SLOVENSKI STANDARD
SIST EN 62493:2015/oprA1:2021

01-november-2021

Dopolnilo A1 - Ocenjevanje opreme za razsvetljavo z vidika izpostavljenosti ljudi elektromagnetnim poljem

Amendment 1 - Assessment of lighting equipment related to human exposure to electromagnetic fields

Beurteilung von Beleuchtungseinrichtungen bezüglich der Exposition von Personen gegenüber elektromagnetischen Feldern

Évaluation d'un équipement d'éclairage relativement à l'exposition humaine aux champs électromagnétiques

Ta slovenski standard je istoveten z: **EN 62493:2015/prA1:2021**

ICS:

17.220.01	Elektrika. Magnetizem. Splošni vidiki	Electricity. Magnetism. General aspects
91.160.01	Razsvetljava na splošno	Lighting in general

SIST EN 62493:2015/oprA1:2021 **en**

34/827/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62493/AMD1 ED2**	
DATE OF CIRCULATION: **2021-08-27**	CLOSING DATE FOR VOTING: **2021-11-19**
SUPERSEDES DOCUMENTS: **34/807/CD, 34/825/CC**	

IEC TC 34 : LIGHTING

SECRETARIAT: United Kingdom	SECRETARY: Mr Petar Luzajic
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Amendment 1 - Assessment of lighting equipment related to human exposure to electromagnetic fields

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

INTRODUCTION (not part of the proposal)

With the publication of the updated ICNRIP guidelines for limits with regard to exposure to high-frequency electromagnetic fields late 2020, IEC 62493 requires to be updated to reflect this update. The corresponding amendment also allows to add some additional specifications for “intentional emitters” making use of electromagnetic fields for communication purposes.

END INTRODUCTION (not part of the proposal)

Replace the 2nd paragraph of the introduction as follows:

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 2020 [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).

Add the following note and example to definition 3.1.14 (Terms and definitions):

3.1.14

Note to entry: Devices that are designed to only receive electromagnetic fields from other sources are not considered as intentional radiators.

EXAMPLE: Near Field Communication (NFC) transduces are not considered as intentional radiators

Replace the 1st paragraph of 4.1 as follows:

The basic restrictions or reference levels for the general public of either IEEE C95.1-2005 or ICNIRP 2020 and ICNIRP 2010 are used, see Annex C.

NOTE Reference levels have been taken from ICNIRP publications; however, basic restrictions of IEEE and ICNIRP are essentially the same.

Replace the 1st sentence of 6.1 as follows:

The assessment method is based on basic restrictions given in both ICNIRP 2020 and ICNIRP 2010, or in IEEE C95.1-2005.

Replace the 3rd sentence of 7.2.3 as follows:

For instance for ICNIRP 2020, general public exposure, the worst case low-power exclusion level is 20 mW for head and trunk.

Replace C.2 as follows:

C.2 ICNIRP basic restrictions

C.2.1 Basic restrictions - SAR

Table C.1 provides the basic restrictions (SAR) for general public exposure to time varying electric and magnetic fields for frequencies between 100 kHz and 300 GHz (see [1]):

Frequency range	Average SAR (whole body) W/kg	Localised SAR (head and trunk) W/kg	Localised SAR (limbs) W/kg
100 kHz to 6 GHz	0,08	2	4
>6 to 300 GHz	0,08	NA[1]	NA[1]
[1]NA signifies "not applicable" and does not need to be taken into account when determining compliance			

Table C.1 – Basic restrictions for general public exposure to time varying electric and magnetic fields for frequencies between 100 kHz and 300 GHz

C.2.2 Basic restrictions – internal electric field

Table C.2 provides the basic restrictions for general public exposure to time varying electric and magnetic fields for frequencies up to 10 MHz (see [1], [2]):

Exposure characteristic	Frequency range	Internal electric field V/m
CNS tissue of the head	1 to 10 Hz	0,1/f
	10 to 25 Hz	0,01
	25 Hz to 1 kHz	$4x10^{-4}f$
	1 kHz to 3 kHz	0,4
	3 kHz to 10 MHz	$1,35x10^{-4}f$
All other tissues (head and body)	1 Hz to 3 kHz	0,4
	3 kHz to 10 MHz	$1,35x10^{-4}f$
f is the frequency in Hz. All values are RMS.		

C.2.3 Changes introduced by ICNIRP 2020 with respect to ICNIRP 1998 and ICNIRP 2010

Changes for the basic restrictions (SAR) from ICNIRP 1998 to ICNIRP 2020 have been made by (i) extending the considered spectrum up to 100 GHz, while (ii) between 100 kHz and 6 GHz limits remain unchanged and (iii) for frequencies above 6 GHz it has been found that they do not need to be taken into account when determining compliance.

For the basic restrictions (internal electric field) ICNIRP 2010 remains applicable for frequencies below 100 kHz, while those above have been replaced by ICNIRP 2020. In ICNIRP 2020 up to 10 MHz a general limit of 1,35x10^-4f is applicable, without differentiation between CNS tissue of the head and other.

As a result, products found compliant with the basic restrictions of ICNIRP 1998 and ICNIRP 2010 are compliant with the basic restrictions of ICNIRP 2020, given that no changes have been introduced in the lighting equipment relevant frequency ranges (SAR: 20 kHz to 10 MHz and 100 kHz to 300 MHz for the internal electric field).