

Elektrické spotrebiče pre domácnosť a na podobné účely. Bezpečnosť. Časť 2-27: Osobitné požiadavky na spotrebiče určené na ožarovanie pokožky ultrafialovým a infračerveným žiarením.

STN EN 60335-2-27

36 1055

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

Táto norma obsahuje anglickú verziu európskej normy. This standard includes the English version of the European Standard.

Obsahuje: EN 60335-2-27:2013, IEC 60335-2-27:2009

Oznámením tejto normy sa od 21.11.2014 ruší STN EN 60335-2-27 (36 1055) z marca 2011

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EUROPEAN STANDARD

EN 60335-2-27

NORME EUROPÉENNE EUROPÄISCHE NORM

December 2013

ICS 13.120; 97.170

Supersedes EN 60335-2-27:2010

English version

Household and similar electrical appliances - Safety -

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

(IEC 60335-2-27:2009, 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 60335-2-27:2009, modifiée)

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -Teil 2-27: Besondere Anforderungen für Hautbestrahlungsgeräte mit Ultraviolettund Infrarotstrahlung (IEC 60335-2-27:2009, modifiziert)

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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.

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CENELEC

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

Foreword

This document EN 60335-2-27:2013 consists of the text of IEC 60335-2-27:2009 prepared by IEC TC 61, "Safety of household and similar electrical appliances", together with the common modifications prepared by the Technical Committee CENELEC TC 61, "Safety of household and similar electrical appliances".

EN 60335-2-27:2013 is based on IEC 60335-2-27:2009, modifying it to fulfil the SCCP requirements for these appliances and to incorporate existing common modifications and interpretation statements.

The following dates are 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) 2014-06-13

(dow)

 latest date by which the national standards conflicting with the EN have to be withdrawn 2014-11-21

This document supersedes EN 60335-2-27:2010.

The principal changes in EN 60335-2-27:2013 as compared with EN 60335-2-27:2010 are as follows (minor changes are not listed):

- clarification of the radiation measurement procedure (32.101);
- guidelines for an exposure time schedule (Annex DD).

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

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 60335-2-27:2009 was approved by CENELEC as a European Standard with the following agreed common modifications:

COMMON MODIFICATIONS

Introduction

Add after the second paragraph:

This standard covers appliances used for intentional tanning. Irradiance limit values are not to be used as safety guidelines for non-intentional UV-exposure.

Add after the seventh paragraph:

An investigation by CENELEC TC 61 has shown that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 2006/95/EC. For products having mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 2006/42/EC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

6 Classification

Replace 6.101 by:

6.Z101 Appliances shall be one of the following types with respect to the type of ultraviolet radiation:

- UV type 1 appliance;
- UV type 2 appliance;
- UV type 3 appliance;
- UV type 4 appliance.

Compliance is checked by inspection and by the relevant tests.

NOTE **UV type 1 appliances** and **UV type 2 appliances** are intended to be used in tanning salons, beauty parlours and similar premises, under supervision of appropriately trained persons.

UV type 3 appliances are suitable for household and similar use and may be used by unskilled persons. They are also suitable for use in tanning salons, beauty parlours and similar premises UV type 4 appliances are only to be used following medical advice and only intended to be used in tanning salons, beauty parlours and similar premises, under supervision of appropriately trained persons, and not for household use

7 Marking and instructions

7.1 Replace the first paragraph by:

Appliances having **UV emitters** shall be marked with the appropriate UV type number in the following form:

UV type X

NOTE Z101 X is replaced by the appropriate number.

Add after Note 102:

UV type 4 appliances shall be marked with the substance of the following:

WARNING: Only to be used following medical advice.

Delete 7.6

7.12 Addition:

Replace the fifth bullet point by:

persons having more than 16 moles (2 mm or more in diameter) on the body;

Replace the eighth bullet point by:

- 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;

Add after the tenth bullet point:

• persons having a first-degree relative with a history of melanoma;

Replace the sixth dashed item by:

 recommended schedule of exposure specifying duration and intervals (based on the UV emitter characteristics, distances and skin sensitivity), see Annex DD and Annex ZB;

Delete 7.14

22.111

Replace the Note by :

NOTE An example of the equivalency code range calculation is as follows.

If the equivalency code of the lamp fitted in the appliance during type testing is

100-R-25/2,7

the equivalency code range that must be marked on the appliance is calculated as follows:

lower value of X range: $0.75 \times 25 = 18.75$ lower value of Y range: $0.85 \times 2.7 = 2.29$ upper value of Y range: $1.15 \times 2.7 = 3.10$

X is to be rounded to the nearest integer, Y is to be rounded to the nearest first decimal.

The fluorescent UV lamp equivalency code range is then:

100-R-(19-25)/(2,3-3,1)

30 Resistance to heat and fire

30.2 Add the following note:

NOTE Z1 The combination of a lampholder and a fluorescent lamp used for skin exposure to ultraviolet and infrared radiation is not considered to be a luminaire. EN 60598-1 is not the standard to be used in this case.

32 Radiation, toxicity and similar hazards

32.101

Replace the first paragraph by :

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 W/m² weighted according to the erythema action spectrum of Figure 103.

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

Delete the paragraph between Note 3 and Note 4.

Annexes

Replace Annex BB by the following:

Annex BB

(normative)

Detailed classification of UV appliances

This annex provides details of a classification of UV appliances based on amounts of radiation in the ranges 250 nm to 320 nm and 320 nm to 400 nm.

BB.1 Definitions

For the purposes of this annex, the following definitions apply.

BB.1.1

UV type 1 appliance

appliance having a **UV emitter** such that the biological effect is caused by radiation having wavelengths longer than 320 nm and characterized by a relatively high irradiance in the range 320 nm to 400 nm

BB.1.2

UV type 2 appliance

appliance having a **UV emitter** such that the biological effect is caused by radiation having wavelengths both shorter and longer than 320 nm and characterized by a relatively high irradiance in the range of 320 nm to 400 nm

BB.1.3

UV type 3 appliance

appliance having a **UV** emitter such that the biological effect is caused by radiation having wavelengths both shorter and longer than 320 nm and characterized by a limited irradiance over the whole UV radiation band

BB.1.4

UV type 4 appliance

appliance having a **UV emitter** such that the biological effect is mainly caused by radiation having wavelengths shorter than 320 nm

BB.2 Classification

UV appliances can be classified as one of the following types:

- UV type 1 appliance;
- UV type 2 appliance;
- UV type 3 appliance;
- UV type 4 appliance.

NOTE 101 **UV type 1 appliances** and **UV type 2 appliances** are intended to be used in tanning salons, beauty parlours and similar premises, under supervision of appropriately trained persons. They are not intended for household use.

UV type 3 appliances are suitable for household and similar use and may be used by unskilled persons. They are also suitable for use in tanning salons, beauty parlours and similar premises.

UV type 4 appliances are only to be used following medical advice and only intended to be used in tanning salons, beauty parlours and similar premises, under supervision of appropriately trained persons, and not for household use

BB.3 Effective irradiance

The **effective irradiance** for each type of UV appliance, weighted according to the erythema action spectrum of Figure 103, is given in Table BB.1.

Table BB.1 - Limits of effective irradiance

UV type appliance	Effective irradiance W/m ²		
ov type appliance	250 nm < $\lambda \leq$ 320 nm	320 nm < $\lambda \leq 400$ nm	
1	< 0,000 5	≥ 0,15	
2	0,000 5 to 0,15	≥ 0,15	
3	< 0,15	< 0,15	
4	≥ 0,15	< 0,15	
λ is the wavelength of the radiation.			

NOTE 101: The total effective irradiance should not exceed 0,3W/m2 (cf. Subclause 32.101)

Annex DD

Add after the fifth bullet point:

NOTE Z101 The second and following exposures should be at least 10 min.

Add after the ninth bullet point:

NOTE Z102 As any exposure to UV radiation increases the risk of skin cancer, there is no safe value of maximum yearly dose.

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Add a new annex:

Annex ZB (informative)

A-deviations

We confirm that the existing A-deviation mentioned in EN 60335-2-27:2010 (Annex ZB, 7.12) is still valid for Finland.

7.12 Finland (Decree of the Ministry of Social Affairs and Health on the Limitation of Public Exposure to Non-ionising Radiation (294/2002), 4.4.2002)

The recommended number of exposures for each part of the body is to be based upon a maximum yearly dose of 5 kJ/m 2 , weighted according to the erythema action spectrum of Figure 103 and taking into account the recommended schedule of exposure.

Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

IEC 61228, Fluorescent ultraviolet lamps used for tanning – Measurement and specification method NOTE Harmonized as EN 61228 (not modified).

ISO 13732-1, Ergonomics of the thermal environment – Methods for the assessment of human responses to contact with surfaces – Part 1: Hot surfaces

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



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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





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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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

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

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 60335-2-27 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This fifth edition cancels and replaces the fourth edition published in 2002, its Amendment 1 (2004) and Amendment 2 (2007). It constitutes a technical revision.

The principal changes in this edition as compared with the fourth edition of IEC 60335-2-27 are as follows (minor changes are not listed):

- clarification of the radiation measurement procedure (32.101);
- guidelines for an exposure time schedule (Annex DD).

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The text of this standard is based on the following documents:

FDIS	Report on voting
61/3911/FDIS	61/3969/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.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fourth edition (2001) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for appliances for skin exposure to ultraviolet and infrared radiation.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

- requirements: in roman type;
- test specifications: in italic type;
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result 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.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

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The following differences exist in the countries indicated below.

- 7.1: The markings are different (USA).
- 10.1: The deviations are different (USA).
- 10.2: The deviations are different (USA).
- 19.101: The test is different (USA).
- 20.1: The test is carried out at an angle of 8° (USA).
- Clause 22: Series resistors are to be incorporated in some UV emitters (Australia).
- 22.107: The requirement is not applicable (USA).
- 22.108: The maximum timer setting is shorter (USA).
- 32.101: The irradiance limits and the tests are different (USA).
- 32.101: The total erythema effective UV irradiance shall not be greater than 0,3 W/m² (Belgium)
- 32.101: The effective irradiance limits and wavelength intervals are different (Spain).
- 32.102: The requirements for protective goggles are different (USA).
- Annex DD: The recommended number of exposures for each part of the body is to be based upon a maximum yearly dose of 5 kJ/m², weighted according to the erythema action spectrum shown in Figure 103 and taking into account the recommended schedule of exposure (Finland).

A list of all parts of the IEC 60335 series, under the general title: Household and similar electrical appliances – Safety, can be found on the IEC website.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

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

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electrical appliances incorporating emitters for exposing the skin to ultraviolet or infrared radiation, for household and similar use, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used in tanning salons, beauty parlours and similar premises, are also within the scope of this standard.

As far as practicable, this standard deals with the common hazards presented by appliances that are encountered by persons using the UV appliances in tanning salons, beauty parlours and similar premises or at home. However, in general, it does not take into account

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledge

prevents them from using the appliance safely without supervision or instruction;

children playing with the appliance.

NOTE 101 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities;
- IEC 60598-1 is applicable as far as is reasonable.

NOTE 102 This standard does not apply to

- appliances for medical purposes;
- appliances that use UV radiation for purposes other than tanning the skin;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

2 Normative references

This clause of Part 1 is applicable.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN