VALGUSTUSSEADMETE HINDAMINE INIMESELE TOIMIVA ELEKTROMAGNETVÄLJA JÄRGI

Assessment of lighting equipment related to human exposure to electromagnetic Field

EESTI STANDARDIKESKUS
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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 62493:2015 sisaldab Euroopa standardi EN 62493:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 62493:2015 consists of the English text of the European standard EN 62493:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.05.2015.	Date of Availability of the European standard is 08.05.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.020, 29.140

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62493

May 2015

ICS 29.020; 29.140

Supersedes EN 62493:2010

English Version

Assessment of lighting equipment related to human exposure to electromagnetic Field (IEC 62493:2015)

Évaluation d'un équipement d'éclairage relativement à l'exposition humaine aux champs électromagnétiques (IEC 62493:2015)

Beurteilung von Beleuchtungseinrichtungen bezüglich der Exposition von Personen gegenüber elektromagnetischen Feldern (IEC 62493:2015)

This European Standard was approved by CENELEC on 2015-04-14. 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

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Foreword

The text of document 34/222/FDIS, future edition 2 of IEC 62493, prepared by IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62493:2015.

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)	2016-01-14
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-04-14

This document supersedes EN 62493:2010.

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 62493:2015 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:

CISPR 15:2013	NOTE	Harmonized as EN 55015:2013 (not modified).
CISPR 16-1-2	NOTE	Harmonized as EN 55016-1-2.
CISPR 16-4-2:2003	NOTE	Harmonized as EN 55016-4-2:2004 [1)] (not modified).
IEC 62226-2-1:2004	NOTE	Harmonized as EN 62226-2-1:2005 (not modified).

[1)] Superseded by EN 55016-4-2:2011 (CISPR 16-4-2:2011).

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 62209-2	2010	Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)	EN 62209-2	2010
IEC 62232	2011	Determination of RF field strength and SAR in the vicinity of radiocommunication base stations for the purpose of evaluating human exposure	-	-
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
IEC 62479 (mod)	2010	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)	EN 62479	2010
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	-

CONTENTS

INTRODUCTION

This International Standard establishes a suitable evaluation method for the influence of 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], ICNIRP 2010 [2], IEEE C95.1:2005 [3] and IEEE C95.6:2002 [4]. The exposure levels with which to comply are basic restrictions (both ICNIRP- and IEEE-based).

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

- internal electric field between 20 kHz and 10 MHz;
- specific absorption rate (SAR) between 100 kHz and 300 MHz;
- power density is outside the scope.

NOTE 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.

1 Numbers 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 internal electric field 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 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;

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

– independent auxiliaries exclusively for the use with lighting equipment;

– lighting equipment including intentional radiators for wireless communication or control.

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 controlgear.

2 Normative references

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.

IEC 62209-2:2010, *Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)*

IEC 62232:2011, *Determination of RF field strength and SAR in the vicinity of radiocommunication base stations for the purpose of evaluating human exposure*

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