



The Mark of the Professional...

TECH NOTE: Speaker Sensitivity

This important specification is a measure of the dB SPL (sound pressure level) that can be expected from a speaker relative to its power input. Raising the SPL of a speaker 3dB requires doubling the amplifier power, so a small increase in loudspeaker output may require a significant increase in amplifier costs. The most common standard is “one watt input measured at a distance of one meter on axis.” Unfortunately, this measurement will not be accurate unless the actual test is done at a greater distance and the results normalized since the one meter test distance does not put the test microphone in the loudspeaker’s far field. As a result, knowledge of a manufacturer’s testing methodology for determining specifications is a key factor in knowing the actual load of a sound system.

“Sensitivity,” which is expressed in dB, should not be confused with “efficiency” that is expressed as a percentage of power out relative to power in. Efficiency data for loudspeakers suffers from many problems such as failure to consider variations in frequency response. For an excellent discussion of this subject, see Jay Mitchell’s Chapter 17 in the 3rd edition of Handbook for Sound Engineers edited by Glen Ballou (published by Focal Press).

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J.W. Davis & Company • 3030 Canton Street • P.O. Box 710219 • Dallas, Texas 75371-0219

Sales 800-527-5705 • Fax 800-388-9106 • Corp 214-651-7341 • Fax 214-939-0328 • www.jwd.com • jwd@jwd.com