



SLOVENSKI STANDARD
oSIST prEN IEC 62484:2021

01-september-2021

Instrumenti za zaščito pred sevanjem - Spektrometrski portalni monitorji (SRPM), ki se uporabljajo za odkrivanje in identifikacijo nedovoljene trgovine z radioaktivnimi snovmi

Radiation protection instrumentation - Spectrometric radiation portal monitors (SRPMs) used for the detection and identification of illicit trafficking of radioactive material

Strahlenschutz-Messgeräte - Auf Spektroskopie basierende Portalmonitore für den Nachweis und die Identifikation des unerlaubten Handels mit radioaktiven Stoffen

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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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Ta slovenski standard je istoveten z: prEN IEC 62484

ICS:

13.280 Varstvo pred sevanjem Radiation protection

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EUROPEAN STANDARD
NORME EUROPÉENNE
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prEN IEC 62484

June 2021

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Will supersede EN 62484:2015 and all of its
amendments and corrigenda (if any)

English Version

**Radiation protection instrumentation - Spectrometric radiation
portal monitors (SRPMs) used for the detection and identification
of illicit trafficking of radioactive material
(IEC 62484:2020)**

Instrumentation pour la radioprotection - Moniteurs
spectroscopiques pour portiques d'accès utilisés pour la
détection et l'identification du trafic illicite des matières
radioactives
(IEC 62484:2020)

Strahlenschutz-Messgeräte - Auf Spektroskopie basierende
Portalmonitore für den Nachweis und die Identifikation des
unerlaubten Handels mit radioaktiven Stoffen
(IEC 62484:2020)

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2021-09-17.

The text of this draft consists of the text of IEC 62484:2020.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

prEN IEC 62484:2021 (E)**European foreword**

This document (prEN IEC 62484:2021) consists of the text of IEC 62484:2020 prepared by IEC/SC 45B "Radiation protection instrumentation" of IEC/TC 45 "Nuclear instrumentation".

This document is currently submitted to the Enquiry.

The following dates are proposed:

- latest date by which the existence of this document (doa) dor + 6 months has to be announced at national level
- latest date by which this document has to be (dop) dor + 12 months implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards (dow) dor + 36 months conflicting with this document have to be withdrawn (to be confirmed or modified when voting)

This document will supersede EN 62484:2015 and all of its amendments and corrigenda (if any).

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-395	-	International Electrotechnical Vocabulary - Part 395: Nuclear instrumentation: Physical phenomena, basic concepts, instruments, systems, equipment and detectors	-	-
IEC 60068-2-5	-	Environmental testing - Part 2-5: Tests - Test S: Simulated solar radiation at ground level and guidance for solar radiation testing and weathering	EN IEC 60068-2-5	-
IEC 62706	-	Radiation protection instrumentation - Environmental, electromagnetic and mechanical performance requirements	-	-
IEC 62755	-	Radiation protection instrumentation - Data format for radiation instruments used in the detection of illicit trafficking of radioactive materials	-	-

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IEC 62484

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INTERNATIONAL STANDARD

Radiation protection instrumentation – Spectrometric radiation portal monitors (SRPMs) used for the detection and identification of illicit trafficking of radioactive material

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIATION PROTECTION INSTRUMENTATION –
SPECTROMETRIC RADIATION PORTAL MONITORS (SRPMS) 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.

This second edition cancels and replaces the first edition of IEC 62484 issued in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) title modified;
- b) making the standard consistent with the new standards for detection of illicit trafficking of radioactive material (see the Introduction);
- c) creating unformed functionality test for all environmental, electromagnetic and mechanical tests and a requirement for the coefficient of variation of each nominal mean reading;

- d) reference to IEC 62706 for the environmental, electromagnetic and mechanical test conditions;
- e) adding information regarding climatic exposures.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
45B/969/FDIS	45B/971/RVD

Full information on the voting for the approval of this International 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
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INTRODUCTION

Illicit and inadvertent movement of radioactive materials has become a problem of increasing importance. Radioactive sources out of regulatory control, so-called "orphan sources", have frequently caused serious radiation exposures and widespread contamination. Although illicit trafficking of nuclear and other radioactive materials is not a new phenomenon, concern about a nuclear "black market" has increased in the last few years particularly in view of its terrorist potential.

In response to the technical policy of the International Atomic Energy Agency (IAEA), the World Customs Organization (WCO) and the International Criminal Police Organization (Interpol) related to the detection and identification of special nuclear materials and security trends, nuclear instrumentation companies are developing and manufacturing radiation instrumentation to assist in the detection of illicit movement of radioactive and special nuclear materials. This type of instrumentation is widely used for security purposes at nuclear facilities, border control checkpoints, and international seaports and airports.

However, to ensure that measurement results made at different locations are consistent, it is imperative that radiation instrumentation be designed to rigorous specifications based upon agreed performance requirements stated in international standards. Several IEC standards have been developed to address body-worn, hand-held and portal instruments, see Table 1.

Table 1 – Standards for instrumentation used to detect illicit trafficking of radioactive and nuclear materials

Type of instrumentation	IEC number	Title of the standard
Body-worn	62401	Radiation protection instrumentation – Alarming Personal Radiation Devices (PRD) for detection of illicit trafficking of radioactive material
	62618	Radiation protection instrumentation – Spectroscopy-Based Alarming Personal Radiation Devices (SPRD) for detection of illicit trafficking of radioactive material
	62694	Radiation protection instrumentation – Backpack-type radiation detector (BRD) for detection of illicit trafficking of radioactive material
Portable or hand-held	62327	Radiation protection instrumentation – Hand-held instruments for the detection and identification of radionuclides and for the estimation of ambient dose equivalent rate from photon radiation
	62533	Radiation protection instrumentation – Highly sensitive hand-held instruments for photon detection of radioactive material
	62534	Radiation protection instrumentation – Highly sensitive hand-held instruments for neutron detection of radioactive material
Portal	62244	Radiation protection instrumentation – Installed radiation portal monitors (RPMs) for the detection of illicit trafficking of radioactive and nuclear materials
	62484	Radiation protection instrumentation – Spectrometric radiation portal monitors (SRPMs) used for the detection and identification of illicit trafficking of radioactive material
Mobile	63121	Radiation protection instrumentation – Vehicle-mounted mobile systems for the detection of illicit trafficking of radioactive materials
Data format	62755	Radiation protection instrumentation – Data format for radiation instruments used in the detection of illicit trafficking of radioactive materials