

## **CEILING MICROPHONES: BIAMP BRINGS A NEW WAY TO DELIVER PROFESSIONAL AUDIO**

Audio systems should be flexible enough to accommodate multi-purpose spaces, room combining, and comply with the aesthetic requirements of the space. Not only do ceiling microphones assist with all of the above, but they also provide an upselling opportunity for integrators.

Typically, audio quality is best when the talker is close to the mic, and the mic is further from the speaker, but it's not always possible to install mics on a table. Whether it's a matter of budget, logistics, or aesthetic preferences, there are many instances where ceiling mics are preferred by the end customer.

Where ceiling mics were once viewed as a challenge to integrators, their quality and capabilities have improved, as have those of DSP algorithms, to effectively eliminate ceiling and HVAC noises as impediments to quality audio. Automatic gain control (AGC), ambient noise compensation (ANC), Biamp SpeechSense™ and Sona™ Acoustic Echo Cancellation (AEC) are examples of these evolutionary algorithms. Depending on the environment and combination of audio algorithms used, Biamp DSPs have the potential to greatly enhance ceiling mic performance.

# BIAMP-BRANDED MICS FROM AUDIX

We've partnered with Audix®, an Oregon-based manufacturer of high quality microphones, to provide integrators with a more complete Biamp solution for their customers' AV system needs. In situations where table mics are not desired, ceiling mics are a viable option for picking up a talkers' speech, while reducing the pickup of table noises such as paper shuffling or pen tapping. Biamp is proud to add the CM1-6W and CM1-6WS hanging ceiling microphones to our line of products.

The CM1-6W and CM1-6WS are 6" miniaturized, gooseneck condenser microphones with fully integrated preamps designed with very high sensitivity for distance pickup. The CM1 microphones are available with a cardioid or supercardioid capsule.

## 5 CEILING MIC BEST PRACTICES

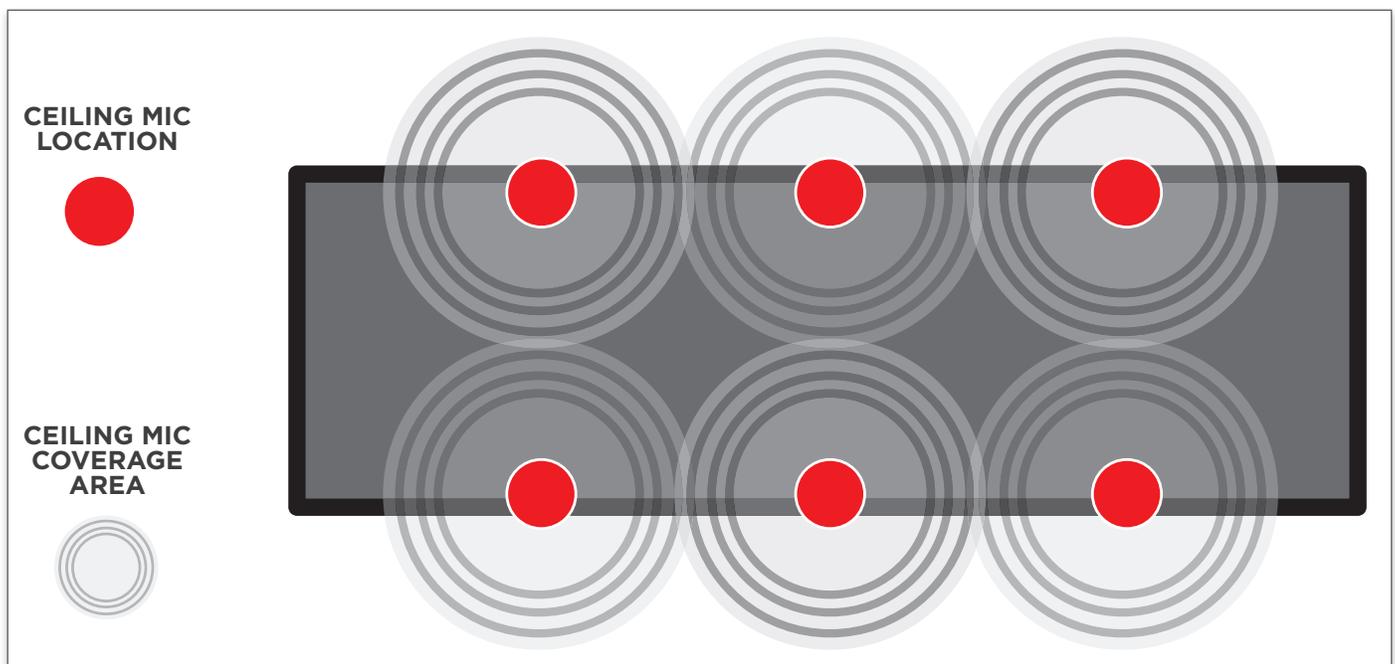
Recommend ceiling mics without hesitation when they provide a better solution for your customers. In order to ensure high intelligibility, quality, and value, it's important to follow ceiling mic best practices.

### 1. CONSIDER ROOM ACOUSTICS

Acoustically treating a room can exponentially increase the performance and intelligibility of the audio. Concrete floors, glass walls, and high ceilings do not make for an ideal environment for ceiling mics. Using acoustical modeling software is the best way to analyze the performance of a room's sound system. Biamp strongly recommends integrators offer this service to their customers.

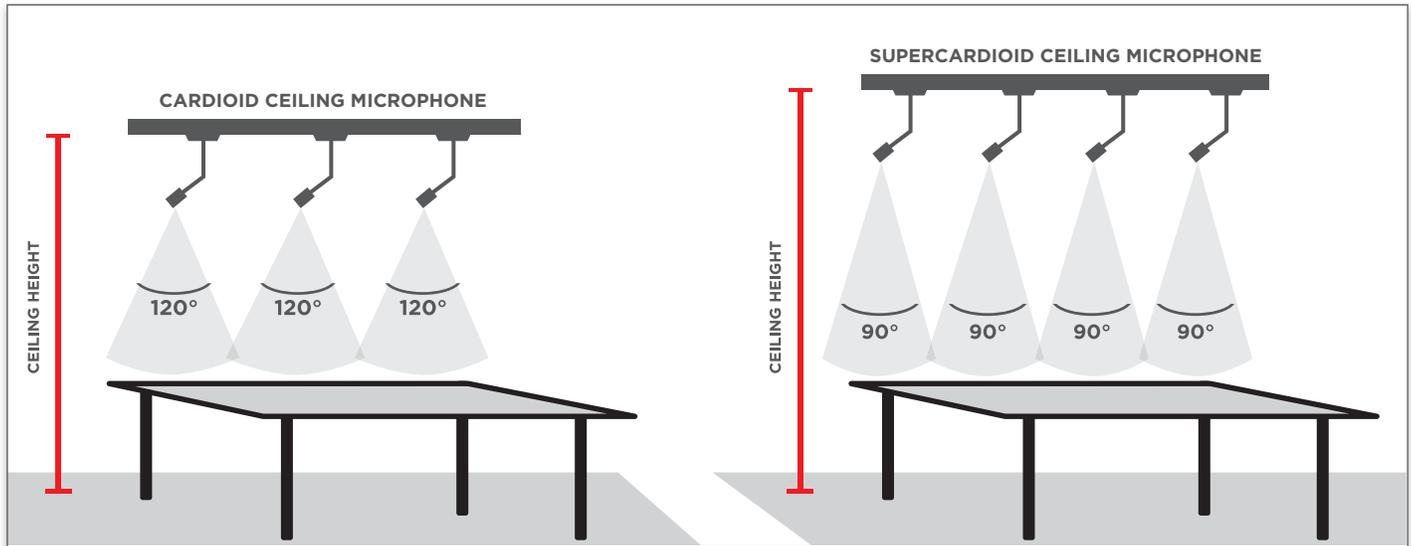
### 2. DETERMINE APPROPRIATE MIC PLACEMENT

Because ceiling mics have a large pickup area, a good rule of thumb is to calculate the distance between each mic based on the size of the room and the seating arrangement.



### 3. DETERMINE APPROPRIATE TYPE OF MIC

Depending on the specifications of the room, different mics will offer the best solution. The cardioid mic, for example, has a pickup pattern of 120°. This wider pickup pattern makes it ideal for average-to low-ceilinged rooms. The supercardioid, on the other hand, has a tighter pickup pattern of 90°, making it better for rooms with higher ceilings.



### 4. CONFIGURE DSP SETTINGS & CREATE ZONES FOR VOICE LIFT

Setting proper gain structure, making sure AEC and automatic mixing are correct, and equalizing the system are all very important steps for optimal audio performance. Preventing certain audio inputs from reaching certain speaker outputs may be necessary for maximum intelligibility.

### 5. MAKE A TEST CALL

Once the audio solution is set-up, make a test call to your office or Biamp's applications engineering team to ensure that someone who knows what to listen for can give you final support and feedback on the success of the installation.

## APPLICATIONS

.....

- **Video and Teleconferencing**
  - **Distance Learning**
  - **Surveillance**
  - **Medical Procedures**
  - **Ambient Room Pickup**
- .....

## **BIAMP CEILING MICS ENABLE CUSTOMERS TO:**

- Easily reconfigure a space
- Maintain desired room aesthetics
- Future-proof with open architecture mics

## **BIAMP CEILING MICS ENABLE INTEGRATORS TO:**

- Easily upsell AV solution package
- Provide value-add to the customer
- Purchase DSPs and mics from a single vendor

503.641.7287

[biamp.com](http://biamp.com)

[biampinfo@biamp.com](mailto:biampinfo@biamp.com)

**BIAMP**<sup>®</sup>  
S Y S T E M S