

SLOVENSKI STANDARD
SIST EN 60335-2-27:2004/A2:2009**01-januar-2009**

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Household and similar electrical appliances - Safety -- Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-27: Besondere Anforderungen für Hautbestrahlungsgeräte mit Ultraviolett- und Infrarotstrahlung
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Appareils électrodomestiques et analogues - Sécurité -- Partie 2-27: Règles particulières pour les appareils d'exposition de la peau aux rayonnements ultraviolets et infrarouges

Ta slovenski standard je istoveten z: EN 60335-2-27:2003/A2:2008

ICS:

| | | |
|--------|-----------------------|---------------------|
| 13.120 | Varnost na domu | Domestic safety |
| 97.170 | Oprema za nego telesa | Body care equipment |

SIST EN 60335-2-27:2004/A2:2009 en,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-27/A2

October 2008

ICS 97.100; 13.120

English version

**Household and similar electrical appliances -
Safety -
Part 2-27: Particular requirements for appliances
for skin exposure to ultraviolet and infrared radiation
(IEC 60335-2-27:2002/A2:2007, modified)**

Appareils électrodomestiques
et analogues -
Sécurité -
Partie 2-27: Règles particulières
pour les appareils d'exposition
de la peau aux rayonnements
ultraviolets et infrarouges
(CEI 60335-2-27:2002/A2:2007, modifié)

Sicherheit elektrischer Geräte
für den Hausgebrauch
und ähnliche Zwecke -
Teil 2-27: Besondere Anforderungen
für Hautbestrahlungsgeräte
mit Ultraviolett- und Infrarotstrahlung
(IEC 60335-2-27:2002/A2:2007,
modifiziert)

[SIST EN 60335-2-27:2004/A2:2009](https://standards.iteh.ai/catalog/standards/sist/1ec319aa-96dc-4e00-9384-1e30c0e0-2009)

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This amendment A2 modifies the European Standard EN 60335-2-27:2003; it was approved by CENELEC on 2008-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 Central Secretariat or to any CENELEC member.

This amendment 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 61/3225/FDIS, future amendment 2 to IEC 60335-2-27:2002, prepared by IEC TC 61, Safety of household and similar electrical appliances, was submitted to the IEC/CENELEC parallel vote procedure.

Although the draft received sufficient support, the ad Hoc WG set up by CENELEC TC 61 for adapting the standard to Mandate M/397 received from the European Commission, prepared a draft, document CLC/TC 61(SEC)1599, that was discussed during the Málaga meeting of CENELEC TC 61 in June 2007, when it was decided to submit a draft to the formal vote.

The draft was circulated in April 2008 and was approved by CENELEC as amendment A2 to EN 60335-2-27:2003 on 2008-10-01.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2009-10-01
- date on which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-10-01

Compliance with the provisions of this amendment ensures that the concerns expressed in Commission Opinion 2004/C275/03¹⁾ are met.

There are no special national conditions causing a deviation from this amendment.

There are no national deviations from this amendment, other than those listed in Annex ZB to EN 60335-2-27:2003.

p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

¹⁾ Commission Opinion of 27 October 2004 within the framework of Council Directive 73/23/EEC relating to electrical equipment designed for use within certain voltage limits — Safety of tanning devices for cosmetic purposes, *Official Journal C 275*, 10/11/2004 P. 0003 – 0005.

Endorsement notice

The text of amendment 2:2007 to the International Standard IEC 60035-2-27:2002 was approved by CENELEC as an amendment to the European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

7 Marking and instructions

- p 7.1 Delete the instruction related to the first paragraph.
- p 7.6 Delete this instruction (7.6 was deleted by common modification to A1).
- p 7.12 Replace the complete text of the addition by the following:

The instructions shall give clear information with regard to the proper use of the appliance.

UV appliances shall include a statement that non-users, especially children, must not be present when the appliance is being operated.

The instructions for appliances having UV emitters shall include the substance of the following:

- a statement that UV appliances are not to be used by:
 - persons under the age of 18 years;
 - persons who tend to freckle;
 - persons with a natural red hair colour;
 - persons having abnormal discoloured patches on the skin;
 - persons having more than 16 moles (2 mm or more in diameter) on the body;
 - persons having any atypical moles (atypical moles are defined as asymmetrical moles larger than 5 mm in diameter with variable pigmentation and irregular borders; in case of doubt, seek medical advice);
 - persons suffering from sunburn;
 - persons not able to tan at all or not able to tan without burning when exposed to the sun;
 - persons that burn easily when exposed to the sun;
 - persons having a history of frequent severe sunburn during childhood;
 - persons suffering from or previously suffering from skin cancer or predisposed to skin cancer;
 - persons having a first-degree relative with a history of melanoma;
 - persons under a doctor's care for diseases that involve photosensitivity;
 - persons receiving photosensitising medications;
- a statement that exposures should not exceed a person's minimal erythral dose (MED). If erythema (skin reddening) appears hours after any exposure, further exposure should cease. After one week, exposures could be restarted from the beginning of the schedule of exposure;
- a statement that if unexpected side effects, such as itching, occur within 48 h of the first session of using a UV appliance, medical advice should be sought prior to further UV exposure;
- information concerning the intended exposure distance (unless this is controlled by the construction of the UV appliance);

- recommended schedule of exposure specifying duration and intervals (based on the **UV emitter** characteristics, distances and skin sensitivity);

NOTE 101 The recommended exposure time for the first session for untanned skin is to correspond to a dose not exceeding 100 J/m^2 , weighted according to the erythema action spectrum shown in Figure 101, or as a result of a test on a small area of the skin. For calculation of the recommended exposure time for the first session use the formula in Note 5 of 32.101. Otherwise sunbed exposure should be at least 10 min.

- recommended number of exposures that should not be exceeded in one year;

NOTE 102 As any exposure to UV radiation increases the risk of skin cancer, there is no safe value of maximum yearly dose, but it is recommended not to exceed 25 kJ/m^2 , weighted according to the non-melanoma skin cancer action spectrum shown in Figure 101 and taking into account the recommended schedule of exposure.

- a statement that the appliance must not be used if the timer is faulty or the filter is broken or removed;
- identification of alternative components that may influence the ultraviolet radiation, such as filters and reflectors;
- identification of replaceable **UV emitters** and a statement that they are only to be replaced by types marked on the appliance. For fluorescent UV lamps for tanning, it shall be stated that they are only to be replaced by types marked with an equivalency code, the UV component of which falls within the UV component equivalency code range that is marked on the appliance. In this case, an example of the equivalency code shall be given and the UV component aspect of the fluorescent UV lamp for tanning equivalency code shall be explained.

The instructions for appliances having **UV emitters** shall contain the substance of the following information and precautions:

- ultraviolet radiation from the sun or from UV appliances can cause skin or eye damage that may be irreversible. These biological effects depend upon the quality and quantity of the radiation as well as the skin sensitivity of the individual; <https://standards.iteh.ai/catalog/standards/sist/1ec319aa-96dc-4e00-9384-029c35ad908/sist-60335-2-27-2004-a2-2009>
- the skin may develop sunburn after overexposure. Excessively repeated exposures to ultraviolet radiation from the sun or from UV appliances may lead to premature ageing of the skin as well as increased risk of development of skin tumours. These risks increase with increasing cumulative UV exposure. Exposure at an early age increases the risk of skin damage later in life;
- the unprotected eye may develop surface inflammation and in some cases damage may occur to the retina after excessive exposure. Cataracts may develop after many repeated exposures;
- in cases of pronounced individual sensitivity or allergic reaction to ultraviolet radiation, medical advice is recommended before starting exposure;
- the following precautions must be taken:
 - always use the protective goggles provided. Contact lenses and sun glasses are not a substitute for goggles;
 - remove cosmetics well in advance of exposure and do not use any sunscreens or products that accelerate tanning;
 - certain medical conditions or side effects of certain medicines may be aggravated by ultraviolet exposure. In case of doubt, seek medical advice;
 - allow at least 48 h between the first two exposures;
 - do not sunbathe and use the appliance on the same day;
 - follow the recommendations concerning exposure durations, exposure intervals and distances from the lamp;

- seek medical advice if persistent lumps or sores appear on the skin or if there are changes in pigmented moles;
- protect sensitive skin parts such as scars, tattoos and genitals from exposure.

For appliances having a lid that has to be opened in normal use, the instructions shall include a warning that the appliance must not be switched on with the lid in the closed position and that, before closing the lid for storage, the appliance must be disconnected from the supply and allowed to cool down.

NOTE 103 This warning is not required if the appliance complies with the tests of 19.2 and 19.3.

The instructions for appliances having **IR emitters** shall include advice for the protection of the eyes against exposure to infrared radiation and advise that adequate precautions must be taken to safeguard the user against the dangers of excessive exposure.

32 Radiation, toxicity and similar hazards

32.101 Replace the existing text by the following:

Appliances shall not present a toxic or similar hazard. Appliances having **UV emitters** shall not emit radiation having a total **effective irradiance** exceeding $0,3 \text{ W/m}^2$ weighted according to the erythema action spectrum of Figure 101.

Appliances shall comply with the values specified in Table BB.1.

Compliance is checked by the following test:

*The appliance is provided with **UV emitters** that have been aged by supplying them at **rated voltage** for a period of approximately:*

- 5 h for fluorescent lamps;
- 1 h for high-intensity discharge lamps.

NOTE 1 A high-intensity discharge lamp is an electric discharge lamp in which the radiation-producing arc is stabilized by the wall temperature and the arc has a bulb wall loading in excess of 3 W/cm^2 .

NOTE 2 For appliances containing both fluorescent lamps and high-intensity discharge lamps, the high-intensity discharge lamps can be aged for the same period as the fluorescent lamps.

*The appliance is supplied at **rated voltage** and operated for approximately half the maximum exposure time allowed by the timer. The irradiance is then measured at the shortest recommended exposure distance, the measuring instrument being positioned so that the highest radiation is recorded. However, the irradiance of facial guns is measured at a distance of $100 \text{ mm} \pm 2 \text{ mm}$ and calculated for the recommended exposure distance.*

*The exposure distance of **UV emitters** that are located over a person is the distance between the emitter and the supporting surface, reduced by 0,3 m.*

The measuring instrument used shall measure the mean irradiance over a circular area having a diameter not exceeding 20 mm. The response of the instrument shall be proportional to the cosine of the angle between incident radiation and the normal to the circular area. The spectral irradiance shall be measured at intervals not exceeding 2,5 nm in an appropriate spectroradiometric system. The spectroradiometer shall have a bandwidth not exceeding 2,5 nm.

NOTE 3 A bandwidth of 1 nm is advisable for greater measurement accuracy in cases where a rapid change of the spectral energy occurs within a small bandwidth area.

NOTE 4 For appliances having upper and lower radiating surfaces, each part is measured separately while the other part is covered or removed. If the distance between two radiating surfaces is less than 0,3 m, the measurement is made at the surface of the upper panel.

NOTE 5 The total **effective irradiance** is given by:

$$E_{\text{eff}} = \sum_{250 \text{ nm}}^{400 \text{ nm}} S_{\lambda} E_{\lambda} \Delta\lambda$$

where

E_{eff} is the total **effective irradiance**;

S_{λ} is the relative spectral effectiveness (weighting factor) according to Figure 101;

E_{λ} is the spectral irradiance in $\text{W/m}^2\text{nm}$;

$\Delta\lambda$ is the wavelength interval (nm).

The wavelength interval for the calculation shall preferably be 1 nm but must not exceed 2,5 nm. It should ideally be equal to the bandwidth of the spectroradiometer used.

Appliances shall have a total irradiance not exceeding $0,003 \text{ W/m}^2$ for wavelengths between 200 nm and 280 nm and measured by a spectroradiometer between 250 nm and 280 nm.

NOTE 6 The total irradiance is given by:

$$E = \sum_{200 \text{ nm}}^{280 \text{ nm}} E_{\lambda} \Delta\lambda$$

where

E is the total irradiance;

E_{λ} is the spectral irradiance in $\text{W/m}^2\text{nm}$;

$\Delta\lambda$ is the wavelength interval (nm).

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Bibliography

p Add the following note to the standards mentioned:

IEC 61228 NOTE Harmonized as EN 61228:2008 (not modified).

ISO 13732-1 NOTE Harmonized as EN ISO 13732-1:2006 (not modified).

NORME
INTERNATIONALE
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AMENDEMENT 2
AMENDMENT 2
2007-03

Amendement 2

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Sécurité –**

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Amendment 2

**Household and similar electrical appliances –
Safety –**

**Part 2-27:
Particular requirements for appliances
for skin exposure to ultraviolet and
infrared radiation**

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