

25 January 2011

Agreement

Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions*

(Revision 2, including the amendments which entered into force on 16 October 1995)

Addendum 98: Regulation No. 99

Revision 2 – Amendment 2

Supplement 6 to the original version of the Regulation - Date of entry into force:
9 December 2010

Uniform provisions concerning the approval of gas-discharge light sources for use in approved gas-discharge lamp units of power-driven vehicles



UNITED NATIONS

* Former title of the Agreement: Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

Paragraph 3.10., amend to read:

"3.10. UV radiation

The UV radiation of the gas-discharge light source shall be such that the gas discharge light source is of the low UV type complying with:

$$k_{UV} = \frac{\int_{\lambda=250 \text{ nm}}^{400 \text{ nm}} E_e(\lambda) \cdot S(\lambda) \cdot d\lambda}{k_m \cdot \int_{\lambda=380 \text{ nm}}^{780 \text{ nm}} E_e(\lambda) \cdot V(\lambda) \cdot d\lambda} \leq 10^{-5} \text{ W/lm}$$

Where ..."

Annex 1,

List of sheets for gas-discharge light sources and their sequence in this annex, amend to read:

Sheet numbers

DxR/1 to 7 (Sheet DxR/6: two pages)

DxS/1 to 6

Sheets DxR/1 to 3 and DxR/6, replace by new sheets, to read (see next pages):

Sheets DxS/1 to 3 and DxS/6, replace by new sheets, to read (see next pages):

CATEGORIES D1R, D2R, D3R AND D4R

Sheet DxR/1

The drawings are intended only to illustrate the essential dimensions (in mm) of the gas-discharge light source

Figure 1
Category D1R - Type with cables - Cap PK32d-3

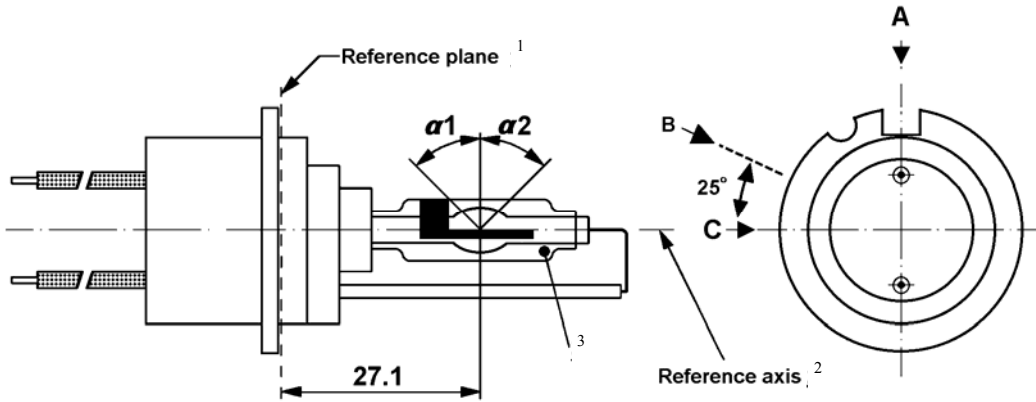
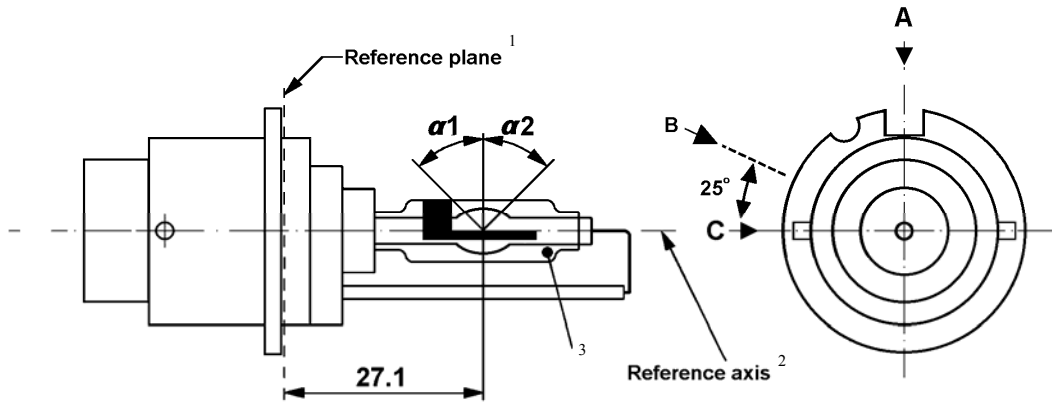


Figure 2
Category D2R - Type with connector - Cap P32d-3



¹ The reference plane is defined by the positions on the surface of the holder on which the three supporting bosses of the cap ring will rest.

² See sheet DxR/3.

³ With respect to the reference axis, when measured at a distance of 27.1 mm from the reference plane the eccentricity of the outer bulb shall be less than ± 0.5 mm in direction C and less than -1 mm / $+0.5$ mm in direction A.

The drawings are intended only to illustrate the essential dimensions (in mm) of the gas-discharge light source

Figure 3
Category D3R - Type with starter – Cap PK32d-6

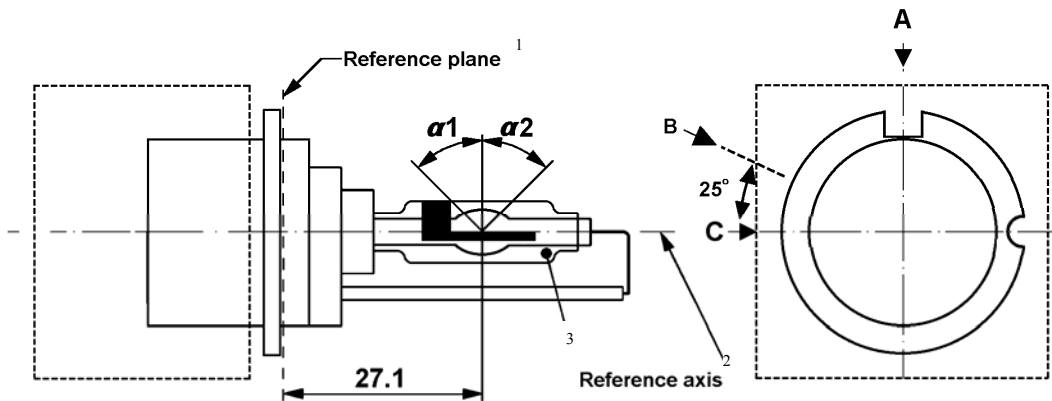
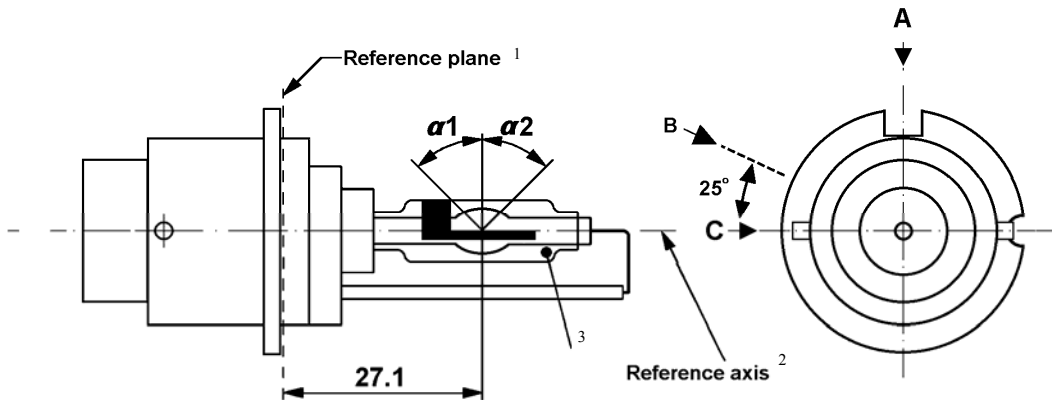


Figure 4
Category D4R - Type with connector – Cap P32d-6



- ¹ The reference plane is defined by the positions on the surface of the holder on which the three supporting bosses of the cap ring will rest.
- ² See sheet DxR/3.
- ³ With respect to the reference axis, when measured at a distance of 27.1 mm from the reference plane the eccentricity of the outer bulb shall be less than ± 0.5 mm in direction C and less than -1 mm $/+0.5$ mm in direction A.

Figure 5
Definition of reference axis¹

The cap shall be pushed in this direction

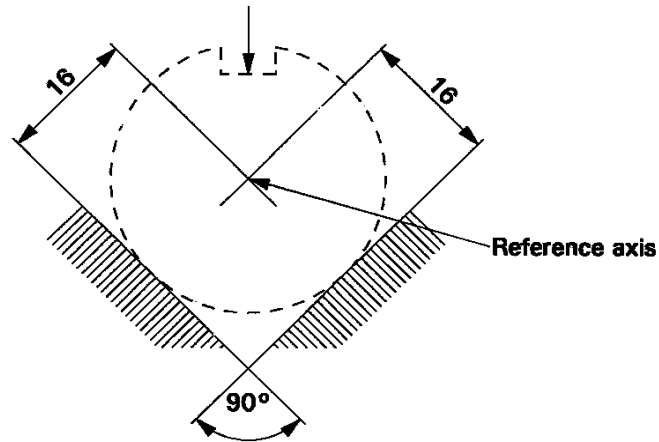
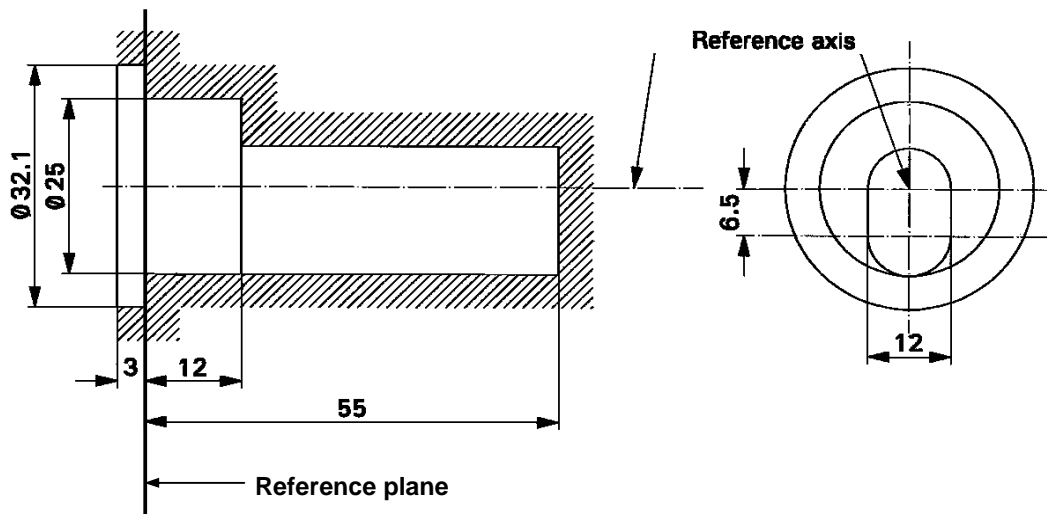


Figure 6
Maximum lamp outline²



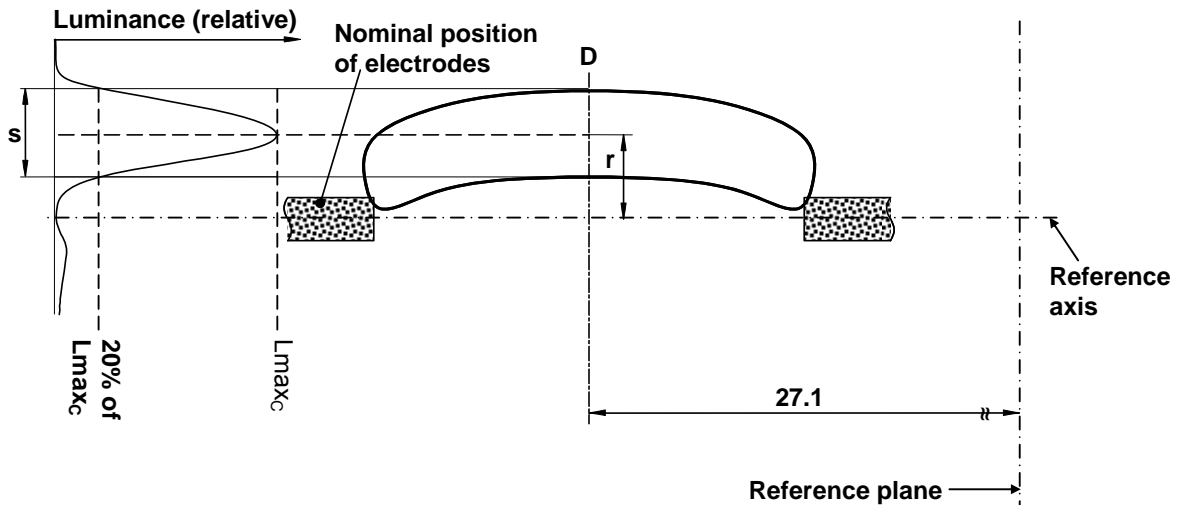
¹ The reference axis is perpendicular to the reference plane and crosses the intersection of the two parallel lines as indicated in figure 5.

² Glass bulb and supports shall not exceed the envelope, as indicated in figure 6. The envelope is concentric with the reference axis.

Position and form of the arc

This test is used to determine the form and sharpness of the arc and its position relative to the reference axis and plane by determining its bending and diffusion; by measuring the luminance in the central cross section D, where L_{max_C} is the maximum luminance of the arc measured from viewing direction C; see sheet DxR/2.

L_{max_C}



Relative luminance distribution in the central cross section D.

The form of the arc is for illustration purpose only.

Reference plane
 Measuring direction C as defined on sheet DxR/7.

When measuring the relative luminance distribution in the central cross section D as indicated in the drawing above, the maximum value L_{max_C} has the distance r from the reference axis. The points of 20% of L_{max_C} have the distance s , as shown in the drawing above.

Dimension in mm	Production light sources		Standard light sources
	D1R/D2R	D3R/D4R	
r (arc bending)	0.50 ± 0.25	0.50 ± 0.25	0.50 ± 0.20
s (arc diffusion)	1.10 ± 0.25	$1.10 + 0.25/-0.40$	1.10 ± 0.25

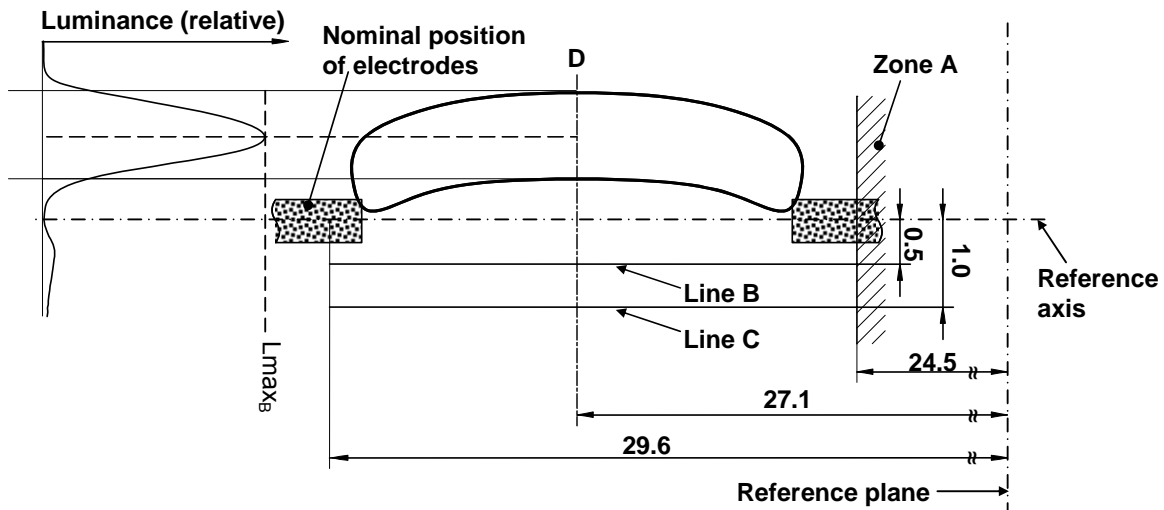
CATEGORIES D1R, D2R, D3R AND D4R

Sheet DxR/6
Page 2 out of 2

Stray light

This test is used to determine unwanted reflected stray light by measuring the luminance in Zone A and at lines B and C, where L_{max_B} is the maximum luminance of the arc measured from viewing direction B; see sheet DxR/2.

L_{max_B}



Relative luminance distribution in the central cross section D.

The form of the arc is for illustration purpose only.

Measuring direction B as defined on sheet DxR/7.

When measuring the luminances from measuring direction B as defined on sheet DxR/7 with a set-up as outlined in annex 5, however with a circular field of 0.2M mm diameter, the relative luminance expressed as a percentage of L_{max_B} (at cross section D) shall be:

Zone A	$\leq 4.5 \%$
Line B	$\leq 15 \%$
Line C	$\leq 5.0 \%$

The area of zone A is defined by the black coating, the outer bulb and a plane at 24.5 mm from the reference plane.

The drawings are intended only to illustrate the essential dimensions (in mm) of the gas-discharge light source

Figure 1
Category D1S - Type with cables - Cap PK32d-2

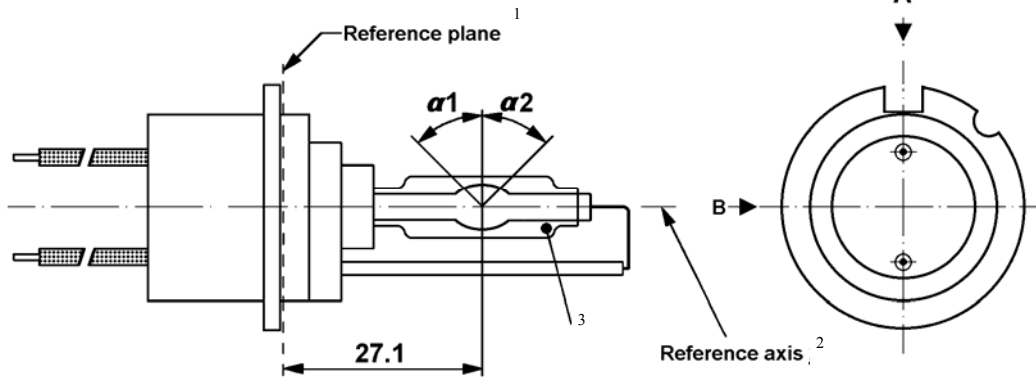
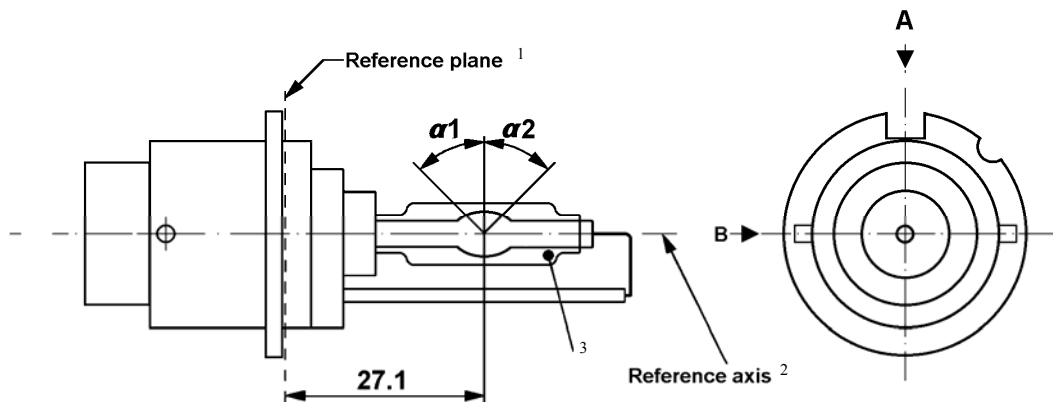


Figure 2
Category D2S - Type with connector - Cap P32d-2



¹ The reference plane is defined by the positions on the surface of the holder on which the three supporting bosses of the cap ring will rest.

² See sheet DxS/3.

³ When measured at a distance of 27.1 mm from the reference plane and with respect to the mid-point of the inner bulb, the outer bulb shall have an eccentricity of 1 mm max.

CATEGORIES D1S, D2S, D3S AND D4S

Sheet DxS/2

The drawings are intended only to illustrate the essential dimensions (in mm) of the gas-discharge light source

Figure 3
Category D3S - Type with starter - Cap PK32d-5

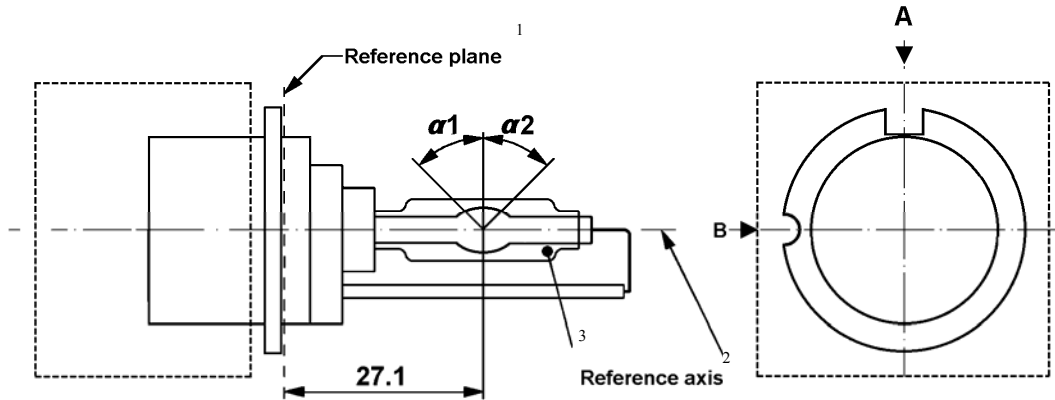
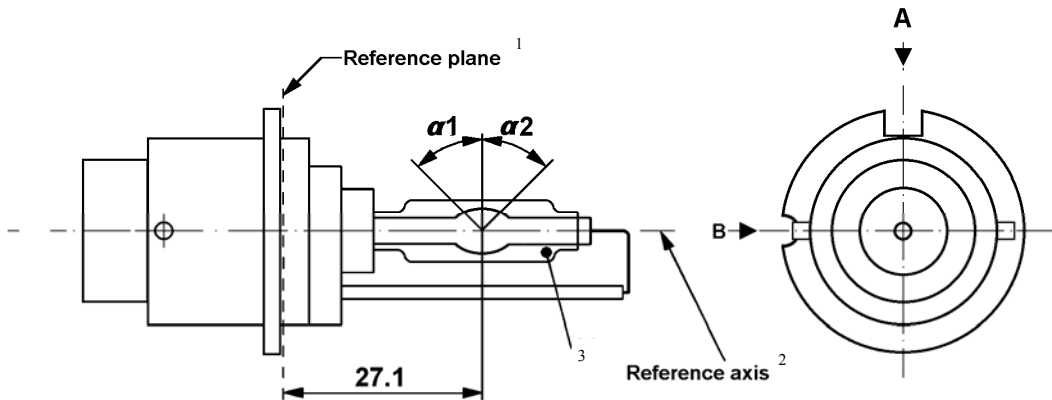


Figure 4
Category D4S - Type with connector - Cap P32d-5



¹ The reference plane is defined by the positions on the surface of the holder on which the three supporting bosses of the cap ring will rest.

² See sheet DxS/3.

³ When measured at a distance of 27.1 mm from the reference plane and with respect to the mid-point of the inner bulb, the outer bulb shall have an eccentricity of 1 mm max.

Figure 5
Definition of reference axis¹

The cap shall be pushed in this direction

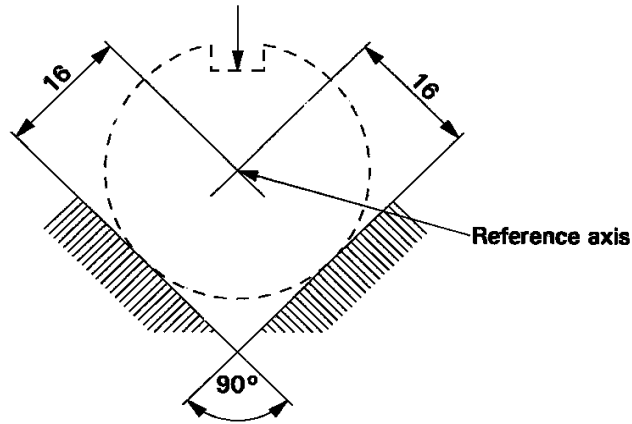
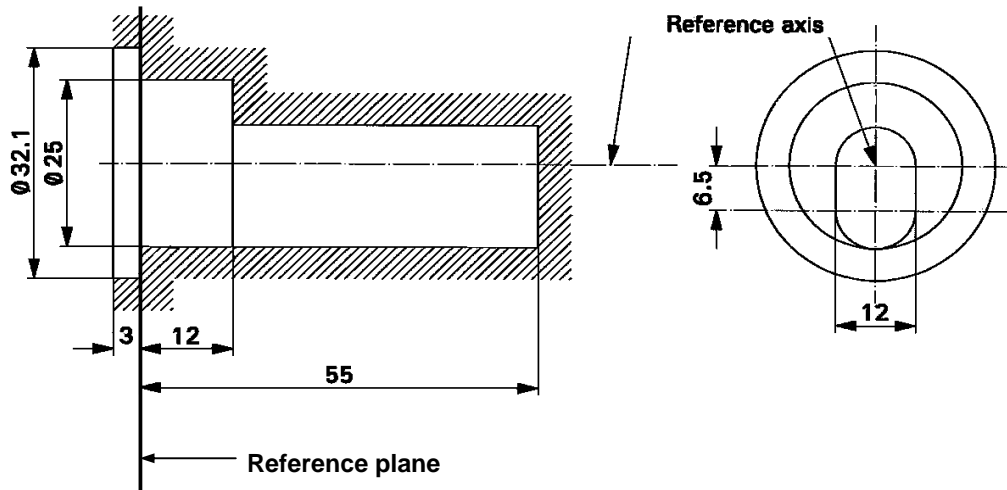


Figure 6
Maximum lamp outline²

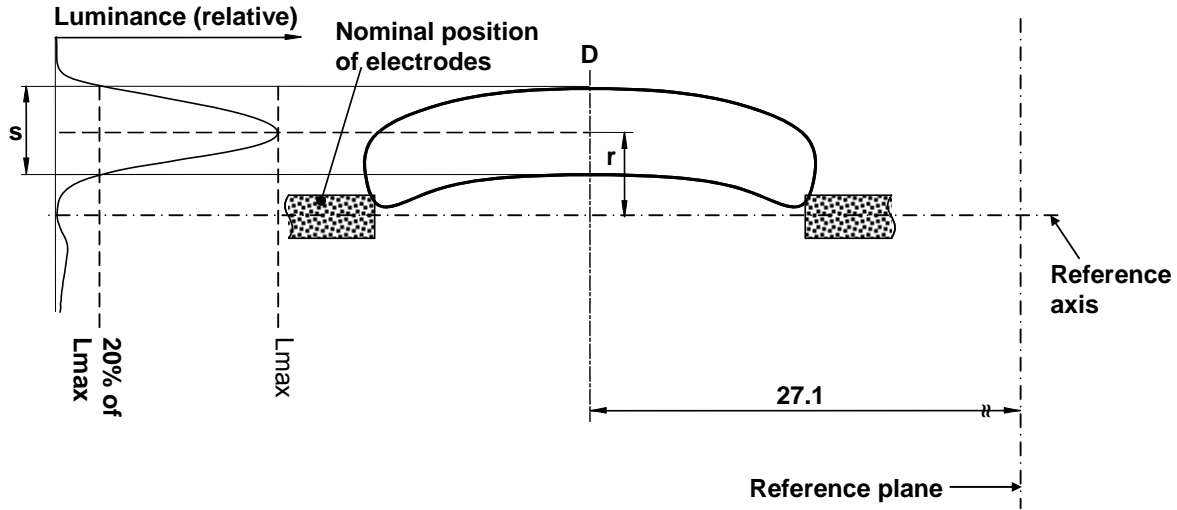


¹ The reference axis is perpendicular to the reference plane and crosses the intersection of the two parallel lines as indicated in figure 5.

² Glass bulb and supports shall not exceed the envelope, as indicated in figure 6. The envelope is concentric with the reference axis.

Position and form of the arc

This test is used to determine the form of the arc and its position relative to the reference axis and the reference plane by measuring its bending and diffusion in the cross section at a distance 27.1 mm from the reference plane.



Relative luminance distribution in the central cross section D.

The form of the arc is for illustration purpose only.

Measuring direction B: light source side view

When measuring the relative luminance distribution in the central cross section as indicated in the drawing above, the maximum value shall be located within the distance r from the reference axis. The point of 20% of the maximum value shall be within s:

Dimension in mm	Production light sources	Standard light sources
r (arc bending)	0.50 ± 0.40	0.50 ± 0.20
s (arc diffusion)	1.10 ± 0.40	1.10 ± 0.25