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Standards

Irish Standard  
I.S. EN IEC 61228:2020

# Fluorescent ultraviolet lamps used for tanning - Measurement and specification method

**I.S. EN IEC 61228:2020**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN IEC 61228:2020 is the adopted Irish version of the European Document EN IEC 61228:2020, Fluorescent ultraviolet lamps used for tanning - Measurement and specification method

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EUROPEAN STANDARD

**EN IEC 61228**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2020

ICS 17.240; 29.140.01; 97.170

Supersedes EN 61228:2008 and all of its amendments  
and corrigenda (if any)

English Version

**Fluorescent ultraviolet lamps used for tanning - Measurement  
and specification method  
(IEC 61228:2020)**

Lampes fluorescentes à ultraviolet utilisées pour le  
bronzage - Méthode de mesure et de spécification  
(IEC 61228:2020)

UV-Leuchtstofflampen für Bräunungszwecke - Verfahren  
zur Messung und Beschreibung  
(IEC 61228:2020)

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 61228:2020 (E)****European foreword**

The text of document 34A/2213/FDIS, future edition 3 of IEC 61228, prepared by SC 34A "Electric light sources" of IEC/TC 34 "Lighting" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61228:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-09-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-12-09

This document supersedes EN 61228:2008 and all of its amendments and corrigenda (if any).

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The text of the International Standard IEC 61228:2020 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60081:1997	NOTE	Harmonized as EN 60081:1998 (not modified)
IEC 60081:1997/A1:2000	NOTE	Harmonized as EN 60081:1998/A1:2002
IEC 60081:1997/A2:2003	NOTE	Harmonized as EN 60081:1998/A2:2003 (not modified)
IEC 60081:1997/A3:2005	NOTE	Harmonized as EN 60081:1998/A3:2005 (not modified)
IEC 60081:1997/A4:2010	NOTE	Harmonized as EN 60081:1998/A4:2010 (not modified)
IEC 60081:1997/A5:2013	NOTE	Harmonized as EN 60081:1998/A5:2013 (not modified)
IEC 60081:1997/A6:2017	NOTE	Harmonized as EN 60081:1998/A6:2017
IEC 60901:1996	NOTE	Harmonized as EN 60901:1996 (not modified)
IEC 60901:1996/A1:1997	NOTE	Harmonized as EN 60901:1996/A1:1997 (not modified)
IEC 60901:1996/A2:2000	NOTE	Harmonized as EN 60901:1996/A2:2000 (not modified)
IEC 60901:1996/A3:2004	NOTE	Harmonized as EN 60901:1996/A3:2004 (not modified)
IEC 60901:1996/A4:2007	NOTE	Harmonized as EN 60901:1996/A4:2008 (not modified)
IEC 60901:1996/A5:2011	NOTE	Harmonized as EN 60901:1996/A5:2012 (not modified)
IEC 60901:1996/A6:2014	NOTE	Harmonized as EN 60901:1996/A6:2017 (modified)
IEC 61195	NOTE	Harmonized as EN 61195
IEC 61199	NOTE	Harmonized as EN 61199
IEC 62471:2006	NOTE	Harmonized as EN 62471:2008 (modified)

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60061-1	-	Lamp caps and holders together with gauges for the control of interchangeability and safety. Part 1: Lamp caps	EN 60061-1	-
IEC 60081	-	Double-capped fluorescent lamps - Performance specifications	EN 60081	-
IEC 60155	-	Glow-starters for fluorescent lamps	EN 60155	-
IEC 60335-2-27	-	Household and similar electrical appliances - Safety - Part 2-27: Particular requirements for appliances for skin exposure to optical radiation	EN 60335-2-27	-
IEC 60921	-	Ballasts for tubular fluorescent lamps - Performance requirements	EN 60921	-
IEC 60929	-	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements	EN 60929	-
IEC 61049	-	Capacitors for use in tubular fluorescent and other discharge lamp circuits. Performance requirements	EN 61049	-
ISO/CIE 28077	2016	Photocarcinogenesis action spectrum (non-melanoma skin cancers)	-	-
CIE 63	1984	The spectroradiometric measurement of light sources		

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**IEC 61228**

Edition 3.0 2020-11

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

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



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**IEC 61228**

Edition 3.0 2020-11

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FLUORESCENT ULTRAVIOLET LAMPS USED FOR TANNING –  
MEASUREMENT AND SPECIFICATION METHOD**

## FOREWORD

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International Standard IEC 61228 has been prepared by subcommittee 34A: Electric light sources, of IEC technical committee 34: Lighting.

This third edition cancels and replaces the second edition published in 2008. This edition constitutes a technical revision.

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

- a) maintenance code: description of the depreciation of the UV irradiance lamp during operation;
- b) operating position: information added for single capped lamps;
- c) spectroradiometric measuring system: new information about distance between sensor and lamp axis;
- d) measurement and evaluation procedure: separated detailed information for double capped fluorescent UV lamps and single capped fluorescent UV lamps;
- e) Annex C (normative), Method of test for irradiance maintenance: new information added;
- f) Annex D (normative), Reflector gauge: new information added;

g) Annex E (normative), Lamp datasheets for measurement: complementary information added.

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

FDIS	Report on voting
34A/2213/FDIS	34A/2220/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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## FLUORESCENT ULTRAVIOLET LAMPS USED FOR TANNING – MEASUREMENT AND SPECIFICATION METHOD

### 1 Scope

This document describes the method of measuring, evaluating and specifying the UV irradiation characteristics of fluorescent ultraviolet lamps that are used in appliances for tanning purposes. It includes specific requirements regarding the marking of such lamps.

These requirements relate only to type testing.

Lamps complying with the requirements of this document comply with the electrical and mechanical safety requirements of IEC 61195 and IEC 61199 with the exception of the requirements for maximum limits of UV radiation.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

IEC 60081, *Double-capped fluorescent lamps – Performance specifications*

IEC 60155, *Glow-starters for fluorescent lamps*

IEC 60335-2-27, *Household and similar electrical appliances – Safety – Part 2-27: Particular requirements for appliances for skin exposure to optical radiation*

IEC 60921, *Ballasts for tubular fluorescent lamps – Performance requirements*

IEC 60929, *AC and/or DC-supplied electronic control gear for tubular fluorescent lamps – Performance requirements*

IEC 61049, *Capacitors for use in tubular fluorescent and other discharge lamp circuits. Performance requirements*

ISO/CIE 28077:2016, *Photocarcinogenesis action spectrum (non-melanoma skin cancers)*

CIE 63:1984, *The spectroradiometric measurement of light sources*

### 3 Terms and definitions

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