

<b>STN</b>	<b>Prístroje na ochranu pred žiarením. Portálové monitory založené na spektroskopii používané na detekciu a identifikáciu nedovoleného obchodu s rádioaktívnym materiálom.</b>	<b>STN EN 62484</b>
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Radiation protection instrumentation - Spectroscopy-based portal monitors used for the detection and identification of illicit trafficking of radioactive material

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/16

Obsahuje: EN 62484:2015, IEC 62484:2010

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Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2016  
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

**EN 62484**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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)

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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**

## 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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-11-02

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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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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 dosimeters 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 dosimeters 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	-	-

**EN 62484:2015**

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 4037-3	1999	X and gamma reference radiation for calibrating dosimeters and doserate meters and for determining their response as a function of photon energy - Part 3: Calibration of area and personal dosimeters 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	-	-



# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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

**Instrumentation pour la radioprotection –  
Moniteurs spectroscopiques pour portiques d'accès utilisés pour la détection et  
l'identification du trafic illicite des matières radioactives**





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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

**Instrumentation pour la radioprotection –  
Moniteurs spectroscopiques pour portiques d'accès utilisés pour la détection et  
l'identification du trafic illicite des matières radioactives**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## FOREWORD

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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*

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ISO 4037-2:1997, *X and gamma reference radiation for calibrating dosimeters and dose rate 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 dosimeters and dose rate meters and for determining their response as a function of photon energy – Part 3: Calibration of area and personal dosimeters 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, 8<sup>th</sup> edition, 2006*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**