SVENSK STANDARD SS-EN 62493

Fastställd	Utgåva	Sida	Ansvarig kommitté
2010-08-23	1	1 (1+40)	SEK TK 34

Belysningsmateriel – Mätning av elektromagnetiska fält och bedömning avseende exponering

Assessment of lighting equipment related to human exposure to electromagnetic fields

Som svensk standard gäller europastandarden EN 62493:2010. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62493:2010.

Nationellt förord

Europastandarden EN 62493:2010

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62493, First edition, 2009 - Assessment of lighting equipment related to human exposure to electromagnetic fields**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 29.020; 29.140

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

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SEK är Sveriges röst i standardiseringsarbetet inom elområdet

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Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

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Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62493

February 2010

ICS 29.020; 29.140

English version

Assessment of lighting equipment related to human exposure to electromagnetic fields

(IEC 62493:2009)

Evaluation d'un équipement d'éclairage relativement à l'exposition humaine aux champs électromagnétiques (CEI 62493:2009)

Beurteilung von Beleuchtungseinrichtungen bezüglich der Exposition von Personen gegenüber elektromagnetischen Feldern (IEC 62493:2009)

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 62493:2010 E

SEK Svensk Elstandard

Foreword

The text of document 34/133/FDIS, future edition 1 of IEC 62493, prepared by IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62493 on 2010-02-01.

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

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)	2010-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-02-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62493:2009 was approved by CENELEC as a European Standard without any modification.

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 62311 (mod)	2007	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)	EN 62311	2008
CISPR 15 + A1 + A2	2005 2006 2008	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	EN 55015 + A1 + A2	2006 2007 2009
CISPR 16-1-1	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN 55016-1-1	-
CISPR 16-1-2	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Conducted disturbances	EN 55016-1-2	-
CISPR 16-4-2	2003	Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainties, statistics and limit modelling - Uncertainty in EMC measurements	EN 55016-4-2	2004
IEEE C95.1-2005	-	Safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz	-	-

CONTENTS

INTRODUCTION

This International Standard establishes a suitable evaluation method for determining the electromagnetic fields in the space around the equipment mentioned in the scope, and defines standardized operating conditions and measurement distances.

This standard is designed to assess, by measurements and/or calculations, electromagnetic (EM) fields and their potential effect on the human body by reference to exposure levels of the general public given by ICNIRP:1998 [1][1)], IEEE C95.1:2005 and IEEE C95.6:2002[2]. The exposure levels with which to comply are basic restrictions (both ICNIRP- and IEEE-based).

NOTE 1 Maximum permissible exposure levels (IEEE-based) or reference levels (ICNRIP-based) are not used.

Based on the lighting equipment operating properties, the frequency range of the applicable basic restrictions can be limited as follows:

- induced current density between 20 kHz to 10 MHz;
- specific absorption rate (SAR) between 100 kHz to 300 MHz;
- power density is outside the scope.

NOTE 2 Operating frequencies of lighting equipment are higher than 20 kHz to avoid audible noise and infrared interference. Frequency contributions above 300 MHz can be neglected.

This standard is not meant to supplant definitions and procedures specified in exposure standards, but it is aimed at supplementing the procedure already specified for compliance with exposure.

The exposure limits given in Annex C (informative) are for information only, do not comprise an exhaustive list and are valid only in certain regions of the world. It is the responsibility of users of this standard to ensure that they use the current version of the limit values specified by the applicable national authorities.

1) Figures in square brackets refer to the Bibliography.

ASSESSMENT OF LIGHTING EQUIPMENT RELATED TO HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

1 Scope

This International Standard applies to the assessment of lighting equipment related to human exposure to electromagnetic fields. The assessment consists of the induced current density for frequencies from 20 kHz to 10 MHz and the specific absorption rate (SAR) for frequencies from 100 kHz to 300 MHz around lighting equipment.

Included in the scope of this standard are:

– all lighting equipment for general lighting with a primary function of generating and/or distributing light intended for illumination purposes, and intended either for connection to the low voltage electricity supply or for battery operation; used indoor and/or outdoor. General lighting equipment means all industrial, residential and public and street lighting;

– lighting part for general lighting of multi-function equipment where one of the primary functions of this is illumination;

– independent auxiliaries exclusively for the use with lighting equipment.

Excluded from the scope of this standard are:

– lighting equipment for aircraft and airfields;

– lighting equipment for road vehicles; (except lighting used for the illumination of passenger compartments in public transport)

– lighting equipment for agriculture;

– lighting equipment for boats/vessels;

– photocopiers, slide projectors;

– apparatus for which the requirements of electromagnetic fields are explicitly formulated in other IEC standards;

NOTE The methods described in this standard are not suitable for comparing the fields from different lighting equipment.

This standard does not apply to built-in components for luminaires such as electronic control gear.

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.

CISPR 15:2005[2)], *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*
Amendment 1 (2006)
Amendment 2 (2008)

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2) There exists of a consolidated edition 7.2 (2009), including CISPR 15:2005 and its Amendment 1 and Amendment 2.

CISPR 16-1-1, *Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus.*

CISPR 16-1-2:, *Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-2: Radio disturbance and immunity measuring apparatus – Ancillary equipment, conducted disturbances*

CISPR 16-4-2:2003, *Specification for radio disturbance and immunity measuring apparatus and methods. Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements*

IEC 62311:2007, *Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)*

IEEE Std C95.1-2005*, IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz*