

---

Gj]U\_YnUWgfbUj cn]U!`8]a Ybn]`g\_YZYY\_f] bY]b`gj YhcVbY'nU H]j Y`f]97  
\* \$, \$- .% - ) # ( .&\$ \$- Ł

Lamps for road vehicles - Dimensional, electrical and luminous requirements (IEC 60809:1995/A4:2009)

Lampen für Straßenfahrzeuge - Maße, elektrische und lichttechnische Anforderungen (IEC 60809:1995/A4:2009)

Lampes pour véhicules routiers - Prescriptions dimensionnelles, électriques et lumineuses (CEI 60809:1995/A4:2009)

**STANDARD PREVIEW**  
**(standards.iteh.ai)**  
<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009>

**Ta slovenski standard je istoveten z: EN 60809:1996/A4:2009**

---

**ICS:**

29.140.20	Žarnice z žarilno nitko	Incandescent lamps
43.040.20	Naprave za osvetlitev, signalizacijo in opozarjanje	Lighting, signalling and warning devices

**SIST EN 60809:1996/A4:2009**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60809:1996/A4:2009

<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60809/A4**

June 2009

ICS 29.140.20; 43.040.20

English version

**Lamps for road vehicles -  
Dimensional, electrical and luminous requirements  
(IEC 60809:1995/A4:2009)**

Lampes pour véhicules routiers -  
Prescriptions dimensionnelles,  
électriques et lumineuses  
(CEI 60809:1995/A4:2009)

Lampen für Straßenfahrzeuge -  
Maße, elektrische  
und lichttechnische Anforderungen  
(IEC 60809:1995/A4:2009)

This amendment A4 modifies the European Standard EN 60809:1996; it was approved by CENELEC on 2009-05-01. 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.

<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-6ca71009a148/en/60809-1996-a4-2009>

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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 34A/1314/FDIS, future amendment 4 to IEC 60809:1995, 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 A4 to EN 60809:1996 on 2009-05-01.

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) 2010-02-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2012-05-01

---

## Endorsement notice

The text of amendment 4:2009 to the International Standard IEC 60809:1995 was approved by CENELEC as an amendment to the European Standard without any modification.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 60809:1996/A4:2009](https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009)  
<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009>



IEC 60809

Edition 2.0 2009-02

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

### AMENDMENT 4 AMENDEMENT 4

The sheets contained in this amendment are to be inserted in IEC 60809  
Les feuilles de cet amendement sont à insérer dans la CEI 60809

### Lamps for road vehicles – Dimensional, electrical and luminous requirements

<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158->

### Lampes pour véhicules routiers – Prescriptions dimensionnelles, électriques et lumineuses

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

S

## 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/1314/FDIS	34A/1321/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.

Le comité a décidé que le contenu de cet amendement et de la publication de base ne sera pas modifié avant la date du résultat de la maintenance indiquée sur le site web de la CEI "http://webstore.iec.ch" dans les données spécifiques à cette publication. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 60809:1996/A4:2009

[https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-](https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009)

[feca7f8043af/sist-en-60809-1996-a4-2009](https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009)

### FOREWORD

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

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

FDIS	Report on voting
34A/1314/FDIS	34A/1321/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.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result 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.

**INSTRUCTIONS POUR L'INSERTION DES  
NOUVELLES PAGES ET FEUILLES  
DE CARACTÉRISTIQUES DANS LA  
PUBLICATION 60809**

-----

1. Retirer les pages  
2 - 18, 24, 28, 30, G-1 et J-1

existantes, insérer les nouvelles pages  
2 - 18, 24, 28, 30, G-1 et J-1.

2. Remplacer les feuilles de caractéristiques :

60809-IEC-7110-1 par  
60809-IEC-7110-2 (6 pages)  
60809-IEC-7120-1 par  
60809-IEC-7120-2 (8 pages)

3. Insérer les nouvelles feuilles de  
caractéristiques :

60809-IEC-2132-1 (4 pages)  
60809-IEC-3135-1 (2 pages)  
60809-IEC-4335-1 (2 pages)

**INSTRUCTIONS FOR THE  
INSERTION OF NEW PAGES  
AND DATA SHEETS  
IN PUBLICATION 60809**

-----

1. Remove the existing pages  
3 - 19, 25, 29, 31, G-2 and J-2

insert the new pages  
3 - 19, 25, 29, 31, 33, G-2 and J-2

2. Replace the lamp data sheets :

60809-IEC-7110-1 with  
60809-IEC-7110-2 (6 pages)  
60809-IEC-7120-1 with  
60809-IEC-7120-2 (8 pages)

3. Insert the new lamp data sheets:

60809-IEC-2132-1 (4 pages)  
60809-IEC-3135-1 (2 pages)  
60809-IEC-4335-1 (2 pages)

## CONTENTS

FOREWORD.....	5
1 General.....	7
1.1 Scope.....	7
1.2 Normative references .....	9
1.3 Definitions .....	9
1.4 Numbering system for lamp data sheets .....	13
2 Requirements and test conditions for filament lamps .....	13
2.1 General requirements.....	13
2.2 Lamp marking .....	13
2.3 Bulbs.....	15
2.4 Colour .....	15
2.5 Lamp dimensions .....	15a
2.6 Caps and bases .....	17
2.7 Initial electrical and luminous requirements .....	17
2.8 Check on optical quality .....	17
2.9 UV radiation .....	19
2.10 Standard (étalon) filament lamps .....	19
3 Requirements and test conditions for discharge lamps .....	19
3.1 General requirements.....	19
3.2 Lamp marking .....	19
3.3 Bulbs.....	21
3.4 Caps .....	21
3.5 Position and dimensions of electrodes, arc and black stripes.....	21
3.6 Starting, run-up and hot-restrike characteristics.....	23
3.7 Electrical and photometric characteristics.....	23
3.8 Colour .....	23
3.9 UV radiation .....	25
3.10 Standard (étalon) discharge lamps .....	27
4 Sampling and conditions of compliance .....	27
5 Lamp data sheets .....	29
5.1 List of specific lamp types .....	29
Annex A (normative) Filament shape, length and position .....	A-2
Annex B (normative) Measurement method of the colour of filament lamps .....	B-2
Annex C (normative) Test conditions for electrical and luminous characteristics.....	C-2
Annex D (normative) Method of measuring internal elements of R2 lamps.....	D-2
Annex E (normative) Method of measuring internal elements of H4 and HS1 lampsE-2	
Annex F (normative) Method of measuring internal elements of HB1 lamps .....	F-2
Annex G (informative) Optical set-up for the measurement of the position and form of the arc and of the position of the electrodes of discharge lamps.....	G-2
Annex H (normative) Measurement method of electrical and photometric characteristics of discharge lamps .....	H-2
Annex J (informative) Overview of lamp types and their applications .....	J-2
Annex K (normative) Test conditions for colour endurance measurements.....	K-2



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LAMPS FOR ROAD VEHICLES – DIMENSIONAL, ELECTRICAL AND LUMINOUS REQUIREMENTS

### 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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 60809 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This consolidated version of IEC 60809 is based on the second edition (1995) [documents 34A/592/DIS and 34A/626/RVD], its Amendment 1 (1996) [documents 34A/653/FDIS and 34A/686/RVD], its Amendment 2 (2002) [documents 34A/979/FDIS and 34A/987/RVD], its Amendment 3 (2004) [documents 34A/1077/FDIS and 34A/1081/RVD] and its Amendment 4 (2009) [documents 34A/1314/FDIS and 34A/1321/RVD].

It bears the edition number 2.4.

The origin (edition 2 or Amendment 1, 2, 3 or 4) of the standard sheets constituting this consolidated edition may be identified by the headers of the sheets.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result 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.

## LAMPS FOR ROAD VEHICLES – DIMENSIONAL, ELECTRICAL AND LUMINOUS REQUIREMENTS

### 1 General

#### 1.1 Scope

This International Standard is applicable to replaceable lamps (filament lamps and discharge lamps) to be used in headlamps, fog-lamps and signalling lamps for road vehicles.

It is especially applicable to those lamps which are the subject of legislation. In particular, it includes the lamps contained in Regulations<sup>1)</sup> No.37 and No.99 of the Geneva Agreement of 20 March 1958 of the United Nations Economic Commission for Europe (ECE). However, the standard may be used for other lamps falling under the scope of this standard.

The standard specifies the technical requirements with methods of tests and basic interchangeability (dimensional, electrical and luminous) for lamps of normal production and for standard (étalon) lamps.

For most of the requirements given in this standard, reference is made to the "relevant data sheet". For all lamps listed in Clause 5, data sheets are contained in this standard. For other lamps, the relevant data are supplied by the lamp manufacturer or responsible vendor. It could be based on national legislation.

Other requirements such as lamp life, lumen maintenance, torsion strength and resistance to vibration and shock are specified in IEC 60810. The latter standard also gives information for guidance of lighting equipment design, such as temperature limits and maximum lamp outlines.

Road vehicle lamps for supplementary purposes which are not the subject of legislation are specified in IEC 60983.

In countries which legislate for approval, for example under the terms of the aforementioned ECE Regulations, it is suggested that reference is made to this standard for assessment of compliance. IEC 60810 and IEC 60983 are not intended for that purpose.

NOTE In the various vocabularies and standards, different terms are used for "incandescent lamp" (IEV 845-07-04) and "discharge lamp" (IEV 845-07-17). In this standard "filament lamp" and "discharge lamp" are used. However, where only "lamp" is written both types are meant, unless the context clearly shows that it applies to one type only.

---

1) United Nations Economic Commission for Europe (ECE), Regulation 37:1992, *Uniform provisions concerning the approval of filament lamps for use in approved lamp units of power-driven vehicles and of their trailers*

United Nations Economic Commission for Europe (ECE), Regulation 99:1996, *Uniform provisions concerning the approval of gas-discharge light sources for use in approved gas-discharge lamp units of power-driven vehicles*

## 1.2 Normative references

The following referenced documents are indispensable for the application 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 60050(845), *International Electrotechnical Vocabulary (IEV) – Chapter 845: Lighting*

IEC 60051, *Direct acting indicating analogue electrical measuring instruments and their accessories*

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

IEC 60810, *Lamps for road vehicles – Performance requirements*

IEC 60983, *Miniature lamps*

## 1.3 Definitions

### 1.3.1

#### category

this term is used to describe different basic designs of standardized lamps.

NOTE Each specific designation, for example P21/5W, H4, D2R forms a category. Most of these designations are taken from the ECE Regulations.

### 1.3.2

#### type

lamps of different types are those within the same category which differ in such essential respects as:

- a) trade name or mark;

NOTE Lamps bearing the same trade name or mark but produced by different manufacturers are considered as being of different types. Lamps produced by the same manufacturer differing only by the trade name or mark may be considered to be of the same type.

- b) bulb design, insofar as it affects the optical results;

- c) for filament lamps, nominal voltage.

NOTE A selective-yellow bulb or a selective-yellow additional outer bulb, solely intended to change the colour but not the other characteristics of a light source emitting white light, does not constitute a change of type of the light source.

### 1.3.3

#### type test

test or 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 specification.

### 1.3.4

#### 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.

### 1.3.5

#### **conformity of production**

compliance of the series production of a given type with the requirements of the relevant specification.

NOTE 1 Production lamps are of the same design as the approved type test sample.

NOTE 2 Local regulations may provide for checking conformity of production by a government agency.

### 1.3.6

#### **nominal voltage**

voltage used to designate a lamp, usually being the battery voltage (6 V, 12 V or 24 V) of the road vehicle supply network.

### 1.3.7

#### **nominal wattage**

wattage used to designate a lamp.

### 1.3.8

#### **test voltage**

voltage at the cap terminals for filament lamps and at the input terminals of the ballast for discharge lamps for which some characteristics are specified and at which they shall be tested.

### 1.3.9

#### **rated value**

value of a characteristic specified for operation of a lamp at test voltage and/or other specified conditions.

### 1.3.10

#### **tolerance**

allowable variation from a rated value generally expressed as percentage of the rated value.

### 1.3.11

#### **limit values**

lowest and/or highest values for characteristics to which the lamp has to comply when operated under specified conditions.

### 1.3.12

#### **test luminous flux**

specified luminous flux of a standard (étalon) lamp at which the photometric characteristics of lighting and light-signalling devices shall be measured and which has to be adjusted for testing a lamp in the standard headlamp according to 2.8.

### 1.3.13

#### **reference plane**

plane defined with reference to the cap or base and with respect to which positions of certain parts of the lamp are measured.

### 1.3.14

#### **reference axis**

axis defined with reference to the cap or base and with respect to which the positions of certain parts of the lamp are measured.

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 60809:1996/A4:2009

<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009>

**1.3.15****ageing period**

period during which unused lamps are operated at their test voltage in order to stabilize their performance.

**1.3.16****standard lamp (étalon lamp)**

lamp emitting white or amber or red light with reduced dimensional tolerances, used for the photometric testing of lighting and light-signalling devices.

NOTE Standard lamps are specified for only one nominal voltage for each category.

**1.3.17****production lamp**

lamp which shall comply with the requirements of this standard as indicated in the column “production lamps” on the relevant lamp data sheet.

**1.3.18****heavy duty lamp**

lamp declared as such by the manufacturer or responsible vendor which shall comply with the heavy duty test conditions specified in Table B.2 of IEC 60810 in addition to the requirements specified in this standard.

**1.4 Numbering system for lamp data sheets**

The first number represents the number of this standard (60809) followed by the letters “IEC”.

The second number represents the lamp data sheet number.

The third number on the sheet indicates the edition of the sheet.

<https://standards.iteh.ai/catalog/standards/sist/5e47510b-610a-4fb0-9158-feca7f8043af/sist-en-60809-1996-a4-2009>

**2 Requirements and test conditions for filament lamps****2.1 General requirements**

Filament lamps shall be so designed as to be and to remain in good working order when in normal use. They shall, moreover, exhibit no fault in design or manufacture.

**2.2 Lamp marking**

The following information shall be legibly and durably marked on all filament lamps:

- the trade name or mark of the manufacturer or responsible vendor;
- the nominal voltage;
- the international designation of the relevant category;
- the nominal wattage (in the sequence: high wattage filament/low wattage filament for dual filament lamps); this need not be indicated separately if it is part of the international designation of the relevant filament lamp category.