

Proposal for Supplement 18 to Regulation No. 23 (Reversing lamps) to introduce
manoeuvring lamps

The text reproduced below was prepared by the experts from OICA in order to introduce criteria to approve manoeuvring lamps. The modifications to Regulation No 23 are shown in **bold** type.

A Proposal:

**REG23 CONCERNING THE APPROVAL OF REVERSING LAMPS AND
MANOEUVRING LAMPS FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS**

Paragraph 0, amend to read:

“0. SCOPE

This Regulation applies to reversing lamps for vehicles of categories M, N, O, and T
1/ **and to manoeuvring lamps for vehicles of categories M and N”**

Insert a new paragraph 1.2., to read:

“**1.2. “Manoeuvring lamp” means a lamp used to provide supplementary illumination to the side of the vehicle to assist during slow manoeuvres.”**

Paragraphs 1.2. to 1.4.(former), renumber as paragraphs 1.3. to 1.5.

Insert new paragraphs 1.6. and 1.7., to read:

“**1.6. Mounting height of a manoeuvring lamp means the height above the ground measured from lowest point of the effective outlet of the optical system (e. g. lens, projection lens) independent of its utilisation in the direction of the reference axis.**

1.7. The orientation of the "Axis of reference" (or "reference axis") of an manoeuvring lamp is downwards, furthermore this axis of reference is parallel to the median longitudinal plane of the vehicle and perpendicular to the ground plane and represents the lamp on the vehicle;”

Paragraph 2.2.1., amend to read:

“2.2.1. drawings, in triplicate, in sufficient detail to permit identification of the type of the lamp and showing in what geometrical position (s) the lamp may be mounted on the

vehicle; the axis of observation to be taken as the axis of reference in the tests (for reversing lamps horizontal angle $H = 0$, vertical angle $V = 0$); and the point to be taken as the centre of reference in the said tests. The drawings must show the position intended for the approval number and the additional symbol in relation to the circle of the approval mark;

In addition the maximum mounting height from the ground of the manoeuvring lamp(s) shall be indicated in the drawing.”

Paragraphs 4.3.2. to 4.3.4., amend to read:

“4.3.2. an additional symbol consisting of:

- (a) **in the case of a reversing lamp** letters A and R,
- (a) **in the case of a manoeuvring lamp** letters **M and L** mingled as shown in Annex 2 to this Regulation.

4.3.3. The first two digits of the approval number which indicate the most recent series of amendments to this Regulation may be placed in the vicinity of the additional symbols "AR" **or** “**ML**”.

4.3.4. On **reversing** lamps of which the visibility angles are asymmetrical with regard to the reference axis in a horizontal direction, an arrow pointing towards the side on which the photometric specifications are met up to an angle of 45° H.”

Paragraph 4.7., amend to read:

“4.7. Annex 2 gives examples of approval marks for a single lamp (figure 1) and for grouped, combined or reciprocally incorporated lamps (figure 2) with all the additional symbols referred to above, in which the letters A and R **or M and L** are mingled.”

5. GENERAL SPECIFICATIONS

.....

6. INTENSITY OF LIGHT EMITTED

Insert a new paragraph 6.1., to read:

“6.1. INTENSITY OF THE LIGHT SPECIFICATIONS FOR REVERSING LAMPS”

Paragraphs 6.1. to 6.5. (former), renumber as paragraphs 6.1.1. to 6.1.5.

Insert a new paragraph 6.2. to 6.2.5., to read:

“6.2. INTENSITY OF THE LIGHT SPECIFICATIONS FOR MANOEUVRING LAMPS

6.2.1. The intensity of the light emitted by each of the two samples shall be not greater than the maxima specified below and shall be measured in relation to

- (a) **the axis of reference in the angular field specified below (expressed in degrees of angle);**

(b) the maximum mounting height above the ground as described by the applicant.

- 6.2.2. The intensity shall be not greater than 8 000 candelas in the angular field specified in the table 1 of paragraph 4. in annex 3.
- 6.2.3. The intensity of the light emitted in any direction in which the light can be observed prescribed by the angular field specified in the table 2 of paragraph 4. in annex 3, shall not exceed 1 candela.
- 6.2.4. In the case, that the manoeuvring lamp is an assembly of more than one lamp, the measured values of each individual lamp shall be spatial super positioned, taking into account the geometrical mounting positions of each of these lamps, to demonstrate, that in the whole specified angular fields, as required above, the admissible maxima will be not exceeded.
- 6.2.5. Areas of the angular field, which are obscured e.g. by the outer vehicle structure, as described in the technical description and/or the relevant drawings by the applicant, shall be excluded from the measurements.”

Paragraph 8., amend to read:

“8. COLOUR OF LIGHT EMITTED

In the case of reversing lamps the colour of the light emitted inside the field of the light distribution grid defined at paragraph 2. of Annex 3 shall be white.

In the case of manoeuvring lamps the colour of the light emitted inside the field of the whole light distribution shall be white.

For testing see Annex 4 to this Regulation.

Outside this field no sharp variation of colour shall be observed.”

Annex I, amend to read:

“Annex 1

COMMUNICATION

(Maximum format: A4 (210 x 297 mm))

1/

issued by: Name of administration:

.....
.....
.....

concerning: 2/ APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITELY DISCONTINUED

of a type of reversing lamp pursuant to Regulation No. 23

Approval No. Extension No. ...

1. Trade name or mark of the device:
2. Manufacturer' s name for the type of device:
3. Manufacturer' s name and address:
4. If applicable, name and address of the manufacturer's representative:
5. Submitted for approval on:
6. Technical service responsible for conducting approval tests:
7. Date of report issued by that service:
8. Number of report issued by that service:

1/ Distinguishing number of the country which has granted/extended/refused/
withdrawn approval (see approval provisions in the Regulation).

2/ Strike out what does not apply.

9. Concise description:

By category of lamp:

Number, category and kind of light source(s):

Voltage and wattage:

Application of an electronic light source control gear:

(a) being part of the lamp: yes/ no 2/

(b) being not part of the lamp: yes/ no 2/

Input voltage(s) supplied by an electronic light source control gear:

Electronic light source control gear manufacturer and identification number (when the light source control gear is part of the lamp but is not included into the lamp body):

Light source module: yes/ no 2/

Light source module specific identification code:

Geometrical conditions of installation and relating variations; if any, **included the maximum height of a manoeuvring lamp:**

10. Position of the approval mark:

11. Comments

In the case of a reversing lamp, this device shall be installed on a vehicle only as part of a pair of devices: yes/ no 2/

12. Reason(s) for extension (if applicable):

13. Approval granted/ extended/ refused/ withdrawn: 2/

14. Place:

15. Date:

16. Signature:

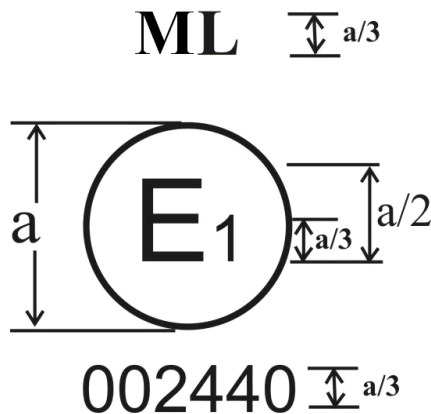
17. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.”

Annex 2, amend to read:

“Annex 2
EXAMPLES OF ARRANGEMENTS OF APPROVAL MARKS

.....
Insert a new figure 4, to read:

**“Figure 4
Marking for an manoeuvring lamps**



The device bearing the approval mark shown above is a manoeuvring lamp approved in Germany (E 1) pursuant to Regulation No. 23 under approval number 2440.

The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 23 in its original form or as amended by supplements 1 and/ or 2, as the case may be.

Note : The approval number and additional symbol shall be placed close to the circle and either above or below the letter "E" or to the left or right of that letter. The digits of the approval number and of the production serial number shall be on the same side of the letter "E" and face the same direction. The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols.”

Annex 3,

Paragraph 1, amend to read:

“1. Measurement methods **general**”

Paragraph 2, amend to read:

“2. **For reversing lamps** the measuring Points expressed in degrees of angle with the axis of reference and values of the minimum intensities of the light emitted
.....”

Insert new paragraphs 4. to 4.2.3., to read:

“4. Measurement methods for manoeuvring lamps

4.1. The manoeuvring lamp shall be mounted on the gonio-photometer with the orientation on the axis of reference in direction of the vertical rotation axis.

4.2. The measurements will be carried out in angular fields expressed in degrees of angle of which the axis of reference is the polar axis. The measuring axis in direction to the photocell is perpendicular to that reference axis with $H = 0^\circ$; $V = 0^\circ$ for angles of field for photometric measurements and subtend (goes through) the lowest edge of the light emitting surface.

4.2.1. Angular field for the measurements in the ground plain (illuminated Zone) is specified in table 1 below:

Table 1:

Corresponding Mounting height In Meter	Angular field	
	vertical	horizontal
0.25 to 0.75	20°	90° to the front of the vehicle and 90° to the rear of the vehicle with the reference axis as polar axis. 0° will be represented in a direction perpendicular to the median longitudinal plane of the vehicle.
0.7 to 1.2	30°	
1.15 to 1.75	40°	
1.7 and above	50°	

The boarder lines of the angular field, as specified in the table above, could be described by polar coordinates in the ground plain. The reference axis of the manoeuvring lamp is perpendicular to the ground plain and cuts the angular field in the origin.

4.2.2. Angular field for the measurements in the ground plain (illuminated Zone) is specified in table 1 below:

4.2.3. Angular field for the measurements in the halve cylindrical plain (stray light Zone) is specified in table 2 below:

Table 2:

	Angular field	
Independent from the Mounting height	Vertical	horizontal
	0 to -45°	90° to the front of the vehicle and 90° to the rear of the vehicle with the reference axis as polar axis. 0° will be represented in a direction perpendicular to the median longitudinal plane of the vehicle.

The boarder lines of the angular field, as specified in the table above, could be described by rays, with the origin in the lamp, cutting the edges of a halve cylindrical wall whose polar axis is the reference axis, the radius is 2000mm. The lower horizontal edge of this halve cylindrical wall is 250mm and the upper horizontal edge is 2000 mm above the ground plane.”

B. Justification:

At GRE-63 a task force was established to define a solution to illuminate the side of a vehicle during slow manoeuvres.

The governmental representatives who joined this task force in Bonn required approvals for lamps which are activated when the vehicle is moving. It was decided by the group to regulate these lamps within ECE-R 23.

Initial idea was to describe the measuring procedure by a plain A as shown in figure 1 parallel to the longitudinal axis of the vehicle, which is located $2000\text{mm}\pm 10\text{mm}$ to the test set-up or to the left or the right side of the vehicle, measured from the extreme outer edges corresponding to the specifications specified in paragraph 2.14. of the Regulation No. 48 and which span in height above the ground from 250mm up to 2000mm and in length 2000mm to the left and 2000 mm to the right of the reference centre of the manoeuvring lamp or of each individual part of the manoeuvring lamp or corresponding to the length of the vehicle.

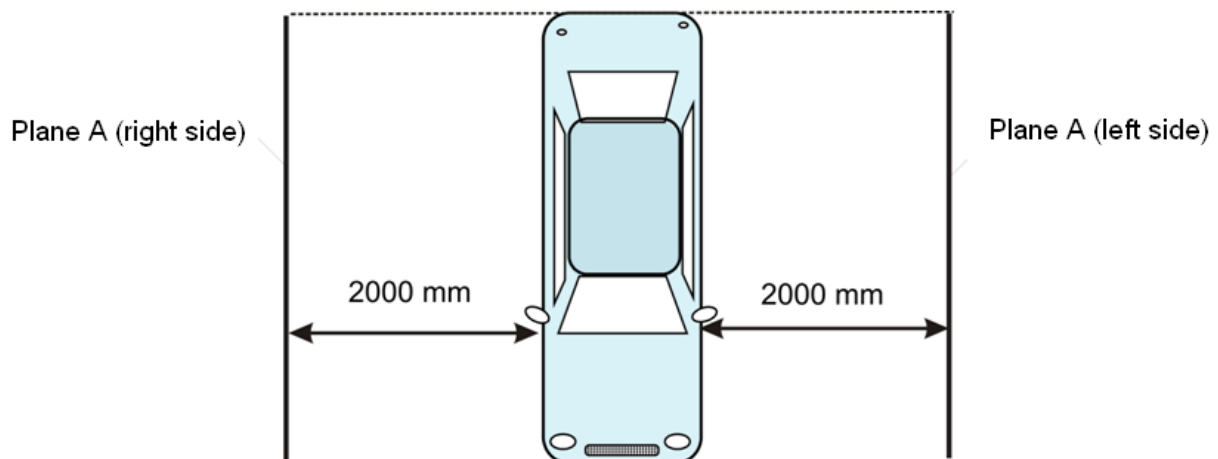


Figure 1

By the fact, that the following discussion results in procedure for a lamp approval, this procedure, proposed as an annex to the Regulation No. 48 was not more applicable. The Task Force decided to incorporate the test procedure into the Regulation No. 23 (Reversing Lamps). This requires at least a test procedure which is comparable to typical lamp measurements in a laboratory.

Because these Requirements establish only maximum conditions to avoid undue dazzle etc. and also covering more or less the initial idea, the walls or better the plain A became a halve cylinder with the radius of 2m (see Figure 2).

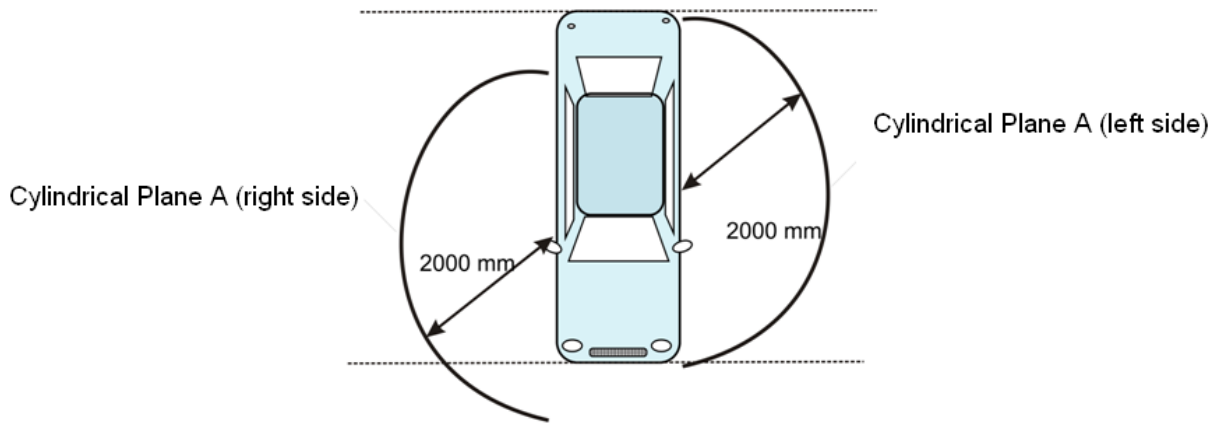


Figure 2

The reference axis and the polar axis of this cylindrical “coordinate system” are the same.

Figure 3 illustrates angular field as described by Table 1 in Paragraph 4 in Annex 3. This angular field represents the measurement of light in direction to the road.

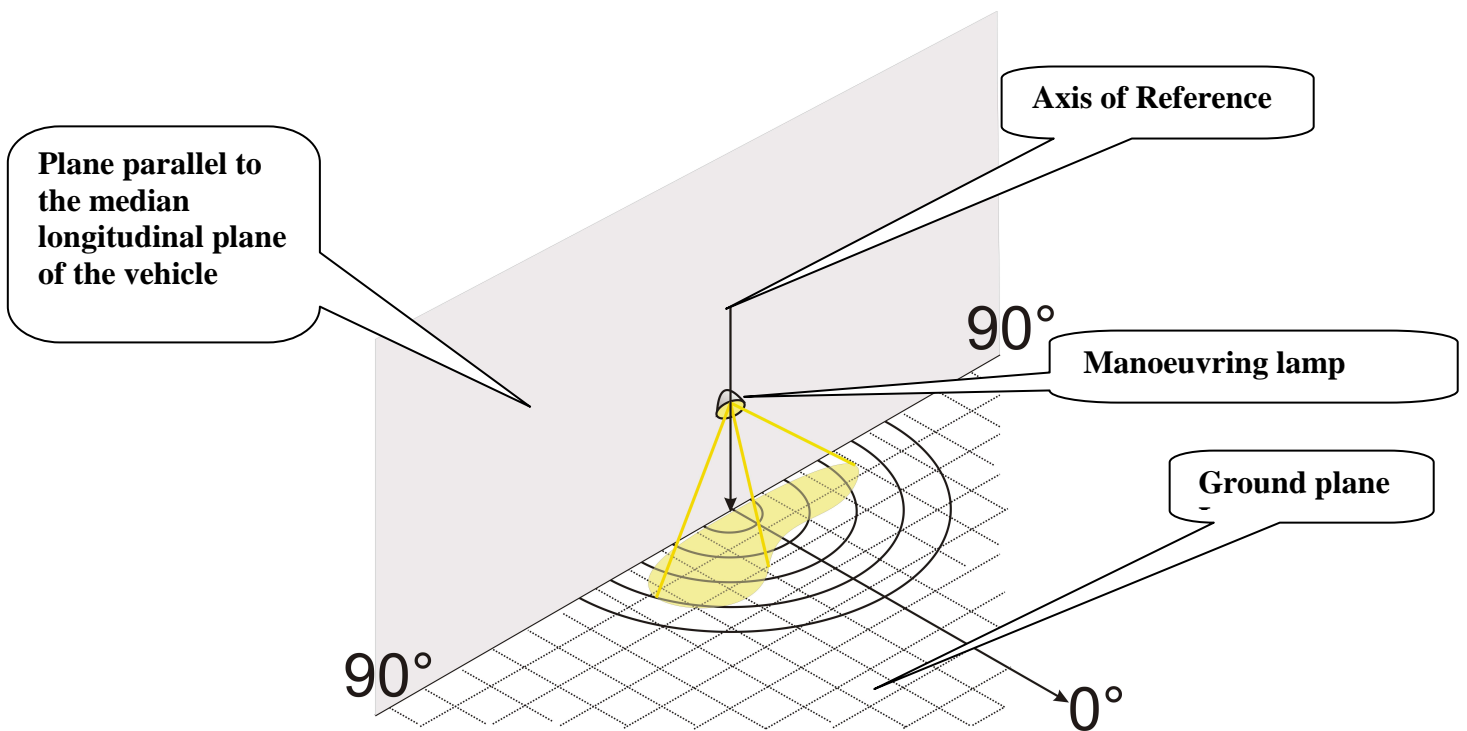


Figure 3

The corresponding set up of the manoeuvring lamp on the gonio-photometer with correct orientation of the axis of reference is shown in Figure 4:

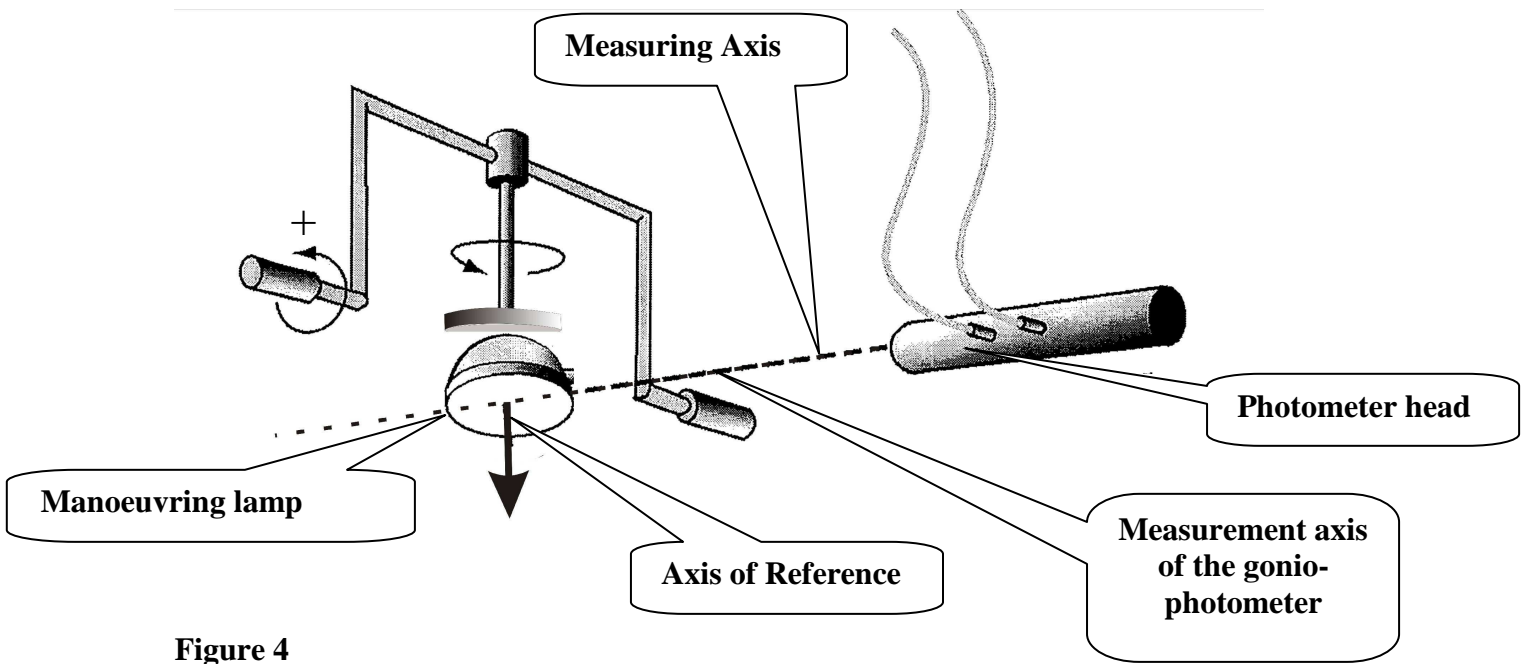


Figure 4

Figure 5 illustrates angular field as described by Table 2 in Paragraph 4 in Annex 3. This angular field represents the measurement of light in direction to other road users. Also it shows some of the rays cutting the lower or upper horizontal edges of this cylindrical plane.

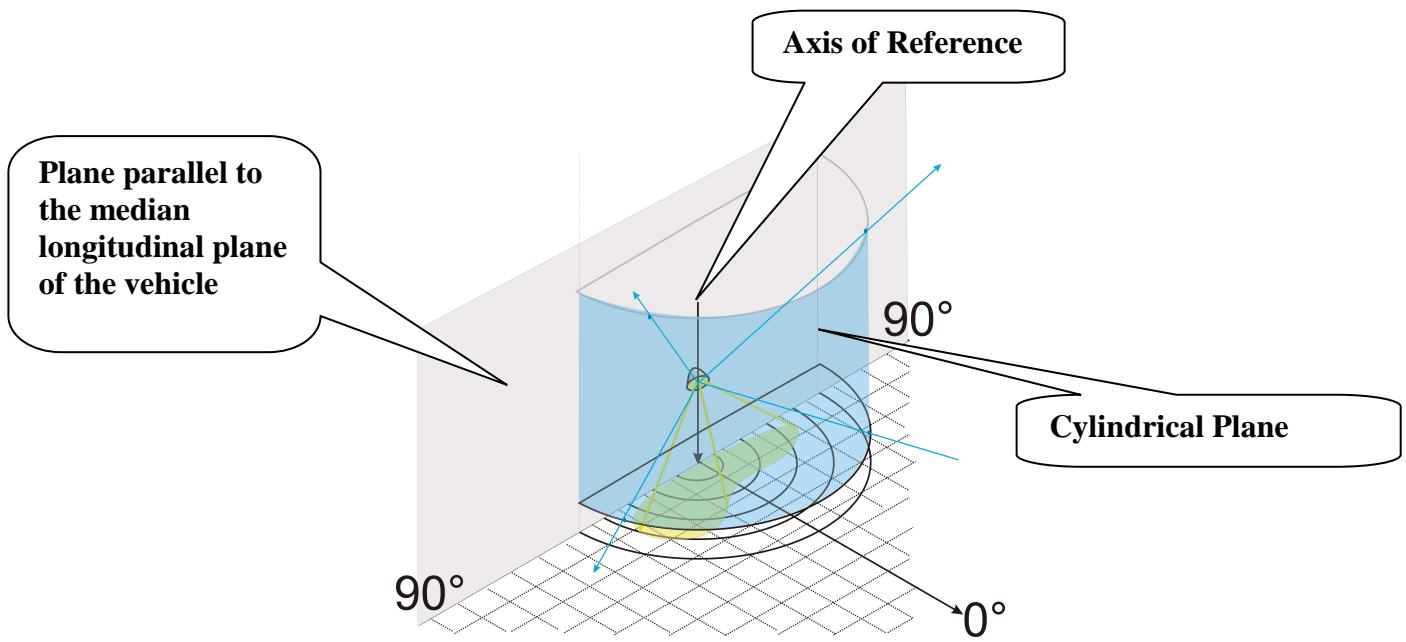


Figure 5

Figure 5 illustrates the vertical cut through the angular fields as described by Table 1 and Table 2 in Paragraph 4 in Annex 3. It shows also some of the dimensions and the variation of some angles depending from the mounting height of manoeuvring lamps. Also you could see again some of the rays cutting the lower or upper horizontal edges of this cylindrical plane.

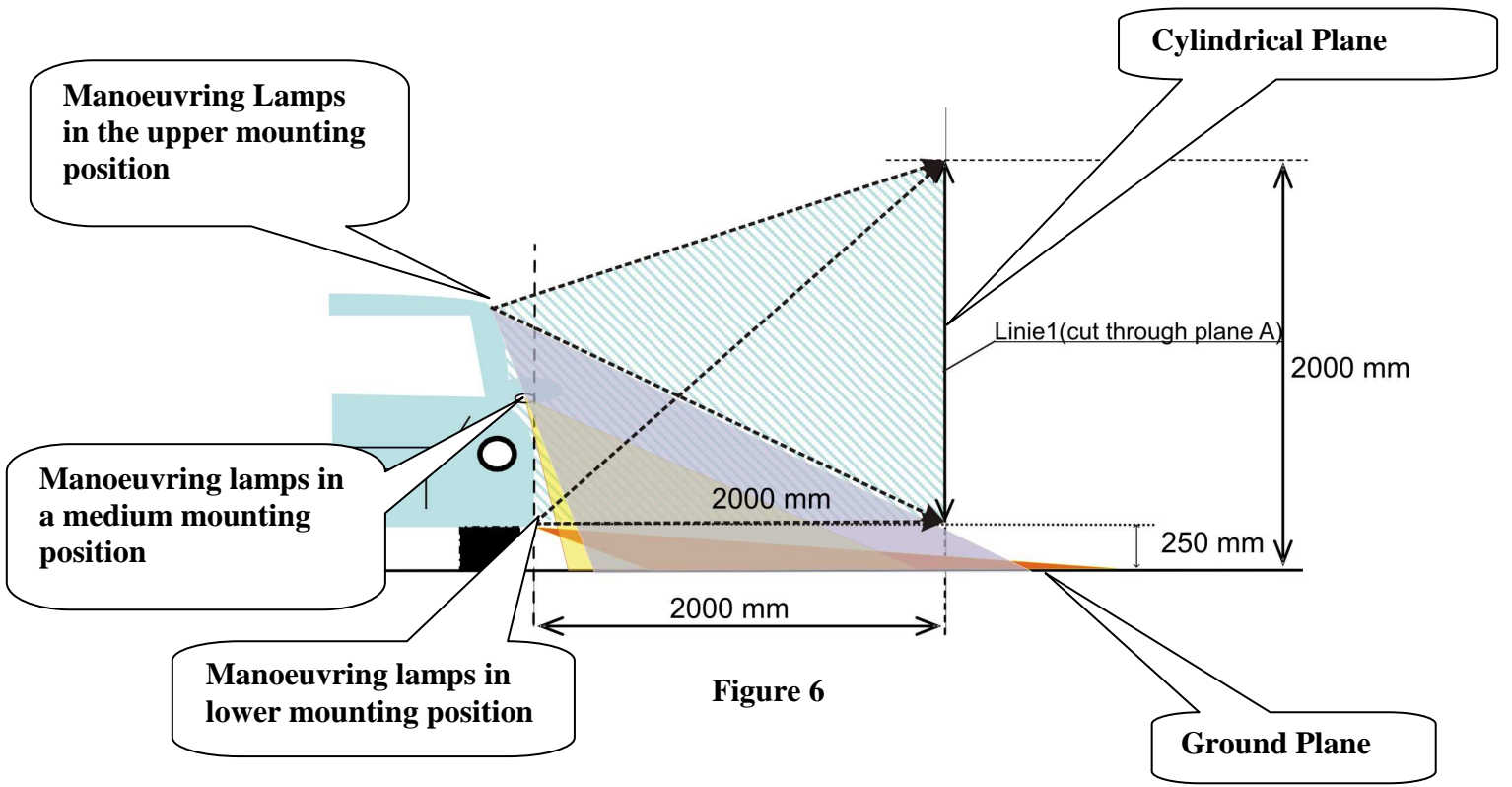


Figure 6