

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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.

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 ($8,6 \pm 0,3$ 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.

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.

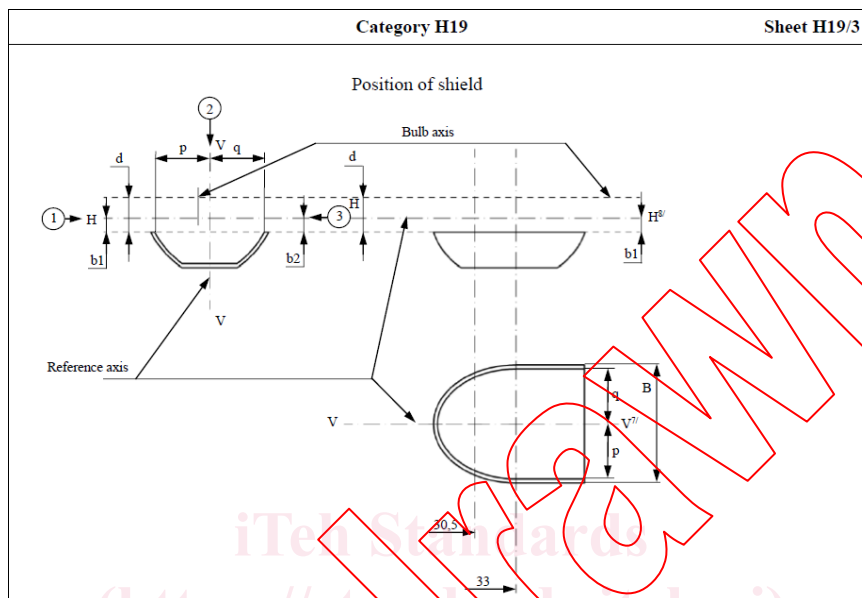


Figure 1 – Category sheet for H19

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”.

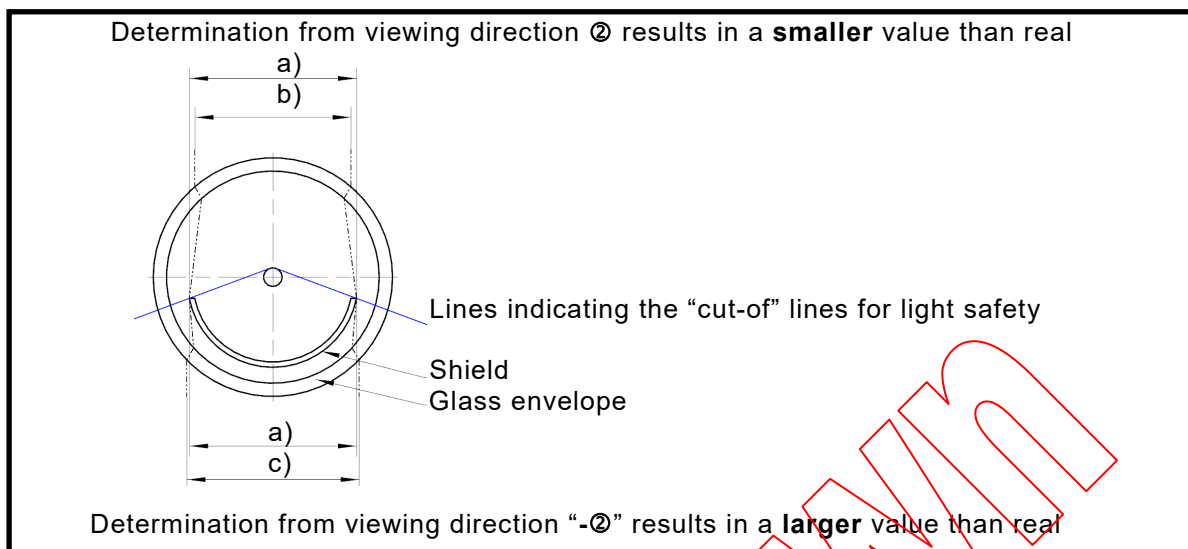


Figure 2 – Simplified drawing of the imaging situations

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 eliminate the need for this interpretation sheet.