SLOVENSKI STANDARD
SIST EN IEC 63013:2020

01-marec-2020

Ohišja svetlečih diod (LED) - Dolgoročni načrt vzdrževanja svetlobnega in sevalnega toka

LED packages - Long-term luminous and radiant flux maintenance projection

LED-Packages - Langfristige Vorhersage des Lichtstromerhalts und des Erhalts der Strahlungsleistung

LED encapsulées - Projection à long terme concernant la conservation du flux lumineux et du flux énergétique

Ta slovenski standard je istoveten z: **EN IEC 63013:2019**

ICS:

29.140.99	Drugi standardi v zvezi z žarnicami	Other standards related to lamps

SIST EN IEC 63013:2020 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 63013

November 2019

ICS 29.140.99

English Version

LED packages - Long-term luminous and radiant flux maintenance projection (IEC 63013:2017)

LED encapsulées - Projection à long terme concernant la conservation du flux lumineux et du flux énergétique (IEC 63013:2017)

LED-Packages - Langfristige Vorhersage des Lichtstromerhalts und des Erhalts der Strahlungsleistung (IEC 63013:2017)

This European Standard was approved by CENELEC on 2017-07-10. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

Ref. No. EN IEC 63013:2019 E

European foreword

The text of document 34A/2008/FDIS, future edition 1 of IEC 63013, prepared by SC 34A "Electric light sources" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63013:2019.

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) 2020-05-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-11-29

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

Endorsement notice

The text of the International Standard IEC 63013:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62506:2013 NOTE Harmonized as EN 62506:2013 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

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

Publication	Year	Title	EN/HD	Year
IEC 62504	-	General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions	EN 62504	-
IES TM-21-11	-	Projecting Long Term Lumen Maintenance of LED Light Sources	-	-
IES LM-80-08	-	IES Approved Method for Measuring Lumen Maintenance of LED Light Sources	-	-
ANSI/IES LM-80-15	-	Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules	-	-

IEC 63013

Edition 1.0 2017-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

LED packages – Long-term luminous and radiant flux maintenance projection

LED encapsulées – Projection à long terme concernant la conservation du flux lumineux et du flux énergétique

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.140.99

ISBN 978-2-8322-4487-6

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LED PACKAGES – LONG-TERM LUMINOUS AND RADIANT FLUX MAINTENANCE PROJECTION

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 itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
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.

International Standard IEC 63013 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34A/2008/FDIS	34A/2015/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.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

INTRODUCTION

One of the benefits of LED lighting is their long lifetime compared to that of many other light source technologies.

However, there is currently no international standard for predicting the long-term luminous flux maintenance of LED packages. This document is intended to close this gap by specifying methods for the long-term luminous flux maintenance projection.

This document is the result of the discussions led by a special expert group within IEC technical committee 34 on this topic.

This expert group had collected a set of luminous flux maintenance measurements of 39 LED package types, each tested at three different temperatures.

Various projection methods were analysed based on this set of test data.

Regarding the selection of models, there was a controversial discussion among the experts and no unanimous agreement could be found.

It was concluded at the meeting in Berlin on 21 January 2014 to choose the TM-21 method as the starting point of the analysis and to have the border function as an alternative in case the TM-21 method was not applicable. It was further concluded that the Arrhenius temperature acceleration should be included in an informative annex.

At the meeting on 26 January 2015 in Washington some further editorial improvements were made and it was agreed to submit this document to IEC as a new project with a view to developing a full international standard.

This new project was approved and all comments received during the enquiry stage were discussed by the project team and resolved. This document incorporates the changes agreed by the project team.