



Talking ***SENSITIVITY***

SPL represents one of the most useful specifications published for any transducer. It is a representation of the efficiency and volume you can expect from a device relative to the input power. This is important because it requires twice the power to increase the volume of a speaker by 3dB. For instance, to increase the volume of a 50W guitar amplifier 3dB (an audible, but relatively small amount), it would require 100W of power. The same outcome could be achieved more economically by replacing the speaker with a model that is 3dB more sensitive.

Loudspeaker manufacturers follow different rules when obtaining this information. You cannot necessarily compare like for like when looking at the sensitivities of different manufacturers' loudspeakers.

Most manufacturers determine sensitivity by putting the speaker in a baffle and measuring the sound pressure level at one meter, with 1W of input power across the frequency response curve. The problem is that one manufacturer may place the microphone one meter from the dust cap of the speaker and gain a distinct advantage over the manufacturer who placed the microphone one meter from the baffle board. The Eminence method is to measure with the microphone one meter from the baffle board. We then take the frequency response curve and points across what we have specified as the usable frequency range to obtain the average sound pressure level (SPL). Eminence believes this method is extremely accurate and represents exactly what you can expect from the transducer in a specific application.

Although sensitivity is important, be sure not to buy your transducer based on efficiency alone. You must be willing to compromise to get your ideal combination of low-frequency reproduction and sensitivity. If you have lots of power, you can have awesome low-frequency reproduction and maintain lots of volume from a speaker with lower sensitivity. On the other hand, if power is a consideration, you may want to sacrifice some low-frequency reproduction in order to maintain a higher sound pressure level.

As a comparison, think of an automobile. If all you do with your car is drive a few miles to work each day, you can probably get by with a small, efficient compact car that has less than 100 horsepower. On the other hand, maybe you carpool and carry six other people to work with you. In that case, you need a larger, more powerful car. The end result is you gave up efficiency but you were doing much more work. The key with loudspeaker selection is to choose the loudspeaker that offers you what you need in terms of low-frequency reproduction, but has the best sensitivity in its class.

