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AMERICAN NATIONAL STANDARD

**Measurement Microphones – Part 2:
Primary Method for Pressure Calibration of
Laboratory Standard Microphones by the
Reciprocity Technique**

ANSI S1.15-2005/Part 2

Accredited Standards Committee S1, Acoustics

Standards Secretariat
Acoustical Society of America
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**ANSI S1.15- 2005 /Part 2
(Replaces ANSI S1.10-1966)**

AMERICAN NATIONAL STANDARD

**Measurement Microphones – Part 2:
Primary Method for Pressure Calibration of
Laboratory Standard Microphones by the
Reciprocity Technique**

Secretariat

Acoustical Society of America

Approved by:

**American National Standards Institute, Inc.
9 March 2005**

Abstract

This Standard specifies a primary method for the calibration of microphones by the reciprocity technique. The specifications are intended to ensure that primary calibration with the reciprocity technique can attain the highest accuracy. The technical requirements of this American National Standard is identical to International Standard IEC 61094-2: 1992, "Measurement microphones -- Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique". Various improvements have been made to include recent technical information.

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Contents

1	Scope	1
2	Normative references	1
3	Definitions.....	1
4	Reference environmental conditions.....	2
5	Principles of pressure calibration by reciprocity.....	3
5.1	General principle	3
5.2	Basic expressions	3
5.3	Insert voltage technique.....	4
5.4	Evaluation of the acoustic transfer impedance	5
5.5	Heat-conduction correction	7
5.6	Capillary tube correction	7
5.7	Final expressions for the pressure sensitivity	8
6	Factors influencing the pressure sensitivity	8
6.1	General	8
6.2	Polarizing voltage.....	9
6.3	Ground shield reference configuration.....	9
6.4	Pressure distribution over the diaphragm.....	9
6.5	Dependence on environmental conditions.....	10
7	Calibration uncertainty components.....	10
7.1	General	10
7.2	Electrical transfer impedance.....	11
7.3	Acoustical transfer impedance.....	11
7.4	Polarizing voltage.....	13
7.5	Uncertainty on pressure sensitivity level.....	13
	Annex A (normative) Heat conduction in a closed cavity	17
	A.1	14
	A.2 Bibliography for Annex A	15
	Annex B (normative) Acoustic impedance of a capillary tube	17
	B.1 Determination by the transmission line theory.....	17
	B.2 Bibliography for Annex B	18
	Annex C (informative) Examples of cylindrical couplers for calibration of microphones.....	21

C.1	General	21
C.2	Plane-wave couplers.....	21
C.3	Large-volume couplers	23
C.4	Bibliography for Annex C	24
Annex D (informative) Environmental influence on the sensitivity of microphones		25
D.1	General	25
D.2	Dependence on static pressure	25
D.3	Microphone sensitivity pressure correction.....	26
D.4	Dependence on temperature	28
D.5	Bibliography for Annex D	30
Annex E (informative) Methods for determining microphone parameters.....		31
E.1	Introduction	31
E.2	Front cavity depth	31
E.3	Front cavity volume and equivalent volume.....	31
E.4	Acoustic impedance of the microphone.....	32
Annex F (informative) Physical properties of air		33
F.1	Properties.....	33
F.2	Nomenclature:.....	33
F.3	Density of humid air	34
F.4	Speed of sound in air	35
F.5	Ratio of specific heats of air.....	37
F.6	Viscosity and thermal diffusivity of air for capillary correction	37
F.7	Bibliography for Annex F.....	39
Annex G (informative) A numerical example for the calculation of estimated expanded uncertainty		41
Bibliography.....		43

Tables

Table A.1 — Values for E_v	16
Table B.1a — Real part of $\underline{Z}_{a,c}$ in gigapascal-second per cubic metre ($\text{GPa}\cdot\text{s}\cdot\text{m}^{-3}$).....	19
Table B.1b — Imaginary part of $\underline{Z}_{a,c}$ in gigapascal-second per cubic metre ($\text{GPa}\cdot\text{s}\cdot\text{m}^{-3}$).....	20
Table C.1 — Nominal dimensions for plane-wave couplers	22
Table C.2 — Nominal dimensions and tolerances for large-volume couplers	24

Table C.3 — Experimentally determined wave-motion corrections for the air-filled large-volume coupler used with type LS1P microphones	24
Table D.1—Coefficients of the polynomial for calculating the microphone sensitivity pressure corrections using Equations (D.1) or (D.2), and temperature corrections using Equation (D.3) for Brüel and Kjær Type 4160 and Type 4180 microphones	30
Table F.1 — Coefficient constants [F.6] for the computation of c/c_0 and κ/κ_0	38
Table F2 — Recommended values of the quantities in clauses F.1 – F.5.....	38
Table F3 — Recommended reference values applicable to dry air at 0 °C and 101.325 kPa.....	38
Table G.1 — A numerical example for the calculation of estimated expanded uncertainty of microphone sensitivity level with a particular microphone calibration arrangement at 250 Hz.....	41

Figures

Figure 1 — Equivalent circuit for evaluating the acoustic transfer impedance $Z_{a,1}$	5
Figure 2 — Equivalent circuit for evaluating $Z'_{a,12}$ when coupler dimensions are small compared with wavelength	6
Figure 3 — Equivalent circuit for evaluating $Z'_{a,12}$, when plane wave transmission in the coupler can be assumed.....	7
Figure C.1 — Mechanical configuration of plane-wave couplers.....	22
Figure C.2 — Mechanical configuration of large-volume couplers.....	23
Figure D.1 — Examples of static pressure coefficient of LS1P and LS2P microphones relative to the low-frequency value as a function of relative frequency f/f_0	26
Figure D.2 — The variation of the slopes of sensitivity correction curves with frequency for three Brüel and Kjær Type 4160 microphones. The curve is obtained with an empirical equation for the computation of microphone sensitivity pressure correction. See Eq. (D.1).	27
Figure D.3 – General frequency dependence of that part of the temperature coefficient for LS1P and LS2P microphones caused by the variation in the impedance of the enclosed air.....	28

Foreword

[This Foreword is for information only, and is not a part of the American National Standard ANSI S1.15 - 200X/Part 2 American National Standard American National Standard Measurement Microphones – Part 2: Primary Method for Pressure Calibration of laboratory Standard Microphones by the Reciprocity Technique].

This standard comprises a part of a group of definitions, standards, and specifications for use in acoustics. It was developed and approved by Accredited Standards Committee S1 Acoustics, under its approved operating procedures. Those procedures have been accredited by the American National Standards Institute (ANSI). The Scope of Accredited Standards Committee S1 is as follows:

Standards, specifications, methods of measurement and test, and terminology in the field of physical acoustics, including architectural acoustics, electroacoustics, sonics and ultrasonics, and underwater sound, but excluding those aspects which pertain to biological safety, tolerances, and comfort.

The technical requirements in this American National Standard are identical to the international standard IEC 61094-2 1992-03, *Measurement Microphones – Part 2: Primary Method for Pressure Calibration of Laboratory Standard Microphones by the Reciprocity Technique*. Various improvements have been made to include the latest information on pressure and temperature coefficients for microphone sensitivity correction and physical properties of air.

This standard replaces ANSI S1.10-1966 American National Standard Method for the Calibration of Microphones.

Annexes A and B form an integral part of this standard.

Annexes C, D, E, F, and G are for information only.

At the time this Standard was submitted to Accredited Standards Committee S1, Acoustics for approval, the membership was as follows:

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G.S.K. Wong, *Vice-Chair*
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Working Group S1/WG 1 Standard Microphones, which assisted Accredited Standards Committee S1, Acoustics, in the development of this standard, had the following membership.

V. Nedzelnitsky, Chair

J. Arrington	R.P. Wagner
E. Burnett	G.S.K. Wong

Suggestions for improvements of this standard will be welcomed. They should be sent to Accredited Standards Committee S1, Acoustics, in care of the Standards Secretariat of the Acoustical Society of America, 35 Pinelawn Road, Suite 114E, Melville, New York 11747-3177. Telephone: 631-390-0215; FAX: 631-390-0217; E-mail: asastds@aip.org

American National Standard

Measurement Microphones – Part 2: Primary Method for Pressure Calibration of Laboratory Standard Microphones by the Reciprocity Method

1 Scope

This standard

- is applicable to laboratory standard microphones meeting the requirements of ANSI S1.15-1997/Part 1 (R2001) and other types of condenser microphones having the same mechanical dimensions;
- specifies a primary method of determining the pressure sensitivity to establish a reproducible and accurate basis for the measurement of sound pressure.

2 Normative references

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

ANSI S1.1-1994 (R 1999) *American National Standard Acoustical Terminology*.

ANSI S1.15-1997/Part 1 (R2001), *American National Standard Measurement microphones – Part 1: Specifications for Laboratory Standard Microphones*.

ANSI/IEEE 260.4-1996 (R2002) *American National Standard Letter Symbols and Abbreviations for Quantities Used in Acoustics*.

IEC 60050-801:1994 *International electrotechnical vocabulary – Chapter 801: Acoustics and electroacoustics*.

Guide to the expression of uncertainty in measurement, 1995, BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OILM

3 Definitions

For the purposes of this standard, the terms and definitions given in ANSI S1.1:1994, IEC 60050-810:1994, and ANSI/IEEE 260.45-1996 (R2002), and the following apply

NOTE Boldface symbols represents complex quantities.