SLOVENSKI STANDARD
SIST EN 60357:2004/A11:2016

01-september-2016

Volframove halogenske sijalke (ne za vozila) - Tehnične specifikacije - Dopolnilo A11

Tungsten halogen lamps (non-vehicle) - Performance specifications

Halogen-Glühlampen (Fahrzeuglampen ausgenommen) - Anforderungen an die Arbeitsweise

Lampes tungstène-halogène (véhicules exceptés) - Prescriptions de performances

Ta slovenski standard je istoveten z: **EN 60357:2003/A11:2016**

ICS:

29.140.20 Žarnice z žarilno nitko Incandescent lamps

SIST EN 60357:2004/A11:2016 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60357:2003/A11

June 2016

ICS 29.140.20

English Version

Tungsten halogen lamps (non-vehicle) - Performance specifications

Lampes tungstène-halogène (véhicules exceptés) - Prescriptions de performances

Halogen-Glühlampen (Fahrzeuglampen ausgenommen) - Anforderungen an die Arbeitsweise

This amendment A11 modifies the European Standard EN 60357:2003; it was approved by CENELEC on 2016-03-14. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

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–	latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2019-03-14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.

CONTENTS **Add** the following annexes:

Delete all references to lamp caps E11.

Delete the following lamp data sheets from the IEC text:

60357-IEC-3211-3

60357-IEC-3230-2

60357-IEC-6115-1

60357-IEC-6720-1

60357-IEC-6722-1

60357-IEC-6725-1 and 2

60357-IEC-6726

60357-IEC-6727

60357-IEC-6820-1

Delete the following particular lamp types from lamp data sheets in the IEC text:

Lamp data sheet	Lamp types deleted		
	Rated wattage	Voltage range	Z_{nom}
60357-IEC-3005-3	1 000	B	89,6
	1 000	B	104,1
	750	B	114,2
	1 000	B	138,1
	1 000	B	162,0
	1 500	B	162,0
60357-IEC-3105-2	650	B	74,9
	800	C	74,9
	1 250	C	121,7
60357-IEC-3210-3	750	B	–
60357-IEC-4105-4	2 000	–	327,4
60357-IEC-4105-5	2 000	–	327,4

1.0.Z1 **Add** the following clause before clause 1.1

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.

1.3.Z1 After 1.3.18 **add** new definitions 1.3.Z1 up to 1.3.Z3:

3.Z1

directional lamp

lamp having at least 80 % light output within a solid angle of π sr (corresponding to a cone with angle of 120°)

[SOURCE: Regulation 1194/2012 Article 2]

3.Z2

partial luminous flux (of a light source, within a specified cone angle)

luminous flux emitted from a light source within a specified cone angle α, determined from the luminous intensity distribution $I(\theta, \varphi)$ of the source:

$$\Phi_{\alpha} = \int_{\varphi=0}^{2\pi} \int_{\theta=0}^{\alpha/2} I(\theta,\varphi) \sin\theta \, \mathrm{d}\theta \, \mathrm{d}\varphi \qquad (2)$$

Note 1 to entry: Partial luminous flux is expressed in lumen (lm)

Note 2 to entry: (θ, φ)=(0,0) is the direction of the cone axis

Note 3 to entry: The cone angle α is the full angle (diameter) of the cone

[SOURCE: EN 13032-4:2015, 3.41, modified, – Notes 4 and 5 removed]

3.Z3

useful luminous flux, Φ_{use}

partial luminous flux of a halogen lamp falling within the cone used for calculating the halogen lamp's energy efficiency according Annex III, point 1.1 of COMMISSION REGULATION (EU) No 1194/2012

Note 1 to entry: Useful luminous flux is expressed in lumen (lm)

Note 2 to entry: The regulation specifies 90° or 120° cones according to the product characteristics

Note 3 to entry: Useful luminous flux is similar to partial luminous flux. It is determined with the cone axis coincident with the observed optical beam axis of the light source, the axis about which the luminous intensity is substantially symmetrical

1.4.3 **Replace** the entire clause 1.4.3 by:

1.4.3 Dimensions

1.4.3.Z1 General

Lamps and, if applicable, filament dimensions shall comply with the values specified on the relevant lamp data sheet.

Measurement of the lamp dimensions shall be done with a caliper at 20 ºC to 30 ºC.

1.4.3.Z2 Relationship between some types and Table 6 of COMMISSION REGULATION (EU) No 1194/2012

The following types, as listed in Table 6 of COMMISSION REGULATION (EU) No 1194/2012, are considered to be related to data sheet as given in the following Table Z1.

Table Z1 - Relationship between some types and Table 6 of COMMISSION REGULATION (EU) No 1194/2012

Type (as in Table 6 of 1194/2012)	Data sheet covering the type	Designation covered by the sheet
Mains-voltage blown glass reflector types		
R50/NR50	60630-IEC-1510-1	R50 E14
R63/NR63	60630-IEC-1520-1 60630-IEC-1530-1	R63 E27 R63 B22d
R80/NR80	60630-IEC-1540-1 60630-IEC-1550-1	R80 E27 R80 B22d
R95/NR95	60630-IEC-1570-1 60630-IEC-1580-1	R95 E27 R95 B22d
R125	60630-IEC-1590-1 60630-IEC-1600-1	R125 E27 R125 B22d
Mains-voltage pressed glass reflector types		
PAR16	60357-IEC-1015-	PAR16 GU10 (also called PAR50 GU10)
PAR16	60630-IEC-1510-1	PAR50 E14 (also called PAR16)
PAR20	60357-IEC-1016-	PAR20 GU10 (also called PAR63 GU10)
PAR20	60630-IEC-1520-1	PAR63 E27 (also called PAR20)
PAR25	60630-IEC-1540-1	PAR80 E27 (also called PAR25)
PAR30S	60630-IEC-1610-1	PAR95S E27 (also called PAR30S)
PAR38	60630-IEC-1620-1	PAR121 E27 (also called PAR38)
Extra-low voltage reflector type		
MR11 GU4	60357-IEC-6310-	MR11
MR11 GU4	60357-IEC-6315-	MR11
MR16 GU 5.3	60357-IEC-6320-	MR16
MR16 GU 5.3	60357-IEC-6325-	MR16
AR111	60357-IEC-6450-	AR111

1.4.5.1 **Add** in indent a) the following after the wording ‘tungsten halogen lamp:

1 These data sheets refer to lamp maximum outline dimensions in EN 60630. These lamps are not otherwise specified in this standard.

(or useful luminous flux for directional lamps) (lm)

1.4.Z1 After 1.4.7 **add** new clauses 1.4.Z1 up to 1.4.Z7:

1.4.Z1

The measurement of the spectral power distribution shall be made under the conditions of Annex A and in accordance with CIE 63.

1.4.Z2

The Correlated colour temperature (CCT) shall be calculated in accordance with CIE 015:2004.

1.4.Z3

The test for starting and warm-up times shall be in accordance with EN 60969:201x[2], B.3.

Starting time is determined as the period from the start of the test to when the lamp has fully completed the starting sequence (lamp has started and remains alight).

Warm-up time is the time taken from the start of the test to when the lamp achieves the required percentage of its stable luminous flux.

Halogen lamps without integrated controlgear are deemed to fulfil the starting time requirement by their technology. Testing is not needed.

1.4.Z4

The Colour rendering index (CRI) of an individual lamp shall be calculated from the spectral power distribution in accordance with CIE 13.3:1995.

1.4.Z5

The determination of the power factor shall be in accordance with IEC/TR 61000-1-7:2016.

Halogen lamps without integrated controlgear are deemed to fulfil the power factor requirement by their technology. Testing is not needed.

1.4.Z6

Lamps without integrated control gear are deemed to be dimmable without testing.

Testing of other types is under consideration.

1.4.Z7

For switching requirements the test conditions shall be as specified in A.3.1. The switching cycle used shall be 1 min on and 3 min off.

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[2] In preparation

Annex A.2 **Replace** the entire subclause by:

A.2.1 General

Luminous flux shall be measured in accordance with CIE 84:1984.

Beam angle(s) and centre beam intensity shall be measured in accordance with EN 61341:2011.

Prior to the initial measurements the lamp shall be aged for approximately 1 h at its rated voltage.

Tests shall be made in a draught-free atmosphere.

Photometric characteristics shall be measured in accordance with EN 13032-1:2004.

A.2.2 Useful luminous flux

For directional lamps the useful luminous flux is obtained by luminous intensity integration as described in EN 13032-4:2015, 6.3 “Partial luminous flux “.

Alternative measurement methods may be used if they can be shown to give equivalent results for the product being tested, if necessary by applying correction factors. Measurements with lamps operating horizontally are often much easier to carry out. The reference method, however, uses the following measurement position: lamps shall be operated in free air in a vertical base-up position.

In case of doubt a goniophotometry measurement in accordance with EN 13032-4:2015, 6.3 shall be leading.

NOTE Below are a few examples of alternative measurement methods. It is not an exhaustive list.

- For small beam angles shine into integrating sphere.
- Mount lamp on internal surface of integrating sphere.
- Mount lamp inside integrating sphere with screening (LM-20 technique).
- Illuminate a surface and measure the illuminance across the surface with a photometer.
- Illuminate a surface and measure the surface luminance with a luminance camera.
- Illuminate a translucent screen and measure the surface luminance of the rear side with a luminance camera.

Annex A.3.7 **Add** the following requirement to the end of this subclause:

Lamps that fail prior to 75% of rated life shall not be included in the average for lumen maintenance.

Bibliography **Add** the following notes for the standards indicated:

IEC 60127-2	NOTE	Harmonized as EN 60127-2
IEC 60335-2-56	NOTE	Harmonized as EN 60335-2-56
IEC 60598-2	NOTE	Harmonized as EN 60598-2-x series