



NSAI
Standards

Irish Standard
I.S. EN ISO 15212-2:2002

Oscillation-type density meters - Part 2: Process instruments for homogeneous liquids (ISO 15212-2:2002)

I.S. EN ISO 15212-2:2002

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NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

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Oscillation-type density meters - Part 2: Process instruments for
homogeneous liquids (ISO 15212-2:2002/Cor 1:2008)

Densimètres à oscillation - Partie 2:
Instruments industriels pour liquides
homogènes (ISO 15212-2:2002/Cor
1:2008)

Dichtemessgeräte nach dem
Schwingerprinzip - Teil 2: Prozessgeräte für
homogene Flüssigkeiten (ISO 15212-
2:2002/Cor 1:2008)

This corrigendum becomes effective on 18 February 2009 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 18 février 2009 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 18. Februar 2009 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

EN ISO 15212-2:2002/AC:2009 (E) **I.S. EN ISO 15212-2:2002**

Endorsement notice

The text of ISO 15212-2:2002/Cor.1:2008 has been approved by CEN as a European Corrigendum without any modification.



I.S. EN ISO 15212-2:2002
INTERNATIONAL STANDARD ISO 15212-2:2002
TECHNICAL CORRIGENDUM 1

Published 2008-12-15

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Oscillation-type density meters —

Part 2:

Process instruments for homogeneous liquids

TECHNICAL CORRIGENDUM 1

Densimètres à oscillations —

Partie 2: Instruments industriels pour liquides homogènes

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO 15212-2:2002 was prepared by Technical Committee ISO/TC 48, *Laboratory equipment*, Subcommittee SC 4, *Density measuring instruments*.

Page 1, Clause 2

Replace the references to IEC 61326-1 and to the *Guide to the Expression in Measurement (GUM)* with the following:

IEC 61326-1, *Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 1: General requirements*

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

Page 4, 6.1

Replace the sentence in 6.1 with the following text:

“All the tests of Clause 6 are intended to be type tests and to be performed at a measurement temperature of 20 °C if not otherwise specified in the text.

When the density meter is required for use in a country which has adopted a standard reference temperature of 27 °C (the alternative recommended for tropical use), this figure shall be substituted for 20 °C and all temperatures representing differences in temperature compared to 20 °C shall be replaced by corresponding temperatures, e.g., in 6.2.1.2, $(10 \pm 1) ^\circ\text{C}$ shall be replaced by $(17 \pm 1) ^\circ\text{C}$ and $(30 \pm 1) ^\circ\text{C}$ by $(37 \pm 1) ^\circ\text{C}$.”

I.S. EN ISO 15212-2:2002

EUROPEAN STANDARD

EN ISO 15212-2

NORME EUROPÉENNE

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English version

Oscillation-type density meters - Part 2: Process instruments for homogeneous liquids (ISO 15212-2:2002)

Densimètres à oscillation - Partie 2: Instruments industriels pour liquides homogènes (ISO 15212-2:2002)

Dichtemessgeräte nach dem Schwingerprinzip - Teil 2: Prozessgeräte für homogene Flüssigkeiten (ISO 15212-2:2002)

This European Standard was approved by CEN on 1 March 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

I.S. EN ISO 15212-2:2002

EN ISO 15212-2:2002 (E)

CORRECTED 2002-04-17

Foreword

This document (ISO 15212-2:2002) has been prepared by Technical Committee ISO/TC 48 "Laboratory glassware and related apparatus" in collaboration with Technical Committee CEN/TC 332 "Laboratory equipment", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2002, and conflicting national standards shall be withdrawn at the latest by September 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 15212-2:2002 has been approved by CEN as a European Standard without any modifications.

NOTE Normative references to International Standards are listed in annex ZA (normative).

Annex ZA

(normative)

Normative references to International Publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 15212-1	1998	Oscillation-type density meters - Part 1: Laboratory instruments	EN ISO 15212-1	1999

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I.S. EN ISO 15212-2:2002

INTERNATIONAL STANDARD

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Oscillation-type density meters —

Part 2:

Process instruments for homogeneous liquids

Densimètres à oscillation —

Partie 2: Instruments industriels pour liquides homogènes



Reference number
ISO 15212-2:2002(E)

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 15212 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15212-2 was prepared by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, Subcommittee SC 4, *Density measuring instruments*.

ISO 15212 consists of the following parts, under the general title *Oscillation-type density meters*:

- *Part 1: Laboratory instruments*
- *Part 2: Process instruments for homogeneous liquids*

Introduction

Density values of pure water at different temperatures and information on how to calculate the density values at different pressures can be found in ISO 15212-1:1998, annex A.

I.S. EN ISO 15212-2:2002

Oscillation-type density meters —

Part 2: Process instruments for homogeneous liquids

1 Scope

This part of ISO 15212 specifies metrological requirements, among others, for oscillation-type density meters as well as for functional units (see 4.2) of oscillation-type density meters, which are used in process for all kinds of homogeneous liquids. This includes liquified gases. Instructions and methods for installation, preadjustment, adjustment and calibration of process instruments are also given. The instruments are either integral systems or functional units, which can be combined into an integral measuring system.

This part of ISO 15212 does not describe the method of use of process density meters for particular applications or products, e.g. petroleum products or beverages. Such methods of use can be defined by relevant institutions such as ISO or responsible Government agencies.

This part of ISO 15212 does not define an instrument specification for any particular application. For this information reference should be made to the relevant standard covering the method of use.

This part of ISO 15212 is addressed to manufacturers of density meters and to bodies, testing and certifying the conformity of density meters. This part of ISO 15212 also gives recommendations for adjustment and calibration of process density meters.

Oscillation-type density meters used in laboratories are addressed in ISO 15212-1.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 15212. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 15212 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 15212-1:1998, *Oscillation-type density meters — Part 1: Laboratory instruments*

IEC 61010-1, *Safety requirements for electrical equipment for measurement, control and laboratory use — Part 1: General requirements*

IEC 61326-1, *Electrical equipment for measurement, control and laboratory use — EMC requirements*

Guide to the Expression of Uncertainty in Measurement (GUM). BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML

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