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Lamps, light sources and LED packages for road vehicles
- Performance requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60810:2018 sisaldab Euroopa standardi EN IEC 60810:2018 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60810:2018 consists of the English text of the European standard EN IEC 60810:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

Lamps, light sources and led packages for road vehicles - Performance requirements (IEC 60810:2017)

Lampes, sources lumineuses et led encapsulées pour
véhicules routiers - Exigences de performances
(IEC 60810:2017)

Lampen für Straßenfahrzeuge - Anforderungen an die
Arbeitsweise
(IEC 60810:2017)

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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

European foreword

The text of document 34A/2021/FDIS, future edition 5 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 IEC 60810:2018.

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) 2018-08-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-02-09

This document supersedes EN 60810:2015.

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Endorsement notice

The text of the International Standard IEC 60810:2017 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 60068-2-48
IEC 60682:1980	NOTE Harmonized as EN 60682:1993
IEC 60809:1995	NOTE Harmonized as EN 60809:1996
IEC 60809:1995/A5:2012	NOTE Harmonized as EN 60809:1996/A5:2012

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 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-845	-	International Electrotechnical Vocabulary- (IEV) -- Chapter 845: Lighting		-
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 60068-2-14	-	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 60068-2-58	-	Environmental testing - Part 2-58: Tests Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	-
IEC 60068-2-60	-	Environmental testing -- Part 2-60: Tests Test Ke: Flowing mixed gas corrosion test	EN 60068-2-60	-
IEC 60809	2014	Lamps for road vehicles - Dimensional, electrical and luminous requirements	EN 60809	2015
ISO 7637-2	2011	Road vehicles_- Electrical disturbances- from conduction and coupling_- Part_2: Electrical transient conduction along supply lines only		-
ISO 10605	-	Road vehicles_- Test methods for electrical-disturbances from electrostatic discharge		-
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	-
United Nations Vehicle Regulations	1958	Agreement concerning the adoption of uniform technical prescriptions 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		-
JESD22-A101C	-	Steady-state temperature humidity bias life-test		-
JESD22-A104E	-	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-B106D	-	Resistance to solder shock for through-hole mounted devices	-	-
JESD22-B110B	-	Mechanical shock - Component and-subassembly	-	-
JESD22-B116	1998	Wire Bond Shear Test Method	-	-
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	-	-
ANSI/IPC/ECA J--STD-002C		Solderability tests for component leads,-terminations, lugs, terminals and wires	-	-
ANSI/ESDA/JEDEC 2012 JS-001		Joint JEDEC/ESDA standard for-electrostatic discharge sensitivity testing human body model (HBM) – component level	-	-
MIL-STD-883E	2015	Visual Inspection Criteria	-	-
ZVEI	2016	Guideline for Customer Notifications of-Product and/or Process Changes (PCN) of Electronic Components specified for Automotive Applications	-	-

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LAMPS, LIGHT SOURCES AND LED PACKAGES FOR ROAD VEHICLES – PERFORMANCE REQUIREMENTS

1 Scope

This document is applicable to filament lamps, discharge lamps, LED light sources and LED packages to be used in road vehicles, i.e. in headlamps, fog-lamps, signalling lamps and interior lighting. It is especially applicable to those lamps and light sources which are listed in IEC 60809.

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 as guidance for lighting and electrical equipment design.

For some of the requirements given in this document, 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 document, "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 document does not apply to luminaires.

NOTE 3 In this document, 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 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.

IEC 60050-845, *International Electrotechnical Vocabulary – Part 845: Lighting* (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 60068-2-14, *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 60068-2-58, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*