# Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3:2024)

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

| | |
|---|---|
| See Eesti standard EVS-EN ISO 4892-3:2024 sisaldab Euroopa standardi EN ISO 4892-3:2024 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 4892-3:2024 consists of the English text of the European standard EN ISO 4892-3:2024. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.10.2024. | Date of Availability of the European standard is 23.10.2024. |
| Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest. | The standard is available from the Estonian Centre for Standardisation and Accreditation. |



Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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# Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3:2024)

Plastiques - Méthodes d'exposition à des sources lumineuses de laboratoire - Partie 3: Lampes fluorescentes UV (ISO 4892-3:2024)

Kunststoffe - Künstliches Bestrahlen oder Bewittern in Geräten - Teil 3: UV-Leuchtstofflampen (ISO 4892-3:2024)

This European Standard was approved by CEN on 17 October 2024.

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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 CEN 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
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## European foreword

This document (EN ISO 4892-3:2024) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 “Plastics” the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4892-3:2016.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Endorsement notice

The text of ISO 4892-3:2024 has been approved by CEN as EN ISO 4892-3:2024 without any modification.

# Contents

Page

# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 6, *Ageing, chemical and environmental resistance*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition cancels and replaces the fourth edition (ISO 4892-3:2016), which has been technically revised.

The main changes are as follows:

— clarification that two fundamentally different types of test chambers exist added (e.g. in 5.2, 5.4, new Annexes);

— Table 4 has been split into two separate tables for the different types of test chambers, Table 4 applies to condensation type devices and Table 5 to climatic chamber type devices;

— new Annex B “Condensation type device”, Annex C “Climatic chamber type device” and Annex D “Alternative test cycles” have been added;

— reference to CIE 85 has been updated to CIE 241;

— combination of different UV fluorescent lamps have been deleted;

— mandatory Clause 3 “Terms and definitions” has been added and subsequent clauses have been renumbered;

— lamp type designations 1A, 1B, 2 have been deleted.

A list of all parts in the ISO 4892 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

# Plastics — Methods of exposure to laboratory light sources —

# Part 3: Fluorescent UV lamps



## 1 Scope

This document specifies methods for exposing plastic specimens to fluorescent UV lamp radiation, heat and water in apparatus designed to simulate the weathering effects that occur when plastic materials are exposed in actual end-use environments to global solar radiation, or to window-glass filtered solar radiation.

Fluorescent UV lamp exposures for paints, varnishes and other coatings are described in ISO 16474-3.

## 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.

ISO 4582, *Plastics — Determination of changes in colour and variations in properties after exposure to glass-filtered radiation, natural weathering or laboratory radiation sources*

ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4892-1 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

## 4 Principle

**4.1** General guidance is given in ISO 4892-1. Following the manufacturer's recommendations for lamp maintenance and/or rotation, fluorescent UV lamps are used to simulate the spectral irradiance of global solar radiation in the short wavelength ultraviolet (UV) region of the spectrum.

**4.2** Specimens are exposed to various levels of UV radiation, heat and moisture (see 4.4) under controlled environmental conditions.

NOTE Specimen preparation and evaluation of the results are covered in other International Standards for specific materials.

**4.3** The exposure conditions are varied by selection of the following:

a) type of fluorescent UV lamp;

b) irradiance level;