

ANSI/CEA Standard

Standard Method of Measurement
for In-Home Loudspeakers

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FOREWORD

This standard describes an improved method for measuring and reporting the performance of a loudspeaker in a manner that should help consumers better understand the performance of the loudspeaker and convey a reasonably good representation of how it may sound in a room based on its off-axis response and how this response affects the consumer's experience.

Unlike previously published standards, this standard describes how to measure and report the directivity of a loudspeaker, whether it stands by itself or is mounted in or on a wall or ceiling. It also describes how to use this directivity data to estimate the in-room frequency response that more recent research has shown correlates well to subjective listening preferences of consumers.

It describes how to measure and report the maximum on-axis usable sound pressure level of a loudspeaker, and how to measure and report the impedance of a loudspeaker. It also describes how to calculate and report the size of the power amplifier needed for the consumer to get the desired SPL from the loudspeaker.

Finally, it includes a number of informational annexes to help readers gain a more thorough understanding of techniques for acquiring loudspeaker data in both anechoic and non-anechoic environments, as well as methods for using this acquired data to predict loudspeaker performance.

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Standard Method of Measurement for In-Home Loudspeakers

1 Scope

This standard describes how to determine the frequency response, directivity and maximum output capability of a residential loudspeaker. It is intended to determine the audio performance of a loudspeaker, not the loudspeaker's ability to survive a given input signal.

This standard applies only to loudspeaker systems, and not to raw transducers.

2 References

2.1 Normative References

The following standards contain provisions that, through reference in this text, constitute normative provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed here.

2.1.1 Normative Reference List

IEC Publication 225, *Octave, Half-Octave, and Third-Octave Band Filters Intended for the Analysis of Sound and Vibration* (1966)

2.1.2 Normative Reference Acquisition

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