SVENSK STANDARD SS-EN 62484

Fastställd	Utgåva	Sida	Ansvarig kommitté
2016-03-16	1	1 (1+39)	SEK TK 45

Kärnteknisk mätutrustning – Mätutrustning för strålskyddsändamål – Spektroskopibaserade portalmonitorer för detektering och identifiering av olaglig handel med radioaktivt material

Radiation protection instrumentation – Spectroscopy-based portal monitors used for the detection and identification of illicit trafficking of radioactive material

Som svensk standard gäller europastandarden EN 62484:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62484:2015.

Nationellt förord

Europastandarden EN 62484:2015

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62484, First edition, 2010 - Radiation protection instrumentation - Spectroscopy-based portal monitors used for the detection and identification of illicit trafficking of radioactive material**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 13.280.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62484

November 2015

ICS 13.280

English Version

Radiation protection instrumentation - Spectroscopy-based portal monitors used for the detection and identification of illicit trafficking of radioactive material (IEC 62484:2010)

Instrumentation pour la radioprotection - Moniteurs spectroscopiques pour portiques d'accès utilisés pour la détection et l'identification du trafic illicite des matières radioactives
(IEC 62484:2010)

Strahlenschutz-Messgeräte - Auf Spektroskopie basierende Portalmonitore für den Nachweis und die Identifikation des unerlaubten Handels mit radioaktiven Stoffen
(IEC 62484:2010)

This European Standard was approved by CENELEC on 2015-11-02. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 62484:2015 E

SEK Svensk Elstandard

European foreword

This document (EN 62484:2015) consists of the text of IEC 62484:2010 prepared by SC 45B "Radiation protection instrumentation" of IEC/TC 45 "Nuclear instrumentation".

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-11-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-11-02

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62484:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60038	NOTE	Harmonized as EN 60038.
IEC 60068-2-75	NOTE	Harmonized as EN 60068-2-75.
IEC 60846	NOTE	Harmonized in EN 60846 series.
IEC 61526:2010	NOTE	Harmonized as EN 61526:2013 (modified).
IEC 62327:2006	NOTE	Harmonized as EN 62327:2011 (modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-393	2003	International Electrotechnical 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 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
+ A1	1999		+ A1	2000
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
ISO 4037-1	1996	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 1: Radiation characteristics and production methods	-	-
ISO 4037-2	1997	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 2: Dosimetry for radiation protection over the energy ranges from 8 keV to 1,3 MeV and 4 MeV to 9 MeV	-	-

Publication	Year	Title	EN/HD	Year
ISO 4037-3	1999	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 3: Calibration of area and personal dosemeters and the measurement of their response as a function of energy and angle of incidence	-	-
ISO 8529-1	2001	Reference neutron radiations - Part 1: Characteristics and methods of production	-	-
ISO 8529-2	2000	Reference neutron radiations - Part 2: Calibration fundamentals of radiation protection devices related to the basic quantities characterizing the radiation field	-	-
ISO 8529-3	1998	Reference neutron radiations - Part 3: Calibration of area and personal dosimeters and determination of response as a function of energy and angle of incidence	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIATION PROTECTION INSTRUMENTATION – SPECTROSCOPY-BASED PORTAL MONITORS USED FOR THE DETECTION AND IDENTIFICATION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIAL

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 62484 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

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

FDIS	Report on voting
45B/634/FDIS	45B/644/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 stability 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 – SPECTROSCOPY-BASED PORTAL MONITORS USED FOR THE DETECTION AND IDENTIFICATION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIAL

1 Scope and object

This International Standard specifies the operational and performance requirements for spectroscopy-based portal monitors used for the detection and identification of illicit trafficking of radioactive material. Spectroscopy-based portal monitors have the ability to detect gamma and neutron radiation and identify gamma-emitting radionuclides that may be present in or on persons, vehicles, containers, or packages in a static or transient mode of operation.

Operational requirements established by this standard include radiation detection and gamma-emitting radionuclide identification, and those requirements associated with the expected electrical, mechanical, and environmental conditions when a portal monitor is deployed.

The object of this standard is to establish performance requirements and to give examples of acceptable test methods, and to specify general characteristics, general test conditions, radiation characteristics, electrical safety, and environmental characteristics to determine if a portal monitor meets the requirements of this standard.

Special applications, which may include a monitor's operation under weather conditions or for detection needs not addressed by this standard, shall require additional testing.

Obtaining operating performance that meets or exceeds the specifications as stated in this standard depends upon properly installing the monitor, establishing appropriate operating parameters, providing security for the monitor, maintaining calibration, implementing a suitable response testing and maintenance program, auditing compliance with quality requirements, and providing proper training for operating personnel.

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 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1 (1999)

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

ISO 4037-1:1996, *X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy – Part 1: Radiation characteristics and production methods*

ISO 4037-2:1997, *X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy – Part 2: Dosimetry for radiation protection over the energy ranges from 8 keV to 1,3 MeV and 4 MeV to 9 MeV*

ISO 4037-3:1999, *X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy – Part 3: Calibration of area and personal dosemeters and the measurement of their response as a function of energy and angle of incidence*

ISO 8529-1:2001, *Reference neutron radiations – Part 1: Characteristics and methods of production*

ISO 8529-2:2000, *Reference neutron radiations – Part 2: Calibration fundamentals of radiation protection devices related to the basic quantities characterizing the radiation field*

ISO 8529-3:1998, *Reference neutron radiations – Part 3: Calibration of area and personal dosimeters and determination of response as a function of neutron energy and angle of incidence*

International Bureau of Weights and Measures: *The International System of Units, 8th edition, 2006*