Annexe DD
(informative)

Lignes directrices pour l'élaboration d'un programme de durée d'exposition

Cette annexe donne des informations détaillées concernant les exigences d'un programme de durée d'exposition.

- Il n'est pas nécessaire que le programme de durée d'exposition dépende du type de peau.
- Il convient que la durée d'exposition recommandée pour la première exposition d'une peau non bronzée ne dépasse pas le temps nécessaire pour fournir une dose de 100 J/m^2, pondéré en fonction du spectre d'action de l'érythème représenté à la Figure 103, ou résultant d'un essai sur une petite surface de la peau. Pour le calcul de la durée d'exposition recommandée pour la première exposition, utiliser la formule de la Note 4 de 32.101.
- Attendre 48 h entre la première et la deuxième exposition, car des effets secondaires inattendus retardés peuvent se produire jusqu'à 48 h après la première exposition.

  NOTE La raison de la première petite dose est la vérification des effets secondaires inattendus qui suivent une quelconque exposition aux UV. Il convient d'expliquer cette raison à l'utilisateur.
- Il convient que la durée d'exposition recommandée pour la deuxième exposition d'une peau non bronzée ne dépasse pas la durée nécessaire pour fournir une dose de 250 J/m^2, pondérée en fonction du spectre d'action de l'érythème représenté à la Figure 103.
- il convient qu'une simple dose ne dépasse pas 600 J/m^2, pondérée en fonction du spectre d'action de l'érythème représenté à la Figure 103.
- Il convient que la période d'attente entre des expositions qui se suivent soit approximativement de 48 h, en raison du comportement cumulé de la réaction érythémale.
- Il convient qu'un programme de bronzage (série d'expositions consécutives) ne dépasse pas la dose totale de 3 kJ/m^2, pondérée en fonction du spectre d'action de l'érythème représenté à la Figure 103.
- Il convient d'appliquer progressivement les augmentations de dose pendant la durée du programme de bronzage.
- Le nombre d'expositions recommandé par année, pour chaque partie du corps, doit être fondé sur une dose annuelle maximale de ~~25~~ 15 kJ/m^2, pondérés en fonction du spectre d'action ~~du cancer de la peau non mélanocytaire~~ de l'érythème illustré à la Figure 103, en tenant compte du programme d'exposition recommandé.

Annexe EE
(informative)

Limites d'éclairement fixées par les autorités régionales ou nationales

De nombreuses autorités nationales ou régionales ont publié des règlements concernant les limites d'éclairement des **appareils UV** qui sont parfois différentes de celles données par la présente norme. Les limites conseillées par les Comités Nationaux qui diffèrent de celles données par la CEI sont indiquées dans les Tableaux EE.1 à EE.3 suivants. Il convient que ces limites soient aussi prises en compte au cours des essais de type et dans la classification de l'appareil pour les pays concernés. En l'absence de différence de limite, c'est la limite donnée par la CEI qui est supposée s'appliquer.

Tableau EE.1 – Europe: limites selon EN 60335-2-27

Appareil	Eclairement effectif total W/m^2	(280 -320) nm eclairement effectif W/m^2	(320 -400) nm eclairement effectif W/m^2	(200 – 280) nm eclairement à courte longueur d'onde W/m^2	Dose maximale par exposition J/m^2	Dose maximale par ana kJ/m^2 (NMSC) [b]
UV type 1	0,3	< 0 001	≥ 0,15	0,003	600	25
UV type 2	0,3	< 0,15	≥ 0,15	0,003	600	25
UV type 3	0,3	< 0,15	< 0,15	0,003	600	25
UV type 4	0,3	≥ 0,15	< 0,15	0,003	600	25
UV type 5	Pas autorisé					

[a] La dose maximale par an applicable en Finlande est de 5 kJ/m^2 pondéré en fonction du spectre d'action de l'érythème.

[b] NMSC signifie que la dose maximale par an est mesurée en fonction du spectre d'action du cancer de la peau non mélanocytaire.

Tableau EE.2 – Australie et Nouvelle-Zélande: limites selon AS/NZS 60335.2.27

Appareil	Eclairement effectif total W/m^2	(280 -320) nm eclairement effectif W/m^2	(320 -400) nm eclairement effectif W/m^2	(200 – 280) nm eclairement à courte longueur d'onde W/m^2
UV type 1	Pas autorisé			
UV type 2	0,7	0,001 – 0,15 en addition 0,007 < UVB*/UVT** < 0,03	≥ 0,15	0,003 en addition la limite d'éclairement spectral 1.0 × 10^{-5} W/m^2/nm
UV type 3		< 0,15 en addition 0,007 < UVB*/UVT** < 0,03	< 0,15	0,003 en addition la limite d'éclairement spectral 1.0 × 10^{-5} W/m^2/nm
UV type 4	Pas autorisé			
UV type 5	Pas autorisé			
UVB* = Eclairement dans la plage 280 nm ≤ λ ≤ 320 nm UVT** = Eclairement total				

Tableau EE.3 – USA: limites selon 21 CFR 1040.20

Appareil	Eclairement effectif total W/m^2	(280 -320) nm eclairement effectif W/m^2	(320 -400) nm eclairement effectif W/m^2	(200 – 260 nm)/(260 – 320) eclairement à courte longueur d'onde ratio
Tous les types				0,003

Bibliographie

La bibliographie de la Partie 1 est applicable avec l'exception suivante.

Addition:

IEC 61228, *Lampes fluorescentes à ultraviolet utilisées pour le bronzage – Méthode de mesure et de spécification*

ISO 3864-1, *Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Partie 1: Principes de conception pour les signaux de sécurité sur les lieux de travail et dans les lieux publics*

~~ISO 13732-1, *Ergonomie des ambiances thermiques – Méthodes d'évaluation de la réponse humaine au contact avec des surfaces – Partie 1: Surfaces chaudes*~~

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FINAL VERSION

VERSION FINALE

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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

Appareils électrodomestiques et analogues – Sécurité – Partie 2-27: Règles particulières pour les appareils d'exposition de la peau aux rayonnements ultraviolets et infrarouges

IEC 60335-2-27:2009-12+AMD1:2012-11 CSV(en-fr)

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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

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This Consolidated version of IEC 60335-2-27 bears the edition number 5.1. It consists of the fifth edition (2009-12) [documents 61/3911/FDIS and 61/3969/RVD] and its amendment 1 (2012-11) [documents 61/4444/FDIS and 61/4497/RVD]. The technical content is identical to the base edition and its amendment.

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

This publication has been prepared for user convenience.

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

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).

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 amendment 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.

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/m^2 (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/m^2, 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.

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.