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AES standard on acoustics - Sound source modeling - Loudspeaker polar radiation measurements

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Abstract

This standard describes how the measurements of loudspeaker polar radiation data shall be made and documented. This acquired data is suitable for application in room acoustic, electro-acoustic, and sound system predictions, and loudspeaker data sheets.

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Contents

Foreword

This foreword is not part of the AES56-2008, *AES standard on acoustics - Sound source modeling - Loudspeaker polar radiation measurements*.

This document was prepared by a writing group of the SC-04-01 Working Group on Acoustics and Sound Source Modeling of the SC-04 Subcommittee on Acoustics in fulfillment of project AES-X83, Loudspeaker Polar Radiation Measurements. The following members contributed: W. Ahnert, B. Olson, S. Feistel, R. Campbell, J. Malek, R. Sauro, B. Dalenback, J. Woodgate, and M. Yonge.

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Addendum 2009-03-10

The notes to clause 4.2.3.1, 4.2.3.2, and 4.2.3.3 have been updated to clarify various practical cases.

Note on normative language

In AES standards documents, sentences containing the word “shall” are requirements for compliance with the document. Sentences containing the verb “should” are strong suggestions (recommendations). Sentences giving permission use the verb “may”. Sentences expressing a possibility use the verb “can”.

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Introduction

There are a variety of existing practices for measuring the polar radiation characteristics of loudspeakers that are incompatible with each other. Most loudspeaker manufacturers have implemented, or are implementing, measuring systems with a spatial resolution of at least five-degrees. For the spectral resolution, these new measuring systems allow the data to be supplied in the form of impulse responses (or derived frequency domain representations) rather than processed 1/3-octave values. At the rate that storage capacity and desktop computer speeds are increasing, larger data files are no longer seen as a significant obstacle to meaningful precision.

1 Scope

This standard specifies how the angular measurements of loudspeaker polar radiation data shall be made and documented. This acquired data is suitable for application in room acoustic, electro-acoustic, and sound system predictions, and loudspeaker data sheets.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

No referenced documents are required for the application of this document.