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National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 61582:2006

ICS 13.280

RADIATION PROTECTION INSTRUMENTATION - IN VIVO COUNTERS - CLASSIFICATION, GENERAL REQUIREMENTS AND TEST PROCEDURES FOR PORTABLE, TRANSPORTABLE AND INSTALLED EQUIPMENT

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61582

May 2006

ICS 13.280

English version

Radiation protection instrumentation - In vivo counters - Classification, general requirements and test procedures for portable, transportable and installed equipment

(IEC 61582:2004, modified)

Instrumentation pour la radioprotection - Systèmes de mesure in vivo - Classification, exigences générales et procédures d'essai pour les appareils portables, mobiles ou à poste fixe (CEI 61582:2004, modifiée)

Strahlenschutz-Messgeräte - Einrichtungen für die in-vivo-Überwachung - Ganz- und Teilkörperzähler - Klassifizierung, allgemeine Anforderungen und Prüfverfahren für tragbare, transportable und festinstallierte Einrichtungen (IEC 61582:2004, modifiziert)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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Ref. No. EN 61582:2006 E

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Foreword

The text of the International Standard IEC 61582:2004, prepared by SC 45B, Radiation protection instrumentation, of IEC TC 45, Nuclear instrumentation, together with common modifications prepared by the CENELEC BTTF 111-3, Nuclear instrumentation and radiation protection instrumentation, was submitted to the formal vote and was approved by CENELEC as EN 61582 on 2006-02-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-02-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-02-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61582:2004 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 Scope and object

Delete in the 10th paragraph, second line: “of the whole body monitor”.

3 Terms and definitions

3.10 relative intrinsic error

Delete the last word of the last paragraph: “activity”.

3.13 energy resolution

Extend the term in order to read “relative energy resolution”.

Delete “full width at half maximum (FWHM)” below the indication of the term.

Shift the first paragraph behind the formula and **start** the shifted paragraph with “Where the full width is measured …”.

Replace in the text in front of the formula “R_e” with “ε_R,”

Replace in the formula “*FWHM*” with “ε_R,”

Delete the “%” at the end of the formula.

4 Classification

4.1 General classification

In the first line, **replace** “type of elements” with “radionuclides”.

7 Characteristics of equipment for high-energy emitter measurements 100 keV to 3 MeV

7.3 Energy resolution

In the second paragraph, **replace** “9 %” with “10 %”.

7.4 Integral non-linearity

In the first and second paragraph, **replace** “conversion response (integral non-linearity)” with “integral non-linearity (conversion response)”.

8 Performance requirements and test procedures for low-energy emitter measurements

8.1 General test procedures

8.1.2 Tests performed under standard test conditions

Replace reference to “Tables 2, 3 and 4” with reference to “Tables 2 and 3”.

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8.4 Radiation characteristics

8.4.2 Linearity (in relation to activity)

8.4.2.3 Expression of results

Correct the explanation of F_{SA} in order to read “is the relative uncertainty of the conventionally true activity of the test phantom in per cent (95 % confidence)”,

extend the explanation of F_{SR} in order to read “... of the test phantom relative to the other sources ...”

8.4.4 Determination of the integral non-linearity (INL) error

8.4.4.2 INL determination

Insert in the first paragraph behind “conversion characteristics”: “(channel number N versus energy E_γ)”,

replace the first explanation below the formula with “the channel number for energy ZERO”

and in the second explanation, **replace** “k” with “K”

8.4.8 Determination of the maximum count rate

8.4.8.2 Method of test

Replace in the formula “$C_2{}^1$” with “$C_1{}^2$”

8.4.9 Determination of stability

8.4.9.2 Method of test

Replace in the last formula and the paragraph in front of it “F” with “F_{inst}”.

8.4.10 Energy resolution measurement

8.4.10.1 Determination method

In the second paragraph and in the last paragraph, **replace** reference to 8.4.4 with reference to 8.4.9.

8.5 Environmental performance characteristics

8.5.2.4 Immunity to conducted disturbances

8.5.2.4.2 Method of test

Under a), **replace** “150 kHz to at” with “150 kHz to 80 MHz at”.

8.5.3 Ambient temperature

8.5.3.2 Method of test

In the second paragraph, **replace** the first reference to 8.4.4 with reference to 8.4.9.

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