

Sound Principles

Ceilings, the Final Frontier: The Do's and Don'ts of Ceiling Microphones

Ceiling microphones are always a great alternative to table mics, when the application calls for it.

An omni-directional microphone is a good solution for surveillance in an observation or interrogation room. It can either be highly visible, or discreet and almost invisible. With its flat frequency response, the omni-directional microphone will capture EVERY bit of noise and sound in the environment, which is obviously the purpose.

Take the following circumstances for instance:

In a conference room setting, the end user or designer might not want microphones to be visible on the table. In a multi-use room where the tables are modular and can be set-up in a variety of ways, permanent installation might not be possible, or perhaps the seating arrangement changes from one meeting to the next.

For applications such as the afore-mentioned, ceiling microphones are relied upon to provide a constant level of clear and concise speech intelligibility. But, as in any other application, good practices are required as the same rules of thumb apply if mic'ing a room from above.

Additionally, suspended ceilings normally hide many different systems which generate noise at different levels. Motors, ventilation ducts, HVAC systems, speakers, even a projector or two can easily be picked up by the microphones and impact the room's acoustics. All these systems will raise the noise level of the room, and if the room is not acoustically tailored, it will greatly affect speech intelligibility.

Furthermore, even with the proper microphones in place, if they are not set up properly they will pick up the undesired noise instead of attenuating them. Lowering the position of the microphones will essentially point them further away from the noise source and reduce their level at the capsule, while raising the participants' speech level by a few decibels.

When positioned properly, a cardioid hanging microphone will effectively pick up the voices of the participants below, at a higher level, and attenuate every other sound in the room.

When positioned over a large conference table, suspended microphones can offer optimal coverage while being totally unobtrusive. With the axis pointing at the heads of the participants, rustling paper noises from the table, or a tapping pen, will be significantly lower than speech being picked up on-axis. When positioned hanging in front and just above the head, these microphones result in being very close to the source of speech, and that is exactly what good practice calls for.

The same rules apply to rooms with higher ceilings, however, these venues may require the microphones to hang slightly higher. Take an auditorium stage for example, where the participants generally stand up to perform, and sometimes stand on risers. Hyper-cardioid pattern microphones will effectively attenuate the noises around the stage while adequately capturing the performance with their longer reach, leaving them out of the way of the performers. Either hanging from trusses or installed on shock mounts, on the floor or on the walls, the 'shotgun' microphones will help capture the performance and be completely out of the way.

Clockaudio offers a wide range of ceiling microphones with different polar patterns and reach for every application. There is also a retractable option for a complete stow away of the mics when not in use. These retractable mics can be grouped and assigned to different areas of the venue.

Whatever your ceiling project calls for, Clockaudio will assist you every step of the way to make the system and the room sound "Clearly Different."

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