40 Side-marker lamps

Refer to: R91 00-S7

40.1 Effective date and Scope:

40.1.1 As for the category symbols M, N and O, the new vehicle variants as of 2006/7/1 and all vehicle variants as of 2008/7/1, shall comply with this regulation and shall be use bulbs that is conform with「Filament lamps」of this regulation.

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

40.1.3 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.

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

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

40.3.1 Brand

40.3.2 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.

40.4 Photometric measurements：

40.4.1 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).

40.4.2 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

40.4.3 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

40.4.4 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.

40.4.5 All light sources which are connected in series are considered to be one light source.

40.4.6 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.

40.5 Trichromatic coordinate: The side-marker lamp must emit amber light; however it can emit red, if the rearmost side-marker lamp is grouped or combined or reciprocally incorporated with the rear position lamp, the rear end-outline marker lamp, the rear fog lamp, the stop lamp, or is grouped with or has part of the light emitting surface in common with the rear retro reflector. For checking these colorimetric characteristics, a source of light at a colour temperature of 2,856 K, corresponding to illuminant A of the International Commission on Illumination (CIE), shall be used. The trichromatic coordinates shall comply with requirement as follows:

Color of red light：

Limit towards yellow: $y \leq 0.335$

Limit towards purple: $y \geq 0.980-x$

Color of Amber light：:

Limit towards yellow: $y \leq x - 0.120$

Limit towards red: $y \geq 0.390$

Limit towards white: $y \geq 0.790-0.670\ x$

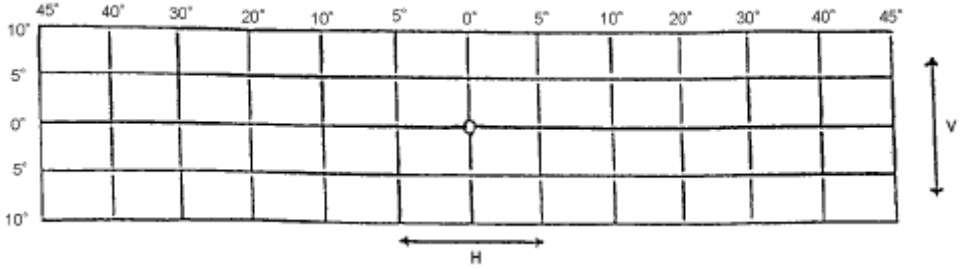

Figure1. SM1 light distribution

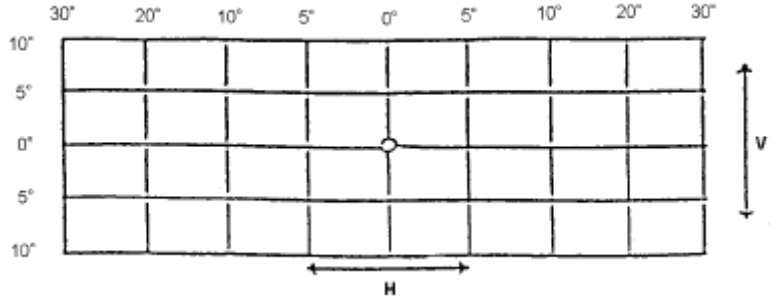

Figure2. SM2 light distribution

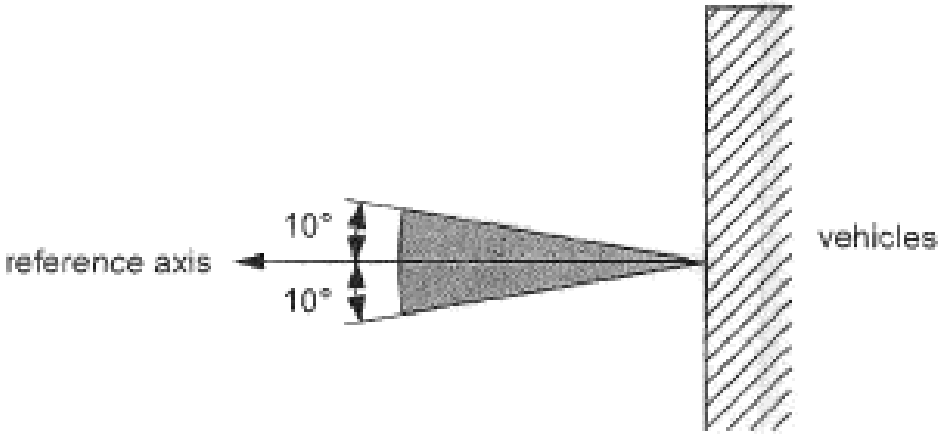

Figure 3. Minimum vertical angles, SM1 and

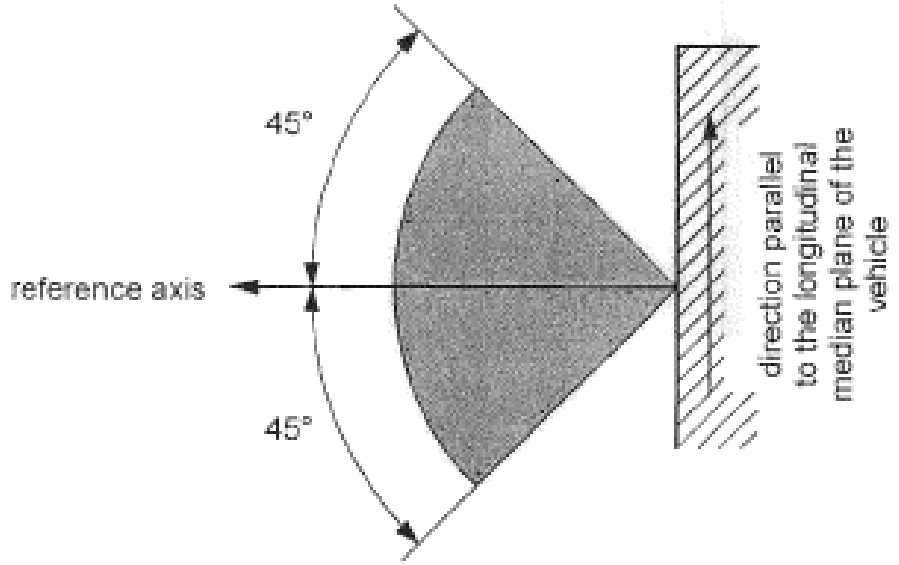

Figure 4. Minimum horizontal angles, SM1

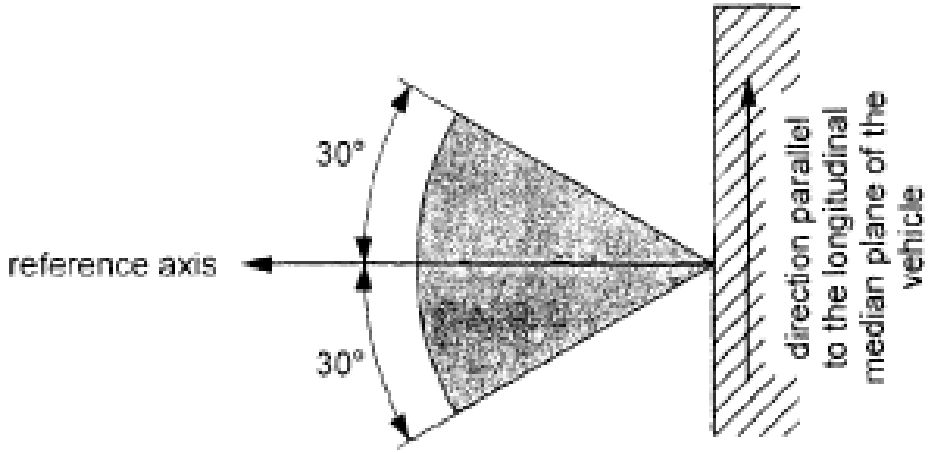

Figure 5. Minimum horizontal angles, SM2

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

Side-marker lamp category		SM1	SM2
Minimum	In the axis of reference	4.0 cd	0.6 cd

intensity	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°