

39 End-outline marker lamps

Refer to: R07 02-S23

39.1 Effective date and Scope:

- 39.1.1 Effective date from 2006/7/1, new types of end-outline marker lamps using in vehicles of category symbols M, N and O, and from 2008/7/1 all types of end-outline marker lamps using in vehicles of category symbols M, N and O, shall comply with this regulation and shall be use bulbs that is conform with "Filament lamps" and/or "LED light sources" of this Direction (based on paragraph 39.1.2, it shall exclude paragraph 39.2.4).
- 39.1.2 Effective date from 2017/1/1, new types of end-outline marker lamps using in vehicles of category symbols M, N and O, and from 2019/1/1, existing types of end-outline marker lamps using in vehicles of category symbols M, N and O, shall comply with 39.2.4 in addition, except the applicants applying for low volume safety approval and applying for vehicle-by-vehicle low volume.
- 39.1.3 For the vehicles imported by authorities, organizations, schools or individuals for self-use only could exempt from regulation of "end-outline marker lamps". Effective date from 2017/1/1, for the vehicles imported by authorities, organizations, institutes or individuals for self-use, if the vehicle registered and owned by the importer for more than six months from abroad, it could exempt from the regulation "end-outline marker lamps".
- 39.1.4 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.

39.2 End-outline marker lamps:

- 39.2.1 Means a lamp fitted near to the extreme outer edges and as close as possible to the top of the vehicle conform to 39.2.4 Specifications marked and intended to indicate clearly the vehicle's overall width.
- 39.2.2 A rear end-outline marker lamp category RM2 emitting more than the maximum value of category RM1, requirements of steady luminous intensity of the respective category shall be fulfilled automatically.
- 39.2.3 An interdependent lamp system shall meet the requirements when all its interdependent lamps are operated together.
- 39.2.4 Specifications marked
 - 39.2.4.1 Means the marks shall be clearly legible on the outside of the marking material and shall be indelible to include below:
 - 39.2.4.1.1 Brand (or marking), type of replaceable light sources(and/or MD(or MODULE) the light source module specific identification code).
 - 39.2.4.1.2 In case of lamps with an electronic light source control gear or a variable intensity control and/or non-replaceable light sources and/or light source module(s), bear the marking of the rated voltage or range of voltage and rated wattage.
 - 39.2.4.1.3 Lamps operating at voltages other than the nominal rated voltages of 6 V, 12 V or 24 V respectively, by the application of an electronic light source control gear or a variable intensity control being not part of the lamp, or having a

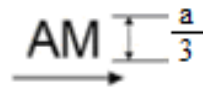
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secondary operating mode, must also bear a marking denoting the rated secondary design voltage.

39.2.4.1.4 The light source module must to mark brand (or marking), MD(or MODULE) the light source module specific identification code, rated voltage (or ranged voltage)and rated wattage. However this provision does not apply to the LED is non-replaceable.

39.2.4.1.5 An electronic light source control gear or a variable intensity control being part of the lamp but not included into the lamp body shall bear the name of the manufacturer and its identification number.

39.2.4.1.6 On devices meeting the requirements of this Regulation in respect of the front end-outline marker lamps, the letters "AM"(figure as below , "a" is at least 5 mm).



39.2.4.1.7 On devices meeting the requirements of this Regulation in respect of the rear end-outline marker lamps, the letters "RM" followed by the Figure "1" when the device produces steady luminous intensity and by the Figure "2" when the device produces variable luminous intensity;



39.2.4.1.8 A horizontal arrow pointing towards the side on which the photometric specifications are met up to an angle of 80 deg. H.

39.2.4.1.9 On devices with reduced light distribution in conformity to paragraph 39.4.4 to this Regulation a vertical arrow starting from a horizontal segment and directed downwards.

39.2.4.1.10 On interdependent lamps, which may be used as part of an interdependent lamp system, the additional letter "Y" to the right of the symbol mentioned in paragraph 39.2.4.1.6. and 39.2.4.1.7. shall be marked on each device.

39.2.4.1.11 The marks and symbols referred to in paragraphs 39.2.4.1.6. to 39.2.4.1.10. above shall be clearly legible and indelible even when the device is fitted in the vehicle.

39.3 End-outline marker lamps shall according to suitable variants and range of principle :

39.3.1 The same brand.

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

39.3.3 The variable intensity control, if any.

39.4 Photometric measurements:

39.4.1 Within the field of light distribution schematically shown as a grid in Figure 1, the light pattern should be substantially uniform.

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In the case of devices of categories RM2 the time that elapses between energising the light source(s) and the light output measured on the reference axis to reach 90 per cent of the value measured shall be measured for the extreme levels of luminous intensity produced by the device. The time measured to obtain the lowest luminous intensity shall not exceed the time measured to obtain the highest luminous intensity.

39.4.2 In each direction corresponding to the points in the light distribution be not less than the product of the minimum specified in Table1 by the percentage specified in the said figure of the direction in question. In no direction within the space from which the light-signalling device is visible, exceed the maximum specified in Table.

39.4.2.1 For an assembly of two or more lamps the total intensity shall not exceed the maximum value prescribed for a single lamp.

39.4.2.2 When an assembly of two independent lamps to be type approved as "D" lamps having the same function is deemed to be a single lamp, it shall comply with the requirements for:

39.4.2.2.1 Maximum intensity if all lamps together are lit;

39.4.2.2.2 Minimum intensity if either lamp has failed.

39.4.2.3 In case of failure of a single lamp containing more than one light source the following provisions shall apply:

39.4.2.3.1 A group of light sources, wired so that the failure of any one of them causes all of them to stop emitting light, shall be considered to be one light source.

39.4.2.3.2 The lamp shall comply with the minimum intensity required when any one light source has failed (refer to figure 1). However, for lamps designed for only two light sources, 50 per cent of the minimum intensity in the axis of reference of the lamp shall be considered sufficient, provided that a note in the communication form states that the lamp is only for use on a vehicle fitted with an operating tell-tale which indicates when any one of these two light sources has failed;

39.4.3 Moreover, throughout the fields defined in the diagrams, the intensity of the light emitted must be not less than 0.05 cd. As for angles required for light distribution in space of the lamps, the horizontal angles are shown in Figure 2. The minimum vertical angles of light distribution in space are 15 degrees above and 15 degrees below the horizontal

39.4.4 For lamps with a permissible mounting height less than 750 mm above the ground, the minimum vertical angles of light distribution in space are 15 degrees above and 5 degrees below the horizontal, the photometric intensity is verified only up to an angle of 5 degrees downwards.

39.4.4.1 For lamps intended to be installed with their H plane at a mounting height more than 2,100 mm above the ground, for which they are 5 degrees above and 15 degrees below the horizontal;

39.4.5 If a rear position lamp and/or a rear end-outline marker lamp is reciprocally incorporated with a stop-lamp producing either steady or variable luminous intensity, the ratio between the luminous intensities actually measured of the two lamps when turned on simultaneously at the intensity of the rear position lamp or end-outline marker lamp when turned on alone should be at least 5: 1 in the

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field delimited by the straight horizontal lines passing through ± 5 deg. V and the straight vertical lines passing through ± 10 deg. H of the light distribution table.

If the one or both of the two reciprocally incorporated lamps contain(s) more than one light source and is (are) considered as a single lamp, the values to be considered are those obtained with all light sources in operation;

39.5 Trichromatic coordinates: The colour of the light emitted inside the field shall be red or white defined in "The installation of lighting and light-signaling devices" of "Directions" (see Figure 1), Outside this field, no sharp variation of colour shall be observed. The source of light is according to each testing measure conditions to proceed. 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.

39.5.1 This requirement also applies to range of variable light of category RM2 Rear end-outline marker lamps.

39.6 In the case of replaceable light source(s):

39.6.1 Any category or categories of light source(s) approved according to "Filament lamps" and/or "LED light sources" of VSTD may be used, it's shall concern about relevant special restriction.

39.6.2 The design of the device shall be such that the light source(s) can be fixed in no other position but the correct one.

39.6.3 The light source(s) holder shall conform to the characteristics given in IEC Publication 60061, and the light source type related tables using.

39.7 Test conditions for each measuring

39.7.1 Testing voltage

39.7.1.1 In case of a lamp with replaceable light source, if not supplied by an electronic light source control gear or a variable intensity control, with an uncolored or colored standard light source of the category prescribed for the device, supplied with the voltage:

(a) In the case of filament lamp(s), that is necessary to produce the reference luminous flux required for that category of filament lamp,

(b) In the case of LED light source(s) of 6.75 V, 13.5 V or 28.0 V; the luminous flux value produced shall be corrected. The correction factor is the ratio between the objective luminous flux and the value of the luminous flux found at the voltage applied.

(c) When equipped with light source(s) at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. For filament lamps 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).

For LED light sources the correction factor is the ratio between the objective 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 light source used shall not deviate more than ± 5 per cent from the mean value.

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Alternatively and in case of filament lamps only, 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.

39.8 In the case of light source modules, it shall be checked that:

39.8.1 The design of the light source module(s) shall be such as:

39.8.1.1 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);

39.8.1.2 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.

39.8.2 The light source module(s) shall be tamperproof.

39.8.3 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.

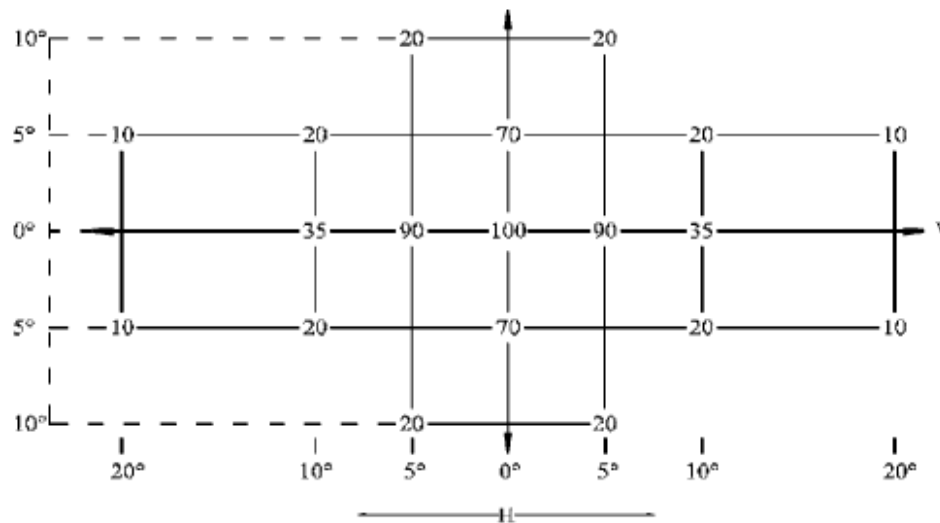


Fig 1. Light intensity distribution in percentage

Table 1. In the reference axis, the light emitted shall be at least equal to the minimum values and not exceed the maximum values specified below :

Light intensity (Candelas) lamp	Minimum light intensity cd	Maximum values in cd when used as	
		Single lamp	Lamp (single) marked "D"
Front end-outline marker lamp AM	4	140	70
Rear end-outline marker lamp RM1 (steady)	4	17	8.5
Rear end-outline marker lamp RM2(variable)	4	42	21

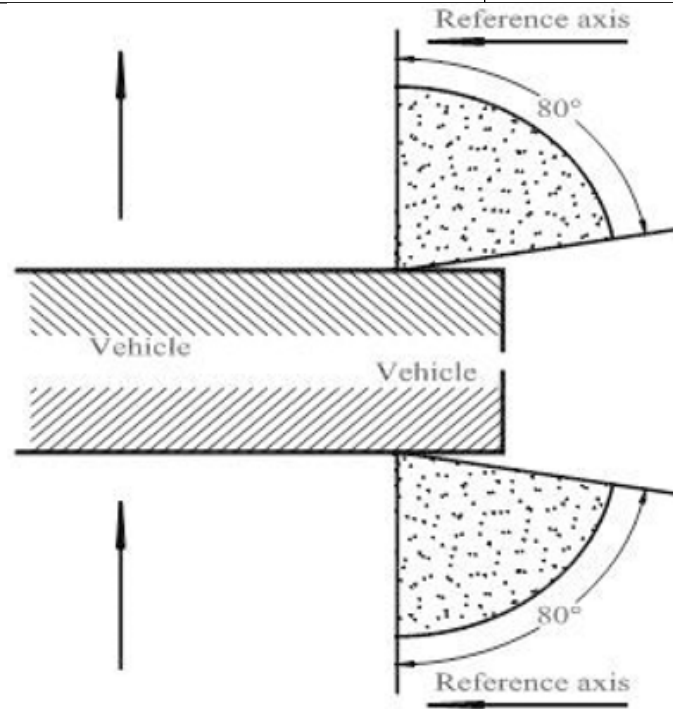


Fig 2. Horizontal angles required for the light distribution in space -- end-outline marker lamp (AM 、RM1 、RM2)