

Agreement

Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be fitted and/or be used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions*

(Revision 2, including the amendments which entered into force on 16 October 1995)

Basis for this document is: Addendum 6: Regulation No. 7

Uniform provisions concerning the approval of front and rear position lamps, stop-lamps and end-outline marker lamps for motor vehicles (except motor cycles) and their trailers



UNITED NATIONS

Regulation No. 7

Uniform provisions concerning the approval of front and rear position lamps, stop-lamps and end-outline marker lamps for motor vehicles (except motor cycles) and their trailers

* Former title of the Agreement: Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958.

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0. Scope

This Regulation applies to:

Front and rear position lamps and stop lamps for vehicles of categories L, M, N, O and T¹; and,

End-outline marker lamps for vehicles of categories M, N, O and T.

1. Definitions

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

2. Application for approval

2.1. The applicant shall follow instructions as stated in paragraph B3. of Regulation No. 48 and paragraph 2.2. below..

2.2. The application for approval shall also specify:

2.2.1. The purpose or purposes for which the device submitted for approval is intended and whether it may also be used in an assembly of two lamps of the same kind/type;

2.2.2. In the case of an end-outline marker lamp, whether it is intended to emit white or red light;

2.2.3. In the case of a category S3 or S4 stop lamp, whether it is intended to be mounted outside or inside (behind the rear window) the vehicle;

2.2.4. Whether the device produces steady luminous intensity (category R, R1, RM1, S1 or S3) or variable luminous intensity (category R2, RM2, S2 or S4);

2.3. The drawings shall also show in what geometrical position(s) the device (and if applicable for category S3 or S4 lamps the rear window) may be mounted on the vehicle; the axis of observation to be taken is the axis of reference in the tests (horizontal angle $H = 0^\circ$, vertical angle $V = 0^\circ$) and the point to be taken as the centre of reference in the said tests;

2.4. In the case of a category S3 or S4 stop lamp which is intended to be mounted inside the vehicle:

2.4.1 the technical description shall also contain the specification of the optical properties (transmission, colour, inclination, etc.) of the rear window(s);

2.4.2 the application shall be accompanied by a sample plate or sample plates (in case of different possibilities) having the equivalent optical properties corresponding to those of the actual rear window(s).

¹ As defined in the Consolidated resolution on the Construction of vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.2, para.2.

3. Markings

The applicant shall follow instructions stated in paragraph B5. of Regulation No. 48

4. Approval

The applicant shall follow instructions stated in paragraph B4. of Regulation No. 48.

5. General requirements

5.1. Each device supplied shall conform to the requirements set forth in **paragraph B6 and B7. of Regulation 48** and paragraphs 5.2., 6. and 8. below.

5.2. In addition to paragraph 5.1. above:

5.2.1. Lamps having been approved as front or rear position lamps, are deemed being also approved **as** end-outline marker lamps.

5.2.2. Front and rear position lamps which are grouped or combined or reciprocally incorporated may also be used as end-outline marker lamps.

5.2.3. Position lamps, which are reciprocally incorporated with another function, using a common light source, and designed to operate permanently with an additional system to regulate the intensity of the light emitted, are permitted.

5.2.3.1. However, in the case of rear position lamp reciprocally incorporated with a stop lamp, the device shall either:

- (a) Be a part of a multiple light source arrangement, or
- (b) Be intended for use in a vehicle equipped with a failure monitoring system for that function.

In either case, a note shall be made within the communication document.

5.3. If the front position lamp incorporates one or more infrared radiation generators, the photometric and colour requirements for this front position lamp shall be met with and without the operation of the infrared radiation generator(s).

5.4. In case of failure of the variable intensity control of:

- (a) A rear position lamp category R2 emitting more than the maximum value of category R or R1;
- (b) A rear end-outline marker lamp category RM2 emitting more than the maximum value of category RM1;
- (c) A stop lamp category S2 emitting more than the maximum value of category S1;
- (d) A stop lamp category S4 emitting more than the maximum value of category S3;

requirements of steady luminous intensity of the respective category shall be fulfilled automatically.

5.5. In the case of replaceable light source(s), any category or categories of light source(s) approved according to Regulation No. 37 and/or

Regulation No. 128 may be used, provided that no restriction on the use is made in Regulation No. 37 and its series of amendments in force at the time of application for type approval or in Regulation No. 128 and its series of amendments in force at the time of application for type approval.

6. Intensity of light emitted

- 6.1. The light emitted by each of the two devices supplied shall be in the reference axis, of not less than the minimum intensity and of not more than the maximum intensity specified below:

		<i>Minimum luminous intensity in cd</i>	<i>Maximum luminous intensity in cd when used as</i>	
			<i>Single lamp</i>	<i>Lamp (single) marked "D" (paragraph 4.2.2.6.)</i>
6.1.1.	Front position lamps, front end-outline marker lamp A or AM	4	140	70
6.1.2.	Front position lamps incorporated in a headlamp	4	140	-
6.1.3.	Rear position lamps, rear end-outline marker lamp			
6.1.3.1.	R or R1 or RM1 (steady)	4	17	8.5
6.1.3.2.	R2 or RM2 (variable)	4	42	21
6.1.4.	Stop-lamps	60	260	130
6.1.4.1.	S1 (steady)			
6.1.4.2.	S2 (variable)	60	730	365
6.1.4.3.	S3 (steady)	25	110	55
6.1.4.4.	S4 (variable)	25	160	80

- 6.1.5. For an assembly of two or more lamps the total intensity shall not exceed the maximum value prescribed for a single lamp.
- 6.2. Outside the reference axis and within the angular fields defined in the diagrams in Annex 3 to this Regulation, the intensity of the light emitted by each of the two devices supplied must:
- 6.2.1. In each direction corresponding to the points in the light distribution table reproduced in Annex 2 to this Regulation, be not less than the product of the minimum specified in the table of paragraph 6.1. above, by the percentage specified in the said table of the direction in question;
- 6.2.2. In no direction within the space from which the light-signalling device is visible, exceed the maximum specified in the table of paragraph 6.1. above;
- 6.2.3. However, a luminous intensity of 60 cd shall be permitted for rear position lamps reciprocally incorporated with stop-lamps (see paragraph 6.1.3. above) below a plane forming an angle of 5° with and downward from the horizontal plane;

-
- 6.2.4. Moreover,
- 6.2.4.1. Throughout the fields defined in the diagrams in Annex 3, the luminous intensity of the light emitted must be not less than 0.05 cd for front and rear position lamps and end-outline marker lamps, not less than 0.3 cd for stop-lamps;
- 6.2.4.2. If a rear position 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 when turned on alone should be at least 5: 1 in the field delimited by the straight horizontal lines passing through $\pm 5^\circ$ V and the straight vertical lines passing through $\pm 10^\circ$ H of the light distribution table.
- If the rear position lamp or the stop lamp or both contain more than one light source and are considered as a single lamp, the values to be considered are those obtained with all sources in operation;
- 6.2.4.3. The provisions of paragraph 2.2. of Annex 2 to this Regulation on local variations of intensity must be observed.
- 6.3. The intensities shall be measured with the filament lamp(s) continuously alight and, in the case of devices emitting red light, in coloured light.
- 6.4. In the case of devices of categories R2, RM2, S2 and S4 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 in accordance with paragraph 6.3. above 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.
- 6.5. The variable intensity control shall not generate signals which cause luminous intensities:
- 6.5.1. Outside the range specified in paragraph 6.1. above and
- 6.5.2. Exceeding the respective steady luminous intensity maximum specified in paragraph 6.1. for the specific device:
- (a) For systems depending only on daytime and night time conditions: under night time conditions;
- (b) For other systems: under standard conditions².
- 6.6. Annex 2, to which reference is made in paragraph 6.2.1. above, gives particulars of the methods of measurement to be used.

7. Test procedure

Follow instructions in Annex B5 of of Regulation No. 48.

² Good visibility (meteorological optical range MOR > 2,000 m defined according to WMO, Guide to Meteorological Instruments and Methods of Observation, Sixth Edition, ISBN: 92-63-16008-2, pp 1.9.1/1.9.11, Geneva 1996) and clean lens.

8. Colour of light emitted

The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 2 shall be red or white. Outside this field, no sharp variation of colour shall be observed. To check these colorimetric characteristics, the test procedure described in paragraph 7. shall be applied.

However, for lamps equipped with non-replaceable light sources, the colorimetric characteristics should be verified with the light sources present in the lamp, in accordance with the relevant sub-paragraph of **Annex B 5 of Regulation No. 48.**

The colour of the light emitted shall lie inside the chromaticity areas defined by the boundaries in Annex B4 of Regulation No. 48.

In the case of a category S3 or S4 stop lamp, which is intended to be mounted inside the vehicle, the colorimetric characteristics shall be verified with the worst case combination(s) of lamp and rear window(s) or sample plate(s).

These requirements shall also apply within the range of variable luminous intensity produced by:

- (a) Rear position lamps of category R2;
- (b) Rear end-outline marker lamps of category RM2;
- (c) Stop lamps of categories S2 and S4.

9. Modifications of a type of direction indicator for motor vehicles and their trailers and extension of approval

Paragraph B10. of Regulation No. 48.

10. Conformity of production

The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.2), with the following requirements:

10.1. **Lamps shall be so manufactured as to conform to the type approved under this Regulation. The compliance with the requirements set forth in paragraphs 6 and 8 above shall be verified as follows:**

10.1.1. The minimum requirements for conformity of production control procedures set forth in Annex B2 to Regulation 48 shall be complied with and no measured value deviates unfavourably by more than 20 per cent from the values prescribed in this Regulation.

In addition for the minimum values required throughout the fields specified in Annex 3 to this Regulation the respective maximum deviations of the measured values shall correspond to the values shown in the table below:

Required minimum value	Equivalent 20 per cent	Equivalent 30 per cent
cd	cd	cd
0,3	0,2	0,1
0,05	0,03	0,02

- 10.1.2.** The sampled lamp for conformity of production control procedures shall be subjected at least to photometric measurements for the minimum values at the points listed in Annex 2 and the required chromaticity coordinates listed in **Annex B4, of the Regulation 48.**
- 10.1.3.** The minimum requirements for sampling by an inspector set forth in Annex B3 to Regulation 48 shall be complied with.
- 10.2.** The authority which has granted type approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be once every two years.

11. Penalties for non-conformity of production

Part II of Regulation No. 48 shall apply.

12. Production definitively discontinued

Part II of Regulation No. 48 shall apply.

13. Names and addresses of Technical Services responsible for conducting approval tests, and of Type approval Authorities

Part II of Regulation No. 48 shall apply.

14. Transitional provisions

- 14.1.** Signalling lamps not equipped with filament lamps and category S3 stop lamps intended to be mounted inside a vehicle.
- 14.1.1.** As from the date of entry into force of Supplement 6 to the 02 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approvals under this Regulation as amended by Supplement 6 to the 02 series of amendments.

-
- 14.1.2. As from 36 months after the date of entry into force of Supplement 6 to the 02 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the type of lamps as described in paragraph 14.1. above meets the requirements of this Regulation as amended by Supplement 6 to the 02 series of amendments.
- 14.1.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of approvals to the preceding series of amendments to this Regulation.
- 14.1.4. Contracting Parties applying this Regulation shall continue to grant approvals to those types of lamps as described in paragraph 14.1. above which comply with the requirements of this Regulation as amended by the preceding series of amendments during the 36 months' period which follows the date of entry into force of Supplement 6 to the 02 series of amendments.
- 14.2. Fitting of lamps described in paragraph 14.1. above on a vehicle.
- 14.2.1. As from the date of entry into force of Supplement 6 to the 02 series of amendments, no Contracting Party applying this Regulation shall prohibit the fitting on a vehicle of lamps described in paragraph 14.1. above approved under this Regulation as amended by Supplement 6 to the 02 series of amendments.
- 14.2.2. Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of lamps described in paragraph 14.1. above approved to this Regulation as amended by the preceding series of amendments during the 48 months' period which follows the date of entry into force of Supplement 6 to the 02 series of amendments.
- 14.2.3. Upon the expiration of a period of 48 months after the date of entry into force of Supplement 6 to the 02 series of amendments, Contracting Parties applying this Regulation may prohibit the fitting of lamps described in paragraph 14.1. above which do not meet the requirements of this Regulation as amended by Supplement 6 to the 02 series of amendments on a new vehicle for which type approval or individual approval was granted more than 24 months after the entry into force of Supplement 6 to the 02 series of amendments to this Regulation.
- 14.2.4. Upon expiration of a period of 60 months after the date of entry into force of Supplement 6 to the 02 series of amendments, Contracting Parties applying this Regulation may prohibit the fitting of lamps as described in paragraph 14.1. above which do not meet the requirements of this Regulation as amended by Supplement 6 to the 02 series of amendments on a new vehicle first registered more than 60 months after the date of entry into force of Supplement 6 to the 02 series of amendments to this Regulation.

Annex 1

Communication

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



issued by: Name of Administration:

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

concerning²: Approval granted
Approval extended
Approval refused
Approval withdrawn
Production definitively discontinued

of a type of device pursuant to Regulation No. 7

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:
 - 9.1. By category of lamp:
For mounting either outside or inside or both²
Colour of light emitted: red/white²
Number, category and kind of light source(s):
Voltage and wattage:

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.

Light source module specific identification code:

Only for installation on M₁ and/or N₁ category vehicles: yes/ no²

Only for limited mounting height of equal to or less than 750 mm above the ground: yes/no².....

Geometrical conditions of installation and relating variations, if any:

Application of an electronic light source control gear/variable intensity control:

(a) Being part of the lamp: yes/no²

(b) Being not part of the lamp: yes/no²

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

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

Variable luminous intensity: yes/no²

9.2. Function(s) produced by an interdependent lamp forming part of an interdependent lamp system:

Front position lamp	yes/ no ²
R1 Rear position lamp	yes/ no ²
R2 Rear position lamp	yes/ no ²
S1 Stop lamp	yes/ no ²
S2 Stop lamp	yes/ no ²
S3 Stop lamp	yes/ no ²
S4 Stop lamp	yes/ no ²
End-outline marker lamp	yes/ no ²

10. Position of the approval mark:

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

12. Approval granted/extended/refused/withdrawn²:

13. Place:

14. Date:

15. Signature:

16. The list of documents deposited with the Type Approval Authority which has granted approval is annexed to this communication and may be obtained on request.

Annex 2

Photometric measurements

1. **In addition to the following paragraph the photometric measurements are carried out according to Annex B5 of Regulation No. 48.**
2. Table of standard light distribution

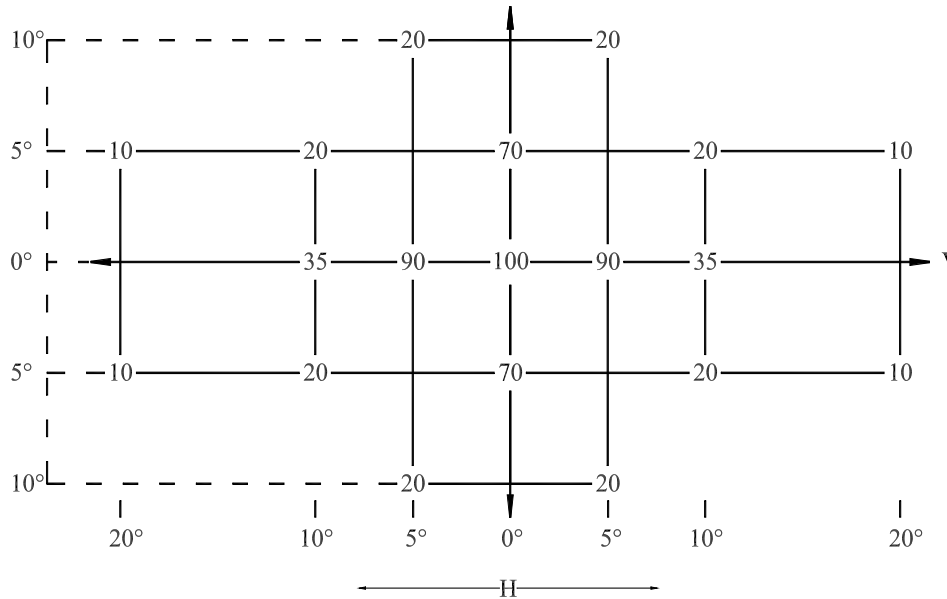


Table of light distribution for category S3 and S4 stop-lamps

Vertical	Horizontal				
	10°	5°	0°	5°	10°
10°	32	-	64	-	32
5°	64	100	100	100	64
0°	64	100	100	100	64
5°	64	100	100	100	64

- 2.1. The direction $H = 0^\circ$ and $V = 0^\circ$ corresponds to the reference axis. (On the vehicle it is horizontal, parallel to the median longitudinal plane of the vehicle and oriented in the required direction of visibility.) It passes through the centre of reference. The values shown in the table give, for the various directions of measurement, the minimum intensities as a percentage of the minimum required in the axis for each lamp (in the direction $H = 0^\circ$ and $V = 0^\circ$).
- 2.2. Within the field of light distribution of paragraph 2., schematically shown as a grid, the light pattern should be substantially uniform, i.e. the light intensity in

each direction of a part of the field formed by the grid lines shall meet at least the lowest minimum value being shown on the grid lines surrounding the questioned direction as a percentage.

- 2.3. However, in the case where a device is intended to be installed at a mounting height of equal to or less than 750 mm above the ground, the photometric intensity is verified only up to an angle of 5° downwards.

Annex 3

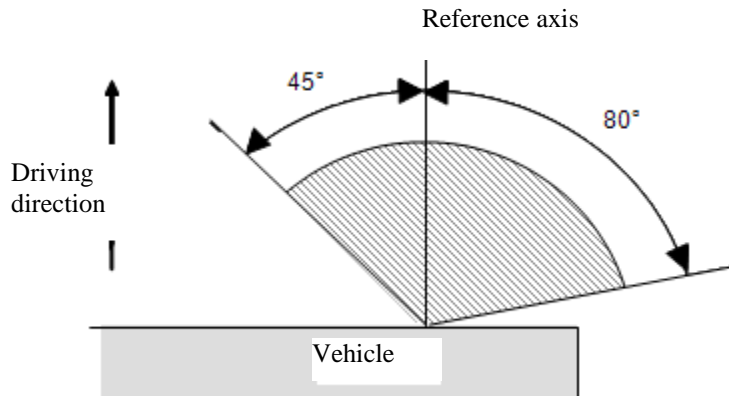
Front and rear position lamps, end-outline marker lamps and stop-lamps: minimum angles required for light distribution in space of these lamps⁵

In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal for all categories of devices included in this Regulation, except:

- (a) For lamps with a permissible mounting height less than 750 mm above the ground, for which they are 15° above and 5° below the horizontal;
- (b) For category S3 or S4 stop lamp for which they are 10° above and 5° below the horizontal.

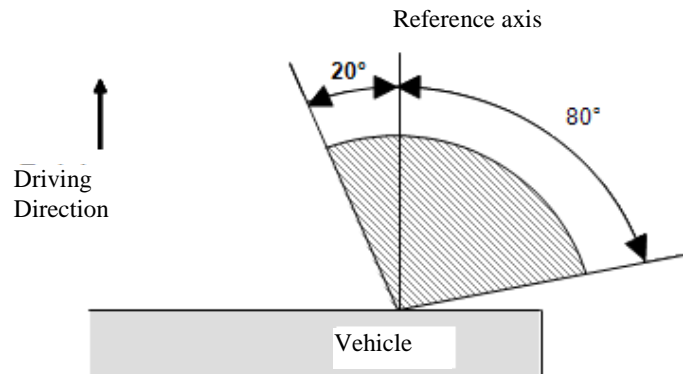
Minimum horizontal angles of light distribution in space

Front position lamps.
On and above the H plane
for all lamps.
And below the H plane for
all vehicles with mounting
height larger than 750mm



Front position lamps,
Under the H plane for all
vehicles with mounting height
less or equal than 750mm

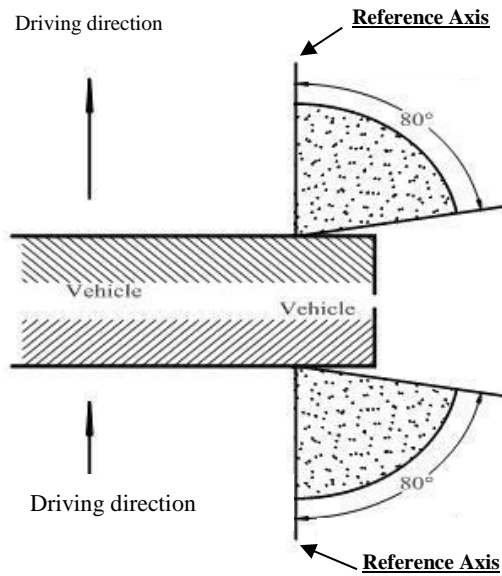
H plane: "horizontal plane
going through the reference
centre of the lamp"



⁵ The angles shown in these diagrams are correct for devices to be mounted on the right side of the vehicle. The arrows point to the front of the vehicle.

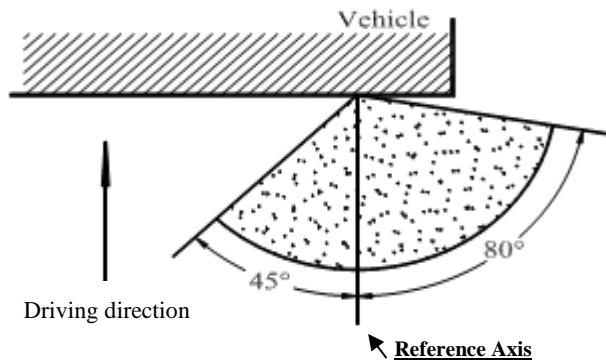
Front end-outline marker lamp (AM)

Rear end-outline marker lamp (RM1, RM2)

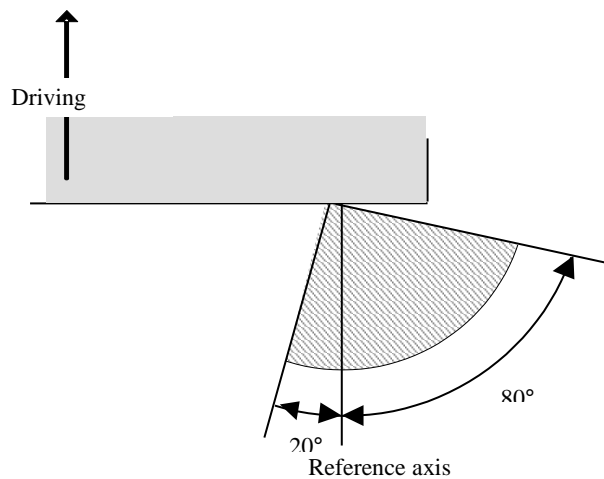


Rear position lamps

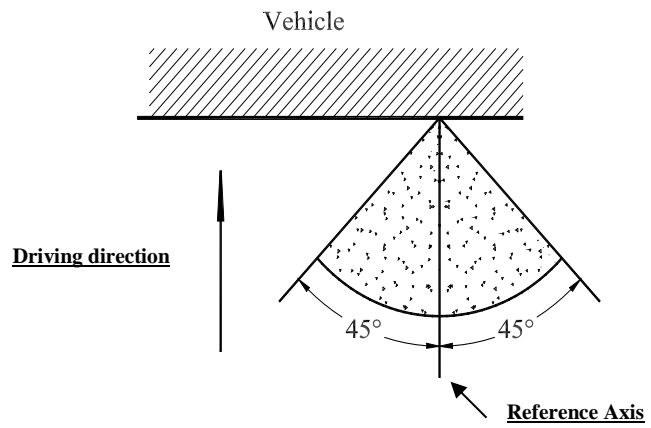
Rear position lamps.
On and above the H plane
for all lamps.
And below the H plane for
all vehicles with mounting
height larger than 750mm



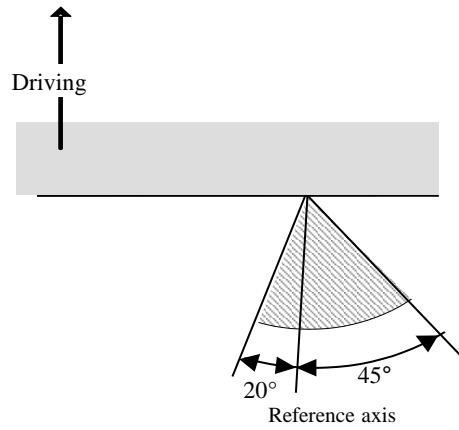
Rear position lamps,
Under the H plane for all
vehicles with a mounting
height less or equal than
750mm



Stop lamps (S1 and S2)
On and above the H plane
for all lamps.
And below the H plane for
all vehicles with mounting
height larger than 750mm



Stop lamps, (S1 and S2),
Under the H plane for
all vehicles with a mounting
height less or equal than
750mm



Stop-lamps (S3)

