

69 Manoeuvring lamp

Refer to: R23 00-S19

69.1 Effective Date and Scope:

69.1.1 Effective date from 2014/1/1, new types of manoeuvring lamp using in vehicles of category symbols M and N vehicles, shall comply with this regulation (according to paragraph 69.1.2, it shall exclude paragraph 69.2.1) and shall use bulbs that conform with " Manoeuvring lamp " and/or "LED light sources" of this Direction.

69.1.2 Effective date from 2017/1/1, new types of manoeuvring lamp using in vehicles of category symbols M and N, and from 2019/1/1, existing types of manoeuvring lamp using in vehicles of category symbols M and N, except the applicants applying for low volume safety approval and applying for vehicle-by-vehicle low volume, shall provide documents declared to conform to 69.2.1 of this regulation, and certification institution may do a reality check when necessary.

69.1.3 For the vehicles imported by authorities, organizations, institutes or individuals for self-use only could exempt from regulation of "Manoeuvring lamp". 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 of " Manoeuvring lamp ".

69.1.4 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.

69.2 "Manoeuvring lamp" means a lamp conform to 69.2.1 Specifications marked and used to provide supplementary illumination to the side of the vehicle to assist during slow manoeuvres;

69.2.1 Specifications marked

69.2.1.1 Means the marks shall be clearly legible on the outside of the marking material and shall be indelible to include below:

69.2.1.1.1 Brand (or marking), type of replaceable light sources (or MD (or MODULE) the light source module specific

identification code).

66.2.1.1.2 The "TOP" marked horizontally on the uppermost part of the illuminating surface to help correct the installation of lamps.

66.2.1.1.3 In case of lamps with non-replaceable light sources or light source module(s), bear the marking of the rated voltage or range of voltage and rated wattage.

66.2.1.1.4 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.

66.2.1.1.5 An additional symbol consisting of letters M and L (figure as below , "a" is at least 5 mm).



66.2.1.1.6 The mark and symbol referred to in paragraphs 66.2.1.1.5. shall be indelible and shall be clearly legible even when the manoeuvring lamp is mounted on the vehicle:

69.3 Manoeuvring lamp shall according to suitable types and range of principle are as below :

69.3.1 Brand

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

69.3.3 The inclusion of components capable of altering the optical effects by reflection, refraction, absorption and/or deformation during operation.

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

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

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- (a) 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);
- (b) 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.

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

69.3.4.3 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.

69.4 Intensity of the light specifications for manoeuvring lamps

69.4.1 The intensity shall not exceed 500 candelas in all directions in which the light can be observed, when installed in any mounting position specified by the applicant.

69.4.2 The device must be so designed that the light emitted directly towards the side, the front or the rear of the vehicle does not exceed 0.5 cd within the angular field as defined below.

(a) The vertical minimum angle ϕ_{\min} (in degree) is:

$$\phi_{\min} = \arctan ((1-h)/10; \text{ where } h \text{ is mounting height in m}$$

(b) The vertical maximum angle ϕ_{\max} (in degree) is:

$$\phi_{\max} = \phi_{\min} + 11,3.$$

The measurement shall be limited to a horizontal angle ranging from +90 deg. to -90 deg. with respect to the line which cuts the reference axis and which is perpendicular to the vertical longitudinal plane of the vehicle.

The measurement distance shall be in minimum 3 m.

69.5 Trichromatic coordinates: In the case of reversing lamp, the light emitted shall be white defined in “The installation of lighting and

light-signaling devices” of “Directions”. Outside this field no sharp variation of colour shall be observed. These requirements shall apply within

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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.

69.6 In the case of replaceable filament lamp(s):

69.6.1 Any category or categories of light source approved according to "Filament lamps" and/or "LED light sources" 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.

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

69.6.3 The light source holder shall conform to the characteristics given in IEC Publication 60061. The holder data sheet relevant to the category of light source used, applies.

69.7 Test procedures

69.7.1 All measurements, photometric and colorimetric, shall be made:

69.7.1.1 In the case of a lamp with replaceable light source, if not supplied by an electronic light source control gear, with an uncolored standard filament lamp of the category prescribed for the device, supplied with the voltage necessary to produce the reference luminous flux required for that category of filament lamp.

69.7.1.2 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.

69.7.1.3 In the case of a system that uses an electronic light source control gear, being part of the lamp 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.

69.7.1.4 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.

69.7.2 The Technical Service shall require from the manufacturer the light source control gear needed to supply the light source and the

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applicable functions.

69.7.3 The voltage to be applied to the lamp shall be indicated in the communication form.

69.7.4 For any lamp, except those equipped with filament lamps, the luminous intensities measured after one minute and after 30 minutes of operation, shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated from the luminous intensity distribution after 30 minutes of operation by applying at each test point the ratio of luminous intensities measured at HV after one minute and after 30 minutes of operation.

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

69.8 Colour of Light Emitted

The colour of the light emitted inside the field of the light distribution grid defined at paragraph 69.5 shall be white. For testing see paragraph 69.4. to this Regulation. Outside this field no sharp variation of colour shall be observed.

69.8.1 Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in paragraph 69.4 and the required chromaticity coordinates.