Hõõglambid. Ohutusnõuded. Osa 3: Halogeenhõõglambid (mitte sõidukilambid) (IEC 60432-3:2012)

Incandescent lamps - Safety specifications - Part 3: Tungsten-halogen lamps (non-vehicle) (IEC 60432-3:2012)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60432-3:2013 sisaldab Euroopa standardi EN 60432-3:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 60432-3:2013 consists of the English text of the European standard EN 60432-3:2013.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.01.2013.	Date of Availability of the European standard is 18.01.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.140.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60432-3

January 2013

ICS 29.140.20

Supersedes EN 60432-3:2003 + A1:2005 + A2:2008

English version

Incandescent lamps - Safety specifications - Part 3: Tungsten-halogen lamps (non-vehicle)

(IEC 60432-3:2012)

Lampes à incandescence - Prescriptions de sécurité - Partie 3: Lampes tungstène-halogène (véhicules exceptés) (CEI 60432-3:2012)

Glühlampen - Sicherheitsanforderungen - Teil 3: Halogen-Glühlampen (Fahrzeuglampen ausgenommen) (IEC 60432-3:2012)

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60432-3:2013 E

Foreword

The text of document 34A/1567/FDIS, future edition 2 of IEC 60432-3, 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 60432-3:2013.

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)	2013-07-18
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-08-08

This document supersedes EN 60432-3:2003 + A1:2005 + A2:2008.

EN 60432-3:2013 includes the following significant technical changes with respect to EN 60432-3:2003 + A1:2005 + A2:2008:

- adapting the cold fill pressure requirements and tests for self-shielded lamps to the state of the technology;
- introduction of requirements to fully cover photobiological safety according to EN 62471.

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 60432-3:2012 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 60127-2	NOTE	Harmonised as EN 60127-2.
IEC 60269-3	NOTE	Harmonised as HD 60269-3.
IEC 60335-2-56:2002	NOTE	Harmonised as EN 60335-2-56:2003 (not modified).
IEC 60432-2:1999	NOTE	Harmonised as EN 60432-2:2000 (modified).
IEC 60432-2:1999/A1:2005	NOTE	Harmonised as EN 60432-2:2000/A1:2005 (modified).
IEC 60598-1	NOTE	Harmonised as EN 60598-1.
IEC 60598-2 Series	NOTE	Harmonised as EN 60598-2 Series (partially modified).
IEC 60682	NOTE	Harmonised as EN 60682.
IEC 60838-1	NOTE	Harmonised as EN 60838-1.

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

Publication	Year	Title	EN/HD	Year
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 60061-3	-	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 3: Gauges	EN 60061-3	-
IEC 60061-4	-	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 4: Guidelines and general information	EN 60061-4	-
IEC 60357	-	Tungsten halogen lamps (non-vehicle) - Performance specifications	EN 60357	-
IEC 60432-1 (mod)	1999	Incandescent lamps - Safety specifications - Part 1: Tungsten filament lamps for domestic and similar general lighting purposes	EN 60432-1	2000
IEC 62471	-	Photobiological safety of lamps and lamp systems	EN 62471	-
IEC/TR 62471-2	-	Photobiological safety of lamps and lamp systems - Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety	-	-

CONTENTS

FOREWORD 4
1 General 6
1.1 Scope 6
1.2 Normative references 6
1.3 Terms and definitions 7
2 Requirements 9
2.1 General 9
2.2 Marking 10
2.2.1 Lamp marking 10
2.2.2 Additional information and marking 10
2.3 Caps or bases 11
2.3.1 General 11
2.3.2 Creepage distances 11
2.3.3 Dimensions 11
2.4 Photobiological safety 12
2.5 Gas pressure of low-pressure self-shielded extra low voltage lamps 12
2.6 Safety at end of life of self-shielded lamps with rated voltages from range B or C 12
2.7 Information for luminaire design 12
3 Assessment 13
3.1 General 13
3.2 Whole production assessment by means of manufacturer's records 13
3.2.1 Assessment of manufacturer's records for particular tests 17
3.2.2 Sampling procedures for the whole production testing 17
3.3 Assessment of batches 18
3.3.1 Sampling for batch testing 18
3.3.2 Number of lamps in the batch sample 18
3.3.3 Sequence of the tests 18
3.3.4 Rejection conditions of batches 18
Annex A (normative) Symbols 19
Annex B (normative) Method of testing the gas-pressure 21
Annex C (informative) Information for luminaire design 22
Annex D (normative) Conditions of compliance for design tests 28
Annex E (informative) Bulb wall temperature measurement 29
Annex F (normative) Induced failure test 30
Bibliography 32

Table 1 – Grouping of test records – Sampling and acceptable quality levels (AQL) 14
Table 2 – Acceptance numbers AQL = 0,25 % 15
Table 3 – Acceptance numbers AQL = 0,65 % 15
Table 4 – Acceptance numbers AQL = 2,5 % 16
Table 5 – Batch sample size and rejection number 18
Table C.1 – Fuse values for general purpose ELV tungsten halogen lamps 23
Table C.2 – Fuse values for photographic lamps 24

Table C.3 – List of maximum bulb temperatures 24
Table C.4 – Maximum base-pin temperatures 25
Table C.5 – Maximum contact temperatures 26
Table C.6 – Maximum reflector-rim temperatures 26

INCANDESCENT LAMPS – SAFETY SPECIFICATIONS –

Part 3: Tungsten halogen lamps (non-vehicle)

1 General

1.1 Scope

This part of IEC 60432 specifies the safety requirements for single-capped and double-capped tungsten halogen lamps, having rated voltages of up to 250 V, used for the following applications:

- projection (including cinematograph and still projection),
- photographic (including studio),
- floodlighting,
- special purpose,
- general purpose,
- stage lighting,

This International Standard does not apply to general purpose single-capped tungsten halogen lamps, covered by IEC 60432-2, that are used as replacement for conventional tungsten filament lamps.

This part of IEC 60432 covers photobiological safety according to IEC 62471 and IEC/TR 62471-2. Lamps covered by this part of IEC 60432 do not reach risk levels that require risk group marking if they are

a) floodlight lamps,

b) general purpose capsule lamps, or

c) general purpose reflector lamps.

1.2 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 60050-845, *International Electrotechnical Vocabulary – Part 845: Lighting* Available from: 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 60061-3, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 3: Gauges*

IEC 60061-4, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 4: Guidelines and general information*

IEC 60357, *Tungsten halogen lamps (non-vehicle) – Performance specifications*

IEC 60432-1:1999, *Incandescent lamps – Safety specifications – Part 1: Tungsten filament lamps for domestic and similar general lighting purposes*

IEC 62471, *Photobiological safety of lamps and lamp systems*

IEC/TR 62471-2, *Photobiological safety of lamps and lamp systems – Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety*

1.3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-845 as well as the following apply.

1.3.1
tungsten halogen lamp
gas-filled lamp containing halogens or halogen compounds, the filament being of tungsten

1.3.2
single-capped tungsten halogen lamp
tungsten halogen lamp having a single cap or base

1.3.3
double-capped tungsten halogen lamp
tungsten halogen lamp having a cap or base on each end of the lamp

1.3.4
extra low voltage tungsten halogen lamp
tungsten halogen lamp with a rated voltage lower than 50 V

Note 1 to entry: Abbreviated: ELV tungsten halogen lamp.

1.3.5
extra low voltage low-pressure tungsten halogen lamp
tungsten halogen lamp with a gas pressure below a certain value and a rated voltage less than or equal to 12 V

1.3.6
self-shielded tungsten halogen lamp
tungsten halogen lamp for which the luminaire needs no protective shield

Note 1 to entry: Abbreviated: self-shielded lamp.

Examples of self-shielded tungsten halogen lamps are:

- ELV tungsten halogen lamps with integral outer envelope;
- ELV low-pressure tungsten halogen lamps;
- mains voltage tungsten halogen lamps which conform to IEC 60432-2;
- mains voltage tungsten halogen lamps which conform to the relevant clauses of this standard.

1.3.7
outer envelope
transparent or translucent enclosure containing a tungsten halogen light source

Note 1 to entry: The enclosure can also consist of a reflector with integral front cover.