

Electroacoustics — Random-incidence and diffuse-field calibration of sound level meters

The European Standard EN 61183:1994 has the status of a
British Standard

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- British Hearing Aid Industry Association
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- Institute of Sound and Vibration Research
- Institution of Electrical Engineers
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National foreword

This British Standard has been prepared by Technical Committee EPL/29 and is the English language version of EN 61183:1994, *Electroacoustics — Random-incidence and diffuse-field calibration of sound level meters*, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 1183:1994 published by the International Electrotechnical Commission (IEC).

Cross-references

Publication referred to	Corresponding British Standard
IEC 50(801):1994	BS 4727 <i>Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms</i> Part 3 <i>Terms particular to telecommunications and electronics</i> Group 08:1995 <i>Acoustics and electroacoustics</i> BS EN 60651:1994 <i>Sound level meters</i>
EN 60651:1994 (IEC 651:1979)	
EN 60804:1994 (IEC 804:1985)	BS EN 60804:1994 ^a <i>Specification for integrating-averaging sound level meters</i>
EN 61094-1:1994 (IEC 1094-1:1992)	BS EN 61094 <i>Measurement microphones</i> Part 1:1995 <i>Specifications for laboratory standard microphones</i>

^a Formerly BS 6698:1986.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Acoustic measuring instruments, sound level meters, calibration, measurements, sound pressure, instrument sensitivity, testing conditions

English version

Electroacoustics — Random-incidence and diffuse-field calibration of sound level meters

(IEC 1183:1994)

Electroacoustique — Etalonnage des
sonomètres sous incidence aléatoire et en
champ diffus
(CEI 1183:1994)

Elektroakustik — Kalibrierung von
Schallpegelmessern in einem Schallfeld mit
stochastischem Schalleinfall und im diffusen
Schallfeld
(IEC 1183:1994)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 29(CO)167, as prepared by IEC Technical Committee 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote in July 1993.

The reference document was approved by CENELEC as EN 61183 on 8 March 1994.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-07-01
- latest date of withdrawal of conflicting national standards (dow) 1995-07-01

Annexes designated “normative” are part of the body of the standard. Annexes designated “informative” are given only for information. In this standard, Annex A and Annex B are informative and Annex ZA is normative.

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1 Scope

1.1 This International Standard describes a free-field calibration method for determining random-incidence sensitivity levels of sound level meters. Additionally, the standard describes a diffuse-field calibration method for determining diffuse-field sensitivity levels.

1.2 For the purpose of this International Standard, diffuse-field sensitivity level may be used interchangeably with random-incidence sensitivity level. Selection of calibration method depends on the facility available.

1.3 Results of calibrations conducted in accordance with this standard depend upon which components of a sound level meter are exposed to the sound field.

1.4 For the purpose of this standard, a sound level meter is considered to be a conventional sound level meter, an integrating-averaging sound level meter, or any other sound measuring system.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(801):1992, *International Electrotechnical Vocabulary (IEV), Chapter 801: Acoustics and electroacoustics*.

IEC 651:1979, *Sound level meters*.

IEC 804:1985, *Integrating-averaging sound level meters*.

IEC 1094-1:1992, *Measurement microphones — Part 1: Specifications for laboratory standard microphones*.

IEC 1260:199X, *Electroacoustics — Octave-band and fractional octave-band filters (in preparation)*.

ISO 266:1975, *Acoustics — Preferred frequencies for measurements (revision in preparation)*.

ISO 3741:1988, *Acoustics — Determination of sound power levels of noise sources — Precision methods for broad-band sources in reverberation rooms*.

ISO 3745:1977, *Acoustics — Determination of sound power levels of noise sources — Precision methods for anechoic and semi-anechoic rooms*.

3 Definitions

3.1 For the definitions of terms used in this International Standard, reference should be made to IEC 50(801). Certain additional terms are defined below for the purpose of this standard.

3.2

reference direction

the direction of sound incidence specified by the manufacturer for testing the free-field sensitivity level and directional characteristics of a sound level meter

3.3

random incidence sound field

at a given location and for a given frequency or frequency band centered on that frequency, a sound field consisting of free sound waves arriving successively from all directions with equal probability and level

3.4

diffuse sound field

at a given location and for a given frequency or frequency band centred on that frequency, a sound field consisting of sound waves arriving more or less simultaneously from all directions with equal probability and level