

**Tungsten halogen
lamps (non-vehicle) —
Performance
specifications
(IEC 60357:2002,
modified)**

ICS 29.140.20

National foreword

This British Standard is the UK implementation of EN 60357:2003+A11:2016. It is derived from IEC 60357:2002, incorporating amendments 1:2006, 2:2008 and 3:2011. It supersedes BS EN 60357:2003+A3:2011 which is withdrawn.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by common modification tags **C** **C1**.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

Where a common modification to an IEC amendment has been introduced, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC to IEC amendment 1 are indicated by **C1** **C1**.

Where a common modification has been introduced by CENELEC amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by **C11** **C11**.

The UK participation in its preparation was entrusted by Technical Committee CPL/34, Lamps and related equipment, to Subcommittee CPL/34/1, Electric lamps.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Amendments/corrigenda issued since publication

Date	Comments
28 February 2010	Implementation of IEC amendment 1:2006 with CENELEC modifications and IEC amendment 2:2008 with CENELEC endorsement A2:2008
31 October 2011	Implementation of IEC amendment 3:2011 with CENELEC endorsement A3:2011
31 August 2016	Implementation of CENELEC amendment 11:2016. Annexes ZA, ZZA, ZZB and ZZC added

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EUROPEAN STANDARD

EN 60357:2003+A11

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EUROPÄISCHE NORM

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English version

**Tungsten halogen lamps (non-vehicle) -
Performance specifications
(IEC 60357:2002, modified)**

Lampes tungstène-halogène
(véhicules exceptés) -
Prescriptions de performances
(CEI 60357:2002, modifiée)

Halogen-Glühlampen
(Fahrzeuglampen ausgenommen) -
Anforderungen an die Arbeitsweise
(IEC 60357:2002, modifiziert)

This European Standard was approved by CENELEC on 2002-12-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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/1001/FDIS, future edition 3 of IEC 60357, 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 60357 on 2002-12-01.

By Technical Board decision D115/066 it was decided that the common modifications to the previous edition should be maintained.

This European Standard Supersedes EN 60357:1988 + A4:1991 + A5:1993 + A6:1994 + A7:1994 + A8:1995 + A9:1996 + A10:1997 + A11:1997 + A12:1999 + A13:2000.

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) 2003-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-12-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B and ZA are normative and annexes C, D and E are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60357:2002 was approved by CENELEC as a European Standard with agreed common modifications.

Foreword to amendment A1

The text of amendment 1:2006 to the International Standard IEC 60357:2002, prepared by 34A, Lamps, of IEC TC 34, Lamps and related equipment, together with common modifications prepared by CENELEC Reporting Secretariat SR 34A, was submitted to the formal vote and was approved by CENELEC as amendment A1 to EN 60357:2003 on 2008-03-01.

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) 2009-03-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-03-01

Edorsement notice

The text of amendment 1:2006 to the International Standard IEC 60357:2002 was approved by CENELEC as an amendment to the European Standard with agreed common modifications.

Foreword to amendment A2

The text of document 34A/1246/CDV, future amendment 2 to IEC 60357:2002, 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 A2 to EN 60357:2003 on 2008-11-01.

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) 2009-08-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-11-01

Endorsement notice

The text of amendment 2:2008 to the International Standard IEC 60357:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A3

The text of document 34A/1394/CDV, future amendment 3 to IEC 60357:2002, 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 A3 to EN 60357:2003 on 2011-03-03.

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

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) 2011-12-03
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2014-03-03

Endorsement notice

The text of amendment 3:2011 to the International Standard IEC 60357:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A11

This document (EN 60357:2003/A11:2016) has been prepared by CLC/TC 34A "Lamps".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-03-14
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-03-14

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60357:2002 and its amendments are prefixed "Z".

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 provides test methods related to parameters as prescribed by Commission Regulation (EC) 244/2009, Commission Regulation (EU) 1194/2012 and Commission Regulation (EU) 874/2012 while conformity assessment (sampling, conformity procedures as well as limits) for market surveillance are specified in the text of the above Regulations.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZA, ZZB and ZZC, which are integral parts of this document.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
		Light and lighting – Measurement and presentation of photometric data of lamps and luminaires – Part 1: Measurement and file format	EN 13032-1 A1	2004 2012
		Light and lighting — Measurement and presentation of photometric data of lamps and luminaires — Part 2: Presentation of data for indoor and outdoor work places	EN 13032-2	2004
		Light and lighting – Measurement and presentation of photometric data – Part 4: LED lamps, modules and luminaires	EN 13032-4	2015
IEC 60050-845	-	International Electrotechnical Vocabulary— 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 60432-2	-	Incandescent lamps - Safety specifications Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes	EN 60432-2	-
IEC 60432-3	-	Incandescent lamps - Safety specifications Part 3: Tungsten halogen lamps (non-vehicle)	EN 60432-3	-
IEC 60630	-	Maximum lamp outlines for incandescent lamps	EN 60630	-
IEC 60969	201x	Self-ballasted compact fluorescent lamps for general lighting services - Performance requirements	FprEN 60969 FprAA	2013 2014
IEC/TR 61341	2010	Method of measurement of centre beam intensity and beam angle(s) of reflector lamps	EN 61341	2011
CIE 13.3	1995	Method of Measuring and Specifying Colour Rendering Properties of Light Source	-	-
CIE 015	2004	Colorimetry	-	-
CIE 63	1984	The spectroradiometric Measurement of light sources	-	-
CIE 84	1989	The measurement of luminous flux	-	-

Annex ZZA
(informative)

Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EC) No 244/2009 aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/495 to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps [2009 OJ L76].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding ecodesign requirements of that Regulation and associated EFTA Regulations.

Table ZZA.1 – Correspondence between this European Standard and Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps [2009 OJ L76] and Commission's standardization request M/495

Ecodesign requirements of Regulation No 244/2009 [2009 OJ L76]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex II, Article 1	Clause 1.4.1, Annex A	Lamp power
Annex II, Article 1	Annex A	Luminous flux
Annex II Table 5	Annex A	Lamp life
Annex II Table 5	Annex A	Lumen maintenance
Annex II Table 5	Clause 1.4.Z7	Number of switching cycles before failure
Annex II Table 5	Annex A	Premature failure rate
Annex II Table 5	Clause 1.4.Z3	Starting time
Annex II Table 5	Clause 1.4.Z3	Warm-up time to 60% ϕ
Article 1 (a)	Clause 1.4.Z2	Chromaticity coordinates
Annex II, Article 3.2 (h), Table 3	Clause 1.4.Z4 and Annex A	Colour rendering index (CRI)
Annex II, article 3.1 (d)	Clause 1.4.Z2	Correlated colour temperature (CCT)
Annex II Table 5	Clause 1.4.Z5	Power factor (only for lamps with integrated control gear)
Annex II 3.1. (h)	Clause 1.4.3	Lamp dimensions
Annex II 3.1. (f)	Clause 1.4.Z6	Dimmability
Annex II 3.1. (g)	Not applicable	Information on design for non-standard conditions

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this

standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the products falling within the scope of this standard.

Annex ZZB
(informative)

**Relationship between this European Standard and the ecodesign requirements
of Commission Regulation (EU) No 1194/2012 aimed to be covered**

This European Standard has been prepared under a Commission's standardization request M/495 to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EU) No 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment [2012 OJ L342].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding ecodesign requirements of that Regulation and associated EFTA Regulations.

Table ZZB.1 – Correspondence between this European Standard and Commission Regulation (EU) No 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment [2012 OJ L342] and Commission's standardization request M/495

Ecodesign requirements of Regulation No 1194/2012 [2012 OJ L342]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex III, article 1 Annex III, Table 4	Clause 1.4.1, Annex A	Lamp power
Annex III, article 3.1.1, 3.1.2 (a), 3.1.3 (c)	Annex A	Useful luminous flux
Annex III, article 3.1.2 (i), 3.1.3 (k)	Annex A	Beam angle
Annex III, Table 4	Annex A	Lamp life
Annex III, Table 4, Table 7	Annex A	Lumen maintenance
Annex III, Table 4	Clause 1.4.Z7	Number of switching cycles before failure, number of switching cycles in accordance with Commission regulation 244/2009
Annex III, Table 4	Annex A	Premature failure rate
Annex III, Table 4	Clause 1.4.Z3	Starting time
Annex III, Table 4	Clause 1.4.Z3	Warm-up time to 60% ϕ
Annex I	Clause 1.4.Z2	Chromaticity coordinates
Annex III, article 3.1.3 (h)	Clause 1.4.Z4 and Annex A	Colour rendering index (CRI)
Annex III, article 3.1.1, 3.1.2 (c)	Clause 1.4.Z2	Correlated colour temperature (CCT)
Annex III, Table 4	Clause 1.4.Z5	Power factor (only for lamps with integrated control gear)

Annex III, article 3.1.2 (h),	Clause 1.4.3	Lamp dimensions
Annex III, article 3.1.3 (m)	Clause 1.4.Z1	Spectral power distribution
Annex III, article 3.1.2 (f)	Clause 1.4.Z6	Dimmability
Annex III, article 3.1.2 (k, l, m)	Clause 1.4.3.Z2	Lamp type (MR11 GU4 etc.)
Annex III, article 3.1.3 (j)	Annex A	Peak intensity in candela
	Not applicable	Information on design for non-standard conditions

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the products falling within the scope of this standard.

Annex ZZC (informative)

Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 874/2012 aimed to be covered

This European standard has been prepared under a Commission's standardisation request M/495 to provide one voluntary means of conforming to the energy labelling requirements of Commission Delegated Regulation (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of electrical lamps and luminaires [2012 OJ L258].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZC.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding energy labelling requirements of that Regulation and associated EFTA Regulations.

Table ZZC.1 – Correspondence between this European Standard and Commission Delegated Regulation (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of electrical lamps and luminaires [2012 OJ L258] and Commission's standardisation request M/495

Energy labelling requirements of Regulation No 874/2012 [2012 OJ L258]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Article 1	Annex A	Applicable parameter according to Article 1: luminous flux
Annex VII	Clause 1.4.1, Annex A	Lamp power
Annex VII	Annex A	Luminous flux (non-directional only)
Annex VII	Annex A	Useful luminous flux (directional only)
Annex VII	Annex A	Beam angle

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the products falling within the scope of this standard.

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TUNGSTEN HALOGEN LAMPS (non-vehicle) – PERFORMANCE SPECIFICATIONS

1 General

1.0.Z1 Overall statement

Where a Commission Regulation specifies limits for parameters these limits shall be used instead of the limits specified in this standard. **C11**

1.1 Scope

This International Standard specifies the performance 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

For some of the requirements given in this standard reference is made to "the relevant data sheet". For some lamps these data sheets are contained in this standard. For other lamps, falling under the scope of this standard, the relevant data are supplied by the lamp manufacturer or responsible vendor.

The requirements of this standard relate only to type testing.

NOTE The requirements and tolerances permitted by this standard correspond to testing of a type test sample, submitted by the manufacturer for that purpose. In principle this type test sample should consist of units having characteristics typical of the manufacturer's production and being as close to the production centre point values as possible.

It may be expected with the tolerances given in the standard that products manufactured in accordance with the type test sample will comply with the standard for the majority of production. Due to the production spread however, it is inevitable that there will sometimes be products outside the specified tolerances. For guidance on sampling plans and procedures for inspection by attributes, see IEC 60410.

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: 1987, *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*

IEC 60432-2: *Incandescent lamps – Safety specifications – Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes*

IEC 60432-3: *Incandescent lamps - Safety specifications – Part 3: Tungsten halogen lamps (non-vehicle)* ¹⁾

¹⁾ To be published.