



SLOVENSKI STANDARD
SIST EN 60357:1999/A5:1999

01-julij-1999

Tungsten halogen lamps (non-vehicle) - Amendment A5 (IEC 60357:1982/A5:1992+corrigenda.Jun. 1992+ Nov.1992)

Tungsten halogen lamps (non-vehicle)

Halogen-Glühlampen (Fahrzeuglampen ausgenommen)

Lampes tungstène-halogène (véhicules exceptés)

STANDARD PREVIEW
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Ta slovenski standard je istoveten z: EN 60357:1988/A5:1993

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ICS:

29.140.20 Žarnice z žarilno nitko Incandescent lamps

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en

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EUROPEAN STANDARD

EN 60357/A5

NORME EUROPEENNE

EUROPÄISCHE NORM

October 1993

UDC 621.327.534:620.1

Descriptors: Lighting fitting, tungsten filament lamp, halogen lamp, electrical characteristic, dimension, maximum pinch temperature, condition of use

Amendment A5 to the English version of EN 60357

Tungsten halogen lamps (non-vehicle)
(IEC 357:1982/A5:1992 + corrigenda 1992)

Lampes tungstène-halogène
(véhicules exceptés)
(CEI 357:1982/A5:1992 +
corrigenda 1992)

Halogen-Glühlampen
(Fahrzeuglampen ausgenommen)
(IEC 357:1982/A5:1992 +
Corrigenda 1992)

This amendment A5 modifies the European Standard EN 60357:1988. It was approved by CENELEC on 1993-09-22. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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

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Ref. No. EN 60357:1988/A5:1993 E

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the amendment 5:1992 to the International Standard IEC 357:1982 and its corrigenda June 1992 and November 1992, could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as amendment A5 to EN 60357 on 22 September 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-10-01
- latest date of withdrawal of conflicting national standards (dow) 1994-10-01

For products which have complied with EN 60357:1988 and its amendment A4:1991 before 1994-10-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-10-01.

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

ENDORSEMENT NOTICE

The text of amendment 5:1992 to the International Standard IEC 357:1982 and its corrigenda June 1992 and November 1992 was approved by CENELEC as an amendment to the European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT 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.

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

IEC Publication	Date	Title	EN/HD	Date
-----	----	-----	-----	----
61	-	Lamp caps and holders together with gauges for the control of interchangeability and safety	-	-
61-1	1969	Part 1: Lamp caps	EN 60061-1*	1993
127	series	Miniature fuses	EN 60127	series
241	1968	Fuses for domestic and similar purposes	-	-
682	1980	Standard method of measuring the pinch temperature of quartz-tungsten-halogen lamps	-	-

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

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

**CEI
IEC
357**

Deuxième édition
Second edition
1982

Modifiée selon les amendements:
Amended in accordance with Amendments:
1(1984), 2(1985), 3(1987), 4(1989)
et/and 5(1992)

**Lampes tungstène-halogène
(véhicules exceptés)**

**Tungsten halogen lamps
(non-vehicle)**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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Countries \ Documents 34A(CO)	114	115	117	129	130	131	144	145	148	149	150
Romania	X	X	X	X	X	X			X	X	X
South Africa (Republic of)	X	X	X	X	X	X			X	X	X
Sweden	X			X	X	X	X	X			
Switzerland	X	X	X	X	X	X	X	X	X	X	X
Turkey	X	X	X				X	X	X	X	X
United Kingdom	X	X	X	X	X	X	X	X	X	X	X
United States of America		X	X				X	X	X	X	X
Union of Soviet Socialist Republics	X	X	X	X	X	X	X	X	X	X	X
Yugoslavia	X	X	X	X	X	X					

Other IEC publications quoted in this standard:

Publications Nos. 61:	Lamps caps and holders together with gauges for the control of interchangeability and safety
61-1:	Part 1: Lamp caps.
127:	Cartridge fuse-links for miniature fuses.
241 (1968):	Fuses for domestic and similar purposes.
682 (1980):	Standard method of measuring the pinch temperature of quartz-tungsten-halogen lamps.

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TUNGSTEN HALOGEN LAMPS (NON-VEHICLE)

SECTION ONE – GENERAL

1. Scope

This standard specifies dimensions and characteristics of tungsten halogen lamps.

The standard has been divided into sections according to the following lamp applications:

PROJECTION
PHOTOGRAPHIC (including studio)
FLOODLIGHTING
SPECIAL PURPOSE
GENERAL PURPOSE
STAGE LIGHTING

Lamps for automobile, aircraft and similar applications are not covered by this standard.

Note. – Projection lamps include those used for cinematograph and still projection applications.

The specific requirements for tubular low-pressure tungsten halogen lamps are given in Clause 9.

The requirements for lamp caps are given in IEC Publication 61-1.

For the purpose of this standard the following voltage designations apply:

Voltage designation	Range of supply voltage
A	< 50 V
B	50 - 170 V
C	> 170 - 250 V

2. Limits on maximum watts

Lamps covered by this standard shall have a maximum wattage at rated voltage as follows:

Maximum wattage = rated wattage +8%

Except where the standard sheet states:

Maximum wattage = rated wattage +12%

For each type, 95% of production shall comply with this requirement.

2. Guidance for the application of tungsten halogen lamps

Fluctuation in the mains supply voltage may adversely affect the life performance of tungsten halogen lamps. As far as possible, therefore, lamps of the tungsten halogen type should at all times be operated at voltages close to the rated voltage marked on the lamp. In any event the applied voltage should not exceed 110% of the rated voltage and preferably should not be above 105% of the rated voltage.

If lamps are marked with a voltage range, the rated voltage shall be taken as the mean of the voltage marked.

For projection lamps operated from an transformer, the effect of increases in primary voltage on the secondary (output) voltage can be minimized by suitable design of the transformer regulation.

4. Cautionary notice for photographic and floodlight lamps

It is recommended that cautionary notices should be supplied with tungsten-halogen photographic and floodlight lamps. These notices should cover at least the following minimum requirements and should be based on the wording shown below:

Caution. – To ensure maximum safety, the following precautions shall be observed:

- a) The luminaire should be provided with a protective shield. ¹⁾
- b) Disconnect the luminaire from the power supply before removing or installing a lamp or an equipment fuse.
- c) When installing a lamp do not remove the protective cover – if provided – until the lamp has been inserted into the equipment.
If the quartz bulb has been touched by bare fingers it should be cleaned before use, using a clean, lint free cloth moistened with methylated spirit.
- d) Always operate the lamp in series with a fuse rated for a current of _____²⁾ amperes and complying with _____²⁾.
- e) Avoid improper use of the lamp, such as:
 - i) burning positions other than those recommended by the manufacturer;
 - ii) operation at over-voltage, or for a longer period than specified;
 - iii) operation in conjunction with improper fuses or equipment not specifically designed for that type and rating of the lamp.
- f) Care should be taken when inserting double-ended tubular lamps that the pip of the exhaust tube does not touch any part of the luminaire.

Notes

- 1) If required by IEC Publication 598 or equivalent National Standard.
- 2) The manufacturer shall specify the rated value for this fuse and the relevant standard as given in Table I, Sub-clause 5.1 or Table II, Sub-clause 5.2.

Non observance of these precautions may lead to damage to the lamp and equipment, and, in extreme cases, to bursting of the lamp.

Note to equipment manufacturers

Since specific conditions may have to be observed to ensure correct and safe operation of the lamp, equipment manufacturers should request the latest detailed information from the lamp manufacturers.

5. Use of external fuses

5.1 Photographic lamps

The current ratings for the fuses that are recommended in the cautionary notices (item d) of Clause 4) should be in accordance with Table I.

TABLE I
Fuse values for photographic lamps

Lamp		Fuse	
Voltage (V)	Wattage (W)	Rated Current (A)	
		a)	b)
100 - 135	500	6,3	—
200 - 250		4,0	—
100 - 135	600	6,3	—
200 - 250		4,0	—
100 - 109	650	10,0*	10,0
110 - 135		6,3	6,0
200 - 250		4,0	4,0
100 - 135	800	10,0*	10,0
200 - 250		6,3	6,0
100 - 109	1000	—	16,0
110 - 135		10,0*	10,0
200 - 250		6,3	6,0
200 - 250	1250	10,0*	10,0
100 - 135	2000	—	25,0
200 - 219		—	16,0
220 - 250		—	10,0
110 - 135	5000	—	50,0
200 - 219		—	35,0
220 - 250		—	25,0
110 - 135	10000	—	100,0
200 - 250		—	50,0

- a) "Quick-acting" miniature fuses 250 V with high breaking capacity. (IEC Publication 127: Cartridge Fuse-links for Miniature Fuses, or the equivalent national standard.)
 b) "Quick-acting" D-fuses, 500 V (IEC Publication 241: Fuses for Domestic and Similar Purposes, or the equivalent national standard.)

* Not included in IEC Publication 127, but in common use.

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5.2 Floodlight lamps

The current ratings for the fuses that are recommended in the cautionary notices (Item c) of Clause 3) shall be in accordance with Table II:

TABLE II
Fuse values for floodlight lamps

Lamp		Fuse	
Voltage (V)	Wattage (W)	Rated Current (A)	
		a)	b)
100 - 135	100	2,0	—
200 - 250	100	2,0	—
100 - 135	150	2,0	—
200 - 250	150	2,0	—
100 - 135	200	4,0	—
200 - 250	200	2,0	—
100 - 135	250	4,0	—
200 - 250	250	2,0	—
100 - 135	300	4,0**	—
200 - 250	300	2,0**	—
100 - 135	500	6,3	—
200 - 250	500	4,0	—
100 - 135	750	10,0*	10,0
200 - 250	750	6,3	6,0
100 - 135	1000	10,0*	10,0
200 - 250	1000	6,3	6,0
100 - 135	1500	—	20,0
200 - 250	1500	—	10,0
100 - 135	2000	—	25,0
200 - 250	2000	—	10,0

- a) "Quick acting" miniature fuses 250 V with high breaking capacity. (IEC Publication 127, or the equivalent national standard.)
 b) "Quick-acting" D-fuses, 500 V. (IEC Publication 241, or the national equivalent standard.)

* Not included in IEC Publication 127, but in common use.

** Under consideration.

6. Maximum pinch temperatures for tungsten halogen lamps

Maximum permissible pinch temperatures of quartz lamps measured according to the method prescribed in IEC Publication 682: Standard Method of Measuring the Pinch Temperature of Quartz-tungsten-halogen Lamps, are specified for each lamp on the relevant data sheet.

Compliance with the maximum pinch temperature requirement will avoid premature lamp failure. Moreover, it will reduce the risk and violence of a possible shattering caused by increased internal pressure due to excessive temperature.

The maximum permissible pinch temperature is related to the rated lamp life and to its operating conditions. The following relation between the above parameters should be used as a guideline.

TABLE III
Maximum pinch temperatures

Lamp rated life (h)	Operating conditions	Maximum pinch temperature (°C)
≥ 300	Normal	350
≥ 200	Normal photographic use	
Any	Unprotected operation in humid environment	
Between 15 and 300 (both excluded)	Normal	400
≤ 15	Normal	450

Note. – Higher pinch temperatures may be specified in the relevant lamp standard sheets for certain lamp types of special design, provided the same level of safety is ensured.

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7. Numbering system for lamp data sheets

The first number represents the number of this publication (357), followed by the letters “IEC”.

The second number represents the lamp group and data sheet number within that group.

Projection lamps	2000-2999
Photographic lamps	3000-3999
Floodlight lamps	4000-4999
Special purpose lamps	5000-5999
General purpose lamps	6000-6999
Stage lighting lamps	7000-7999

The third number represents the edition of the page of the data sheet. In case where a data sheet has more than one page it is possible for the page to have different edition numbers with the data sheet number remaining the same.

In the case of amendments to single pages of a data sheet, these pages are issued with an amended edition number. For example, only page 1 of lamp data sheet 357-IEC-2016-1 has been amended so this page is now numbered 357-IEC-2016-2. The two remaining pages therefore retain the number 357-IEC-2016-1.

8. Standard sheets

The following standard sheets are to be found at the end of Section One:

Title	Sheet number
Principle of dimensioning of tubular tungsten halogen lamps fitted with caps R7s and RX7s	357-IEC-1001-
Principle of dimensioning of tubular tungsten halogen lamps fitted with Fa4 caps	357-IEC-1002-
Centring principle for 50 mm integral mirror tungsten halogen lamps with base GZ6.35	357-IEC-1003-
Centring principle for 2 in integral mirror tungsten halogen lamps	357-IEC-1004-
External dimensions of tungsten halogen projection lamps having a 2 in integral reflector and a GX5.3 or GY5.3 base	357-IEC-1005-
Holding systems for 2 in integral mirror tungsten halogen lamps with GX5.3 or GY5.3 bases	357-IEC-1006-
Principle of dimensioning of single-ended tungsten halogen lamps with G6.35 or GY6.35 bases	357-IEC-1007-
Centring principle for 42 mm integral mirror tungsten halogen lamps with base GX5.3 or GY5.3	357-IEC-1008-
External dimensions of tungsten halogen projection lamps having a 42 mm integral reflector and a GX5.3 or GY5.3 base	357-IEC-1009-
External dimensions of tungsten halogen lamps having a 35 mm integral reflector and a GZ4 base	357-IEC-1010-
External dimensions of tungsten halogen general purpose lamps having a 35 mm integral mirror and front cover	357-IEC-1011-
External dimensions of tungsten halogen general purpose lamps having a 51 mm (2 in) integral mirror and front cover	357-IEC-1012-

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9. Tubular low-pressure tungsten halogen lamps

9.1 Definition

Low-pressure tungsten halogen lamps have a working gas pressure below 10^5 Pa (1 bar).

9.2 Dimensions

In order to obtain non-interchangeability with existing high-pressure tungsten halogen lamps, the low-pressure lamps are longer than the existing lamps.

9.3 Marking

The packaging of low-pressure tungsten halogen lamps shall be provided with a marking indicating clearly that it contains one or more low-pressure lamps.

9.4 Filling-gas pressure

The filling gas pressure shall not exceed 10^5 Pa (1 bar) either during operation or in any other circumstances.

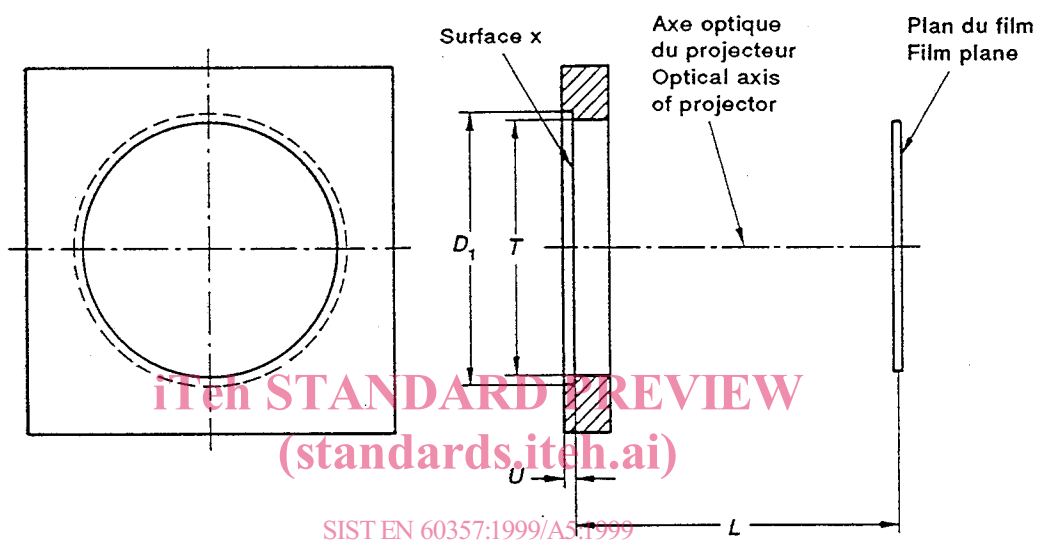
Compliance is checked by determining the normal room temperature filling-gas pressure which is multiplied by a factor 4.3 related to a maximum bulb temperature of 950 °C. A recommended method for testing is specified in Appendix A.

**PRINCIPE DE CENTRAGE
DES LAMPES TUNGSTÈNE-HALOGENÈ
À RÉFLECTEUR INCORPORÉ DE 42 mm
AVEC UN SOCLE GX5.3 OU GY5.3**

**CENTRING PRINCIPLE
FOR 42 mm INTEGRAL MIRROR
TUNGSTEN HALOGEN LAMPS
WITH BASE GX5.3 OR GY5.3**

Dimensions en millimètres – Dimensions in millimetres

Le plan n'est destiné qu'à indiquer les dimensions qui sont à contrôler
The drawing is intended only to indicate the dimensions to be controlled



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CEI-IEC 882/91

Dispositif de centrage du bord du réflecteur de la lampe – Centring device for lamp reflector rim

Référence Reference	Min.	Nom.	Max.
D_1	42.27	–	42.32
T	–	–	39.75
U	1.40	–	1.65
L	Note 1		

Notes 1. – La cote L (distance de travail) est la distance de la surface d'appui (surface x) au plan du film. La valeur de L dépend de l'objectif utilisé et du contour du réflecteur de la lampe. Les valeurs spécifiques sont données dans les feuilles de caractéristiques des lampes.

Dimension L (working distance) is the distance from the seating surface (Surface x) to the film plane. This value of L is dependent upon the objective lens used and also on the contour of the lamp reflector. Specific values are given in the lamp data sheets.

2. – La forme du dispositif n'est pas limitée à celle qui est montrée. Les encastrements, ergots ou autres systèmes d'arrêt doivent être situés à l'emplacement spécifié.

Shape of device is not restricted to that shown. Recesses, studs or other stopping features shall be provided at the specified location.

3. – Le dispositif de centrage est destiné à l'utilisation avec un système de fixation de la lampe qui fournit une force axiale en vue d'assurer le contact entre la surface x du bord de la lampe et la surface x du dispositif. Celui-ci fournit à la lampe les fonctions principales de positionnement et de fixation.

The centring device is intended for use with a lamp holding system which provides an axial force to ensure contact of the rim surface x of the lamp with surface x of the device. This device provides the primary location and holding functions for the lamp.