

A Proposal of amendments to ECE Regulation No. 23

**UNIFORM PROVISIONS CONCERNING THE APPROVAL OF REVERSING LAMPS
AND FOR EXTERIOR COURTESY LAMPS FOR POWER-DRIVEN VEHICLES AND
THEIR TRAILERS**

0. SCOPE

This Regulation applies to reversing lamps for vehicles of categories M, N, O, and T 1/ .
and to exterior courtesy lamps for vehicles of categories M and N

1. DEFINITIONS

For the purposes of this Regulation,

1. 1. "reversing lamp" means the lamp of the vehicle designed to illuminate the road to the rear of the vehicle and to warn other road users that the vehicle is reversing or about to reverse;

Insert a new paragraph 1.2. to read and renumber the paragraphs 1.2. to 1.4. in 1.3. to 1.5.:

- 1.2. "Exterior Courtesy lamp" means a lamp used to provide supplementary illumination to assist during the entry and exit of driver and passenger, loading operations, or slow manoeuvres;"**

1. 3. The definitions given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation.

1. 4. reversing lamps of different " types " means lamps which differ in such essential respects as:
(a) the trade name or mark;
(b) the characteristics of the optical system, (levels of intensity, light distribution angles, category of filament lamp, light source module, etc.);
A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.

1. 5. References made in this Regulation to standard (étalon) filament lamp(s) and to Regulation No. 37 shall refer to Regulation No. 37 and its series of amendments in force at the time of application for type approval.

Insert a 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 exterior courtesy 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 installation of the lamp on the vehicle;**

2. APPLICATION FOR APPROVAL

2. 1. The application for approval shall be submitted by the holder of the trade name or mark or by his duly accredited representative.
At the choice of the applicant, it will specify that the device may be installed on the vehicle with different inclinations of the reference axis in respect to the vehicle reference planes and to the ground or rotate around its reference axis; these different conditions of installation shall be indicated in the communication form.
2. 2. For each type of reversing lamp **or courtesy lamp**, the application shall be accompanied by:

Paragraph 2.2.1. amend to read:

2. 2. 1. drawings, in triplicate, in sufficient detail to permit identification of the type of the reversing lamp **or courtesy lamp** and showing in what geometrical position(s) the reversing lamp may be mounted on the vehicle; the axis of observation to be taken as the axis of reference in the tests (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 mounting height and the orientation of the reference axis of the courtesy lamp(s) shall be indicated in the drawing in relation to the ground, the vertical and the longitudinal axis.

3. MARKINGS

The samples of a type of reversing lamp **or courtesy lamp** submitted for approval shall:

4. APPROVAL

- 4.1. If the two samples of a type of reversing lamp **or courtesy lamp** meet the requirements of this Regulation, approval shall be granted.
- 4.2. An approval number shall be assigned to each type approved. The same Contracting Party shall not assign the same number to another type of reversing lamp **or courtesy lamp** covered by this Regulation. Notice of approval or of extension or refusal or withdrawal of approval or production definitely discontinued of a type of reversing lamp pursuant to this Regulation shall be communicated to the Parties to the 1958 Agreement which apply this Regulation by means of a form conforming to the model in Annex 1 to this Regulation.
- 4.3. Every reversing lamp **or courtesy lamp** conforming to a type approved under this Regulation shall bear in the space referred to in paragraph 3.4. above, in addition the mark and the particulars prescribed above in paragraphs 3.1., 3.2. and 3.3. or 3.5. respectively:

Paragraph 4.3.2. amend to read:

4.3.2. On devices meeting the requirements of this Regulation in respect of the reversing lamps an additional symbol consisting of letters A and R, arranged as shown in Annex 2 to this Regulation.

On devices meeting the requirements of this Regulation in respect of the exterior courtesy lamps an additional symbol consisting of letters C and L, arranged 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 "CL".

Paragraph 4.3.4. amend to read:

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.

4.6. The mark and symbol referred to in paragraphs 4.3.1. and 4.3.2. shall be indelible and shall be clearly legible even when the reversing lamp **or courtesy lamp** is mounted on the vehicle.

...

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 C and L** are mingled.

5. GENERAL SPECIFICATIONS

...

6. INTENSITY OF LIGHT EMITTED

Paragraph 6.1. amend to read and renumbering of the following paragraphs:

6.1. INTENSITY OF THE LIGHT SPECIFICATIONS FOR REVERSING LAMPS

6.1.1. The intensity of the light emitted by each of the two samples shall be not less than the minima and not greater than the maxima specified below and shall be measured in relation to the axis of reference in the directions shown below (expressed in degrees of angle with the axis of reference).

6.1.2. The intensity along the axis of reference shall be not less than 80 candelas.

6.1.3. The intensity of the light emitted in all directions in which the light can be observed shall not exceed:

300 candelas in directions in or above the horizontal plane;

and, in directions below the horizontal plane:

600 candelas between h-h and 5° D and

8 000 candelas below 5° D.

6.1.4. In every other direction of measurement shown in Annex 3 to this Regulation, the luminous intensity shall be not less than the minima specified in that annex.

However, in the case where the reversing lamp is intended to be installed on a vehicle exclusively in a pair of devices, the photometric intensity may be verified only up to an angle of 30° inwards where a photometric value of at least 25 cd shall be satisfied. This condition shall be clearly explained in the application for approval and relating documents (see paragraph 2 of this Regulation).

Moreover, in the case where the type approval will be granted applying the condition above, a statement in paragraph 11 'Comments' of the communication form (see Annex 1 to this Regulation), will inform that the device shall only be installed in a pair.

- 6.1.5.** In the case of a single lamp containing more than one light source, the lamp shall comply with the minimum intensity required when any one light source has failed and when all light sources are illuminated the maximum intensities shall not be exceeded. 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.

Insert a new paragraph 6.2. to read:

6.2. INTENSITY OF THE LIGHT SPECIFICATIONS FOR EXTERIOR COURTESY LAMPS

- 6.2.1.** The intensity of the light emitted by each of the two samples shall be not larger than the maxima specified below and shall be measured in relation to
- the axis of reference in the angular field specified below (expressed in degrees of angle);
 - the mounting height as described by the applicant.
- 6.2.2.** The intensity shall be not larger than [1000] 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 the directions 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 [0.05] candelas.
- 6.2.4.** In the case, that the exterior courtesy 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.

7. TEST PROCEDURES

- 7.1.** All 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 courtesy 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.

- 10.1. The approval granted in respect of a type of reversing lamp **or courtesy lamp** pursuant to this Regulation may be withdrawn if the foregoing requirements are not complied with or if the reversing lamp **or courtesy lamp** bearing the mark referred to in paragraphs 4.3.1. and 4.3.2. does not conform to the type approved.

11. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a type of reversing lamp **or courtesy lamp** approved in accordance with this Regulation, he shall so inform the authority which granted the approval. Upon receiving the relevant communication, that authority shall inform thereof the other Parties to the 1958 Agreement which apply this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.

Annex 1. 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. ...

of a type of courtesy 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:
9. Concise description:

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:

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:

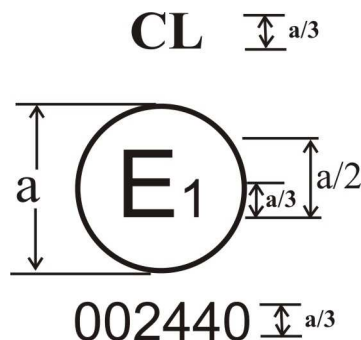
17. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.

Annex 2

EXAMPLES OF ARRANGEMENTS OF APPROVAL MARKS

Insert a new figure 4 , to read:

Figure 4
Marking for an exterior courtesy lamps



The device bearing the approval mark shown above is a courtesy 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 PHOTOMETRIC MEASUREMENTS

Paragraph 1. amend to read:

1. Measurement methods **general**
 - 1.1. When photometric measurements are taken, stray reflections shall be avoided by appropriate masking.
 - 1.2. In the event that the results of measurements are challenged, measurements shall be taken in such a way as to meet the following requirements:
 - 1.2.1. the distance of measurement shall be such that the law of the inverse of the square of the distance is applicable;
 - 1.2.2. the measuring equipment shall be such that the angle subtended by the receiver from the reference centre of the light is between 10' and 1°;
 - 1.2.3. the intensity requirement for a particular direction of observation shall be satisfied if the required intensity is obtained in a direction deviating by not more than one quarter of a degree from the direction of observation.
 - 1.3. In the case where the device may be installed on the vehicle in more than one or in a field of different positions the photometric measurements shall be repeated for each position or for the extreme positions in the field of reference axis specified by the manufacturer.
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
- ...
3. Photometric measurement of lamps equipped with several light sources the photometric performance shall be checked:

....

Insert a new paragraph 4. , to read:

4. Measurement methods for courtesy lamps
 - 4.1. The exterior courtesy 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 to 2.5	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 exterior courtesy 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 halve cylindrical plain (stray light Zone) is specified in table 2 below:

Table 2:

Corresponding Mounting height In Meter	Angular field	
	vertical	horizontal
0.25 to 0.75	5° to -40°	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	15° to -30°	
1.15 to 1.75	25° to -20°	
1.7 to 2.5	40° to -5°	

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 2000mm above the ground plain.

B Justification:

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 courtesy lamp or of each individual part of the courtesy lamp or corresponding to the length of the vehicle.

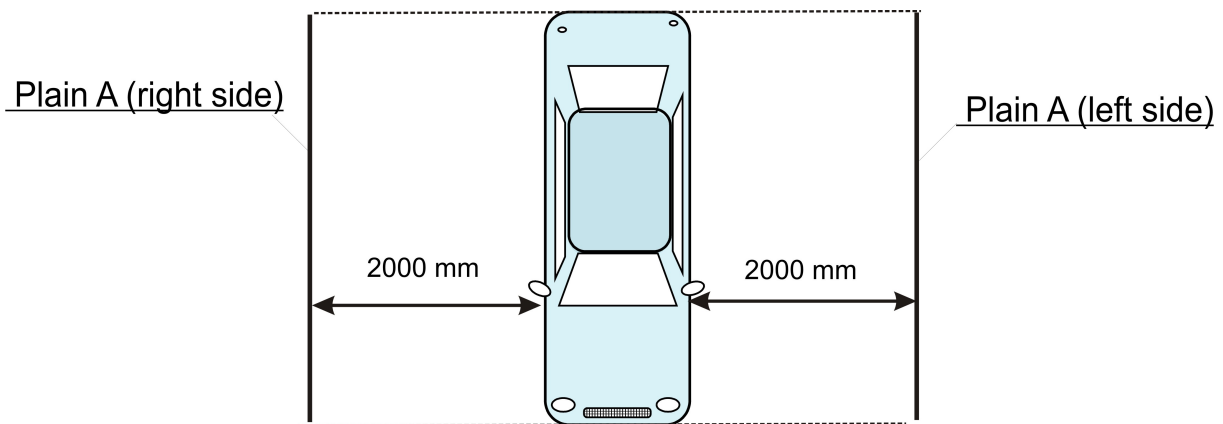


Figure 1

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).

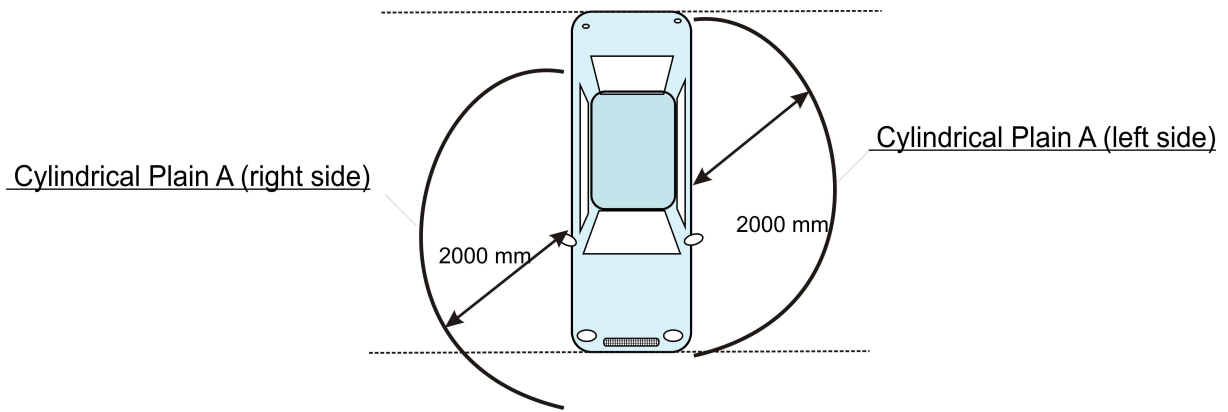


Figure 2

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

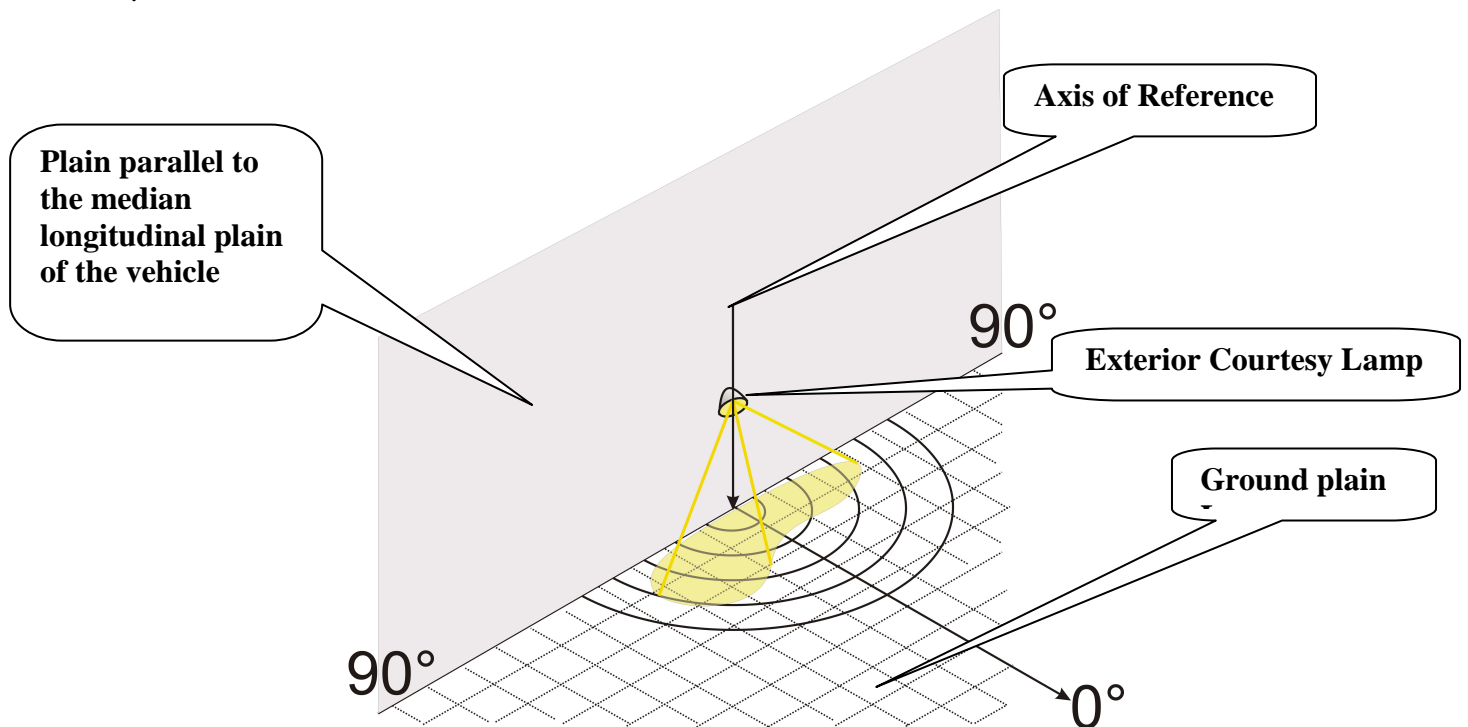


Figure 3

The corresponding set up of the exterior courtesy lamp on the goniophotometer with correct orientation of the axis of reference is shown in Figure 4:

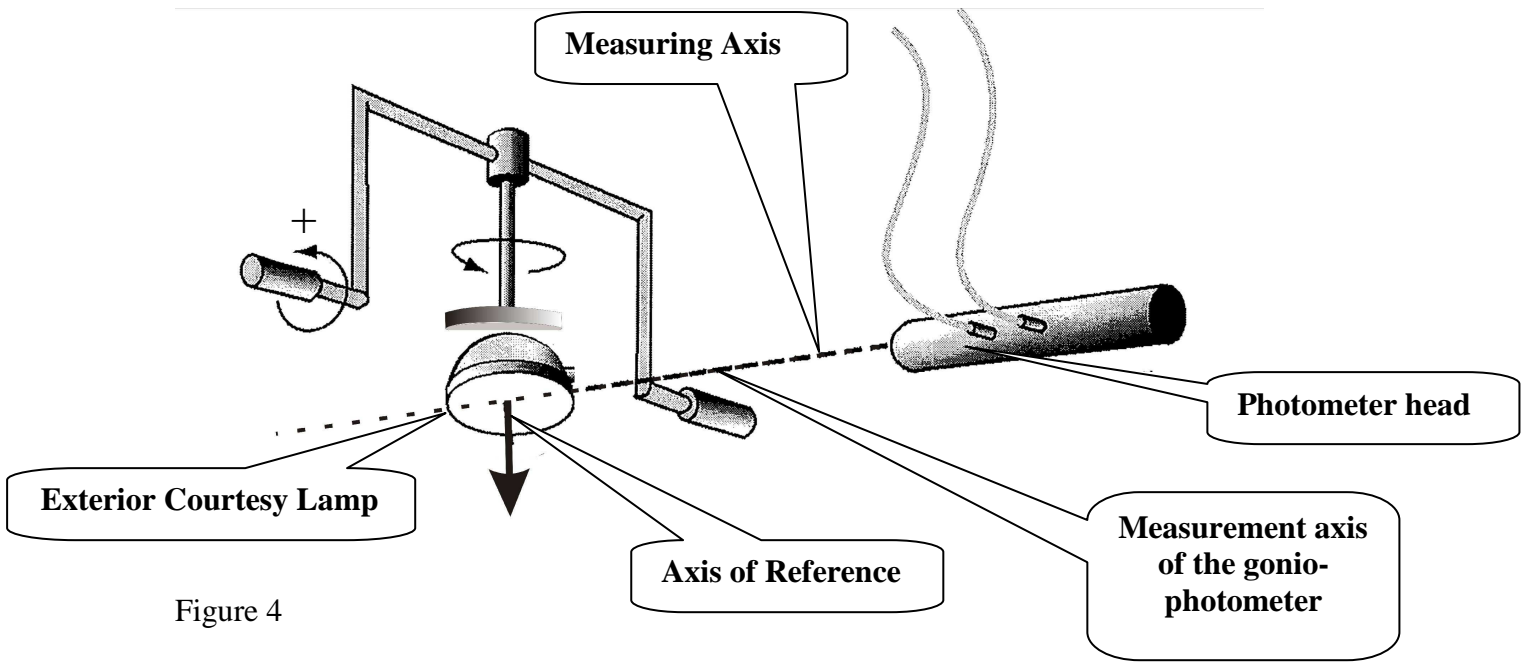


Figure 4

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 plain.

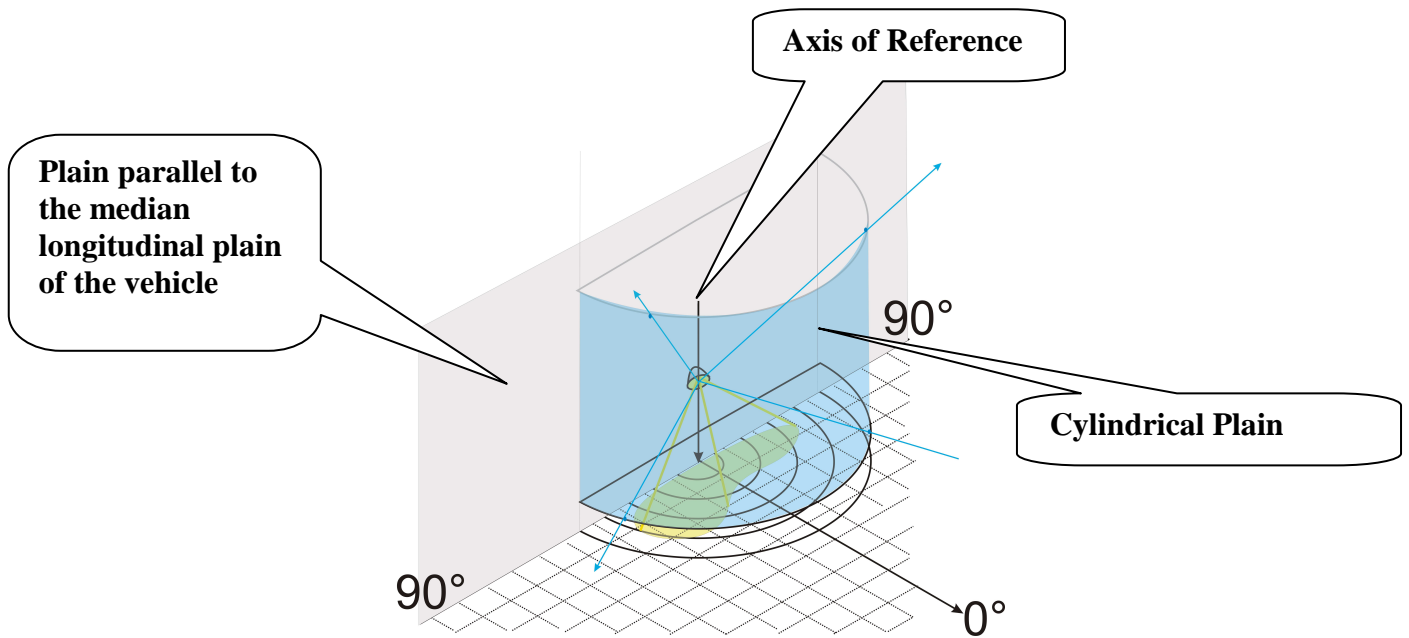


Figure 5

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 exterior courtesy lamps. Also you could

see again some of the rays cutting the lower or upper horizontal edges of this cylindrical plain.

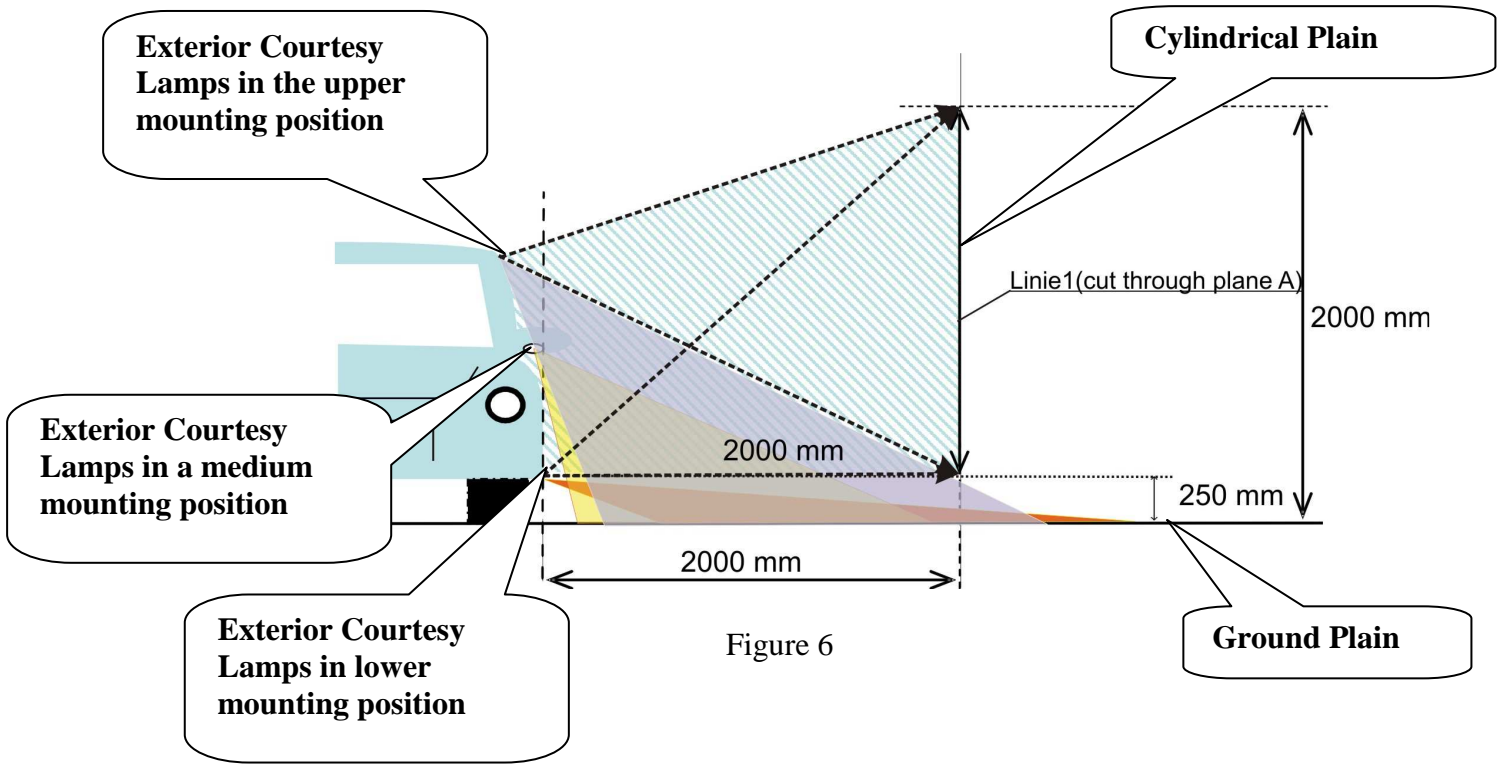
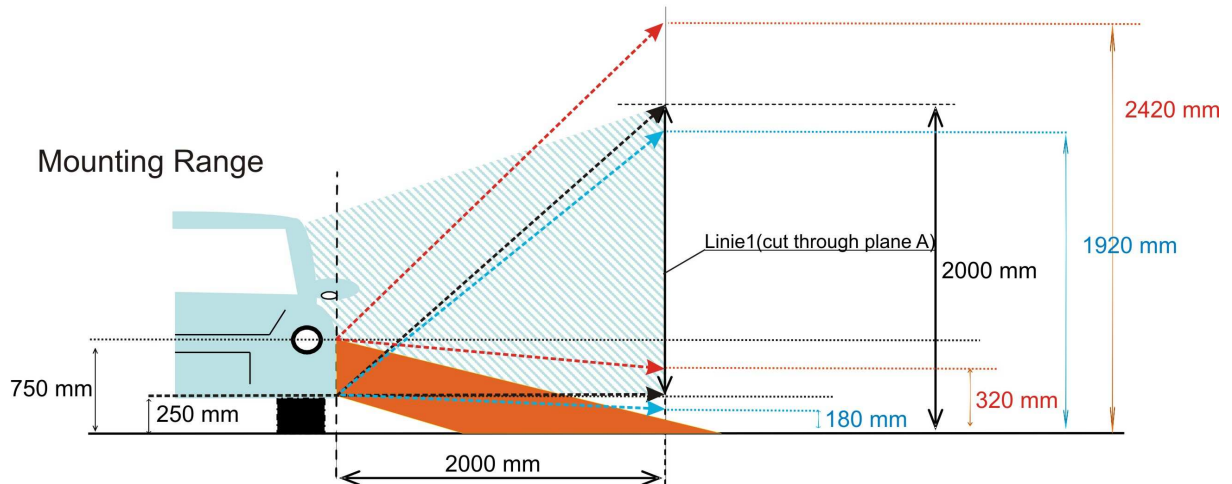


Figure 6

Tolerance areas depending from the mounting height



Tolerance areas depending from the mounting height shown for the lower and the upper position in the case of a mounting height range of 0.25m to 0.75m. Results are for the other mounting height ranges are equivalent.

Tolerance areas depending from the mounting height									
Corresponding Mounting height In Meter			vertical			lower mounting position		higher mounting position	
			Downward relative to the measuring axis		Upward relative to the measuring axis	Lower edge position of the "2m" Screen (downward angle)	Upper edge position of the "2m" Screen (upward angle)	Lower edge position of the "2m" Screen (downward angle)	Upper edge position of the "2m" Screen (upward angle)
0.25	to	0.75	5°	to	-40°	0.08m	1.93m	0.58m	2.43m
0.7	to	1.2	15°	to	-30°	0.16m	1.85m	0.66m	2.35m
1.15	to	1.75	25°	to	-20°	0.22m	1.88m	0.82m	2.48m
1.7	to	2.5	40°	to	-5°	0.02m	1.88m	0.82m	2.67m