SVENSK STANDARD SS-EN 62534

Fastställd	Utgåva	Sida	Ansvarig kommitté
2016-03-16	1	1 (1+28)	SEK TK 45

Kärnteknisk mätutrustning – Mätutrustning för strålskyddsändamål – Handhållna neutrondetektorer med hög känslighet för upptäckt av radioaktivt material

Radiation protection instrumentation – Highly sensitive hand-held instruments for neutron detection of radioactive material

Som svensk standard gäller europastandarden EN 62534:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62534:2015.

Nationellt förord

Europastandarden EN 62534:2015

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62534, First edition, 2010 - Radiation protection instrumentation - Highly sensitive hand-held instruments for neutron detection of radioactive material**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 13.280.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62534

November 2015

ICS 13.280

English Version

Radiation protection instrumentation - Highly sensitive hand-held instruments for neutron detection of radioactive material (IEC 62534:2010)

Instrumentation pour la radioprotection - Instruments portables de haute sensibilité pour la détection neutronique de matières radioactives
(IEC 62534:2010)

Strahlenschutz-Messgeräte - Hochempfindliche Handgeräte zur Detektion von Neutronenstrahlung emittierendem radioaktivem Material
(IEC 62534:2010)

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.

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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 62534:2015 E

SEK Svensk Elstandard

European foreword

This document (EN 62534:2015) consists of the text of IEC 62534:2010 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 62534:2010 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 60068-2-18:2000	NOTE	Harmonized as EN 60068-2-18:2001 (not modified).
IEC 60068-2-27:2008	NOTE	Harmonized as EN 60068-2-27:2009 (not modified).
IEC 60068-2-75:1997	NOTE	Harmonized as EN 60068-2-75:1997 (not modified).
IEC 60086-1:2006	NOTE	Harmonized as EN 60086-1:2007 [1)] (not modified).
IEC 60721-3-7:2002	NOTE	Harmonized as EN 60721-3-7:1995 (not modified) and as EN 60721-3-7:1995/A1:1997 (not modified)
IEC 61000-4-1:2006	NOTE	Harmonized as EN 61000-4-1:2007 (not modified).
IEC 61000-4-4:2004	NOTE	Harmonized as EN 61000-4-4:2004 [2)] (not modified).
IEC 61000-4-6:2008	NOTE	Harmonized as EN 61000-4-6:2009 (not modified).
IEC 61000-4-8:2009	NOTE	Harmonized as EN 61000-4-8:2010 (not modified).
IEC 61187:1993	NOTE	Harmonized as EN 61187:1994 (modified).
IEC 62022:2004	NOTE	Harmonized as EN 62022:2007 (modified).
IEC 62244:2006	NOTE	Harmonized as EN 62244:2011 (modified).
IEC 62327:2006	NOTE	Harmonized as EN 62327:2011 (modified).

1) Superseded by EN 60086-1:2011 (IEC 60086-1:2011), not modified.

2) Superseded by EN 61000-4-4:2012 (IEC 61000-4-4:2012), not 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 61005 (mod)	2003	Radiation protection instrumentation - Neutron ambient dose equivalent (rate) meters	EN 61005	2004
IEC 61526 (mod)	2005	Radiation protection instrumentation - Measurement of personal dose equivalents Hp(10) and Hp(0,07) for X, gamma, neutron and beta radiations - Direct reading personal dose equivalent meters and monitors	EN 61526	2007
ISO 8529-1	2001	Reference neutron radiations - Part 1: Characteristics and methods of production	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIATION PROTECTION INSTRUMENTATION – HIGHLY SENSITIVE HAND-HELD INSTRUMENTS FOR NEUTRON DETECTION 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 62534 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/639/FDIS	45B/653/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 – HIGHLY SENSITIVE HAND-HELD INSTRUMENTS FOR NEUTRON DETECTION OF RADIOACTIVE MATERIAL

1 Scope and object

This International Standard applies to hand-held instruments used for the detection and localization of neutron emitting radioactive material. These instruments are highly sensitive meaning that they are designed to detect slight variations in the range of usual background that may be caused by illicit trafficking or inadvertent movement of radioactive material. This high sensitivity allows scanning of larger volume items such as vehicles and containers. These instruments may also be used in fixed or temporally fixed unattended mode to monitor check points or critical areas. Instruments addressed by this standard will also provide a means to detect photon radiation for personal protection.

This standard does not apply to the performance of radiation protection instrumentation which is covered in IEC 61005 and in IEC 61526.

The object of this standard is to establish performance requirements, provide examples of acceptable test methods, and to specify general characteristics, general test conditions, radiation characteristics, electrical safety, and environmental characteristics, that are used to determine if an instrument meets the requirements of this standard.

The results of tests performed provide information to government agencies and other users on the capability of radiation detection instruments for reliably detecting neutron sources.

Obtaining operating performance that meets or exceeds the specifications as stated in this standard depends upon properly establishing appropriate operating parameters, 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 – Part 394: Nuclear instrumentation – Instruments, systems, equipment, and detectors*

IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

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

IEC 61005:2003, *Radiation protection instrumentation – Neutron ambient dose equivalent (rate) meters*

IEC 61526:2005, *Radiation protection instrumentation – Measurement of personal dose equivalents Hp(10) and Hp(0,07) for X, gamma, neutron and beta radiations – Direct reading personal dose equivalent meters and monitors*

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