



NSAI
Standards

Irish Standard
I.S. EN 62363:2011

Radiation protection instrumentation - Portable photon contamination meters and monitors (IEC 62363:2008 (MOD))

I.S. EN 62363:2011

Incorporating amendments/corrigenda issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD

EN 62363

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2011

ICS 13.280

English version

**Radiation protection instrumentation -
Portable photon contamination meters and monitors
(IEC 62363:2008, modified)**

Instrumentation pour la radioprotection -
Appareils portables de mesure et de
surveillance de la contamination par des
photons
(CEI 62363:2008, modifiée)

Strahlenschutz-Messgeräte -
Tragbare Oberflächenkontaminations-
Messgeräte und -Überwachungsgeräte für
Photonenstrahlung
(IEC 62363:2008, modifiziert)

This European Standard was approved by CENELEC on 2011-06-20. CENELEC 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 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

The text of the International Standard IEC 62363:2008, prepared by SC 45B, Radiation protection instrumentation, of IEC TC 45, Nuclear instrumentation, together with the common modifications prepared by the Technical Committee CENELEC TC 45B, Radiation protection instrumentation, was submitted to the formal vote and was approved by CENELEC as EN 62363 on 2011-06-20.

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) 2012-06-20

- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2014-06-20

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62363:2008 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

5 General characteristics

5.1 Classification

Last line, **replace** “Less than 10 keV” with “Less than 20 keV”

6 General test procedures

6.3 Reference radionuclides

Last line, **replace** “Less than 10 keV” with “Less than 20 keV”

8 Radiation characteristics

8.2 Detector profile

8.2.2 Method of test

In the first paragraph, **replace** “concentrically” with “centrally”

Insert as second paragraph:

“In the case of a rectangular detector three profiles shall be taken. One from the centre in the direction normal to the shortest side of the sensitive area of the detector, another from the centre in the direction normal to the longest side of the sensitive area of the detector and one from the centre in the direction of a corner of the sensitive area of the detector. In the case of square detectors the first above is unnecessary. In the case of a cylindrical detector there is only a single profile.”

8.3 Surface emission rate response

8.3.1 General

First paragraph, last sentence: **replace** “with sensitive volumes in excess of 20 ml” with “with large sensitive volumes and/or areas”

Annex A

Replace title with “Limit distances for typical cylindrical detectors”

Replace in the title of the right column of Table A.1 “50 ml” with “2 ml”

Replace the second note in Table A.1 with “Be refers to a detector with a beryllium window of area 8 cm².”

Add the following new annex.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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>
IEC 60050-393	2003	International Electrotechnology Vocabulary - Part 393: Nuclear instrumentation - Physical phenomena and basic concepts	-	-
IEC 60050-394	2007	International Electrotechnical Vocabulary - Part 394: Nuclear instrumentation - Instruments, systems, equipment and detectors	-	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60086	series	Primary batteries	EN 60086	series
IEC 60325 (mod)	2002	Radiation protection instrumentation - Alpha, beta and alpha/beta (beta energy > 60 keV) contamination meters and monitors	EN 60325	2004
IEC 61187 (mod)	1993	Electrical and electronic measuring equipment - Documentation	EN 61187 + corr. March	1994 1995
ISO 7503-1	1988	Evaluation of surface contamination - Part 1: Beta-emitters (maximum beta energy greater than 0,15 MeV) and alpha-emitters	-	-
ISO 7503-3	1996	Evaluation of surface contamination - Part 3: Isomeric transition and electron capture emitters, low energy beta-emitters (E _{βmax} less than 0,15 MeV)	-	-
ISO 8769-2	1996	Reference sources for the calibration of surface contamination monitors - Part 2: Electrons of energy less than 0,15 MeV and photons of energy less than 1,5 MeV	-	-
ISO 11929-1	2000	Determination of the detection limit and decision threshold for ionizing radiation measurements - Part 1: Fundamentals and application to counting measurements without the influence of sample treatment	-	-
BIPM	1998	The international system of units (SI)	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION**RADIATION PROTECTION INSTRUMENTATION –
PORTABLE PHOTON CONTAMINATION METERS AND MONITORS****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62363 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This standard should be regarded as a complementary standard to IEC 60325, which is applicable to alpha and beta contamination monitoring assemblies.

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

FDIS	Report on voting
45B/579/FDIS	45B/590/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.

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.

RADIATION PROTECTION INSTRUMENTATION – PORTABLE PHOTON CONTAMINATION METERS AND MONITORS

1 Scope and object

This International Standard is applicable to portable and transportable contamination meters and monitors designed for the direct measurement or the direct detection of surface contamination by photon radiation emitting radionuclides and which comprise at least:

- a detection assembly (comprising counter tube, scintillation detector or semiconductor detector, etc.), which may be connected either rigidly or by means of a flexible cable or incorporated into a single assembly;
- a measurement assembly.

The standard is applicable to:

- photon surface contamination meters;
- photon surface contamination monitors.

The standard is applicable to detection assemblies that are designed to measure photon contamination from radionuclides which emit photons with energy in excess of 5 keV. In particular, this standard should be used to assess the performance of assemblies used to demonstrate that material is free from surface contamination by photon emitting radionuclides.

This standard is also applicable to special purpose assemblies and to assemblies specifically designed to provide limited spectroscopic information to the user.

NOTE These detection assemblies may be used to measure photon emissions from radionuclides that also emit alpha and beta radiations, where the alpha and beta emissions may be shielded due to the nature of the contamination. If shielding of the radioactive emissions occurs, then strictly speaking, the contamination is near to rather than on the surface of the article being monitored.

The object of this standard is to lay down standard requirements and to give examples of acceptable methods, and also to specify general characteristics, general test conditions, radiation characteristics, electrical safety, environmental characteristics, and the requirements of the identification certificate for photon contamination meters and monitors.

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 60050-393:2003, *International Electrotechnical Vocabulary (IEV) – Part 393: Nuclear Instrumentation – Physical phenomena and basic concepts*

IEC 60050(394):2007, *International Electrotechnical Vocabulary (IEV) – Part 394: Nuclear instrumentation: Instruments, systems, equipment and detectors*

IEC 60068-2-27, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 60086 (all parts), *Primary batteries*

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