



SLOVENSKI STANDARD

SIST EN 60809:1996

01-junij-1996

Filament lamps for road vehicles - Dimensional, electrical and luminous requirements (IEC 809:1995)

Lamps for road vehicles - Dimensional, electrical and luminous requirements

Lampen für Straßenfahrzeuge - Maße, elektrische und lichttechnische Anforderungen

Lampes pour véhicules routiers - Prescriptions dimensionnelles, électriques et lumineuses

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Ta slovenski standard je istoveten z: **EN 60809:1996**

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ICS:

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

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60809

January 1996

ICS 29.140.20; 43.040.20

Supersedes HD 494 S4:1994

Descriptors: Road vehicle, electrical equipment, signal lamp, filament lamp, incandescent lamp, electrical characteristic, dimension

English version

Filament lamps for road vehicles
Dimensional, electrical and luminous requirements
(IEC 809:1995)

Lampes à filament pour véhicules
routiers - Prescriptions dimensionnelles,
électriques et lumineuses
(CEI 809:1995)

Glühlampen für Straßenfahrzeuge
Maße, elektrische und lichttechnische
Anforderungen
(IEC 809:1995)

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This European Standard was approved by CENELEC on 1995-11-28. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, 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

Foreword

The text of document 34A/592/DIS, future edition 2 of IEC 809, 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 EN 60809 on 1995-11-28.

This European Standard supersedes HD 494 S4:1994.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A to F and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 809:1995 was approved by CENELEC as a European Standard without any modification.

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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 50(845)	1987	International electrotechnical vocabulary Chapter 845: Lighting	-	-
IEC 51	series	Direct acting indicating analogue electrical-measuring instruments and their accessories	EN 60051	series
IEC 61-1 (mod)	1969	Lamp caps and holders together with gauges for the control of interchangeability and safety Part 1: Lamp caps	EN 60061-1 ¹⁾	1993
IEC 810	1993	Lamps for road vehicles - Performance requirements	EN 60810	1994
IEC 983	1995	Miniature lamps	-	-
ISO 7227	1987	Road vehicles - Lighting and light signalling devices - Vocabulary	-	-

1) EN 60061-1 includes supplements A:1970 to N:1992 to IEC 61-1.

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Prescriptions dimensionnelles,
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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FILAMENT LAMPS FOR ROAD VEHICLES –
DIMENSIONAL, ELECTRICAL AND LUMINOUS
REQUIREMENTS**

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.

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International Standard IEC 809 has been prepared by sub-committee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This second edition cancels and replaces the first edition published in 1985, amendment 1 (1987), amendment 2 (1989) and amendment 3 (1992), and constitutes a technical revision.

The text of this standard is based on the first edition, amendments 1, 2 and 3 and on the following documents:

DIS	Report on voting
34A/592/DIS	34A/626/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.

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

Section 1: General

1.1 Scope

This International Standard covers filament lamps to be used in headlamps, fog-lamps and signalling lamps for road vehicles and specifies the technical requirements with methods of test and basic interchangeability (dimensional, electrical and luminous). It applies to those filament lamps which may be the subject of legislation. In particular, it covers those filament lamps contained in Regulation No. 37 of the Geneva agreement of 20 March 1958 of the United Nations Economic Commission for Europe (ECE) concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipment and parts.

NOTE – For road vehicle lighting equipment, it is common practice to use the term "filament lamp" for incandescent lamps (see ISO 7227 and ECE Regulation No. 37). This is taken into consideration in this standard.

The filament lamp types specified are listed in section 4.

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.

In this standard details are included of the following:

- a) requirements for production filament lamps;
- b) requirements for standard (étalon) filament lamps.

Performance requirements such as filament lamp life, lumen maintenance, torsion strength and resistance to vibration and shock are specified in IEC 810.

Information such as temperature limits and maximum filament lamp outlines is also included in that standard for guidance of lighting equipment design. IEC 810 is not intended for reference by authorities concerning type approval or conformity of production.

Road vehicle filament lamps for supplementary purposes which are not the subject of legislation are specified in IEC 983.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(845): 1993, *International Electrotechnical Vocabulary (IEV) – Chapter 845: Lighting*

IEC 51, *Direct acting indicating analogue electrical measuring instruments and their accessories*

IEC 61-1: 1969, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

IEC 810:1993, *Lamps for road vehicles - Performance requirements*

IEC 983: 1995, *Miniature lamps*

ISO 7227: 1987, *Road vehicles - Lighting and light signalling devices - Vocabulary*

NOTE – From definition 3.14 in ISO 7227, the term "dipped-beam" is adopted in this standard. Moreover, the term "passing-beam" is still in use.
From definition 3.15 in ISO 7227, the term "main-beam" is adopted in this standard. Moreover, the term "driving-beam" is still in use.

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1.3 Definitions

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

1.3.1 category: This term is used to describe different basic designs of standardized filament lamps.

NOTE – Each specific designation, for example P21/5W, H4, forms a category. The term is taken from ECE Regulation No. 37.

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

a) trade name or mark;

NOTE – Filament lamps bearing the same trade name or mark but produced by different manufacturers are considered as being of different types.

Filament 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) nominal voltage.

1.3.3 type test: A 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: A 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.

NOTES

- 1 Production filament lamps are of the same design as the approved type test sample.
- 2 Local regulations may provide for checking conformity of production by a government agency.

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

1.3.7 nominal wattage: The wattage used to designate a filament lamp.

1.3.8 test voltage: The voltage for which some characteristics of a lamp are specified and at which they shall be tested.

1.3.9 rated value: (Definition under consideration)

NOTE – The following definition, which is basically for the new lamp data sheets, is proposed: "Value of a characteristic specified for operation of a filament lamp at test voltage and/or other specified conditions".

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1.3.10 tolerance: Allowable variation from a rated value generally expressed as percentage of the rated value.

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

1.3.12 test luminous flux: Specified luminous flux of a standard (étalon) filament lamp at which the photometric characteristics of lighting and light-signalling devices shall be measured and which has to be adjusted for testing a filament lamp in the standard head-lamp according to clause 2.8.

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

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

1.3.15 ageing period: A period during which unused filament lamps are operated at their test voltage in order to stabilize their performance.

1.3.16 standard filament lamp (étalon filament lamp): A filament lamp with colourless bulb, if no other colour is allowed according to the relevant lamp data sheet, and with reduced dimensional tolerances, used for the photometric testing of lighting and light-signalling devices.

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

1.3.17 production filament lamp: A filament 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 filament lamp: Filament lamp declared as such by the manufacturer or responsible vendor which shall comply with the heavy duty test conditions specified in table B2 of IEC 810 in addition to the requirements specified in this standard.

1.4 Numbering system for filament lamp data sheets

The first number represents the number of this standard (809) followed by the letters "IEC".

The second number represents the filament lamp data sheet number.

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

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Section 2: Requirements and test conditions

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

2.2.1 The following information shall be legibly and durably marked on the filament lamp:

- the trade name or mark of 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.

Inscriptions other than the above may be affixed.

NOTE - An example of such an inscription is the approval mark conferred by an administrative authority.

2.2.2 Compliance shall be checked by the following:

- a) presence and legibility of the marking - by visual inspection;
- b) durability - by applying the following test on unused filament lamps:

the area of the marking on the filament lamp shall be rubbed by hand with a smooth cloth, dampened with water for a period of 15 s.

After this test the marking shall still be legible.

2.2.3 If the marking is on the bulb, it shall not adversely affect the luminous characteristics.

2.3 Bulbs

Filament lamp bulbs shall exhibit no scores or spots which might impair their optical performance.

2.4 Colour of the bulb

2.4.1 The bulb of the filament lamp shall be colourless, unless otherwise prescribed on the relevant filament lamp data sheet. For some categories a coloured bulb is allowed.

2.4.2 In the case of a coloured bulb, after the ageing period corresponding to clause C.1, the surface of the bulb shall be lightly wiped with a cotton cloth soaked in a mixture of 70 vol. % of n-heptane and 30 vol. % of toluol. After about 5 min, the surface shall be inspected visually. It shall not show any apparent changes.

2.4.3 The colour of the bulb shall be in accordance with the requirements of annex B.

2.5 Filament lamp dimensions

2.5.1 The filament lamp dimensions shall comply with the limiting values given in the lamp drawing or on the relevant filament lamp data sheet.

2.5.2 The definition of and the measuring condition for the filament shape, length and position, shall be in accordance with the appropriate requirements of annexes A, D, E and F respectively.

2.6 Caps and bases

Filament lamps shall have standard caps or bases as specified on the relevant filament lamp data sheet and shall comply with the relevant cap data sheet of IEC 61.

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2.7 Initial electrical and luminous requirements

2.7.1 Filament lamp wattage and luminous flux shall comply with the limiting values given on the relevant filament lamp data sheet.

2.7.2 The luminous flux specified on the relevant filament lamp data sheet applies for filament lamps emitting white light, unless a special colour is stated there.

2.7.3 In the case where selective-yellow colour is allowed the luminous flux of the filament lamp with selective-yellow (outer) bulb shall be at least 85 % of the specified luminous flux of the relevant filament lamp with colourless bulb.

2.7.4 Compliance shall be checked by the tests specified in annex C.

2.8 Check on optical quality

This requirement applies only to double filament lamps with internal shield for headlamps emitting an asymmetrical dipped beam when the relevant regulation requires such a test.

2.8.1 The check of optical quality shall be carried out at a voltage such that the test luminous flux is obtained.