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Subject: Re: Measurement Information

Posted by [Wayne Parham](#) on Tue, 29 Sep 2009 14:19:51 GMT

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I'd measure outdoors, to get an idea what the speaker's response is without room interactions. I prefer ten meters at 100 watts, but you can go with five meters or even just two or three if the speakers won't handle the power. Results change at different positions, so keep that in mind.

If the listeners won't be ten meters away, it may not make sense to measure at that distance. Might be better to measure close to the distance you think they'll be used. Even better, measure at several distances and positions (on and off axis) to see what the speaker does at several angles and distances. The ideal speaker is one that produces the same response at all angles within its intended pattern, but every speaker configuration is different in this regard. That's where measurements at various positions and angles can help show you what the capabilities of the speaker are, beyond the basic (almost hypothetical) "1W/1M on-axis response curve."

If outdoors measurements show a problem, then you can work on the speaker to get the kinks out. If not, then you can start making measurements in-room, to find out where to place the speakers and arrange furniture for best results.

I would anticipate your next questions might be what distance is best, what differences are found between measurements at different distances, and whether to stand the speaker upright or facing it on its back, how to position the microphone, i.e. using a boom, centered with respect to the baffle, on the ground, etc. My suggestion would be to try different positions to see what results you get. You'll learn something.

Also try this with a point source - measure the speaker standing upright facing forward or lying on its back facing up, etc. Measure the speaker sitting on the ground facing forward and compare with it being raised on a stand. You'll learn something there too. The response in different positions is usually vastly different, so you'll learn how the environment affects the sound, and so you'll begin to learn how to setup your test to measure various things.