup>**



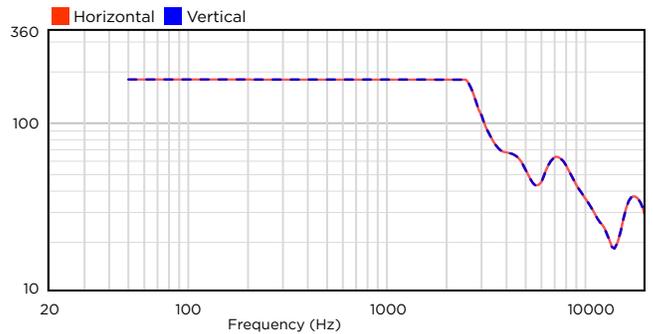
**DIRECTIVITY INDEX (dB)<sup>10</sup>**



**IMPEDANCE (Ω)**



**BEAMWIDTH (degrees)<sup>11</sup>**



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### TECHNICAL DRAWING / DIMENSIONS / FINISH

**W (bezel diameter) x D**  
223 mm x 159 mm  
(8.8" x 6.3")

**Cutout Diameter**  
193 mm (7.6")

**Unit Weight**  
2.1 kg (4.6 lbs)

**Shipping Weight (shipped in pairs)**  
TBD

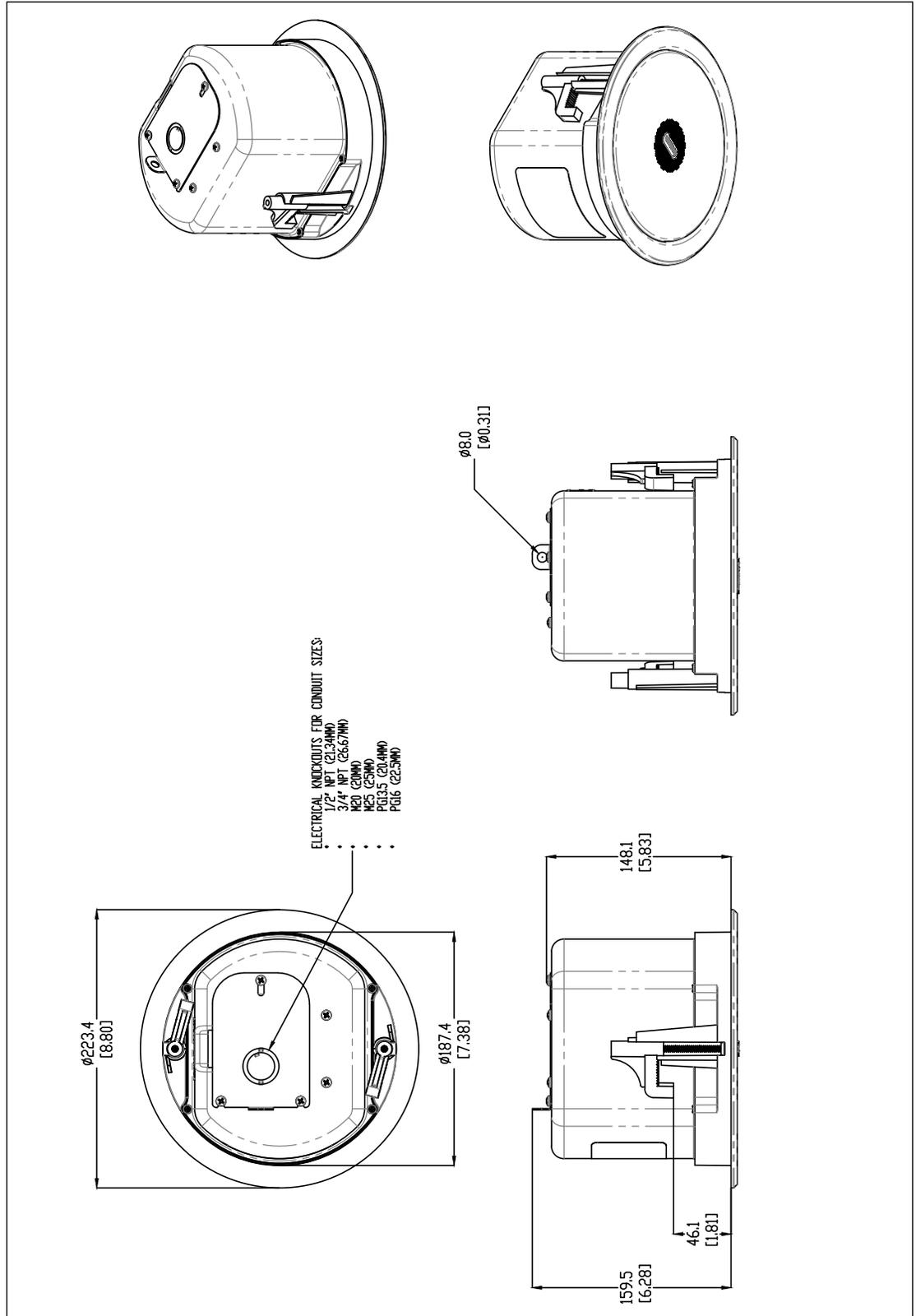
#### Grille:

Powder-coated perforated steel backed with color-matched woven fabric with safety line. White finish (RAL9016).

#### Enclosure / Finish

Back Can: Black, Matte finish Steel

Face: UL 94V-0 rated ABS plastic, paintable Black finish.

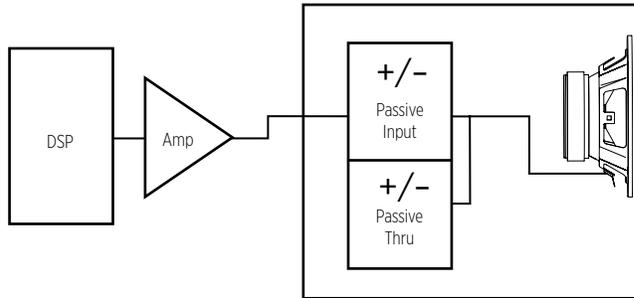


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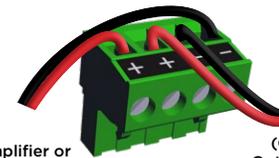
### CONNECTION DIAGRAMS



Single amp



Tap Switch (on face)



In from the amplifier or  
previous loudspeaker,  
terminals 1[+] & 4[-]

(Optional)  
Out to the next  
loudspeaker,  
terminals 2[+] & 3[-]

Input

### NOTES

- PERFORMANCE SPECIFICATIONS** All measurements are performed using a time-windowed impulse response to eliminate reflections, approximating an anechoic environment, at a distance of at least 6.0 m. All acoustic specifications are rounded to the nearest whole number. An external DSP using settings provided by Biamp is required to achieve the specified performance; further performance gains can be realized using the FIR loudspeaker optimization presets available in Biamp's Community Amplified Loudspeaker Controllers (ALC SERIES).
- OPERATING RANGE** The frequency range over which the on-axis equalized/processed response remains within 10 dB of the rated sensitivity, in accordance with IEC 60268-5.
- SENSITIVITY** The broadband SPL of the loudspeaker when pink noise is applied (band limited to the loudspeaker's Operating Range) at an input voltage of 2.83 V, in accordance with IEC 60268-5. Also listed for a voltage that would produce 1 watt into the nominal impedance. Measured in whole space with no external processing applied, except where indicated.
- NOMINAL CONTINUOUS POWER HANDLING** The maximum continuous nominal input voltage at the rated impedance that the system can withstand without damage, for a period of 2 hours using an IEC 60268-1 defined spectrum with recommended signal processing and protection filters.
- NOMINAL MAXIMUM SPL** The SPL produced when an IEC 60268-1 signal is applied, at the nominal input voltage, to the equalized/processed loudspeaker system. Referenced to a distance of 1 meter. The peak SPL represents the 2:1 (6 dB) crest factor of the IEC 60268-1 test signal.
- RATED CONTINUOUS VOLTAGE** The maximum continuous rated input voltage for the system that results in no more than a 3 dB change in the system's response during operation using an IEC 60268-1 defined spectrum with recommended signal processing and protection filters.
- RATED MAXIMUM SPL** The SPL produced when a typical program material signal is applied to the equalized/processed loudspeaker system, at a level which drives at least one subsection to its rated continuous voltage limit. Referenced to a distance of 1 meter. The peak SPL represents the 4:1 (12 dB) crest factor of the program signal.
- AXIAL (PROCESSED) SENSITIVITY** The variation in acoustic output level with frequency for a swept-sine measurement signal. The Processed measurement uses the recommended signal processing for the loudspeaker system. The other sensitivity measurements use no additional external processing. All data are referenced to 1 meter. The on-axis magnitude and phase responses, as well as the average magnitude response, calculated over one-half of the nominal coverage angles, are shown. The responses have 1/6 octave smoothing applied.
- HORIZONTAL / VERTICAL OFF-AXIS RESPONSES** The loudspeaker's magnitude response at various off-axis angles using the recommended signal processing in the operating mode which utilizes the largest number of individually amplified pass bands. The responses have 1/3 octave smoothing applied.
- DIRECTIVITY INDEX** The ratio of the on-axis SPL to the mean SPL at the same distance for all points within the measurement sphere for each given frequency; expressed in dB. The response has 1/3 octave smoothing applied.
- BEAMWIDTH** The included angle between the -6 dB points in the polar response of the loudspeaker when driven in the operating mode which utilizes the largest number of individually amplified pass bands. The responses have 1/3 octave smoothing applied.

Data presented on this data sheet represents a selection of the basic performance specifications for the model. These specifications are intended to allow the user to perform a fair, straightforward evaluation and comparison with other loudspeaker spec sheets. For a detailed analysis of this loudspeaker's performance, please download the GLL file and/or the CLF file from our website: [www.biamp.com](http://www.biamp.com).

**CAUTION:** Installation of loudspeakers should only be performed by trained and qualified personnel. It is strongly recommended that a licensed and certified professional structural engineer approve the mounting design.