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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
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Lamps for road vehicles – Dimensional, electrical and luminous requirements

Lampes pour véhicules routiers – Exigences dimensionnelles, électriques et lumineuses

IEC 60809:2014-12/AMD1:2017-03(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IEC 60809

Edition 3.0 2014-12

LAMPS FOR ROAD VEHICLES – DIMENSIONAL, ELECTRICAL AND LUMINOUS REQUIREMENTS

INTERPRETATION SHEET 1

This interpretation sheet has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this interpretation sheet is based on the following documents:

ISH	Report on voting
34A/2007/ISH	34A/2017/RVD

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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Introduction (not part of the proposal)

In the Amendment 1 to Ed.3 (34A/1901/CDV voted positively), Annex E was updated to extend the method of measuring internal elements of dual filament lamps to all such categories, for instance the new category H19.

In the amendment of the current category sheet for H19 (Regulation No. 37), the distinct physical shield width B is introduced (8,6 ± 0,3 mm) to ensure interchangeability of light sources as it relates to road safety (see WP.29/2016/111; to become Resolution [R.E.5] on the common specification of light source categories). In the category sheet for H19 reference is made to Annex E of IEC 60809:2014 for the method of measurement of the internal elements.

ICS 29.140.20; 43.040.20

IEC 60809:2014-12/AMD1:2017-03/ISH1:2017-07(en-fr)

See in Figure 1 an extract from WP.29/2016/111.

Practical measurement set-ups use optical vision-systems like a projection system to determine the dimensions of the internal elements.

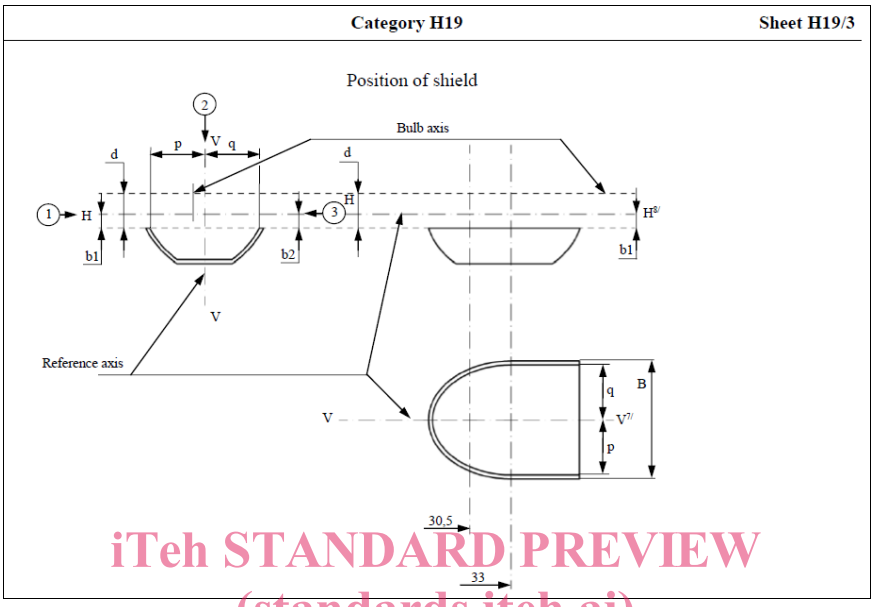

Figure 1 – Category sheet for H19

Problem statement:

When using the above mentioned vision system, a measurement error is introduced due to refraction and blurring (by the glass envelope), additional to the measurement uncertainty.

The effect is mainly dependent on the shield width in relation to the glass envelope diameter.

For lamp designs with a relatively small glass envelope diameter (there is only an upper limit specified), the shield gets close to the glass envelope and the effect becomes significant.

Figure 2 shows a simplified drawing of the view imaging situations of the shield, with and without the effect due to the “refractive index” of the glass envelope.

a) Physical dimension “B” when the glass envelope is removed,

b) Visual size of the shield width when measured through the glass envelope in direction ②, resulting in a “smaller value for “B”.

c) Visual size of the shield width when measured through the glass envelope in direction “-②” (the opposite direction as defined in IEC 60809:2014/AMD1:2017), even show the contrary deviation from the real dimension, resulting in a “larger value for “B”.

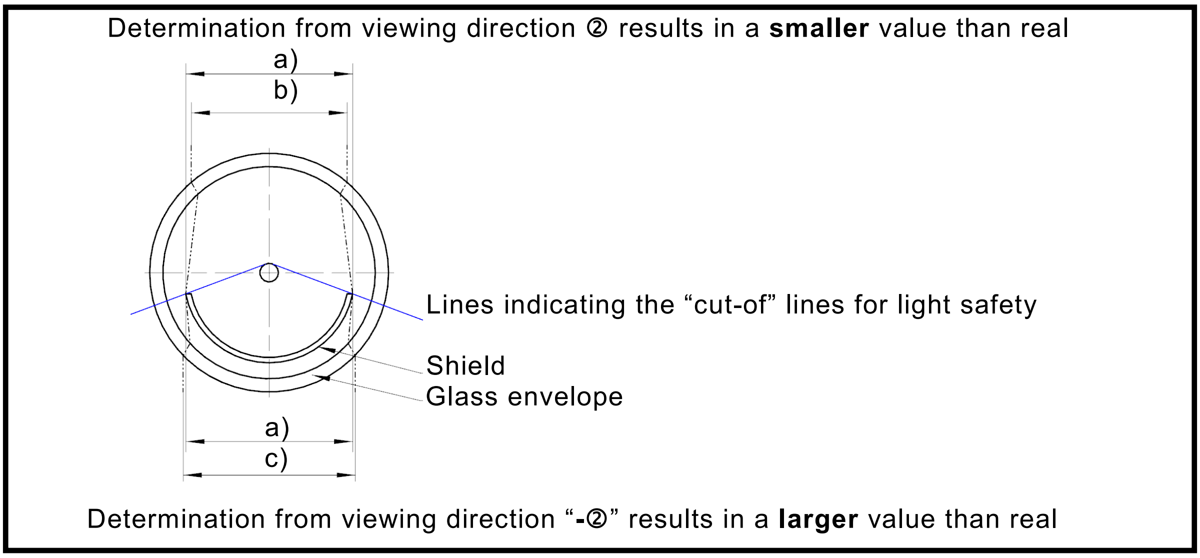

Figure 2 – Simplified drawing of the imaging situations

Proposal:

To publish an Interpretation Sheet on Clause E.5 of IEC 60809:2014/AMD1:2017, *Lamps for road vehicles – Dimensional, electrical and luminous requirements*, as follows:

INTERPRETATION SHEET

Clause E.5 of IEC 60809:2014/AMD1:2017, *Lamps for road vehicles – Dimensional, electrical and luminous requirements*

Note to MP 24 to MP 25 in Table E.1

To avoid measurement errors of the shield width B due to the refractions by the glass envelope the following options are considered:

1) The removal of the glass envelope.

2) The use of X-ray measurement.

   NOTE 1 Option 1 can be used for verification.

3) The use of an immersion fluid inside and outside of the envelope in a rectangular glass bath ensuring the refractive index of the immersion fluid matches that of the glass envelope close enough to avoid refractions. The immersion fluid can be filled inside the envelope after removing the top of the bulb. Care shall be taken not to touch/move internal elements.

   NOTE 2 Option 1 can be used for verification of the immersion fluid and the test setup.

4) The use of a correction factor, taking into account the optical offset and the measurement uncertainty. The verification of the correction factor for a certain lamp design shall be made according the measurement method under item "1)" i.e. after removal of the glass envelope.

   NOTE 3 Option 1 can be used for verification.

Note to this interpretation sheet:

The next revision of this standard shall incorporate an improvement of the body text to elminate the need for this interpretation sheet.

FOREWORD

This amendment has been prepared by subcommittee 34A: Lamps, of IEC technical committee 34: Lamps and related equipment.

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

CDV	Report on voting
34A/1901/CDV	34A/1940/RVC

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

The contents of the interpretation sheet 1 of July 2017 have been included in this copy.

4.4.1 Colour of light

Add, after the third dashed list item (definition of red colour), the following new text:

– finished filament lamps emitting amber light:

A_{12}	green boundary:	$y = x - 0{,}120$
A_{23}	the spectral locus[2]	
A_{34}	red boundary:	$y = 0{,}390$
A_{41}	white boundary:	$y = 0{,}790 - 0{,}670\ x$

With intersection points:

A_1:	$x = 0{,}545$, $y = 0{,}425$
A_2:	$x = 0{,}560$, $y = 0{,}440$
A_3:	$x = 0{,}609$, $y = 0{,}390$
A_4:	$x = 0{,}597$, $y = 0{,}390$

Annex E

Replace the existing title with the following new title:

Method of measuring internal elements of H4, H17, H19 and HS1 lamps

E.2.6 Plane Y1-Y1

Replace the existing paragraph with the following new text:

Plane Y1-Y1 is a plane parallel to the reference plane at a distance of 29,5 mm from it (30,0 mm for the 24 V type, 30,5 mm for category H19).

E.2.8 Plane Y3-Y3

Replace the existing paragraph with the following new text:

Plane Y3-Y3 is a plane parallel to the reference plane at a distance of 23,5 mm from it (25,0 mm for categories HS1 and H17, 24,5 mm for category H19).

E.3 Viewing directions (see Figure E.1)

Add, at the end of Clause E.3, the following new sub-clause:

E.3.4 Viewing direction ④

Viewing direction ④ is perpendicular to plane V-V, seen from the side of the right-hand shield edge.

E.4.1 Shield and filaments (see Figure E.2)

Replace the existing text with the following new text:

Viewing direction ①

MP 1 and MP 2	The intersections of the main beam filament axis with planes Y3-Y3 and Y4-Y4
MP 3 and MP 4	The intersections of the shield edge with planes Y1-Y1 and Y2-Y2
MP 5 and MP 6	The intersections of the envelope of the dipped beam filament with planes Y1-Y1 and Y2-Y2 farthest from plane H-H
MP 7	The intersection of the bulb axis with plane Y1-Y1
MP 8 and MP 11	The intersections of the outer part of respectively the first and last luminous turns of the dipped beam filament with the shield edge
MP 9 and MP 10	The intersections of the outer part of respectively the first and last luminous turns of the main beam filament with the centre line (axis) of that filament

Viewing direction ②

MP 12 and MP 13	The intersections of the main beam filament axis with planes Y3-Y3 and Y4-Y4
MP 14 and MP 15	The intersections of the dipped beam filament axis with planes Y1-Y1 and Y2-Y2
MP 16 and MP 17	The intersections of the interior shield edges with plane Y2-Y2

MP 24 and MP 25	The intersections of the outer shield edges with plane Y2-Y2 (including shield material thickness; applies to category H19 only)
Viewing direction ③	(Categories H4 and HS1. Can be used as an equivalent alternative to viewing direction for categories H17 or H19)
MP 18 and MP 19	The intersections of the shield edge with plane Y1-Y1 and Y2-Y2
Viewing direction ④	(Categories H17 and H19. Not for category H4 nor HS1)
MP 18 and MP 19	The intersections of the shield edge with plane Y1-Y1 and Y2-Y2

E.5 Dimensions to be measured

Replace the existing paragraph with the following new text:

Table E.1 states the dimensions to be measured. Values and tolerances are given on the relevant filament lamp data sheet H4, H17, H19 or HS1 of UN Regulation 37.

Replace the existing Table E1 with the following new Table E.1

Table E.1 – Dimensions to be measured for H4, H17, H19 and HS1 lamps

Distance (see Figure E.2)	Measured perpendicular to plane	Viewing direction	Dimension	
			12 V	24 V
MP 2 to MP 3	H-H	1	a/26,0	
MP 1 to MP 3 [a]	H-H	1	a/23,5	
MP 3 to H-H [d]	H-H	1	b_1/29,5	b_1/30,0
MP 4 to H-H [b]	H-H	1	b /33,0	
MP 18 to X-X [c,d]	X-X	3	b_2/29,5	b_2/30,0
		4		
MP 19 to X-X [c]	X-X	3	b /33,0	
		4		
MP 3 to MP 5 [d]	H-H	1	c/29,5	c/30,0
MP 4 to MP 6 [b]	H-H	1	c/33,0	
MP 7 to MP 3	H-H	1	d	
MP 8 to reference plane	Reference plane	1	e	
MP 8 to MP 9	Reference plane	1	f	
MP 13 to V-V	V-V	2	g/26,0	
MP 12 to V-V [a]	V-V	2	g/23,5	
MP 14 to V-V [d]	V-V	2	h/29,5	h/30,0
MP 15 to V-V	V-V	2	h/33,0	
MP 9 to MP 10	Reference plane	1	l_r	
MP 8 to MP 11	Reference plane	1	l_c	
MP 16 to V-V [b]	V-V	2	p/33,0	
MP 17 to V-V [b]	V-V	2	q/33,0	
Angle α (see Figure E.3)				
MP 23 to MP 20	H-H	1	α	
MP 23 to MP 21	V-V	2	α	
MP 23 to MP 22	V-V	2	α	
MP 24 to MP 25	V-V	2	B/33,0	

[a] For category HS1, this dimension shall be measured at 25,0 mm distance from the reference plane. For category H19, this dimension shall be measured at 24,5 mm distance from the reference plane.

[b] For category HS1, this dimension shall be measured at 31,0 mm distance from the reference plane.

[c] For categories H17 and H19, viewing direction ③is an alternative to viewing direction ④, but values and tolerances shall comply with those defined for viewing direction ④ in UN Regulation 37.

[d] For category H19, this dimension shall be measured at 30,5 mm distance from the reference plane.