

# SOUNDTUBE®

## Maximizing Speaker Directivity Best Practices for Installation | FP Series

Please read the following instructions carefully before installing your SoundTube® speaker. If you have any questions regarding installation that are not answered in the following directions, please contact your local sound contractor or the SoundTube®/MSE Audio® technical support team. Contact information can be found at the bottom of the manual.

### Ensuring Focused Sound

- 1) Mitigate direct sound out of the area by enabling the built-in high pass filter if it is not already enabled. There are directions for this in the user manual, which is available on our website. This can be done with DSP on the source end as well. Low frequencies naturally disperse in a wider pattern, and the high pass filter will attenuate lower frequencies.
- 2) Make sure areas below and around the speaker are as sound absorbing as possible. Sound bounces off of hard surfaces and will disperse around the room, if the speaker is hung above a hard surface such as concrete or wood floors, sound will bounce off this surface and be heard around the room. A rubber mat or thick carpet under the speaker helps if the floor is hard. Anything that can be done to make the room less reverberant helps further.
- 3) Run the speaker at as low volume as possible, this further reduces reflected sound. A good starting point is for your content to be 6dB above ambient level.
- 4) Hang the speaker as low as possible. Coverage looks like a cone, so the closer to the listener the speaker is, the smaller the projected circular area of sound is.
- 5) Consider the limitations of physics and the speaker when designing or choosing content. Lower frequencies are more omnidirectional, so if the FP will be playing a recording of speech, a female speaker will generally work better. Also, the less dynamic range the recording has, the easier it will be to dial in the volume to the best balance of intelligibility and volume. If you have to turn the volume up so that quiet parts of a recording can be understood, louder parts will tend to bleed out.

### More Guidelines for Setting SPL

- 1) Measure ambient noise level of the venue at the busiest time.
- 2) Step outside the dome and check to see that the SPL of the dome is not too loud as compared to the ambient noise level.
- 3) Adjust equalization to match the program music being played. Note: Bass frequencies will bleed outside the dome due to their longer wavelengths.

