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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

**World Forum for Harmonization of Vehicle Regulations**

One-hundred-and-forty-ninth session  
Geneva, 10 - 13 November 2009  
Item 4.2.9 of the provisional agenda

**1958 AGREEMENT**

Consideration of draft amendments to existing Regulations

Proposal for Supplement 34 to the 03 series of amendments to Regulation No. 37  
(Filament lamps of power-driven vehicles and their trailers)

Submitted by the Working Party on Lighting and Light-Signalling \*/

The text reproduced below was adopted by the Working Party on Lighting and Light-Signalling (GRE) at its sixty-first session. It is based on ECE/TRANS/WP.29/GRE/2009/10, ECE/TRANS/WP.29/GRE/2009/13, ECE/TRANS/WP.29/GRE/2009/14 and ECE/TRANS/WP.29/GRE/2009/15, all not amended. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration (ECE/TRANS/WP.29/GRE/61, para. 7).

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\*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraph 3.6.3., amend to read:

"3.6.3. The colour of the light emitted shall be measured by the method specified in Annex 5. Each measured value shall lie within the required tolerance area. 5/ Moreover, in the case of filament lamps emitting white light, the measured values shall not deviate more than 0.020 units in the x and/or y direction from a point of choice on the Planckian locus (IEC Publication 15.2 Colorimetry, 1986). Filament lamps for use in light signalling devices shall meet the requirements as specified in paragraph 2.4.2. of IEC Publication 60809, Amendment [5] to Edition 2.

5/ For Conformity of Production purposes of amber and red colour only, at least 80 per cent of the measuring results shall lie within the required tolerance area."

Annex 1,

The list of categories of filament lamps, grouped, and their sheets, amend to read:

"Group 1

Without general restrictions:

<u>Category</u>	<u>Sheet number(s)</u>
H1	H1/1 to 3
...	
H15	H15/1 to 5
H16	H16/1 to 4
H21W <u>**/</u>	H21W/1 to 2
...	
HS5	HS5/1 to 4
HS5A <u>*****/</u>	HS5A/1 to 3
HS6 <u>*****/</u>	HS6/1 to 4
...	
PSX24W <u>**/</u>	P24W/1 to 3
PSX26W <u>**/</u>	PSX26W1 to 3
PX24W <u>**/</u>	P24W/1 to 3
S2	S1/S2/1 to 2
S3	S3/1

"

Insert footnote \*\*\*\*\*/, to read:

\*\*\*\*\*/ Not for use in headlamps other than Regulation 113 class C headlamps "

The list of sheets for filament lamps and their sequence, amend to read:

"Sheet number(s)

...

C21W/1 to 2

...

H15/1 to 5

H16/1 to 4

H6W/1

...

HS5/1 to 4

HS5A/1 to 3

HS6/1 to 4

...

PR27/7W/1

PSX26W/1 to 3

PY21W/1

...

"

Insert new sheets H16/1 to 4, between sheet H15/5 and H6W/1, to read (see next pages):

The drawings are intended only to illustrate the essential dimensions (in mm) of the filament lamp

### Category H16

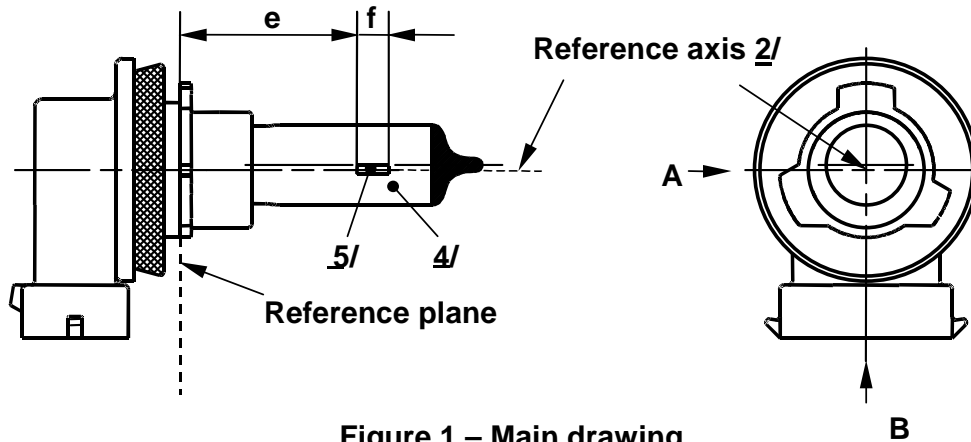


Figure 1 – Main drawing

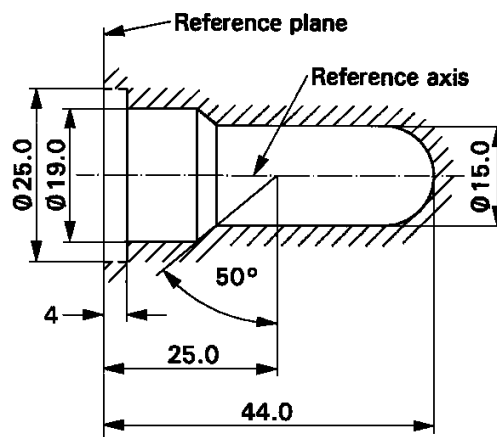
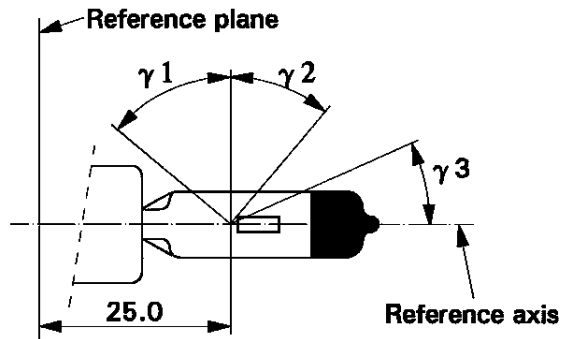


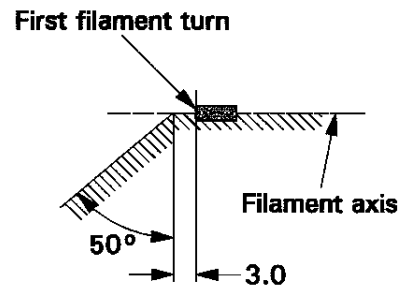
Figure 2 - Maximum lamp outline 3/

- 1/ The reference plane is the plane formed by the underside of the bevelled lead-in flange of the cap.
- 2/ The reference axis is perpendicular to the reference plane and passing through the centre of the 19 mm cap diameter.
- 3/ Glass bulb and supports shall not exceed the envelope as indicated in Figure 2. The envelope is concentric to the reference axis.
- 4/ The light emitted shall be white or selective yellow.
- 5/ Notes concerning the filament diameter.
  - No actual diameter restrictions apply but the objective for future developments is to have  $d_{max.} = 0.9$  mm.
  - For the same manufacturer, the design diameter of standard (étalon) filament lamp and filament lamp of normal production shall be the same.



View B

Figure 3  
Distortion free area 6/ and black top 7/



View A

Figure 4  
Metal free zone 8/

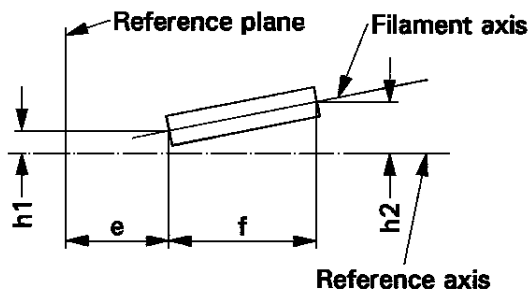
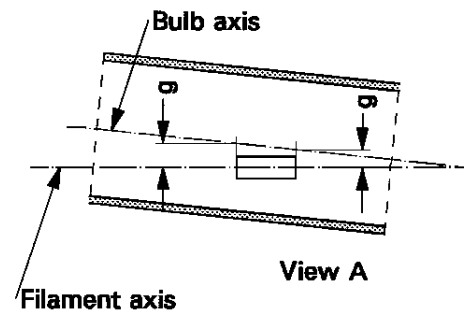


Figure 5

Permissible offset of filament axis 9/  
(for standard filament lamps only)



View A

Filament axis

Figure 6  
Bulb eccentricity 10/

- 6/ Glass bulb shall be optically distortion free within the angles  $\gamma_1$  and  $\gamma_2$ . This requirement applies to the whole bulb circumference within the angles  $\gamma_1$  and  $\gamma_2$ .
- 7/ The obscuration shall extend at least to angle  $\gamma_3$  and shall extend at least to the cylindrical part of the bulb on the whole bulb top circumference.
- 8/ The internal design of the lamp shall be such that stray light images and reflections are only located above the filament itself seen from the horizontal direction. (View A as indicated in Figure 1 on sheet H16/1). No metal parts other than filament turns shall be located in the shaded area as seen in Figure 4.
- 9/ The offset of the filament with respect to the reference axis is measured only in viewing directions A and B as shown in Figure 1 in sheet H16/1. The points to be measured are those where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.
- 10/ Offset of filament in relation to bulb axis measured in two planes parallel to the reference plane where the projection of the outside of the end turns nearest to or furthest from the reference plane crosses the filament axis.

## CATEGORY H16

## Sheet H16/3

Dimensions in mm	Filaments lamps of normal production		Standard filament lamp	
	12 V		12 V	
e	<u>11/</u>	25.0	<u>12/</u>	25.0 ± 0.1
f	<u>11/</u>	3.2	<u>12/</u>	3.2 ± 0.1
g		0.5 min.		u.c.
h1		0	<u>12/</u>	0 ± 0.1
h2		0	<u>12/</u>	0 ± 0.15
γ1		50° min.		50° min.
γ2		40° min.		40° min.
γ3		30° min.		30° min.
Cap:	H16: PGJ19-3	in accordance with IEC Publication 60061 (sheet 7004-110-2)		
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS				
Rated values	Volts	12		12
	Watts	19		19
Test voltage	Volts	13.2		13.2
Objective values	Watts	22 max.		22 max.
	Luminous flux	500 +10% / -15 %		
Reference luminous flux: 500 lm at approximately 13.2 V				
Reference luminous flux: 550 lm at approximately 13.5 V				

11/ The ends of the filament are defined as the points where, when the viewing direction is direction A as shown in Figure 1 on sheet H16/1, the projection of the outside of the end turns crosses the filament axis.

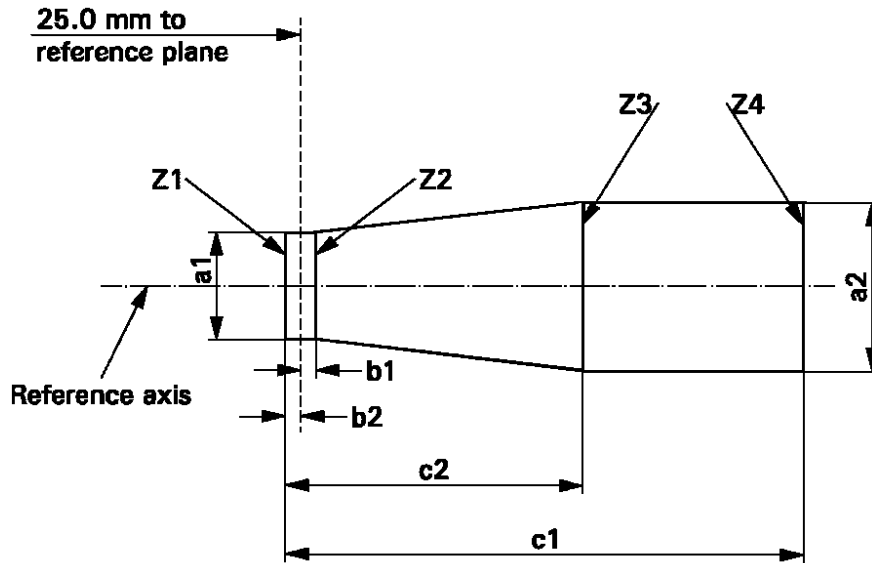
12/ To be checked by means of a "Box System"; sheet H16/4.

CATEGORY H16

Sheet H16/4

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and reference plane, whether a filament complies with the requirements.



a1	a2	b1	b2	c1	c2
$d + 0.50$	$d + 0.70$	0.25		3.6	2.6

$d$  = diameter of filament

The filament position is checked solely in directions A and B as shown on sheet H16/1, Figure 1.

The filament shall lie entirely within the limits shown.

The ends of the filament as defined on sheet H16/3, note 11/, shall lie between lines Z1 and Z2 and between Z3 and Z4."

Insert new sheets HS5A/1 to 3, between sheet HS5/4 and sheet HS6/1, to read:

" CATEGORY HS5A Sheet HS5A/1

The drawings are intended only to illustrate the essential dimensions (in mm) of the filament lamp

FILAMENT LAMP FOR MOTORCYCLES

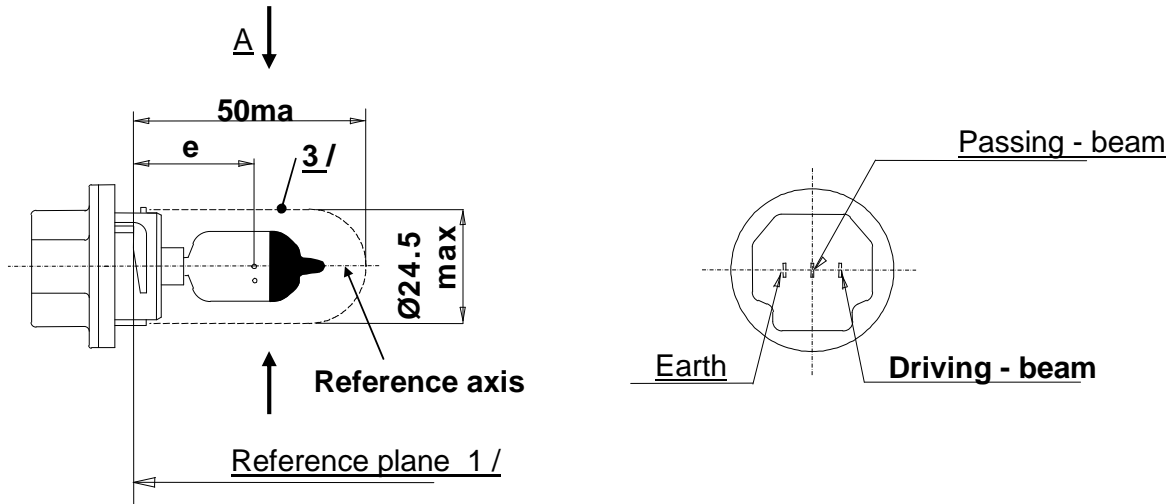


Figure 1

Main drawing

Reference plane 1 /

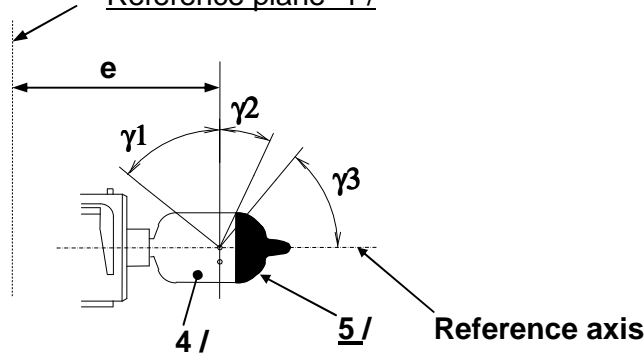
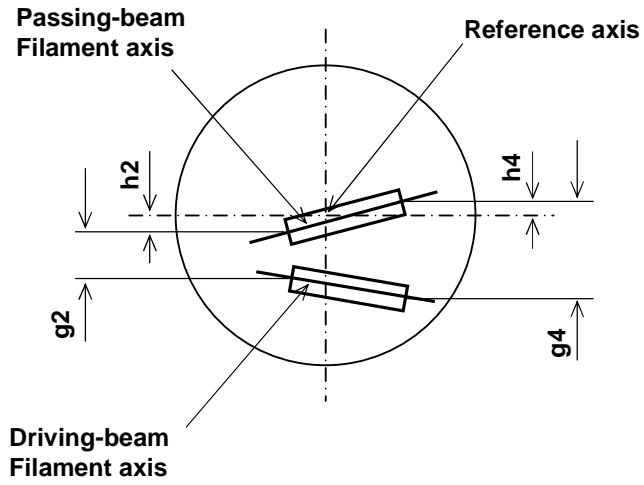
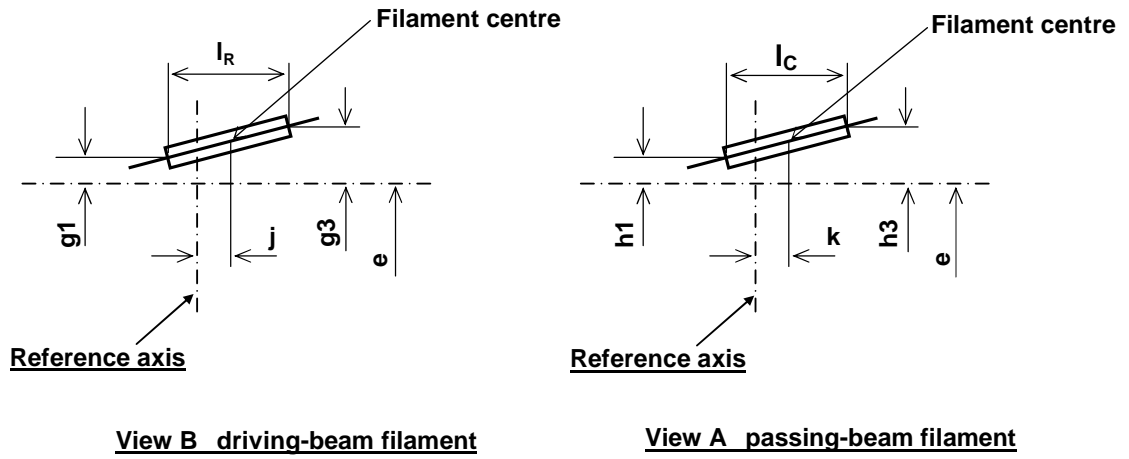


Figure 2 Distortion free area 4/ and black top 5/

- 1/ The reference plane is defined by three ramps inside surface.
- 2/ The reference axis is perpendicular to the reference plane and passing through the centre of the 23 mm cap diameter.
- 3/ Glass bulb and supports shall not exceed the envelope as indicated in figure 1. The envelope is concentric to the reference axis.
- 4/ Glass bulb shall be optically distortion free within the angles  $\gamma_1$  and  $\gamma_2$ . This requirement applies to the whole bulb circumference within the angles  $\gamma_1$  and  $\gamma_2$ .
- 5/ The obscuration shall extend at least to angle  $\gamma_3$  and shall extend at least to the cylindrical part of the bulb on the whole top circumference.





Top view of driving-beam and passing-beam filament

Figure 3  
Filament position and dimensions

## CATEGORY HS5A

## Sheet HS5A/3

Dimensions in mm		Filament lamps of normal production		Standard filament lamp		
		12V		12V		
e	26	—		—		
l <sub>c</sub>	<u>6/</u> 4.6	±0.5		± 0.3		
k	0	±0.4		± 0.2		
h1, h3	0	±0.3		± 0.15		
h2, h4	0	±0.4		± 0.2		
l <sub>R</sub>	<u>6/</u> 4.6	±0.5		± 0.3		
j	0	±0.6		± 0.3		
g1, g3	0	±0.6		± 0.3		
g2, g4	2.5	±0.4		± 0.2		
γ <sub>1</sub>	50° min.	-		-		
γ <sub>2</sub>	23° min.	-		-		
γ <sub>3</sub>	50° min.	-		-		
Cap PX23t in accordance with IEC Publication 60061 (sheet 7004-138A-1)						
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS						
Rated values	Voltage	V	12 <u>7/</u>		12 <u>7/</u>	
	Wattage	W	45	40	45	40
Test voltage		V	13.2		13.2	
Objective Values	Wattage	W	50 max.	45 max.	50 max.	45 max.
	Luminous flux	lm	750	640		
		±%	15	15		
Reference luminous at approximately		12V			550 lm	470 lm
		13.2V			750 lm	640 lm

6/ The positions of the first and the last turn of the filament are defined by the intersections of the outside of the first and the outside of the last light-emitting turn, respectively, with the plane parallel to and 26 mm distant from the reference plane.

7/ The values indicated in the left-hand columns relate to the driving-beam filament and those indicated in the right-hand columns to the passing-beam filament. "

Insert new sheets PSX26W/1 to 3, between sheet PR27/7W/1 and sheet PY21W/1, to read:

**CATEGORY PSX26W**

**Sheet PSX26W/1**

The drawings are intended only to illustrate the essential dimensions (in mm) of the filament lamp

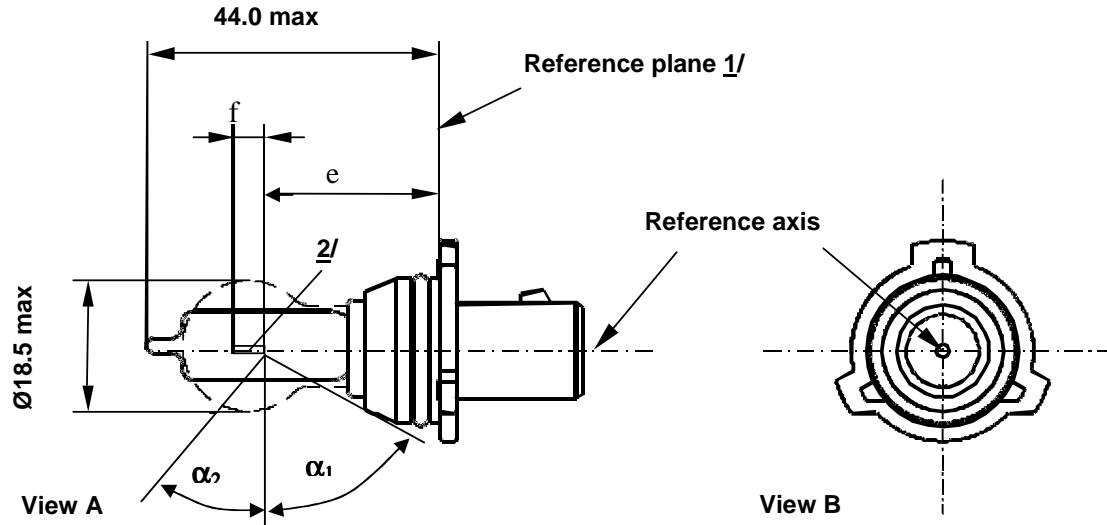
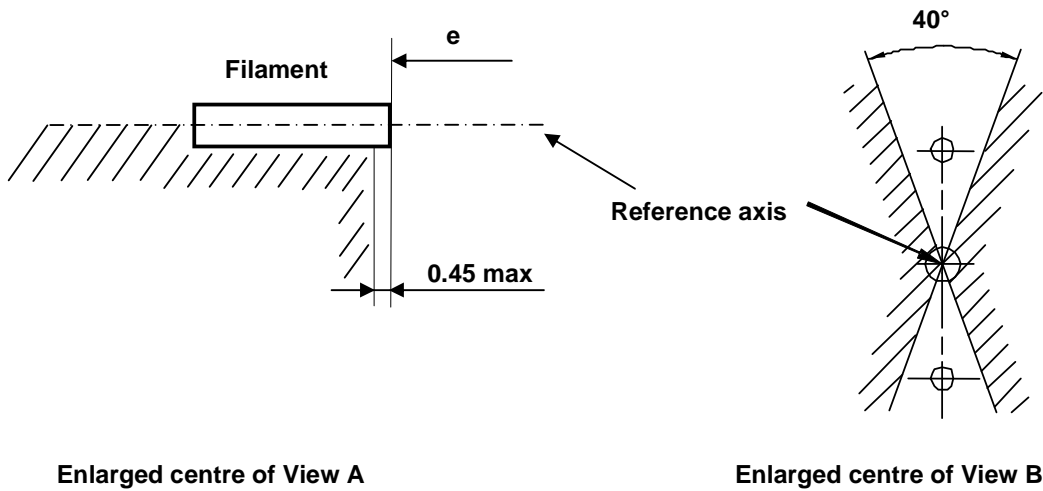


Figure 1 – Main drawing



Enlarged centre of View A

Enlarged centre of View B

Figure 2 – Metal free zone 3/

- 1/ The reference plane is defined by the meeting points of the cap-holder fit.
- 2/ No actual filament diameter restrictions apply but the objective is  $d_{max} = 1.1$  mm.
- 3/ No opaque parts other than filament turns shall be located in the shaded area indicated in Figure 2. This applies to the rotational body within the angles  $\alpha_1 + \alpha_2$ .

## CATEGORY PSX26W

## Sheet PSX26W/2

Dimensions in mm		Filament lamps of normal production		Standard filament lamp
e	<u>5/</u>	24.0	<u>4/</u>	24.0 ± 0.25
f	<u>5/</u>	4.2	<u>4/</u>	4.2 ± 0.25
α1	<u>6/</u>	35.0° min.		35.0° min.
α2	<u>6/</u>	58.0° min.		58.0° min.
Cap PG18.5d-3		in accordance with IEC Publication 60061 (sheet 7004-147-1)		
ELECTRICAL AND PHOTOMETRIC CHARACTERISTICS				
Rated values	Voltage	V	12	12
	Wattage	W	26	26
Test voltage		V	13.5	13.5
Objective values	Wattage	W	26 max.	26 max.
	Luminous flux	lm	500	
		±	+10% / -10%	
Reference luminous flux at approximately 13.2V				465 lm
Reference luminous flux at approximately 13.5V				500 lm

4/ To be checked by means of a "Box-System"; sheet PSX26W/3.

5/ The ends of the filament are defined as the points where, when the viewing direction is perpendicular to the plane through the filament lead-in wires, the projection of the outside of the end turns crosses the filament axis.

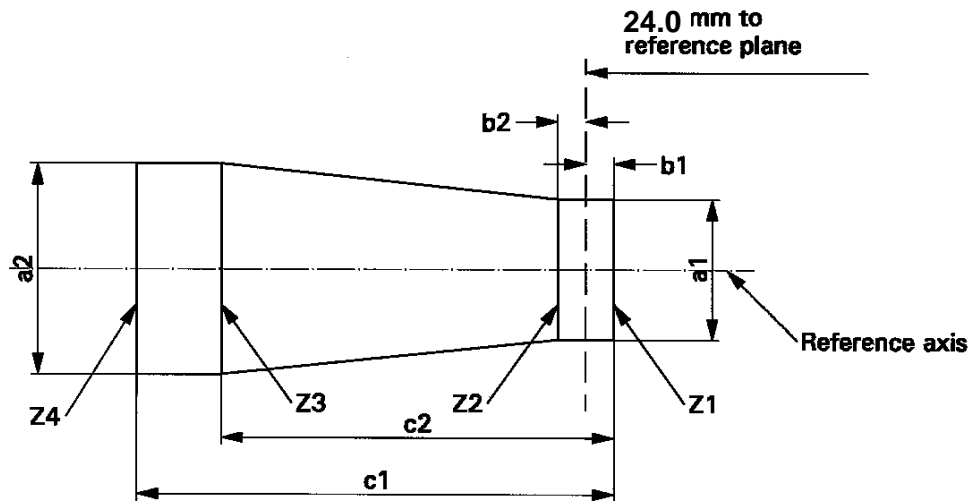
6/ No part of the cap beyond the reference plane shall interfere with angle α2 as shown in Figure 1 on sheet PSX26W/1. The bulb shall be optically distortion free within the angles α1+ α2. These requirements apply to the whole bulb circumference.

**CATEGORY PSX26W**

**Sheet PSX26W/3**

Screen projection requirements

This test is used to determine, by checking whether the filament is correctly positioned relative to the reference axis and reference plane, whether a filament lamp complies with the requirements.



	a1	a2	b1,b2	c1	c2
Filament lamps of normal production	1.7	1.7	0.30	5.0	4.0
Standard filament lamps	1.5	1.5	0.25	4.7	4.0

The filament position is checked in two mutually perpendicular planes, one of them being the plane through the lead-in wires.

The ends of the filament as defined on sheet PSX26W/2, note 4/, shall lie between Z1 and Z2 and between the lines Z3 and Z4.

The filament shall lie entirely within the limits shown.

Annex 2, item 9, amend to read:

"9. Concise description:

...

Colour of the light emitted: White/selective-yellow/amber/red 2/

Colour coating on glass bulb: yes/no 2/

Halogen filament lamp: yes/no 2/ "

Annex 5,

Paragraph 1.4., amend to read:

"1.4. Filament lamps shall be measured preferably in the normal operating position. In case of dual filament lamps the high wattage (major or driving-beam) filament shall be operated only."

Paragraphs 2.3. to 2.3.3., amend to read (the drawing remains unchanged):

"2.3. Measuring directions (see the figure below).

2.3.1. Initially, the receiver shall be positioned perpendicular to the lamp axis and to the filament axis (or plane in case of a curved filament). After measurement the receiver shall be moved around the filament lamp in bi-directional steps of about 30° until the area specified in paragraphs 2.3.2. or 2.3.3. is covered. In each position a measurement shall be made. However, no measurement shall be made when:

- (a) The centreline of the receiver coincides with the filament axis; or
- (b) The line of sight between the receiver and the filament is blocked by opaque (non-transmitting) parts of the light source, such as lead wires or a second filament, if any.

2.3.2. For filament lamps used in headlamps, measurements shall be made in directions around the filament lamp with the centreline of the receiver aperture located within an angle  $\pm 30^\circ$ , from the plane perpendicular to the lamp axis with the origin in the centre of the filament. In case of filament lamps with two filaments, the centre of the driving-beam filament shall be taken.

2.3.3 For filament lamps used in light signalling devices, measurements shall be made in directions around the filament lamp with exception of:

- (a) the area claimed or covered by the cap of the filament lamp; and
- (b) the immediate transition area along the cap.

In case of filament lamps with two filaments, the centre of the major filament shall be taken.

..."

"Annex 7,

Table 1, amend to read:

"Table 1 - Characteristics

Grouping of characteristics	Grouping */ of test records between lamp types	Minimum 12 monthly sample per grouping */	Acceptable level of non-compliance per grouping of characteristics (%)
...			
Colour of the bulb	All types (emitting red and amber light) of the same category and colour technology	20	1
...			
Colour endurance test	All lamps (emitting red, amber and white light) of one colour coating technology	20 <u>***</u> /	1

...

\*\*\*/ Representative distribution over categories of lamps using the same colour coating technology and finishing, and that comprises lamps of the smallest and the largest diameter of the outer bulb, each at the highest rated wattage. "

Table 2, amend to read:

"Table 2 \*/

Number of test results of each characteristics	Qualifying limits for acceptance
20	0
21 - 50	1
51 - 80	2
81 - 125	3
126 - 200	5
201 - 260	6
261 - 315	7
316 - 370	8
371 - 435	9
436 - 500	10
501 - 570	11
571 - 645	12
646 - 720	13
721 - 800	14
801 - 860	15
861 - 920	16
921 - 990	17
991 - 1,060	18
1,061 - 1,125	19
1,126 - 1,190	20
1,191 - 1,249	21

\*/ In accordance with ISO 2859-1:1999 "Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection" including Technical Corrigendum 1:2001."

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