

40-1 Side-marker lamps : Effective date from 2011/1/1

Refer to: R91 00-S13

40-1.1 Effective date and Scope:

40-1.1.1 Effective date from 2011/1/1, new variants of category symbols M, N and O used of Side-marker lamps, it shall comply with this regulation and shall be use bulbs that is conform with "Filament lamps" of this Direction.

40-1.1.2 As for the category symbols M, N and O used all variants of Side-marker lamps, which was confirmed to "40 side-marker lamps" of this "Directions" and its light source is red, it shall conform to the stipulation of red side-marker lamps' luminosity and irradiated angle in this regulation.

40-1.1.3 For the vehicles imported by authorities, organizations, schools or individuals for self-use only could exempt from regulation of "side-marker lamps".

40-1.1.4 For the low volume type safety approval, maximum 20% deviation of the levels of intensity standard of this test is allowed, and if the light source is LED, it can omit the failure conditions test.

40-1.2 Side-marker lamps: means a lamp used to indicate the presence of the vehicle when viewed from the side.

40-1.3 Side-marker lamps shall according to suitable variants and range of principle :

40-1.3.1 Brand

40-1.3.2 The characteristics of the optical system (levels of intensity, light distribution angles, category of filament lamp, light source module, etc.) , however , if bulbs or filter's color is change that it doesn't mean to change the variants.

40-1.4 Photometric measurements :

40-1.4.1 SM1 Category of side-marker lamps:

Minimum values: the reference axis, at which it shall be 4.0 cd.

SM2 Category of side-marker lamps:

Minimum values: the reference axis, at which it shall be 0.6 cd. (see Table 1, Figure1 and Figure 2).

40-1.4.2 The vertical angles required for light distribution in space are indicated in Fig 3; the horizontal angle of SM1 is indicated in Fig 4; the horizontal angle of SM2 is indicated in Fig 5

40-1.4.3 SM1 and SM2 Category of side-marker lamps:

Minimum values: 0.6 cd, at any point other than the reference axis

Maximum values: 25.0 cd, at any point

40-1.4.4 In the case of a lamp containing more than one light source: the lamp shall comply with the minimum intensity required when any one light source has failed; when all light sources are illuminated the maximum intensity specified may not be exceeded.

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40-1.4.5 All light sources which are connected in series are considered to be one light source.

40-1.4.6 The angle of 10 degrees below the horizontal may be reduced to 5 degrees in case of lamps with a mounting height of equal to or less than 750 mm above the ground.

40-1.4.7 In the case of light source modules, it shall be checked that:

40-1.4.7.1 The design of the light source module(s) shall be such as:

40-1.4.7.1.1 that each light source module can only be fitted in no other position than the designated and correct one and can only be removed with the use of tool(s);

40-1.4.7.1.2 If there are more than one light source module used in the housing for a device, light source modules having different characteristics can not be interchanged within the same lamp housing.

40-1.4.7.2 The light source module(s) shall be tamperproof.

40-1.4.7.3 A light source module shall be so designed that regardless of the use of tool(s), it shall not be mechanically interchangeable with any replaceable approved light source.

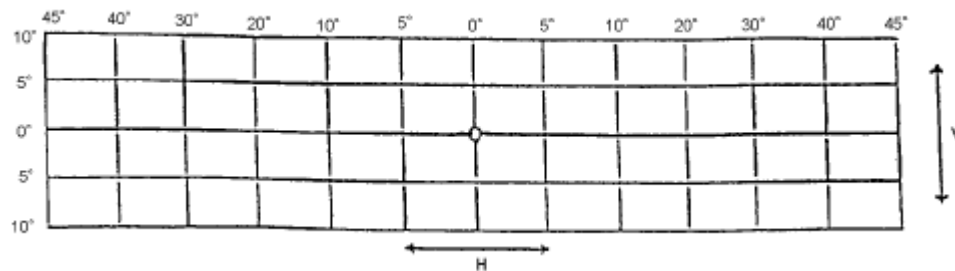
40-1.5 Trichromatic coordinate: The colour of the light emitted inside the field shall be amber defined in “The installation of lighting and light-signaling devices” of this “Directions” (see Figure 1 and Figure 2) , outside this field, no sharp variation of colour shall be observed. These requirements shall apply within the range of variable luminous intensity produced by testing conditions. However, for lamps equipped with non-replaceable light sources (filament lamps and other), the colorimetric characteristics should be verified with the light sources present in the lamp.

40-1.6 In the case of replaceable filament lamp(s):

40-1.6.1 Any category or categories of filament lamp(s) approved according to 「Filament lamps」 may be used, provided that no restriction on the use is made in 「Filament lamps」 and its series of amendments in force at the time of application for type approval.

40-1.6.2 The design of the device shall be such that the filament lamp can be fixed in no other position but the correct one.

40-1.6.3 The filament lamp holder shall conform to the characteristics given in IEC Publication 60061. The holder data sheet relevant to the category of filament lamp used, applies.



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Figure1. SM1 light distribution

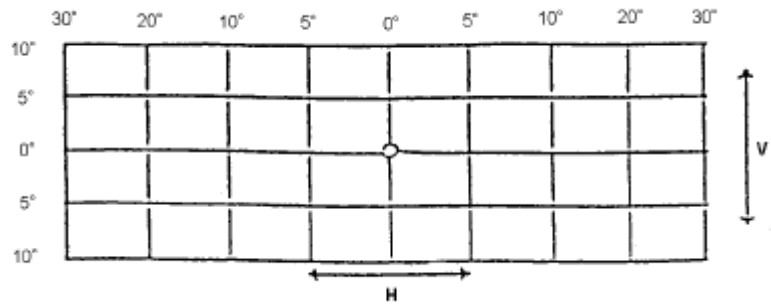


Figure2. SM2 light distribution

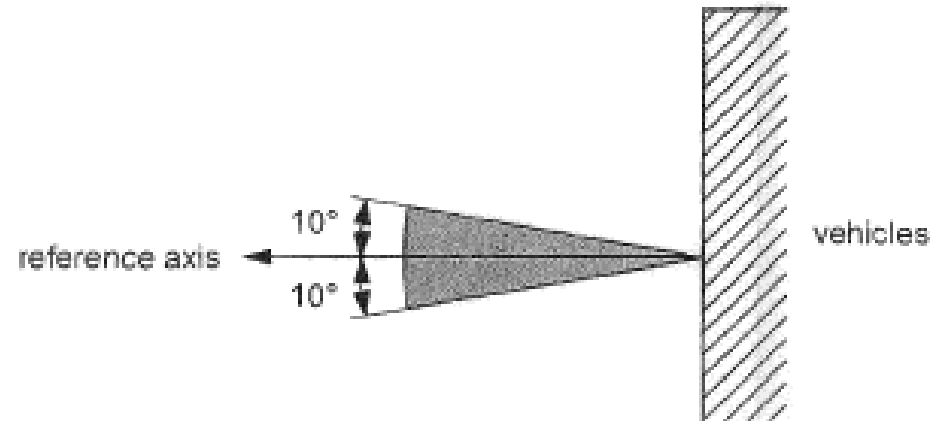


Figure 3. Minimum vertical angles, SM1 and

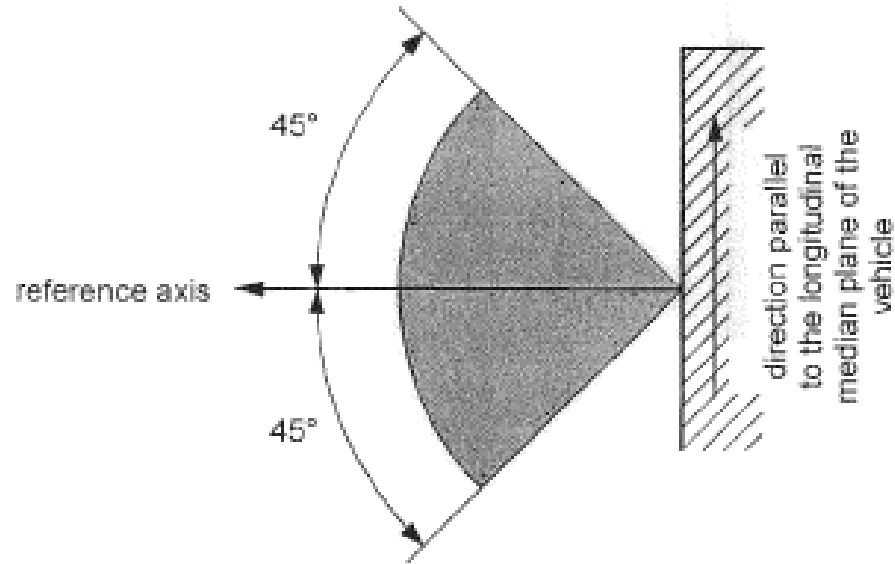


Figure 4. Minimum horizontal angles, SM1

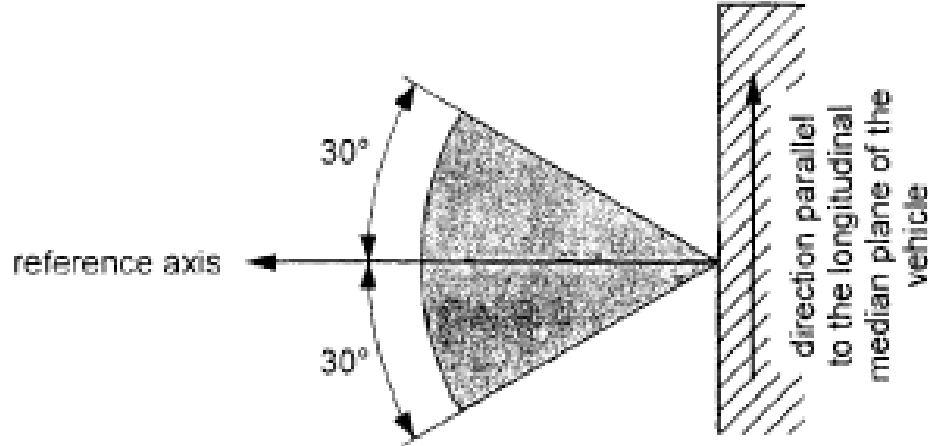


Figure 5. Minimum horizontal angles, SM2

Table 1. The requirement of intensity and angle field of light emitted by side-marker lamps

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Side-marker lamp category		SM1	SM2
Minimum intensity	In the axis of reference	4.0 cd	0.6 cd
	Within the specified angular field, other than above	0.6 cd	0.6 cd
Maximum intensity		25.0 cd	25.0 cd
Angular field	Horizontal	±45°	±30°
	Vertical	±10°	±10°

^{2/} In addition, for red side-marker lamp, in the angular field from 60 degrees to 90 degrees in horizontal direction and +/- 20 degrees in vertical direction towards the front of the vehicle, the maximum intensity is limited to 0.25 cd.

40-1.7 Test procedure

40-1.7.1 Measuring condition for each test:

40-1.7.1.1 In case of a lamp with replaceable light source, if not supplied by an electronic light source control gear with an uncoloured or coloured standard filament lamp of the category prescribed for the device, at the voltage necessary to produce the reference luminous flux required for that category of filament lamp.

When equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V the luminous intensity values produced shall be corrected. The correction factor is the ratio between the reference luminous flux and the mean value of the luminous flux found at the voltage applied (6.75 V, 13.5 V or 28.0 V). The actual luminous fluxes of each filament lamp used shall not deviate more than +/- 5 per cent from the mean value. Alternatively a standard filament lamp may be used in turn, in each of the individual positions, operated at its reference flux, the individual measurements in each position being added together.

40-1.7.1.2 In the case of a lamp equipped with non-replaceable light sources (filament lamps and other), at 6.75 V, 13.5 V or 28.0 V, respectively.

40-1.7.1.3 In the case of a system that uses an electronic light source control gear being part of the lamp¹ applying at the input terminals of the lamp the voltage declared by the manufacturer or, if not indicated, 6.75 V, 13.5 V or 28.0 V, respectively.

40-1.7.1.4 In the case of a system that uses an electronic light source control gear not being part of the lamp the voltage declared by the manufacturer shall be applied to the input terminals of the lamp.

40-1.7.2 The test laboratory shall require from the manufacturer the light source control gear needed to supply the light source and the applicable functions.

40-1.7.3 The limits of the apparent surface in the direction of the reference axis of a light signalling device shall be determined.