
Gospodinjski in podobni električni aparati - Varnost - 2-27. del: Posebne zahteve za aparate za nego kože z ultravijoličnim in infrardečim sevanjem (IEC 60335-2-27:2002)

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-27:2004](https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004)

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60335-2-27:2004

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>

EUROPEAN STANDARD

EN 60335-2-27

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2003

ICS 97.170; 13.120

Supersedes EN 60335-2-27:1997 + A1:2000

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)**

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)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-27: Besondere Anforderungen
für Hautbehandlungsgeräte mit
Ultraviolett- und Infrarotstrahlung
(IEC 60335-2-27:2002)

This European Standard was approved by CENELEC on 2003-05-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

[SIST EN 60335-2-27:2004](https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004)

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>

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 the International Standard IEC 60335-2-27:2002 (61/2181/FDIS), prepared by IEC TC 61, Safety of household and similar electrical appliance, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60335-2-27 on 2003-05-01.

This European Standard supersedes EN 60335-2-27:1997 + A1:2000.

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) 2004-05-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 2006-05-01

This part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances – Safety – Part 1: General requirements. It was established on the basis of the 2002 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This Part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Particular requirements for electric 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 reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

NOTE 1 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.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

NOTE 2 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.

SIST EN 60335-2-27:2004

There are no special national conditions causing a deviation from this European Standard, other than those listed in Annex ZA to EN 60335-1.

National deviations from this European Standard are listed in Annex ZB and are in addition to those in EN 60335-1.

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

Introduction

p Add:

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, 73/23/EEC. For products having mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 98/37/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.

Endorsement notice

The text of the International Standard IEC 60335-2-27:2002 was approved by CENELEC as a European Standard without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-27:2004](https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004)

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>

p Add:

Annex ZB (informative)

A-deviations

Addition:

Clause Deviation

6.101 **France** (Decree No. 97-617 of 30 May 1997)

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

UV type 3 appliances may be used by unskilled persons.

UV type 2 and **UV type 4 appliances** are intended to be used only following medical advice and under medical supervision.

UV type 1, UV type 2 and **UV type 4 appliances** cannot be sold to the public.

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/m², weighted according to the UV action spectrum of Figure 101 and taking into account the recommended schedule of exposure.

32.101 **France** (Decree No. 97-617 of 30 May 1997)

For **UV type 1** and **UV type 3 appliances**, the irradiance in the range less than or equal to 320 nm, shall not exceed 1,5 % of the total UV irradiance of these appliances.

Spain (Real Decreto 1002/2002 of 27 September)

Users of UV appliances for household and similar use such as appliances intended to be used in tanning salons, beauty parlors and similar premises, cannot be exposed to ultraviolet radiation with

- a) **effective irradiance** above 0,30 W/m²;
- b) wavelengths shorter than 295 nm.

(standards.iteh.ai)

SIST EN 60335-2-27:2004

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>

NORME
INTERNATIONALE

CE
IEC

INTERNATIONAL
STANDARD

60335-2-27

Quatrième éditio
Fourth editio
2002-0

**Appareils électrodomestiques et analogues –
Sécurité –**

**Partie 2-27:
Règles particulières pour les appareils
d'exposition de la peau aux rayonnements
ultraviolets et infrarouges**

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

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

© IEC 2003 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur. SIST EN 60335-2-27:2004
No part of this publication may be reproduced or utilized in any form, or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher. https://standards.iteh.ai/catalog/standards/sist/en-60335-2-27/2004

International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

R

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

FOREWORD	5
INTRODUCTION	9
1 Scope	11
2 Normative references.....	11
3 Definitions	13
4 General requirement	13
5 General conditions for the tests	13
6 Classification	15
7 Marking and instructions	15
8 Protection against access to live parts	19
9 Starting of motor-operated appliances	19
10 Power input and current.....	19
11 Heating.....	21
12 Void	21
13 Leakage current and electric strength at operating temperature	21
14 Transient overvoltages.....	23
15 Moisture resistance.....	23
16 Leakage current and electric strength	23
17 Overload protection of transformers and associated circuits.....	23
18 Endurance	23
19 Abnormal operation.....	23
20 Stability and mechanical hazards	25
21 Mechanical strength.....	25
22 Construction	27
23 Internal wiring.....	29
24 Components	31
25 Supply connection and external flexible cords.....	31
26 Terminals for external conductors	31
27 Provision for earthing.....	31
28 Screws and connections	31
29 Clearances, creepage distances and solid insulation	31
30 Resistance to heat and fire.....	33
31 Resistance to rusting	33
32 Radiation, toxicity and similar hazards.....	33
Annexes.....	39
Annex AA (normative) Measurement of luminance	39
Bibliography	39
Figure 101 – UV action spectrum	37
Table 101 – Limits of effective irradiance	33
Table 102 – Maximum transmission of the goggles	35

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 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.

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

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-d1c37e1e3331/iec-60335-2-27-2003>

This fourth edition cancels and replaces the third edition published in 1995 and its amendment 1 (2000). It constitutes a technical revision.

This bilingual version (2003-10) replaces the English version.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61/2181/FDIS	61/2262/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 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 electric 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 this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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).
- 32.102: The requirements for protective goggles are different (USA).

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.

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.

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.

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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 60335-2-27:2004](https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004)

<https://standards.iteh.ai/catalog/standards/sist/664f7aa1-8223-4cd3-9307-db344c34f837/sist-en-60335-2-27-2004>