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Interested committees:

Title: Draft BS IEC 60335-2-27 Household and similar electrical appliances - Safety. Part 2-27: Particular requirements for appliances for skin exposure to optical radiation.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

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Information on the co-operating organizations represented on the committees referenced above may be obtained from <https://standardsdevelopment.bsigroup.com/>.

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Full document details: 18/30369334 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



PROJECT NUMBER:

IEC 60335-2-27 ED6

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2017-12-22

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2018-03-16

SUPERSEDES DOCUMENTS:

61/5557/RR

IEC TC 61 : SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

SECRETARIAT:

United States of America

SECRETARY:

Ms Randi Myers

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

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:

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

NOTE FROM TC/SC OFFICERS:

This document is circulated according to the decisions taken at the meeting of TC 61 in Toronto – see 61/5486/RM and Vladivostok.

Refer to 61/5349/DC and 61/5417/INF and 61/5486/RM, item 19

Refer to 61/5466/DC and 61/5518/INF and item 17 from Vladivostok

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-27: Particular requirements for appliances
for skin exposure to optical 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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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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

This sixth edition cancels and replaces the fifth edition published in 2009 including its Amendment 1 (2012) and its Amendment 2 (2015). It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the seventh edition:

- aligns the text with IEC 60335-1, Ed 5, and its Amendments 1 and 2;
- luminuous transmission has been defined (3.1.102)
- requirements for testing parts of the appliance that are operated unattended are added (30.2)

The text of this International Standard is based on the following documents:

FDIS	Report on voting
61/XX/FDIS	61/5381/RVD

Full information on the voting for the approval of this International 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.

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.

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 fifth edition (2010) 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 tumble dryers.

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 stability 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.

The National Committees are requested to note that for this document the stability date is 2022.

This text is included for the information of the National Committees and will be deleted at the publication stage.

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.

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).

Note of the Secretary: National Committees are asked to reconfirm their in some countries notes. Unless they are reconfirmed, they will be deleted.

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 optical 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 optical radiation (wavelength 100 nm to 1 mm), for household and similar use, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 1 Battery-operated appliances and other d.c. supplied appliances are within the scope 10 of this standard. Dual supply appliances, either mains-supplied or battery-operated, are 11 regarded as **battery-operated appliances** when operated in the battery mode.

This standard deals with the reasonably foreseeable hazards presented by appliances that are encountered by all persons using the appliances in tanning salons, beauty parlours and similar premises or at home. However, in general, it does not take into account.

As far as practicable, this standard deals with the common hazards presented by appliances that are encountered by persons using the 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 knowledgeprevents 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 skin or hair care (IEC 60335-2-23);
- sauna heating appliances and infrared cabins (IEC 60335-2-53);
- cosmetic and beauty care appliances incorporating lasers and intense light sources (IEC 60335-2-113)
- appliances for medical purposes (IEC 60601);
- 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 except as follows.

Addition:

IEC 61228, *Fluorescent ultraviolet lamps used for tanning – Measurement and specification method*

IEC 62471:2006, *Photobiological safety of lamps and lamp systems*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

Addition:

3.1.101

effective irradiance

irradiance of electromagnetic radiation weighted according to a specified action spectrum

3.1.102

luminous transmission

percentage of incident light passing through a material weighted by the spectral sensitivity of the human eye between and integrated over the wavelength range of 380 and 780 nm

3.5 Definitions relating to types of appliances

Addition:

3.5.101

UV appliance

appliance incorporating **UV emitters** for tanning purposes

3.5.102

IR appliance

appliance incorporating one or more **IR emitters**

3.5.103

VIS appliance

appliance incorporating one or more **VIS emitters**

3.6 Definitions relating to parts of an appliance

Addition:

3.6.101

ultraviolet emitter

radiating source constructed to emit electromagnetic energy at wavelengths between 200 nm and 400 nm

Note 1 to entry: A fluorescent UV lamp for tanning is an example of a **UV emitter**.

Note 2 to entry: UV radiation with wavelengths below 200 nm is not easily transmitted through air and usually exists only in a vacuum.

Note 3 to entry: **Ultraviolet emitters** are also referred to as **UV emitters**.

3.6.102

infrared emitter

radiating source constructed to emit electromagnetic energy at wavelengths between 780 nm and 1 mm

Note 1 to entry: **Infrared emitters** are also referred to as **IR emitters**.

3.6.103**visual emitter**

radiating source constructed to emit electromagnetic energy at wavelengths of 400 nm to 780 nm

Note 1 to entry: **Visual emitters** are also referred to as **VIS emitters**.

3.6.104**UV filter**

device used to modify the ultra-violet radiation passing through it, generally by altering the spectral distribution

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.101 *Appliances with **IR emitters** only are tested as **heating appliances**. All other appliances are tested as **motor-operated appliances**.*

6 Classification

This clause of Part 1 is applicable except as follows.

6.101 UV appliances shall be one of the following types with respect to the emission of ultraviolet radiation:

- appliances suitable for household use;
- appliances for commercial use only.

NOTE 1 Appliances for household use may also be for commercial use, such as in tanning salons, beauty parlours and similar premises.

NOTE 2 Detailed classification of the appliances is described in Annex BB.

Compliance is checked by inspection and by the relevant tests.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Addition:

UV appliances intended for commercial use, such as in tanning salons, beauty parlours and similar premises shall be marked with the “not for household use” symbol shown in 7.6 or with the substance of the following:

Not for household use

Appliances having fluorescent UV lamps for tanning shall be marked with the fluorescent UV lamp equivalency code range. This equivalency code range identifies the fluorescent UV lamps for tanning that shall be used in the appliance.

NOTE 101 Details of the fluorescent UV lamp code that is marked on the lamp are given in IEC 61228 and are reproduced in Annex CC for information. An example of the fluorescent UV lamp equivalency code range to be marked on the appliance is given in 22.111.

For **UV emitters** other than fluorescent UV lamps for tanning, the appliance shall be marked with the type reference of the emitters that are recommended for use.

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