

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electroacoustics – Measurement microphones –
Part 2: Primary method for pressure calibration of laboratory standard
microphones by the reciprocity technique**

**Electroacoustique – Microphones de mesure –
Partie 2: Méthode primaire pour l'étalonnage en pression des microphones
étalons de laboratoire par la méthode de réciprocité**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROACOUSTICS –
MEASUREMENT MICROPHONES –****Part 2: Primary method for pressure calibration of laboratory
standard microphones by the reciprocity technique**

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International Standard IEC 61094-2 has been prepared by IEC technical committee 29: Electroacoustics.

This second edition cancels and replaces the first edition published in 1992. This second edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- an update of Clause 6 to fulfil the requirements of ISO/IEC Guide 98-3;
- an improvement of the heat conduction theory in Annex A;
- a revision of Annex F: Physical properties of humid air.

The text of this standard is based on the following documents:

FDIS	Report on voting
29/671/FDIS	29/676/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61094 series, published under the general title *Electroacoustics – Measurement microphones*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

ELECTROACOUSTICS – MEASUREMENT MICROPHONES –

Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique

1 Scope

This part of International Standard IEC 61094

- is applicable to laboratory standard microphones meeting the requirements of IEC 61094-1 and other types of condenser microphone having the same mechanical dimensions;
- specifies a primary method of determining the complex pressure sensitivity so as to establish a reproducible and accurate basis for the measurement of sound pressure.

All quantities are expressed in SI units.

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.

IEC 61094-1:2000, *Measurement microphones – Part 1: Specifications for laboratory standard microphones*

ISO/IEC Guide 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*¹

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61094-1 and ISO/IEC Guide 98-3 as well as the following apply.

3.1

reciprocal microphone

linear passive microphone for which the open circuit reverse and forward transfer impedances are equal in magnitude

3.2

phase angle of pressure sensitivity of a microphone

for a given frequency, the phase angle between the open-circuit voltage and a uniform sound pressure acting on the diaphragm

NOTE Phase angle is expressed in degrees or radians (° or rad).

¹ ISO/IEC Guide 98-3:2008 is published as a reissue of the Guide to the expression of uncertainty in measurement (GUM), 1995.