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|---|---|---|

Lamps for road vehicles - Performance requirements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/15

Obsahuje: EN 60810:2015, IEC 60810:2014

Oznámením tejto normy sa od 20.01.2018 ruší
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# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 60810**

March 2015

ICS 29.140.99

Supersedes EN 60810:2003

English Version

## Lamps for road vehicles - Performance requirements (IEC 60810:2014)

Lampes pour véhicules routiers - Exigences de performances (IEC 60810:2014)

Lampen für Straßenfahrzeuge - Anforderungen an die Arbeitsweise (IEC 60810:2014)

This European Standard was approved by CENELEC on 2015-01-20. 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.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Foreword

The text of document 34A/1797/FDIS, future edition 4 of IEC 60810, prepared by SC 34A "Lamps", of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60810:2015.

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) 2015-10-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-01-20

This document supersedes EN 60810:2003.

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

## Endorsement notice

The text of the International Standard IEC 60810:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

| | | |
|---|---|---|
| IEC 60068-2-20 | NOTE | Harmonized as EN 60068-2-20. |
| IEC 60068-2-47 | NOTE | Harmonized as EN 60068-2-47. |
| IEC 60682 | NOTE | Harmonized as EN 60682. |

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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 60050 | series | International electrotechnical vocabulary | - | - |
| IEC 60061-1 | - | Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps | EN 60061-1 | - |
| IEC 60068-2-6 | 1995 | Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal) | EN 60068-2-6 | 1995 |
| IEC 60068-2-14 | - | Environmental testing - Part 2-14: Tests - Test N: Change of temperature | EN 60068-2-14 | - |
| IEC 60068-2-43 | - | Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections | EN 60068-2-43 | - |
| IEC 60068-2-60 | - | Environmental testing - Part 2: Tests - Test Ke: Flowing mixed gas corrosion test | EN 60068-2-60 | - |
| IEC 60410 | 1973 | Sampling plans and procedures for inspection by attributes | - | - |
| IEC 60809 | 2014 | Lamps for road vehicles - Dimensional, electrical and luminous requirements | EN 60809 | 2015 |
| CISPR 25 | - | Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers | EN 55025 | - |

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| UNECE 1958 Agreement | - | Agreement concerning the adoption of uniform technical prescription for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions | - | - |
| UNECE 38 | - | 1958 Agreement, Addendum 37: Regulation No. 38: Uniform provisions concerning the approval of rear fog lamps for power-driven vehicles and their trailers | - | - |
| UNECE 48 | - | 1958 Agreement, Addendum 47: Regulation No. 48: Uniform provisions concerning the approval of vehicles with regard to the installation of lighting and light-signalling devices | - | - |
| UNECE 101 | - | 1958 Agreement, Addendum 100: Regulation No. 101: Uniform provisions concerning the approval of passenger cars powered by an internal combustion engine only, or powered by a hybrid electric power train with regard to the measurement of the emission of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range, and of categories $M_1$ and $N_1$ vehicles powered by an electric power train only with regard to the measurement of electric energy consumption and electric range | - | - |
| UNECE 123 | - | 1958 Agreement, Addendum 122: Regulation No. 123: Uniform provisions concerning the approval of adaptive front lighting systems (AFS) for motor vehicles | - | - |
| UNECE 128 | - | 1958 Agreement, Addendum 127: Regulation No. 128: Uniform provisions concerning the approval of light emitting diode (LED) light sources for use in approved lamp units on power-driven vehicles and their trailers | - | - |
| JESD22-A100D | - | Cycled temperature humidity bias life test | - | - |
| JESD22-A101C | - | Steady-state temperature humidity bias life test | - | - |
| JESD22-A104D | - | Temperature cycling | - | - |
| JESD22-A105C | - | Power and temperature cycling | - | - |
| JESD22-A106B | - | Thermal shock | - | - |
| JESD22-A108D | - | Temperature, bias, and operating life | - | - |
| JESD22-A113F | - | Preconditioning of plastic surface mount devices prior to reliability testing | - | - |

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| JESD22-A115C | - | Electrostatic discharge (ESD) sensitivity testing machine model (MM) | - | - |
| JESD22-B101B | - | External visual | - | - |
| JESD22-B103B | - | Vibration, variable frequency | - | - |
| JESD22-B106D | - | Resistance to solder shock for through-hole mounted devices | - | - |
| JESD22-B110B | - | Mechanical shock - Component and subassembly | - | - |
| JESD51-50 | 2012-04 | Overview of methodologies for the thermal measurement of single- and multi-chip, single- and multi-pn-junction light-emitting diodes (LEDs) | - | - |
| JESD51-51 | 2012-04 | Implementation of the electrical test method for the measurement of real thermal resistance and impedance of light-emitting diodes with exposed cooling surface | - | - |
| JESD51-52 | 2012-04 | Guidelines for combining CIE 127-2007 total flux measurements with thermal measurements of LEDs with exposed cooling surface | - | - |
| JESD51-53 | 2012-05 | Terms, definitions and units glossary for LED thermal testing | - | - |
| IPC/ECA J-STD-002C | - | Solderability tests for component leads, terminations, lugs, terminals and wires | - | - |
| ANSI/ESDA/JEDEC JS-001 | 2012 | JEDEC/ESDA joint standard for electrostatic discharge sensitivity test - Human body model (HBM) - Component level | - | - |

IEC 60810

Edition 4.0 2014-12

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Lamps for road vehicles – Performance requirements

## Lampes pour véhicules routiers – Exigences de performances

IEC 60810:2014-12(en-fr)

# IEC 60810

Edition 4.0 2014-12

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Lamps for road vehicles – Performance requirements

## Lampes pour véhicules routiers – Exigences de performances

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# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# LAMPS FOR ROAD VEHICLES – PERFORMANCE 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.
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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 60810 has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

This fourth edition cancels and replaces the third edition, published in 2003, its Amendments 1 (2008) and 2 (2013). This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) introduction of new gas discharge light sources;

b) introduction of requirements for non-replaceable filament lamps;

c) introduction of requirements and test conditions for LED packages.

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

| FDIS | Report on voting |
|---|---|
| 34A/1797/FDIS | 34A/1818/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability 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 – PERFORMANCE REQUIREMENTS

## 1 Scope

This International Standard is applicable to lamps (filament lamps, discharge lamps and LED light sources) to be used in headlamps, fog-lamps and signalling lamps for road vehicles. It is especially applicable to those lamps which are listed in IEC 60809. However, the standard may also be used for other lamps falling under the scope of this standard.

It specifies requirements and test methods for the measurement of performance characteristics such as lamp life, luminous flux maintenance, torsion strength, glass bulb strength and resistance to vibration and shock. Moreover, information on temperature limits, maximum lamp outlines and maximum tolerable voltage surges is given for the guidance of lighting and electrical equipment design.

For some of the requirements given in this standard, reference is made to data given in tables. For lamps not listed in such tables, the relevant data are supplied by the lamp manufacturer or responsible vendor.

The performance requirements are additional to the basic requirements specified in IEC 60809. They are, however, not intended to be used by authorities for legal type-approval purposes.

NOTE 1 In the various vocabularies and standards, different terms are used for "incandescent lamp" (IEC 60050-845:1987, 845-07-04) and "discharge lamp" (IEC 60050-845:1987, 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.

NOTE 2 This standard does not apply to luminaires.

NOTE 3 In this standard, the term LED light source is used, in other standards the term LED lamps can be used to describe similar products.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available at <http://www.electropedia.org/)

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

IEC 60068-2-6:1995, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14*, Environmental testing – Part 2–14: Tests – Test N: Change of temperature*

IEC 60068-2-43, *Environmental testing – Part 2-43: Tests – Test Kd: Hydrogen sulphide test for contacts and connections*

IEC 60068-2-60, *Environmental testing – Part 2: Tests – Test Ke: Flowing mixed gas corrosion test*

IEC 60410:1973, *Sampling plans and procedures for inspection by attributes*

IEC 60809:2014, *Lamps for road vehicles*

CISPR 25, *Vehicles, boats and internal combustion engines – Radio disturbance characteristics – Limits and methods of measurement for the protection of on-board receivers*

United Nations, *Agreement concerning the adoption of uniform technical prescription for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions.*[1]
Available from Internet: www.unece.org/trans/main/wp29/wp29regs.html (website checked 2014-08-19)

Addendum 37: Regulation No. 38, *Uniform provisions concerning the approval of rear fog lamps for power-driven vehicles and their trailers*

Addendum 47: Regulation No 48, *Uniform provisions concerning the approval of vehicles with regard to the installation of lighting and light-signalling devices*

Addendum 122: Regulation No. 123, *Uniform provisions concerning the approval of adaptive front-lighting systems (AFS) for motor vehicles*

Addendum 100: Regulation No. 101, *Uniform provisions concerning the approval of passenger cars powered by an internal combustion engine only, or powered by a hybrid electric power train with regard to the measurement of the emission of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range, and of categories M1 and N1 vehicles powered by an electric power train only with regard to the measurement of electric energy consumption and electric range*

Addendum 127: Regulation No. 128, *Uniform provisions concerning the approval of light emitting diode (LED) light sources for use in approved lamp units on power-driven*

JESD22-A100D, *Cycled temperature humidity bias life test*

JESD22-A101C, *Steady-state temperature humidity bias life test*

JESD22-A104D, *Temperature cycling*

JESD22-A105C, *Power and temperature cycling*

JESD22-A106B, *Thermal shock*

JESD22-A108D, *Temperature, bias, and operating life*

JESD22-A113F, *Preconditioning of plastic surface mount devices prior to reliability testing*

JESD22-A115C, *Electrostatic discharge (ESD) sensitivity testing machine model (MM)*

JESD22-B101B, *External visual*

JESD22-B103B, *Vibration, variable frequency*

JESD22-B110B, *Mechanical shock*

JESD22-B106D, *Resistance to solder shock for through-hole mounted devices*

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1 Also known as *The 1958 Agreement*. In the text of this standard the regulations under this agreement are referred to as, for example, UN Regulation 37 or R37.

JESD51-50:2012-04, *Overview of methodologies for the thermal measurement of single- and multi-chip, single- and multi-pnjunction light-emitting diodes (LEDs)*

JESD51-51:2012-04, *Implementation of the electrical test method for the measurement of real thermal resistance and impedance of light-emitting diodes with exposed cooling surface*

JESD51-52:2012-04, *Guidelines for combining CIE 127-2007 total flux measurements with thermal measurements of leds with exposed cooling surface*

JESD51-53:2012-05, *Terms, definitions and units glossary for LED thermal testing*

ANSI/IPC/ECA J-STD-002C, *Solderability tests for component leads, terminations, lugs, terminals and wires*

ANSI/ESDA/JEDEC JS-001-2012, *Joint JEDEC/ESDA standard for electrostatic discharge sensitivity testing human body model (HBM) – component level*