SLOVENSKI STANDARD
SIST EN 60901:2001/A2:2001

01-marec-2001

Single-capped fluorescent lamps - Performance specifications (IEC 60901:1996/A2:2000)

Single-capped fluorescent lamps - Performance specifications

Einseitig gesockelte Leuchtstofflampen - Anforderungen an die Arbeitsweise

Lampes à fluorescence à culot unique - Prescriptions de performances

Ta slovenski standard je istoveten z: **EN 60901:1996/A2:2000**

ICS:

29.140.30	Fluorescenļ ne sijalke. Sijalke	Fluorescent lamps. Discharge lamps

SIST EN 60901:2001/A2:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60901/A2

September 2000

ICS 29.140.30
UDC 621.327:614.8

English version

Single-capped fluorescent lamps Performance specifications (IEC 60901:1996/A2:2000)

Lampes à fluorescence à culot unique - Prescriptions de performances (CEI 60901:1996/A2:2000)

Einseitig gesockelte Leuchtstofflampen - Anforderungen an die Arbeitsweise (IEC 60901:1996/A2:2000)

This amendment A2 modifies the European Standard EN 60901:1996; it was approved by CENELEC on 2000-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Ref. No. EN 60901:1996/A2:2000 E

Foreword

The text of document 34A/908/FDIS, future amendment 2 to IEC 60901: 1996, prepared by SC 34A, Lamps, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 60901:1996 on 2000-06-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2001-03-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-06-01

Endorsement notice

The text of amendment 2:2000 to the International Standard IEC 60901:1996 was approved by CENELEC as an amendment to the European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Replace the list in EN 60901:1996 by:

Publication	Year	Title	EN/HD	Year
IEC 60050-845	1987	International Electrotechnical Vocabulary (IEV) Chapter 845: Lighting	-	-
IEC 60061-1 + supplements + amendments (mod)	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety Part 1: Lamp caps	EN 60061-1 + amendments	1993
IEC 60081	1997	Double-capped fluorescent lamps - Performance specifications	EN 60081	1998
IEC 60155	1993	Glow-starters for fluorescent lamps	EN 60155	1995
IEC 60598-1 (mod)	1996	Luminaires Part 1: General requirements and tests	EN 60598-1	1997
IEC 60921 (mod)	1988	Ballasts for tubular fluorescent lamps - Performance requirements	EN 60921	1991
IEC 60927	1996	Auxiliaries for lamps - Starting devices (other than glow starters) - Performance requirements	EN 60927	1996
IEC 60929 + corr. June	1990 1991	A.C. supplied electronic ballasts for tubular fluorescent lamps - Performance requirements	EN 60929	1992
IEC 61199	1993	Single-capped fluorescent lamps - Safety specifications	EN 61199[1)]	1994
IEC/TS 61231	1999	International lamp coding system (ILCOS)	-	-

1) EN 61199 is superseded by EN 61199:1999, which is based on IEC 61199:1999.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60901

1996

AMENDEMENT 2
AMENDMENT 2

2000-04

Amendement 2

Lampes à fluorescence à culot unique – Prescriptions de performances

Amendment 2

Single-capped fluorescent lamps – Performance specifications

Les feuilles de cet amendement sont à insérer dans la Publication 60901 (1996)

The sheets contained in this amendment are to be inserted in Publication 60901 (1996)

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE XA

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

INSTRUCTIONS POUR L'INSERTION DES NOUVELLES PAGES ET FEUILLES DE CARACTÉRISTIQUES DANS LA PUBLICATION

1. Retirer la page de titre et insérer la nouvelle page de titre.
2. Retirer les pages I-1 à A-1 et insérer les nouvelles pages I-1 à A-1.
3. Retirer les pages B-7 à E-1 et insérer les nouvelles pages B-7 à E-1.
4. Retirer les pages II-3 à II-7 et insérer les nouvelles pages II-3 à II-7.

SECTION 2 – FEUILLES DE CARACTÉRISTIQUES

5. Retirer les feuilles
   0518-1 (pages 1 et 2)
   0526-1 (pages 1 et 2)
   1413-1 (page 2)
   1418-1 (page 2)
   1426-1 (page 2)
   2005-1 (pages 1 et 2)
   2007-1 (pages 1 et 2)
   2009-1 (pages 1 et 2)
   2011-1 (pages 1 et 2)
   2218-1 (page 1)
   2224-1 (page 1)
   2236-1 (page 1)
   2510-1 (pages 1 et 2)
   2513-1 (pages 1 et 2)
   2518-1 (pages 1 et 2)
   2526-1 (pages 1 et 2)
   3118-1 (page 1)
   3124-1 (page 1)
   3136-1 (page 1)
   6240-1 (page 1)
   6255-1 (page 1)
   7412-1 (pages 1 et 2)
   7416-1 (pages 1 et 2)
   7424-1 (pages 1 et 2)
   7432-1 (pages 1 et 2)
   7442-1 (pages 1 et 2)
6. Insérer les nouvelles feuilles
   0518-2 (pages 1 et 2)
   0526-2 (pages 1 et 2)
   1413-2 (page 2)
   1418-2 (page 2)
   1426-2 (page 2)
   2005-2 (pages 1 et 2)
   2007-2 (pages 1 et 2)
   2009-2 (pages 1 et 2)
   2011-2 (pages 1 et 2)
   2218-2 (page 1)
   2224-2 (page 1)
   2236-2 (page 1)
   2510-2 (pages 1 et 2)
   2513-2 (pages 1 et 2)
   2518-2 (pages 1 et 2)
   2526-2 (pages 1 et 2)
   3118-2 (page 1)
   3124-2 (page 1)
   3136-2 (page 1)
   3413-1 (pages 1, 2 et 3)
   3418-1 (pages 1, 2 et 3)
   3426-1 (pages 1, 2 et 3)
   6240-2 (page 1)
   6255-2 (page 1)
   7432-2 (pages 1 et 2)
   7442-2 (pages 1 et 2)
7. Insérer les nouvelles feuilles A020-1 et B410-1.

INSTRUCTIONS FOR THE INSERTION OF NEW PAGES AND SHEETS IN PUBLICATION

1. Remove title page and insert new title page.
2. Remove pages I-2 to A-1 and insert new pages I-2 to A-1.
3. Remove pages B-8 to E-1 and insert new pages B-8 to E-1.
4. Remove pages II-4 to II-8 and insert new pages II-4 to II-8.

SECTION 2 – DATA SHEETS

5. Remove sheets.
   0518-1 (pages 1 and 2)
   0526-1 (pages 1 and 2)
   1413-1 (page 2)
   1418-1 (page 2)
   1426-1 (page 2)
   2005-1 (pages 1 and 2)
   2007-1 (pages 1 and 2)
   2009-1 (pages 1 and 2)
   2011-1 (pages 1 and 2)
   2218-1 (page 1)
   2224-1 (page 1)
   2236-1 (page 1)
   2510-1 (pages 1 and 2)
   2513-1 (pages 1 and 2)
   2518-1 (pages 1 and 2)
   2526-1 (pages 1 and 2)
   3118-1 (page 1)
   3124-1 (page 1)
   3136-1 (page 1)
   6240-1 (page 1)
   6255-1 (page 1)
   7412-1 (pages 1 and 2)
   7416-1 (pages 1 and 2)
   7424-1 (pages 1 and 2)
   7432-1 (pages 1 and 2)
   7442-1 (pages 1 and 2)
6. Insert new sheets
   0518-2 (pages 1 and 2)
   0526-2 (pages 1 and 2)
   1413-2 (page 2)
   1418-2 (page 2)
   1426-2 (page 2)
   2005-2 (pages 1 and 2)
   2007-2 (pages 1 and 2)
   2009-2 (pages 1 and 2)
   2011-2 (pages 1 and 2)
   2218-2 (page 1)
   2224-2 (page 1)
   2236-2 (page 1)
   2510-2 (pages 1 and 2)
   2513-2 (pages 1 and 2)
   2518-2 (pages 1 and 2)
   2526-2 (pages 1 and 2)
   3118-2 (page 1)
   3124-2 (page 1)
   3136-2 (page 1)
   3413-1 (pages 1, 2 and 3)
   3418-1 (pages 1, 2 and 3)
   3426-1 (pages 1, 2 and 3)
   6240-2 (page 1)
   6255-2 (page 1)
   7432-2 (pages 1 and 2)
   7442-2 (pages 1 and 2)
7. Insert new sheets A020-1 and B410-1.

AVANT-PROPOS

Le présent amendement a été établi par le sous-comité 34A: Lampes, du comité d'études 34 de la CEI: Lampes et équipements associés.

Le texte de cet amendement est issu des documents suivants:

FDIS	Rapport de vote
34A/908/FDIS	34A/914/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cet amendement.

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FOREWORD

This amendment has been prepared by subcommittee 34A: Lamps, of technical committee 34: Lamps and related equipment.

The text of this amendment is based on the following documents:

FDIS	Report on voting
34A/908/FDIS	34A/914/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

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NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60901

Deuxième édition
Second edition
1996

Modifiée selon les amendements 1 (1997) et 2 (2000)
Amended in accordance with amendments 1 (1997) and 2 (2000)

Lampes à fluorescence à culot unique – Prescriptions de performances

Single-capped fluorescent lamps – Performance specifications

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

SINGLE-CAPPED FLUORESCENT LAMPS – PERFORMANCE SPECIFICATIONS

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The 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 the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

International Standard IEC 901 has been prepared by sub-committee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
34A/588/FDIS	34A/634/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.

Annexes A, B and C form an integral part of this standard.

Annexes D and E are for information only.

This second edition of IEC 901 cancels and replaces the first edition, published in 1987, amendment 1 (1989) and amendment 2 (1992). The main changes relate to:

– the removal of safety related items;
– the abandonment of the division into three sections;
– the introduction of new terminology;
– a new numbering of the lamp data sheets;
– the introduction of new lamp data sheets.

SINGLE-CAPPED FLUORESCENT LAMPS – PERFORMANCE SPECIFICATIONS

Section 1: General

1.1 Scope

This International Standard specifies the performance requirements for single-capped fluorescent lamps for general lighting service.

The requirements of this standard relate only to type testing. Conditions of compliance, including methods of statistical assessment, are under consideration.

The following lamp types and modes of operation with external ballasts are included:

a) lamps operated with an internal means of starting, having preheated cathodes, for operation on a.c. mains frequencies;

b) lamps operated with an external means of starting, having preheated cathodes, for operation on a.c. mains frequencies with the use of a starter, and additionally operating on high frequency;

c) lamps operated with an external means of starting, having preheated cathodes, for operation on a.c. mains frequencies without the use of a starter (starterless), and additionally operating on high frequency;

d) lamps operated with an external means of starting, having preheated cathodes, for operation on high frequency;

e) lamps operated with an external means of starting, having non-preheated cathodes, for operation on high frequency.

1.2 General statement

It may be expected that lamps which comply with this standard will start and operate satisfactorily at voltages between 92 % and 106 % of rated supply voltage and at an ambient air temperature of between 10 °C and 50 °C, when operated with a ballast complying with IEC 60921 or IEC 60929, where relevant with a starter complying with IEC 60155 or IEC 60927, and in a luminaire complying with IEC 60598-1.

NOTE For some lamps, additional information for high-frequency ballast design is given for proper starting at an ambient air temperature of –15 °C.

1.3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(845):1987, *International Electrotechnical Vocabulary (IEV) – Chapter 845: Lighting*

IEC 60061-1:1969, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

IEC 60081:1997, *Double-capped fluorescent lamps – Performance specifications*

IEC 60155:1993, *Glow starters for fluorescent lamps*

IEC 60598-1:1996, *Luminaires – Part 1: General requirements and tests*

IEC 60921:1988, *Ballasts for tubular fluorescent lamps – Performance requirements*

IEC 60927:1996, *Auxiliaries for lamps – Starting devices (other than glow starters) – Performance requirements*

IEC 60929:1990, *AC supplied electronic ballasts for tubular fluorescent lamps – Performance requirements*

IEC 61199:1993, *Single-capped fluorescent lamps – Safety specifications*

IEC/TS 61231:1999, *International lamp coding system (ILCOS)*

1.4 Definitions

For the purpose of this International Standard, the following definitions apply.

For definitions related to lighting, see IEC 60050(845).

1.4.1
fluorescent lamp
discharge lamp of the low pressure mercury type, in which most of the light is emitted by one or several layers of phosphors excited by the ultra-violet radiation from the discharge

1.4.2
single-capped fluorescent lamp
fluorescent lamp having a single cap, for operation on external circuits with either an internal or external means of starting

1.4.3
nominal value
approximate quantity value used to designate or identify a lamp

1.4.4
rated value
quantity value for a characteristic of a lamp for specified operating conditions. The value and the conditions are specified in this standard, or assigned by the manufacturer or responsible vendor

1.4.5
lumen maintenance
ratio of the luminous flux of a lamp at a given time in its life to its initial luminous flux, the lamp being operated under specified conditions. This ratio is generally expressed as a percentage

1.4.6
initial readings
starting characteristics of a lamp, measured before ageing, and the electrical, photometric and cathode characteristics of a lamp, measured at the end of the 100 h ageing period

1.4.7
conditioning period
time required after switching on a lamp to reach stabilization of the vapour pressure within the discharge tube

1.4.8
starting aid
conductive strip affixed to the outer surface of a lamp, or a conductive plate which is spaced within an appropriate distance from the lamp. A starting aid is usually connected to earth potential, and can only be effective when it has an adequate potential difference from one end of the lamp

1.4.9
reference ballast
special ballast, either inductive for lamps for operation on a.c. mains frequencies, or resistive for lamps for operation on high frequency. It is designed for the purpose of providing comparison standards for use in testing ballasts, for the selection of reference lamps and for testing regular production lamps under standardized conditions. It is essentially characterized by the fact that at its rated frequency, it has a stable voltage/current ratio which is relatively uninfluenced by variations in current, temperature and magnetic surroundings, as outlined in the relevant ballast standard

1.4.10
calibration current of a reference ballast
value of the current on which the calibration and control of the reference ballast are based

1.4.11
type test
test or a series of tests made on a type test sample for the purpose of checking compliance of the design of a given product with the requirements of the relevant standard

1.4.12
type test sample
sample consisting of one or more similar units, submitted by the manufacturer or responsible vendor for the purpose of a type test

1.5 Lamp requirements

1.5.1 General

A lamp, on which compliance with this standard is claimed, shall comply with the requirements of IEC 61199.

A lamp shall be so designed that its performance is reliable in normal and accepted use. In general, this can be achieved by satisfying the requirements of the following subclauses.