



**SLOVENSKI STANDARD**  
**SIST EN 60357:1999/A6:1999**  
**01-julij-1999**

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**Tungsten halogen lamps (non-vehicle) - Amendment A6 (IEC 60357:1982/A6:1993)**

Tungsten halogen lamps (non-vehicle)

Halogen-Glühlampen (Fahrzeuglampen ausgenommen)

Lampes tungstène-halogène (véhicules exceptés)

**Ta slovenski standard je istoveten z: EN 60357:1988/A6:1994**

[SIST EN 60357:1999/A6:1999](https://standards.iteh.ai/catalog/standards/sist/8c965327-240d-4db2-8c4d-8a56d4543791/sist-en-60357-1999-a6-1999)

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**ICS:**

29.140.20      Žarnice z žarilno nitko      Incandescent lamps

**SIST EN 60357:1999/A6:1999**      **en**

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EUROPEAN STANDARD

EN 60357/A6

NORME EUROPEENNE

EUROPÄISCHE NORM

July 1994

ICS 29.140.20

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

Amendment A6 to the English version of EN 60357

Tungsten halogen lamps (non-vehicle)  
(IEC 357:1982/A6:1993)

Lampes tungstène-halogène  
(véhicules exceptés)  
(CEI 357:1982/A6:1993)

Halogen-Glühlampen  
(Fahrzeuglampen ausgenommen)  
(IEC 357:1982/A6:1993)

This amendment A6 modifies the European Standard EN 60357:1988. It was approved by CENELEC on 1994-05-15. 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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EN 60357:1988/A6:1994

#### FOREWORD

At the request of the CENELEC Reporting Secretariat SR 34A, amendment 6:1993 to the International Standard IEC 357:1982 was submitted to the CENELEC Unique Acceptance Procedure (UAP) in September 1993 for acceptance as a European Standard.

The text of the International Standard was approved by CENELEC as amendment A6 to the EN 60357 on 15 May 1994.

The following dates were fixed:

- latest date of publication of  
an identical national standard (dop) 1995-07-15
- latest date of withdrawal of  
conflicting national standards (dow) 1995-07-15

For products which have complied with EN 60357:1988 and its amendments A4:1991 and A5:1993 before 1995-07-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-07-15.

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#### ENDORSEMENT NOTICE

[SIST EN 60357:1999/A6:1999](https://standards.iteh.ai/catalog/standards/sist/8c965327-240d-4db2-8c4d-8a56d4543791/sist-en-60357-1999-a6-1999)

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The text of amendment 6:1993 to the the International Standard IEC 357:1982 was approved by CENELEC as a European Standard without any modification.

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
357

Deuxième édition  
Second edition  
1982

AMENDEMENT 6  
AMENDMENT 6  
1993-07

Amendement 6

Lampes tungstène-halogène  
(véhicules exceptés)

iTeh STANDARD PREVIEW

Amendment 6

(standards.iteh.ai)

Tungsten halogen lamps

(non-vehicle)

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*Les feuilles de cet amendement sont à insérer dans  
la CEI 357 (1982).*

*The sheets contained in this amendment are to be  
inserted in IEC 357 (1982).*

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Commission Electrotechnique Internationale  
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CODE PRIX  
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● Pour prix, voir catalogue en vigueur  
For price, see current catalogue

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**INSTRUCTIONS POUR L'INSERTION  
DES NOUVELLES PAGES ET FEUILLES  
DANS LA PUBLICATION 357**

1. Retirer la page de titre et les pages 2, 3 et 4.  
Insérer la nouvelle page de titre et les nouvelles pages 2, 3 et 4.

**SECTION UN – GÉNÉRALITÉS**

2. Retirer les pages 7 à 17.  
Insérer les nouvelles pages 7 à 27.

**SECTION DEUX – FEUILLES DE  
CARACTÉRISTIQUES DES LAMPES**

3. Insérer les nouvelles feuilles ou les retirer et insérer les feuilles 1010-2, 1013-1, 2105-2 page 2, 2107-2 page 2, 2110-2 page 2, 2115-2 page 2, 2208-3 page 1 et page 2, 2220-3 page 1 et page 2, 2225-3 page 1 et page 2, 2330-3 page 1, 2330-1 page 2, 2415-3 page 1 et page 2, 2425-3 page 1, 2425-1 page 2, 2550-2 page 1, 2550-1 page 2, 2640-2 page 1, 2650-2 page 1, 2651-2 page 1, 2665-2, 2666-2, 2680-2, 2681-2, 2690-2 page 1, 3210-3, 3211-3, 4005-3, 4105-4, 5004-2 page 2, 5005-2 page 2.

**SECTION SIX – LAMPES POUR USAGE GÉNÉRAL**

4. Retirer la page de titre comportant le tableau: Feuilles de caractéristiques.  
Insérer la nouvelle page.
5. Insérer les nouvelles feuilles 6225-1 page 1 et page 2, 6315-1, 6325-1, 6410-1, 6420-1, 6430-1, 6440-1, 7150-3, 7165-2.

**ANNEXE C**

6. Ajouter les pages XII et XIII.

**INSTRUCTIONS FOR THE INSERTION  
OF NEW PAGES AND SHEETS IN  
PUBLICATION 357**

1. Remove existing title page and pages 2, 3 and 4.  
Insert new title page and new pages 2, 3 and 4.

**SECTION ONE – GENERAL**

2. Remove pages 7 to 17.  
Insert new pages 7 to 27

**SECTION TWO – LAMP DATA SHEETS**

3. Insert new sheets or remove and insert revised sheets 1010-2, 1013-1, 2105-2 page 2, 2107-2 page 2, 2110-2 page 2, 2115-2 page 2, 2208-3 page 1 and page 2, 2220-3 page 1 and page 2, 2225-3 page 1 and page 2, 2330-3 page 1, 2330-1 page 2, 2415-3 page 1 and page 2, 2425-3 page 1, 2425-1 page 2, 2550-2 page 1, 2550-1 page 2, 2640-2 page 1, 2650-2 page 1, 2651-2 page 1, 2665-2, 2666-2, 2680-2, 2681-2, 2690-2 page 1, 3210-3, 3211-3, 4005-3, 4105-4, 5004-2 page 2, 5005-2 page 2.

**SECTION SIX – GENERAL PURPOSE LAMP**

4. Remove the title page including table: Lamp data sheets.  
Insert new page.

5. Insert new sheets 6225-1 page 1 and page 2, 6315-1, 6325-1, 6410-1, 6420-1, 6430-1, 6440-1, 7150-3, 7165-2.

**ANNEX C**

6. Add pages XII and XIII.

## PRÉFACE

Le présent amendement a été établi par le sous-comité 34A: Lampes, du comité d'études n° 34 de la CEI: Lampes et équipements associés.

Le texte de cet amendement est issu des documents suivants:

Règle des six mois	Rapports de vote	Règle des six mois	Rapports de vote
34A(BC)598 34A(BC)594 34A(BC)607 34A(BC)603 34A(BC)604	34A(BC)647 34A(BC)643 34A(BC)662 34A(BC)658 34A(BC)659	34A(BC)620 34A(BC)621 34A(BC)617 34A(BC)649	34A(BC)671 34A(BC)672 34A(BC)668 34A(BC)690

Règle des six mois	Rapports de vote	Procédure des deux mois	Rapports de vote
34A(BC)499 34A(BC)593	34A(BC)562 34A(BC)642	34A(BC)609 34A(BC)665	34A(BC)628 34A(BC)684

Les rapports de vote indiqués dans le tableau ci-dessus donnent toute information sur le vote ayant abouti à l'approbation de cet amendement.

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This amendment has been prepared by sub-committee 34A: Lamps, of IEC technical committee No. 34: Lamps and related equipment.

The text of this amendment is based upon the following documents:

SIST EN 60357:1999/A6:1999  
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Six Months' Rule	Reports on voting	Six Months' Rule	Reports on voting
34A(CO)598 34A(CO)594 34A(CO)607 34A(CO)603 34A(CO)604	34A(CO)647 34A(CO)643 34A(CO)662 34A(CO)658 34A(CO)659	34A(CO)620 34A(CO)621 34A(CO)617 34A(CO)649	34A(BC)671 34A(CO)672 34A(CO)668 34A(CO)690

Six Months' Rule	Reports on voting	Two Months' Procedure	Reports on voting
34A(CO)499 34A(CO)593	34A(CO)562 34A(CO)642	34A(CO)609 34A(CO)665	34A(BC)628 34A(CO)684

Full information on the voting for the approval of this amendment can be found in the reports on voting indicated in the above table.

NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

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357

Deuxième édition  
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Modifiée selon les amendements:  
Amended in accordance with amendments:  
1(1984), 2(1985), 3(1987), 4(1989), 5(1992)  
et/and 6(1993)

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Lampes tungstène-halogène  
(véhicules exceptés)

Tungsten halogen lamps  
(non-vehicle)  
(standards.iteh.ai)

[SIST EN 60357:1999/A6:1999](https://standards.iteh.ai/catalog/standards/sist/8c965327-240d-4db2-8c4d-8a56d4543791/sist-en-60357-1999-a6-1999)  
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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
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## SECTION TWO – PROJECTION LAMPS

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Lamp data sheets

## SECTION THREE – PHOTOGRAPHIC LAMPS

*Lamp data sheets*

## SECTION FOUR – FLOODLIGHT LAMPS

*Lamp data sheets*

## SECTION FIVE – SPECIAL PURPOSE LAMPS

*Lamp data sheets*

## SECTION SIX – GENERAL PURPOSE LAMPS

*Lamp data sheets*

## SECTION SEVEN – STAGE LIGHTING LAMPS

*Lamp data sheets*

Annex A – Recommended method of testing of low-pressure tungsten halogen lamps.....	III
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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.

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

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

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

<i>Voltage designation</i>	<i>Range of supply voltage</i>
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.

### 3 Guidance for the application of tungsten halogen lamps

The life of tungsten halogen lamps will be adversely affected by switching-on with, and/or operation at, supply voltages which are higher than the lamp rated voltage.

Lamps which are designed for use on higher supply voltages (voltage designations B and C will, in general, tolerate larger increases in supply voltage than those of low rated voltage (voltage designation A) particularly those lamps designed for very high luminous efficacy and/or high correlated colour temperature.

Luminous efficacy and correlated colour temperature are closely related to the attainable lamp life, therefore, rated lamp voltage and declared lamp life are good indicators of the degree of overvoltage which is tolerable to achieve acceptable lamp performance.

For this purpose the following guidelines should be observed.

Declared lamp life (h)	Maximum percentage of rated lamp voltage	
	Voltage designation A	Voltage designation B and C
< 25	100 %	110%
25 to < 50	105 %	
50 to < 200	108 %	
≥ 200	110 %	

#### NOTES

- 1 If lamps are marked with a voltage range, the rated voltage shall be taken as the mean of the voltages marked.
- 2 Better control of voltage fluctuations can be obtained by use of a properly designed power supply. This is particularly applicable to lamps of voltage designation A.

### 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 should be observed:

- a) The luminaire should be provided with a protective shield.
- 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 \_\_\_\_\_<sup>2)</sup> amperes. and complying with \_\_\_\_\_<sup>2)</sup>.

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.

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#### Note to equipment manufacturers

SIST EN 60357:1999/A6:1999

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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 of the cautionary notices) 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	1 000	–	16,0
110-135		10,0*	10,0
200-250		6,3	6,0
200-250	1 250	10,0*	10,0
100-135	2 000	–	25,0
200-219		–	16,0
220-250		–	10,0
110-135	5 000	–	50,0
200-219		–	35,0
220-250		–	25,0
110-135	10 000	–	100,0
200-250		–	50,0

a) "Quick-acting" miniature fuses 250 V with high breaking capacity (IEC 127-2: *Miniature fuses – Cartridge fuse-links*, or the equivalent national standard).

b) "Quick-acting" D-fuses, 500 V (IEC 241: *Fuses for Domestic and Similar Purposes*, or the equivalent national standard).

\* Not included in IEC 127-2, but in common use.

## 5.2 Floodlight lamps

The current ratings for the fuses that are recommended in the cautionary notices (Item d) of Clause 4) 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	1 000	10,0*	10,0
200-250	1 000	6,3	6,0
100-135	1 500	–	20,0
200-250	1 500	–	10,0
100-135	2 000	–	25,0
200-250	2 000	–	10,0

a) "Quick-acting" miniature fuses 250 V with high breaking capacity (IEC 127-2, or the equivalent national standard).

b) "Quick-acting" D-fuses 500 V (IEC 241, or the equivalent national standard).

\* Not included in IEC 127-2, but in common use.

\*\* Under consideration.

## 5.3 General purpose halogen lamps

### 5.3.1 Supply voltage range < 50 V (Voltage designation A)

Single-ended lamps with a rated voltage of  $\geq 24$  V shall always be operated in series with a fuse as specified in table III. This fuse shall be in the secondary (lamp) circuit of the transformer/convertor.