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World Forum for Harmonization of Vehicle Regulations

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Item 7 of the provisional agenda

NEW DRAFT REGULATION FOR LIGHT-SIGNALLING DEVICES

Communication by the expert from France*

The text reproduced below was prepared by the expert from France with the aim of simplifying the presentation of the Regulations on signalling lamps. It presents all the characteristics and requirements that are common to the Regulations on such signalling lamps, with a view to supplementing them. It is designed using the same structure as the Regulations. It is based on informal document No. GRE-59-01, distributed during the fifty-ninth session of GRE (see the report, ECE/TRANS/WP.29/GRE/59, para. 44). The parts that are apparently not useful are indicated in brackets, and are the subject of a footnote (*), in bold. Proposed amendments to the current texts appear in bold.

* In accordance with the programme of work of the Inland Transport Committee for the period 2006-2010 (ECE/TRANS/166/Add.1, activity 02.4), the World Forum has the task of drawing up, harmonizing and updating the Regulations in order to improve vehicle performance. This document is submitted in the framework of those terms of reference.

A. PROPOSAL

A.1 PROPOSAL FOR REGULATION No. X (Characteristics of signalling lamps for motor vehicles and trailers)

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1. SCOPE

This Regulation is the basis for the Regulations for motor vehicle (and trailer) signalling lamps. It includes all definitions, methods of measurement and characteristics common to all these Regulations. The individual points specific to each function are still indicated in each Regulation.

2. DEFINITIONS

2.1 “Definition of terms”: 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.

2.2 “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.);**
- (c) The category of the lamp, if any;**
- (d) The variable intensity control, if any.**

A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.

3. APPLICATION FOR APPROVAL

3.1 The application for approval of a type of lamp shall be submitted by the holder of the trade name or mark or by his duly accredited representative. It shall specify, if applicable, as indicated in each Regulation, the categories of the device, and some of its characteristics. If the applicant so desires, it may also 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.

3.2 For each type of lamp the application shall be accompanied by the following:

3.2.1 Drawings, in triplicate, sufficiently detailed to permit identification of the type and if applicable the category of the lamp, and showing geometrically in what position(s) it may be mounted on the vehicle; the axis of observation to be taken as the axis of reference in the tests (horizontal angle $H = 0^\circ$, vertical angle $V = 0^\circ$); and the point to be taken as the centre of reference during the tests. The drawings shall show the position intended for the approval number and the additional symbols in relation to the circle of the approval mark;

- 3.2.2** A brief technical description stating in particular, with the exception of lamps with non-replaceable light sources:
- (a)** The category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those contained in Regulation No. 37; and/or
 - (b)** The light source module specific identification code.
- 3.2.3** For a lamp with variable intensity, a concise description of the variable intensity control. [For a double-intensity lamp, an arrangement diagram and a specification of the characteristics of the system ensuring the two levels of intensity]*;
- 3.2.4** Two samples; if application is made for the approval for devices which are not identical but are symmetrical and suitable for mounting one on the left and one on the right side of the vehicle, the two samples submitted may be identical and be suitable for mounting only on the right or only on the left side of the vehicle. For a variable-intensity lamp, the application shall also be accompanied by variable intensity control or a generator providing the same signal(s).
- 4. MARKINGS**
- Devices submitted for approval shall:
- 4.1** Bear the trade name or mark of the applicant; this marking shall be clearly legible and indelible;
- 4.2** With the exception of lamps with non-replaceable light sources, bear a clearly legible and indelible marking indicating:
- (a)** The category or categories of filament lamp(s) prescribed; and/or
 - (b)** The light source module specific identification code;
- 4.3** Comprise a space of sufficient size for the approval marking and the additional symbols prescribed in paragraph 5.2 below; this space shall be shown in the drawings mentioned in paragraph 3.2.1 above;

* This sentence between brackets [...] is perhaps no longer valid. If it is, then it is necessary to refer to the two intensity levels without referring to their “variability”.

4.4. In case of lamps with:

- (a) An electronic light source control gear; or
- (b) A variable intensity control; and/or
- (c) Non-replaceable light sources; and/or
- (d) Light source module(s);

bear the marking of the rated voltage or range of voltage and rated maximum wattage;

4.5 In the case of lamps with light source module(s), the light source module(s) shall bear:

4.5.1 The trade name or mark of the applicant; this marking must be clearly legible and indelible;

4.5.2 The specific identification code of the module; this marking must be clearly legible and indelible. This specific identification code shall comprise the starting letters “MD” for “MODULE” followed by the approval marking without the circle as prescribed in paragraph 5.2.1.1 below; this identification code shall be shown in the drawings mentioned in paragraph 3.2.1 above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant;

4.5.3 The marking of the rated voltage or range of voltage and rated maximum wattage.

4.6 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.

5. APPROVAL

5.1 General

5.1.1 If the two devices submitted for approval in pursuance of paragraph 3.2.4 above meet the requirements of this Regulation corresponding to their function, approval shall be granted.

- 5.1.2** Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations annexed to the 1958 Agreement, a single international approval mark may be applied. The approval may only be granted if each of these lamps meets the requirements of one or more Regulations. Lamps that do not meet any requirements shall not be grouped, combined or reciprocally incorporated with others.
- 5.1.3** An approval number shall be assigned to each type approved. Its first two digits shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation under which approval has been granted, at the time of issue of the approval. The same Contracting Party shall not assign the same number to another type of device covered by this Regulation.
- 5.1.4** Notice of approval or of extension or refusal of approval of a type of device pursuant to the Regulation shall be communicated to the Parties to the 1958 Agreement which apply the Regulation, by means of a form conforming to the model in Annex 2 to the Regulation under which the device has been approved.
- 5.1.5** Every device conforming to a type approved under this Regulation shall bear in the space referred to in paragraph 4.3, above, and in addition to the markings prescribed in paragraphs 4.1 and 4.2 or 4.4 respectively, an approval mark as described in paragraphs 5.2 and 5.3, below.
- 5.2** Composition of the approval mark
- The approval mark shall consist of:
- 5.2.1** An international approval marking, comprising:
- 5.2.1.1** A circle surrounding the letter “E” followed by the distinguishing number of the country which has granted approval;¹

¹ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Serbia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 for Ireland, 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30 (vacant), 31 for Bosnia and Herzegovina, 32 for Latvia, 33 (vacant), 34 for Bulgaria, 35 (vacant), 36 for Lithuania, 37 for Turkey, 38 (vacant), 39 for Azerbaijan, 40 for The former Yugoslav Republic of Macedonia, 41 (vacant), 42 for the European Community (Approvals are granted by its member States using their respective ECE symbol), 43 for Japan, 44 (vacant), 45 for Australia, 46 for Ukraine, 47 for South Africa, 48 for New Zealand, 49 for Cyprus,

- 5.2.1.2** The approval number prescribed in paragraph 5.1.3, above.
- 5.2.2** The additional symbol (or symbols) indicated in the Regulation under which the approval has been granted.
- 5.2.3** The two digits of the approval number which indicate the series of amendments in force at the time of issue of the approval and, if necessary, the required arrow, may be marked close to the above additional symbols.
- 5.2.4** The marks and symbols referred to in paragraphs 5.2.1 and 5.2.2, above, shall be clearly legible and be indelible even when the device is fitted in the vehicle (see paragraph 5.4).

5.3 Arrangement of the approval mark

5.3.1 Independent lamps

Annex 3, point 1, to this Regulation gives an example of arrangement of the approval mark with the above-mentioned additional symbols.

If different types of lamps complying with the requirements of several Regulations, use the same outer lens having the same or different colour, a single international approval mark may be affixed, consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the lamp, provided that:

- 5.3.1.1** It is visible after their installation (see paragraph 5.4);
- 5.3.1.2** The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and if necessary, the required arrow, shall be marked;

50 for Malta, 51 for the Republic of Korea, 52 for Malaysia, 53 for Thailand, 54 and 55 (vacant), 56 for Montenegro, 57 (vacant) and 58 for Tunisia. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the 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, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

- 5.3.1.3** The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which approval has been granted;
- 5.3.1.4** The main body of the lamp shall include the space described in paragraph 4.3, above, and shall bear the approval mark of the actual function(s);
- 5.3.1.5** Point 4 in Annex 3 to this Regulation gives examples of an approval mark with the above-mentioned additional symbols.
- 5.3.2** Grouped, combined or reciprocally incorporated lamps
- 5.3.2.1** Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be applied consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:
- 5.3.2.1.1** It is visible after the installation of the lamps (see paragraph 5.4);
- 5.3.2.1.2** No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.
- 5.3.2.2** An identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow, shall be marked:
- 5.3.2.2.1** Either on the appropriate light-emitting surface;
- 5.3.2.2.2** Or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified.
- 5.3.2.3** The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by the Regulation under which approval has been granted.
- 5.3.2.4** An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by a Regulation.

5.3.2.5 Annex 3, point 2, to this Regulation gives examples of the arrangement of the approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols.

5.3.3 Lamps reciprocally incorporated with other lamps, of which the lens may also be used for other types of headlamps. The provisions laid down in paragraph 5.3.2, above, are applicable.

5.3.3.1 In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the headlamp, even if it cannot be separated from the lens, also comprises the space described in paragraph 4.3, above, and bears the approval marks of the actual functions. If different types of headlamps comprise the same main body, the latter may bear the different approval marks.

5.3.3.2 Annex 3, point 3, to this Regulation gives examples of approval marks for lamps reciprocally incorporated with a headlamp.

5.4 Position of the approval marking

The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.

6. GENERAL SPECIFICATIONS

6.1 Each device supplied shall conform to the specifications set forth in paragraphs 7, “intensity of light emitted”, and 9, “colour of the emitted light”, below.

6.2 The devices must be so designed and constructed that under normal conditions of use and notwithstanding the vibrations to which they may be subjected in such use, their satisfactory operation remains assured and they retain the characteristics prescribed by this Regulation and the Regulation under which they have been approved.

6.3 For a device equipped with a light source module:

6.3.1 The design of the light source module(s) shall be such that even in darkness the light source module(s) can be fitted in no position but the correct one;

- 6.3.2 The light source module(s) shall be tamperproof.
- 6.4 The limits of the apparent surface in the direction of the reference axis of a light-signalling device shall be determined.
- 6.5 The conditions of point 5.7 of Regulation No. 48 shall be verified.**
- 6.6 The heat resistance test, if applicable (see each Regulation), shall be carried out.

7. INTENSITY OF LIGHT EMITTED

Defined in each Regulation for signalling lamps.

8. TEST PROCEDURES

- 8.1 All measurements, photometric and colorimetric, shall be made:
 - 8.1.1 In the 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 uncoloured or coloured 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;
 - 8.1.2 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;
 - 8.1.3 In the case of a system that uses an electronic light source control gear or a variable intensity control, being part of the lamp² 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;
 - 8.1.4 In the case of a system that uses an electronic light source control gear or a variable intensity control, not being part of the lamp with the voltage declared by the manufacturer applied to the input terminals of the lamp.

** Point should be added to the existing text.

² For the purpose of this Regulation “being part of the lamp” means to be physically included in the lamp body or to be external, separated or not, but supplied by the lamp manufacturer as part of the lamp system.

- 8.2** However, in the case of a lamp operated by a variable intensity control to obtain variable luminous intensity, photometric measurements shall be performed according to the applicant's description.
- 8.3** The test laboratory shall require from the manufacturer the light source control gear or a variable intensity control needed to supply the light source and the applicable functions.
- 8.4** The voltage to be applied to the lamp shall be noted in the communication form in Annex 2 of the Regulation under which the device has been approved.

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted by a lamp is stipulated in each Regulation.

Or:

The colour of the light emitted by a lamp is stipulated in Regulation No. 48.***

The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2 of Annex 4 of each Regulation shall be within the limits of the coordinates prescribed in Annex 5 to this Regulation. Outside this field, no sharp variation of colour shall be observed. These requirements shall also apply within the range of variable luminous intensity produced by variable intensity lamps.

10. MODIFICATIONS OF A TYPE OF LAMP FOR MOTOR VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL

- 10.1** Every modification of a type of lamp shall be notified to the administrative department which approved the type. The department may then either:
- 10.1.1** Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the device still complies with the requirements; or
- 10.1.2** Require a further test report from the technical service responsible for conducting the tests.

*** May be either (bear in mind the consequences for the individual lamp regulations).

- 10.2** Confirmation or refusal of approval, specifying the alterations, shall be communicated by the procedure specified in paragraph 5.1.4, above, to the Parties to the Agreement applying this Regulation.
- 10.3** The Competent Authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Parties to the 1958 Agreement applying the Regulation under which the approval has been granted by means of a communication form conforming to the model in Annex 2 to each Regulation.

11. 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:

- 11.1** Devices approved in accordance with a Regulation shall be so manufactured as to conform to the type approved and to meet the requirements set forth in paragraphs 7, "Intensity of Light Emitted", and 9, "Colour of Light Emitted", of the Regulation under which they have been approved;
- 11.2** The minimum requirements for conformity of production control procedures set forth in Annex 6 to this Regulation shall be complied with;
- 11.3** The minimum requirements for sampling by an inspector set forth in Annex 7 to this Regulation shall be complied with;
- 11.4** 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.

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

- 12.1** The approval granted in respect of a device pursuant to a Regulation may be withdrawn if the foregoing requirements are not met;
- 12.2** If a Contracting Party to the Agreement which applies a Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in Annex 2 to each Regulation.

13. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a device 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 applying this Regulation by means of a communication form conforming to the model in Annex 2 to each Regulation.

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS

The Parties to the 1958 Agreement which apply a Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, or the definitive discontinuation of production issued in other countries, are to be sent.

Annexes 1 and 2

Not applicable

Annex 3

ARRANGEMENT OF APPROVAL MARKS

1. MARKING OF INDEPENDENT LAMPS

See Annex 3, point 1, of each Regulation.

Note: The approval number and the additional symbols shall be placed close to the circle and either above or below the letter “E”, or to the right or left of that letter. The digits of the approval 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.

2. SIMPLIFIED MARKING OF GROUPED, COMBINED OR RECIPROCALLY INCORPORATED LAMPS WHEN TWO OR MORE LAMPS ARE PART OF THE SAME ASSEMBLY


The vertical and horizontal lines schematize the shape of the light-signalling device. These are not part of the approval mark.

2.1 Devices in rear


Model A

	IA 02	2b	R2 → 02
	F2 00	AR	00 S2 02

Model B

		IA	2b	R2	
		02	→	→	
			01	02	
		F2	AR	S2	
		00	00	02	
		3333			
					

Model C

IA	2b	R2			
02	→	→			
	01	02			
F2	AR	S2			
00	00	02			
3333					
					
→					

Note: These three examples of approval marks (models A, B and C) represent three possible variables for the marking of a lighting device when two or more lamps are part of the same assembly of grouped, combined or reciprocally incorporated lamps.

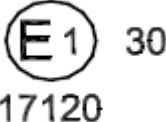
They indicate that the device was approved in the Netherlands (E4) under approval number 3333 and comprises:

- (a) A reflex-reflector of class 1A approved in accordance with the 02 series of amendments to Regulation No. 3;

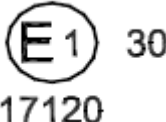
- (b) **A rear direction indicator lamp with variable luminous intensity (category 2b) approved in accordance with the 01 series of amendments to Regulation No. 6;**
- (c) **A red rear position lamp with variable luminous intensity (R2) approved in accordance with the 02 series of amendments to Regulation No. 7;**
- (d) **A rear fog lamp with variable luminous intensity (F2) approved in accordance with Regulation No. 38 in its original version;**
- (e) **A reversing lamp (AR) approved in accordance with Regulation No. 23 in its original version;**
- (f) **A stop-lamp with variable luminous intensity (S2) approved in accordance with the 02 series of amendments to Regulation No. 7.**

2.2 Devices in front


Model D

					
	02 A →	02 HCR ↔	02 B →	00 RL	01 1a

Model E

	02 A 02 HCR 02 B 00 RL 01 1a → ↔			
				


Model F

<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border: 1px dashed black; text-align: center;">A 02 →</td> <td style="border: 1px dashed black; text-align: center;">HCR 02 ↔</td> <td style="border: 1px dashed black; text-align: center;">K 00</td> <td style="border: 1px dashed black; text-align: center;">R L 00</td> <td style="border: 1px dashed black; text-align: center;">1a 01</td> </tr> </table>	A 02 →	HCR 02 ↔	K 00	R L 00	1a 01				
A 02 →	HCR 02 ↔	K 00	R L 00	1a 01					
 30 17120									

Note: These three examples of approval marks above, models D, E and F, correspond to a lighting device approved in Germany (E1) under approval number 17120, and incorporating:

- (a) **A front position lamp** (A) approved in accordance with the 02 series of amendments to Regulation No. 7;
- (b) **A headlamp** (HCR) with a passing beam designed for right-hand and left-hand traffic and a driving beam with a maximum intensity comprised between 86,250 and 101,250 candelas (indicated by the figure 30), approved in accordance with the 02 series of amendments to Regulation No. 20;
- (c) **A front direction indicator lamp** (of category 1a) approved in accordance with the 01 series of amendments to Regulation No. 6;
- (d) **Daytime running lights** (RL) approved in accordance with the 00 series of amendments to Regulation No. 87;
- (e) **A front fog lamp** (B) approved in accordance with the 02 series of amendments to Regulation No. 19 in models D and E;
- (f) **A cornering lamp** (K) approved in accordance with the 00 series of amendments to Regulation No. 119 in model F.

3. MARKING OF A LAMP RECIPROCALLY INCORPORATED WITH A HEADLAMP

30 
 1a HCR CR
 01 ← 04 → 01

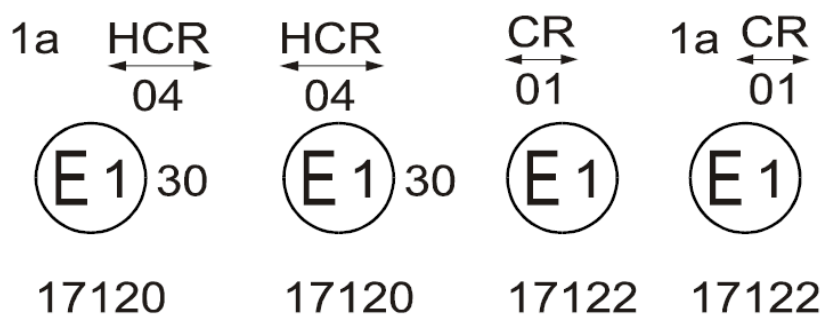
17120

17122

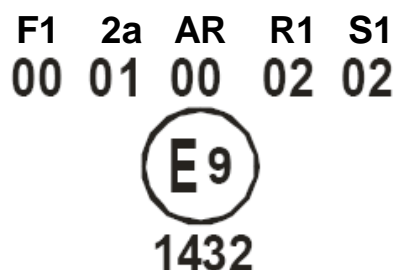
The above example corresponds to the marking of a lens intended to be used in different types of headlamps, namely either:

- (a) A headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam with a maximum intensity comprised between 86,250 and 101,250 candelas (indicated by the number 30), approved in Germany (E1) in accordance with the requirements of Regulation No. 8 as amended by the 04 series of amendments; which is reciprocally incorporated with a front direction indicator (category 1a) approved in accordance with the 01 series of amendments to Regulation No. 6; or
- (b) A headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam, approved in Germany (E1) in accordance with the requirements of Regulation No. 1 as amended by the 01 series of amendments, which is reciprocally incorporated with the same front direction indicator as above; or even
- (c) Either of the above-mentioned headlamps approved as a single lamp.

The main body of the headlamp shall bear the only valid approval number, for instance:



4. MARKING OF INDEPENDENT LAMPS USING THE SAME LENS



The above example corresponds to the marking of a lens intended to be used in different types of lamps. The approval marks indicate that the device was approved in Spain (E9) under approval number 1432 and comprises:

- (a) **A rear fog lamp** (F) of category F1 (steady luminous intensity) approved in accordance with Regulation No. 38 in its original version;
- (b) **A rear direction indicator lamp** of category 2a (steady luminous intensity) approved in accordance with the 01 series of amendments to Regulation No. 6;
- (c) **A reversing lamp** (AR) approved in accordance with Regulation No. 23 in its original version;
- (d) **A red rear position lamp** of category R1 (steady luminous intensity) approved in accordance with the 02 series of amendments to Regulation No. 7;
- (e) **A stop-lamp with one level of illumination** of category S1 (steady luminous intensity) approved in accordance with the 02 series of amendments to Regulation No. 7.

5. MARKING OF LIGHT SOURCE MODULES

MD E3 17325

The light source module bearing the identification code shown above has been approved together with a lamp approved in Italy (E3) under approval number 17325.

Annex 4

PHOTOMETRIC MEASUREMENTS

1. MEASUREMENT METHODS

- 1.1 During photometric measurements, stray reflections shall be avoided by appropriate masking.
- 1.2 In case the results of measurements should be challenged, measurements shall be carried out 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 angular aperture of the receiver viewed from the reference centre of the light is comprised between 10' and 1 degree;
- 1.2.3 The intensity requirement for a particular direction of observation shall be deemed to be satisfied if that requirement is met 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 of the field of the reference axes specified by the manufacturer.

2. PHOTOMETRIC MEASUREMENT OF LAMPS

- 2.1 For any lamp except those equipped with filament lamp(s), the luminous intensities measured after one minute and after 30 minutes of operation:
- (a) In flashing mode ($f = 1.5$ Hz, duty factor 50%) for direction indicator lamps;
- (b) In steady mode for other lamps;
- shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated by applying at each test point the ratio of luminous intensity measured in HV after one minute and after 30 minutes of operation, as described above.
- 2.2 The photometric performance of lamps incorporating several light sources shall be checked:

2.2.1 For lamps equipped with non-replaceable light sources (filament lamps and other):

with the light sources present in the lamp, in accordance with the relevant subparagraph of paragraph 8.1. of this Regulation;

2.2.2 For lamps equipped with replaceable filament lamps:

with lamps supplied with 6.75 V, 13.5 V or 28.0 V.

The luminous intensity values produced shall then be corrected. 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).

The actual luminous fluxes of each filament lamp used shall not deviate more than $\pm 5\%$ from the mean value. Alternatively 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.

2.3 In any event, all light sources connected in series shall be considered as a single light source.

Annex 5

COLOUR OF LIGHTS

Trichromatic coordinates:

1. From the “amber” zone:

Limit towards green: $y \leq x - 120$

Limit towards red: $y \geq 0,390$

Limit towards white: $y \geq 0,790 - 0,670 x$

2. From the “red” zone:

Limit towards yellow: $y \leq 0,335$

Limit towards purple: $y \geq 0,980 - x$

3. From the “white” zone:

Limit towards blue: $x \geq 0,310$

Limit towards yellow: $x \leq 0,500$

Limit towards green: $y \leq 0,150 + 0,640 x$

Limit towards green: $y \leq 0,440$

Limit towards purple: $y \geq 0,050 + 0,750 x$

Limit towards red: $y \geq 0,382$

For checking these colorimetric characteristics, the test procedure described in paragraph 8.1 of this Regulation shall be applied.

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, in accordance with the relevant subparagraph of paragraph 8.1. of this Regulation.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION CONTROL PROCEDURES

1. GENERAL

- 1.1 The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation and the Regulation under which the lamp has been approved.
- 1.2 With respect to photometric performances, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random according to point 8 of this Regulation:
- 1.2.1 No measured value deviates unfavourably by more than 20% from the values prescribed in the Regulation under which the lamp has been approved;
- 1.2.2 If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.
- 1.3 The chromaticity coordinates shall be complied with when tested under conditions of point 8 of this Regulation.

2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY THE MANUFACTURER

For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation and the Regulation under which the lamp has been approved.

If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.

2.1 Nature of tests

Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.

2.2 Methods used in tests

- 2.2.1 Tests shall generally be carried out in accordance with the methods set out in this Regulation.

2.2.2 In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.

2.2.3 The application of paragraphs 2.2.1 and 2.2.2 requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.

2.2.4 In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.

2.3 **Nature of sampling**

Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.

The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.

2.4 **Measured and recorded photometric characteristics**

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4, and the chromaticity coordinates listed in Annex 5, provided for in the Regulation and the Regulation under which it has been approved.

2.5 **Criteria governing acceptability**

The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 11.1 of this Regulation.

The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with Annex 7 (first sampling) would be 0.95.

Annex 7**MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR****1. GENERAL**

1.1 The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation and the Regulation under which the lamp has been approved, if any, if the differences do not exceed inevitable manufacturing deviations.

1.2 With respect to photometric performances, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random according to point 8 of this Regulation:

1.2.1 No measured value deviates unfavourably by more than 20% from the values prescribed in the Regulation under which it has been approved;

1.2.2 If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp;

1.2.3 Lamps with apparent defects are disregarded.

1.3 The chromaticity coordinates shall be complied with when tested under conditions of point 8 of this Regulation.

2. FIRST SAMPLING

In the first sampling four lamps are selected at random. The first sample of two (the first and third lamps) is marked A, the second sample of two (the second and fourth lamps) is marked B.

2.1 The conformity is not contested

2.1.1 Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps in the unfavourable directions are:

2.1.1.1 Sample A

A1: one lamp	0%
for the other lamp not more than	20%

A2: both lamps more than	0%
but not more than	20%
go to sample B	

2.1.1.2 Sample B

B1: both lamps 0%

2.1.2 or if the conditions of paragraph 1.2.2 for sample A are fulfilled.

2.2 The conformity is contested

2.2.1 Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:

2.2.1.1 Sample A

**A3: one lamp not more than 20%
the other lamp more than 20%
but not more than 30%**

2.2.1.2 Sample B

**B2: in the case of A2
one lamp more than 0%
but not more than 20%
the other lamp not more than 20%**

**B3: in the case of A2
one lamp 0%
the other lamp more than 20%
but not more than 30%**

2.2.2 or if the conditions of paragraph 1.2.2 for sample A are not fulfilled.

2.3 Approval withdrawn

Conformity shall be contested and point 11 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:

2.3.1 Sample A

**A4: one lamp not more than 20%
the other lamp more than 30%**

A5: both lamps more than 20%

2.3.2 Sample B

B4: in the case of A2
 one lamp more than 0%
 but not more than 20%
 the other lamp more than 20%

B5: in the case of A2
 both lamps more than 20%

B6: in the case of A2
 one lamp 0%
 the other lamp more than 30%

2.3.3 or if the conditions of paragraph 1.2.2 for samples A and B are not fulfilled.

3. REPEATED SAMPLING

In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.

3.1 The conformity is not contested

3.1.1 Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps are:

3.1.1.1 Sample C

C1: one lamp 0%
 the other lamp not more than 20%

C2: both lamps more than 0%
 but not more than 20%
 go to sample D

3.1.1.2 Sample D

D1: in the case of C2
 both lamps 0%

3.1.2 or if the conditions of paragraph 1.2.2 for sample C are fulfilled.

3.2 The conformity is contested

3.2.1 Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:

3.2.1.1 Sample D

D2:	in the case of C2	
	for both lamps	0%
	but not more than	20%
	the other lamp not more than	20%

3.2.1.2 or if the conditions of paragraph 1.2.2 for sample C are not fulfilled.

3.3 Approval withdrawn

Conformity shall be contested and point 12 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:

3.3.1 Sample C

C3:	one lamp not more than	20%
	the other lamp more than	20%

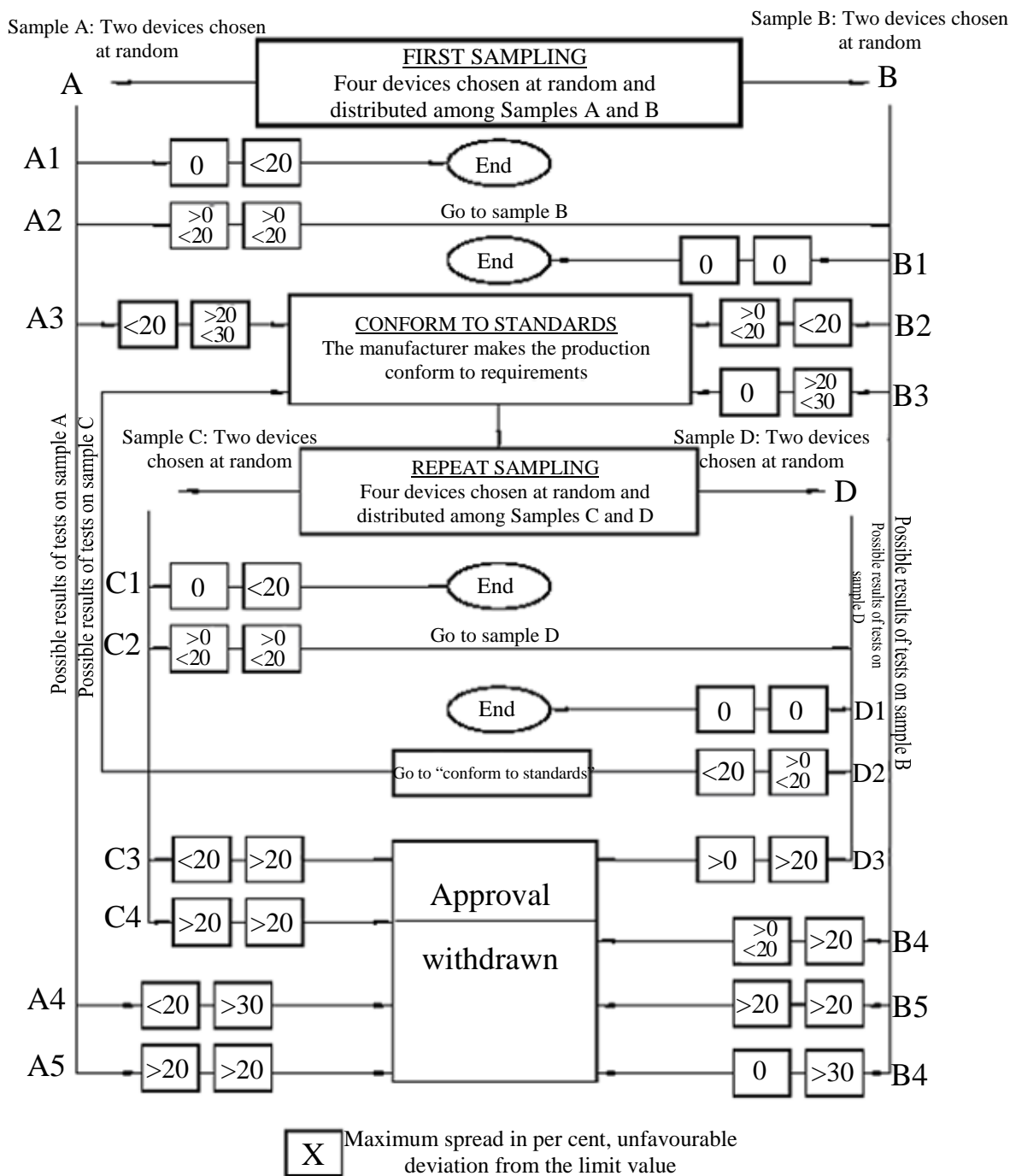
C4:	both lamps more than	20%
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3.3.2 Sample D

D3:	in the case of C2	
	one lamp 0 %, or more than	0%
	the other lamp more than	20%

3.3.3 or if the conditions of paragraph 1.2.2 for samples C and D are not fulfilled.

Figure 1



A.2 PROPOSAL

REGULATION No. 6 - (Direction indicators)

(The text below was drawn up on the basis of Supplement 15 to the 01 series of amendments)

Regulation No. 6

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF DIRECTION INDICATORS
FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS

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ANNEXES

Annex 1: Minimum angles required for light distribution in space of these categories of lamps

Annex 2: Communication

Annex 3: Arrangement of approval marks

Annex 4: Photometric measurements

Annex 5: Colour of lights

Annex 6: Minimum requirements for conformity of production control procedures

Annex 7: Minimum requirements for sampling by an inspector

1. SCOPE

This Regulation applies to direction indicators for vehicles of categories L, M, N, O, and T.¹

2. DEFINITIONS

For the purposes of this Regulation:

2.1 “Direction indicator” means a device mounted on a motor vehicle or trailer which, when operated by the driver, signals the latter’s intention to change the direction in which the vehicle is proceeding. [The present Regulation applies solely to fixed-position flashing light devices whose flashing is obtained by the intermittent supply of electric current to the lamp.]*

~~2.2 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.~~

2.2 “Definition of terms”:²

2.3 “Direction indicators of different types”³

(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.);

(c) the category of direction indicator lamps;

(d) the variable intensity control, if any.

~~A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

* **The sentence in brackets [...] is perhaps no longer valid.**

² See point 2, paragraph 2.1, of Regulation No. X.

³ See point 2, paragraph 2.2, of Regulation No. X.

3. APPLICATION FOR APPROVAL⁴

3.1 An application for approval of a type of direction indicator shall specify the following:

- (a) To which **category** or categories, 1, 1a, 1b, 2a, 2b, 3, 4, 5 or 6, according to Annex 1, the direction indicator belongs;
- (b) If it belongs to category 2, whether it has steady luminous intensity (category 2a) or variable luminous intensity (category 2b);
- (c) If the indicator **may** also be used in an assembly of two lamps of the same category. ~~At the choice of the applicant, it will also 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 direction indicator the application shall be accompanied by the following:~~

~~2.2.1. Drawings, in triplicate, sufficiently detailed to permit identification of the type and category and showing geometrically in what position(s) the direction indicator may be mounted on the vehicle; the axis of observation to be taken as the axis of reference in the tests (horizontal angle $H = 0^\circ$, vertical angle $V = 0^\circ$); and the point to be taken as the centre of reference in the said tests. The drawings shall show the position intended for the approval number and the additional symbols in relation to the circle of the approval mark;~~

~~2.2.2. A brief technical description stating in particular, with the exception of lamps with non-replaceable light sources:~~

~~(a) the category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those contained in Regulation No. 37; and/or~~

~~(b) the light source module specific identification code.~~

~~2.2.3. For a direction indicator of category 2b, a concise description of the variable intensity control, an arrangement diagram and a specification of the characteristics of the system ensuring the two levels of intensity;~~

⁴ See points 3 to 3.2.4 of Regulation No. X, and supplement 3.1 with the following sections.

~~2.2.4. Two samples; if the approval is applied for devices which are not identical but are symmetrical and suitable for mounting one on the left and one on the right side of the vehicle, the two samples submitted may be identical and be suitable for mounting only on the right or only on the left side of the vehicle.~~

~~For a direction indicator of category 2b, the application shall also be accompanied by variable intensity control or a generator providing the same signal(s).~~

4. MARKINGS⁵

~~Devices submitted for approval shall:~~

~~3.1. bear the trade name or mark of the applicant; this marking shall be clearly legible and indelible;~~

~~3.2. with the exception of lamps with non-replaceable light sources, bear a clearly legible and indelible marking indicating:~~

~~(a) the category or categories of filament lamp(s) prescribed; and/or~~

~~(b) the light source module specific identification code.~~

~~3.3. comprise a space of sufficient size for the approval marking and the additional symbols prescribed in paragraph 4.2. below; this space shall be shown in the drawings mentioned in paragraph 2.2.1. above;~~

~~3.4. 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 maximum wattage.~~

~~3.5. in the case of lamps with light source module(s), the light source module(s) shall bear:~~

~~3.5.1. the trade name or mark of the applicant; this marking must be clearly legible and indelible;~~

~~3.5.2. the specific identification code of the module; this marking must be clearly legible and indelible.~~

~~This specific identification code shall comprise the starting letters "MD" for "MODULE" followed by the approval marking without the circle as prescribed in paragraph 4.2.1.1. below; this specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1. above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant.~~

⁵ See points 5 to 5.4 of Regulation No. X.

~~3.5.3. the marking of the rated voltage or range of voltage and rated maximum wattage.~~

~~3.6. 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.~~

5. APPROVAL

5.1 General

5.1.1 ⁶

5.1.2 ⁷

5.1.3 The first two digits of the approval number, “at present 01, corresponding to the 01 series of amendments”. Direction indicators of different categories may be marked with a single approval number when they form one assembly.⁸

5.1.4 ⁹

5.1.5 ¹⁰

5.2 Composition of the approval mark

The approval mark shall consist of:

5.2.1 An international approval marking, comprising:

5.2.2 The following additional symbol (or symbols), indicated in the Regulation under which the lamp has been approved:

5.2.2.1 One or more of the numbers: 1, 1a, 1b, 2a, 2b, 3, 4, 5 or 6, according to whether the device belongs to one or more categories 1, 1a, 1b, 2a, 2b, 3, 4, 5 or 6 for which approval is sought in accordance with paragraph 3.1;

⁶ See point 5.1.1 of Regulation No. X.

⁷ See point 5.1.2 of Regulation No. X.

⁸ See point 5.1.3 of Regulation No. X.

⁹ See point 5.1.4 of Regulation No. X.

¹⁰ See point 5.1.5 of Regulation No. X.

- 5.2.2.2 On devices which cannot be mounted on either side of the vehicle indiscriminately, a horizontal arrow showing in which position the device is to be mounted (the arrow shall be directed outwards from the vehicle in the case of devices of categories 1, 1a, 1b, 2a and 2b and towards the front of the vehicle in the case of devices of categories 3, 4, 5 and 6). In addition, for devices of category 6 an indication “R” or “L” shall in this case be shown on the device, indicating the right or left side of the vehicle.
- 5.2.2.3 On devices which may be used as part of an assembly of two lamps, the additional letter “D” to the right side of the symbol mentioned in paragraph 5.2.2.1.;
- 5.2.2.4 On devices with reduced light distribution in conformity to paragraph 2.1.3. of Annex 4 to this Regulation a vertical arrow starting from a horizontal segment and directed downwards.

- ~~4.2.2.5. The two digits of the approval number which indicate the series of amendments in force at the time of issue of the approval and, if necessary, the required arrow may be marked close to the above additional symbols;~~
- ~~4.2.2.6. The marks and symbols referred to in paragraphs 4.2.1. and 4.2.2. above shall be clearly legible and be indelible even when the device is fitted in the vehicle.~~

~~4.3. Arrangement of the approval mark~~

~~4.3.1. Independent lamps~~

~~Annex 3, Figure 1, to this Regulation gives an example of arrangement of the approval mark with the above mentioned additional symbols.~~

~~If different types of lamps complying with the requirements of several Regulations, use the same outer lens having the same or different colour, a single international approval mark may be affixed, consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the lamp, provided that:~~

- ~~4.3.1.1. It is visible after their installation.~~
- ~~4.3.1.2. The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and if necessary, the required arrow shall be marked.~~

- 4.3.1.3. ~~The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which approval has been granted.~~
- 4.3.1.4. ~~The main body of the lamp shall include the space described in paragraph 3.3. above and shall bear the approval mark of the actual function(s).~~
- 4.3.1.5. ~~Figure 4 in Annex 3 to this Regulation gives examples of an approval mark with the above-mentioned additional symbols.~~
- 4.3.2. ~~Grouped, combined or reciprocally incorporated lamps~~
- 4.3.2.1. ~~Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be applied consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:~~
- 4.3.2.1.1. ~~it is visible after the installation of the lamps;~~
- 4.3.2.1.2. ~~no part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~
- 4.3.2.2. ~~an identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow shall be marked:~~
- 4.3.2.2.1. ~~either on the appropriate light-emitting surface;~~
- 4.3.2.2.2. ~~or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified.~~
- 4.3.2.3. ~~The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by the Regulation under which approval has been granted.~~
- 4.3.2.4. ~~An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~

~~4.3.2.5. Annex 3, Figure 2, to this Regulation gives examples of the arrangement of the approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols.~~

~~4.3.3. Lamps reciprocally incorporated with other lamps, of which the lens may also be used for other types of headlamps~~

~~The provisions laid down in paragraph 4.3.2. above are applicable.~~

~~4.3.3.1. In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the headlamp, even if it cannot be separated from the lens, also comprises the space described in paragraph 3.3. above and bears the approval marks of the actual functions.~~

~~If different types of headlamps comprise the same main body, the latter may bear the different approval marks.~~

~~4.3.3.2. Annex 3, Figure 3, to this Regulation gives examples of approval marks for lamps reciprocally incorporated with a headlamp.~~

~~4.4. The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.~~

6. GENERAL SPECIFICATIONS¹¹

In case of failure of the variable intensity control of a direction indicator of category 2b emitting more than the maximum value of category 2a, requirements of steady luminous intensity of category 2a shall be fulfilled automatically.

7. INTENSITY OF LIGHT EMITTED

7.1 The light emitted by each of the two devices supplied must be in the case of direction indicators of categories 1, 1a, 1b, 2a, 2b, 3 or 4 in the reference axes, in the case of direction indicators of categories 5 or 6 in direction A according to Annex 1 of not less than the minimum intensity and of not more than the maximum intensity specified below.

¹¹ See point 6 of Regulation No. X, and supplement it with the following paragraph.

Direction indicator of category	Minimum luminous intensity in cd	Maximum luminous intensity in cd when used as		
		Single lamp ¹²	Lamp (single) marked "D" (see paragraph 5.2.2.3) ¹²	Total for the assembly of two lamps (see paragraph 5.2.2.3) ¹²
1	175	700	500	1 000
1a	250	800	600	1 200
1b	400	860	600	1 200
2a (steady)	50	350	250	500
2b (variable)	50	700	500	1 000
3 to the front to the rear	175	700	500	1 000
	50	200	140	280
4 to the front to the rear	175	700	500	1 000
	0.6	200	140	280
5	0.6	200	140	280
6	50	200	140	280

¹² [The total value of maximum intensity for an assembly of two or more lamps is given by multiplying by 1.4 the value prescribed for a single lamp, except for category 2a.] **

This sentence between brackets [...] is perhaps no longer valid. Furthermore, lamps of category 2a are no longer excluded.

When an assembly of two or more lamps having the same function is deemed to be, for the purpose of installation on a vehicle, a "single lamp", this assembly shall comply with the minimum intensity required when one lamp has failed, and, all the lamps together shall not exceed the admissible maximum intensity (last column of the table).

In the case of a single lamp containing more than one light source:

- (a) All light sources which are connected in series are considered to be one light source;
- (b) The lamp shall comply with the minimum intensity required when any one light source has failed. However, for front or rear direction indicator lamps designed for only two light sources, 50% 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;
- (c) When all light sources are illuminated the maximum intensity specified for a single lamp may be exceeded provided that the single lamp is not marked "D" and the maximum intensity specified for an assembly of two or more lamps (last column of the table) is not exceeded.

- 7.2 Outside the reference axis, within the angular fields specified in the arrangement diagrams in Annex 1 to this Regulation, the intensity of the light emitted by each of the two devices supplied must:
- 7.2.1 In each direction corresponding to the points in the relevant table of luminous-intensity distribution reproduced in Annex 4 to this Regulation, be not less than the minimum specified in paragraph 7.1 above multiplied by the percentage specified in the said table for the direction in question;
- 7.2.1.1 In divergence from paragraphs 7.2 and 7.2.1, for categories 4 and 5 direction indicators, to the rear, a minimum value of 0.6 cd is required throughout the fields specified in Annex 1;
- 7.2.2 In no direction within the area from which the indicator lamp is visible, exceed the maximum specified in paragraph 7.1 above;
- 7.2.3 Moreover,
- 7.2.3.1 Throughout the fields defined in the diagrams in Annex 1, the intensity of the light emitted must be not less than 0.7 cd for devices of category 1b, not less than 0.3 cd for devices of categories 1, 1a, 2a, 2b, 3 and 4 towards the front [and for those of category 2b by day; it shall not be less than 0.07 cd for devices of category 2b by night;]***
- 7.2.3.2 For devices of categories 1 and 2b and, to the front, for devices of categories 3 and 4, the intensity of the light emitted outside the zone defined by the measuring points $\pm 10^\circ\text{H}$ and $\pm 10^\circ\text{V}$ (10° -field) must not exceed the following values:

Direction indicators of category	Maximum luminous intensity, in cd, outside the 10° field		
	Single lamp	Lamp (single) marked "D" (see paragraph 5.2.2.3)	Total for the assembly of two lamps (see paragraph 5.2.2.3)
1, 2 b, 3 and 4	400	280	560

Between the boundaries of the 10° -field ($\pm 10^\circ\text{H}$ and $\pm 10^\circ\text{V}$) and the 5° -field ($\pm 5^\circ\text{H}$ and $\pm 5^\circ\text{V}$), the maximum admissible values of the intensities are linearly increased up to the values as defined in paragraph 7.1.

*** These sentences in brackets [...] are perhaps no longer valid. If they are, it is necessary to refer to the "day" and "night" levels in a different manner than by relating to "variability".

- 7.2.3.3 For devices of category 1a and 1b, the intensity of the light emitted outside the zone defined by the measuring points $\pm 15^\circ\text{H}$ and $\pm 15^\circ\text{V}$ (15° -field) shall not exceed the following values:

Direction indicators of category	Maximum luminous intensity, in cd, outside the 15° field		
	Single lamp	Lamp (single) marked "D" (see paragraph 5.2.2.3)	Total for the assembly of two lamps (see paragraph 5.2.2.3)
1a	250	175	350
1b	400	280	560

Between the boundaries of the 15° -field ($\pm 15^\circ\text{H}$ and $\pm 15^\circ\text{V}$) and the 5° -field ($\pm 5^\circ\text{H}$ and $\pm 5^\circ\text{V}$), the maximum values are increased linearly up to the values as defined in paragraph 7.1.

- 7.2.3.4 The provisions of paragraph 2.2 of Annex 4 to this Regulation on local variations of intensity must be observed.

- 7.3 In general the intensities shall be measured with the light source(s) continuously alight.

However, depending on the construction of the device, for example, the use of light-emitting diodes (LED), or the need to take precautions to avoid overheating, it is allowed to measure the lamps in flashing mode. This must be achieved by switching with a frequency of $f = 1.5 \pm 0.5$ Hz with the pulse width greater than 0.3 s, measured at 95% peak light intensity. In the case of replaceable filament lamps, the filament lamps shall be operated at reference luminous flux during on time. In all other cases the voltage as required in paragraph 8.1.1 of Regulation No. X shall be switched with a rise time and fall time shorter than 0.01 s; no overshoot is allowed. In the case of measurements taken in flashing mode the reported luminous intensity shall be represented by the maximum intensity.

- 7.4 In the case of variable intensity devices of category 2b the time that elapses between energizing the light source(s) and the light output measured on the reference axis to reach 90% of the value measured in accordance with paragraph 7.3 above shall be measured for the extreme levels of luminous intensity produced by the direction indicator. The time measured to obtain the lowest luminous intensity shall not exceed the time measured to obtain the highest luminous intensity.

- 7.5 The variable intensity control shall not generate signals which cause luminous intensities:

- 7.5.1 Outside the range specified in paragraph 7.1. above; and

- 7.5.2 Exceeding the category 2a maximum specified in paragraph 7.1:
- [(a) For systems depending only on daytime and night time conditions: under night time conditions;]***
- (b) For other systems: under reference conditions as demonstrated by the manufacturer.¹³
- 7.6 Annex 4, referred to in paragraph 7.2.1, above, gives particulars of the measurement methods to be used.

8. TEST PROCEDURES¹⁴

- 7.1. ~~All measurements, photometric and colorimetric, shall be made:~~
- 7.1.1. ~~In the 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 uncoloured or coloured 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,~~
- 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.~~
- 7.1.3. ~~In the case of a system that uses an electronic light source control gear or a variable intensity control, being part of the lamp¹/ 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.~~
- 7.1.4. ~~In the case of a system that uses an electronic light source control gear or a variable intensity control, not being part of the lamp with the voltage declared by the manufacturer applied to the input terminals of the lamp.~~
- 7.2. ~~However in the case of a direction indicator of category 2b operated by a variable intensity control to obtain variable luminous intensity, photometric measurements shall be performed according to the applicant's description.~~

*** These sentences in brackets [...] are perhaps no longer valid. If they are, it is necessary to refer to the “day” and “night” levels in a different manner than by relating to “variability”.

¹³ 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.

¹⁴ See point 8 of Regulation No. X.

~~7.3. The test laboratory shall require from the manufacturer the light source control gear or a variable intensity control needed to supply the light source and the applicable functions.~~

~~7.4. The voltage to be applied to the lamp shall be noted in the communication form in Annex 2 of this Regulation.~~

~~7.5. The limits of the apparent surface in the direction of the reference axis of a light signalling device shall be determined.~~

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted by a direction indicator shall be: amber.**¹⁵**

These requirements shall also apply within the range of variable luminous intensity produced by direction indicators of category 2b.

10. MODIFICATIONS OF A TYPE OF DIRECTION INDICATOR FOR MOTOR VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL¹⁶

~~9.1. Every modification of a type of direction indicator shall be notified to the administrative department which approved the type. The department may then either:~~

~~9.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the device still complies with the requirements; or~~

~~9.1.2. Require a further test report from the technical service responsible for conducting the tests.~~

~~9.2. Confirmation or refusal of approval, specifying the alterations, shall be communicated by the procedure specified in paragraph 4.1.4. above to the Parties to the Agreement applying this Regulation.~~

~~9.3. The Competent Authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in Annex 2 to this Regulation.~~

****** To be deleted if Regulation No. X refers to Regulation No. 48.**

¹⁵ See point 9 of Regulation No. X, and supplement it with the last sentence, with the following stipulation concerning lamps with variable luminous intensities.

¹⁶ See point 10 of Regulation No. X.

11. CONFORMITY OF PRODUCTION¹⁷

~~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. Direction indicators approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6. and 8. above.~~
- ~~10.2. The minimum requirements for conformity of production control procedures set forth in Annex 6 to this Regulation shall be complied with.~~
- ~~10.3. The minimum requirements for sampling by an inspector set forth in Annex 7 to this Regulation shall be complied with.~~
- ~~10.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION¹⁸

- ~~11.1. The approval granted in respect of a device pursuant to this Regulation may be withdrawn if the foregoing requirements are not met.~~
- ~~11.2. If a Contracting Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in Annex 2 to this Regulation.~~

13. PRODUCTION DEFINITELY DISCONTINUED¹⁹

~~If the holder of the approval completely ceases to manufacture a device 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 applying this Regulation by means of a communication form conforming to the model in Annex 2 to this Regulation.~~

¹⁷ See point 11 of Regulation No. X.

¹⁸ See point 12 of Regulation No. X.

¹⁹ See point 13 of Regulation No. X.

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS²⁰

~~The Parties to the 1958 Agreement which apply this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.~~

15. TRANSITIONAL PROVISIONS

- 15.1** As from the official date of entry into force of Supplement 8 to the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by Supplement 8 to the 01 series of amendments.
- 15.2** As from 24 months after the date of entry into force, Contracting Parties applying this Regulation shall grant ECE approvals only if the type of direction indicator to be approved meets the requirements of this Regulation as amended by Supplement 8 to the 01 series of amendments.
- 15.3** Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the preceding series of amendments to this Regulation.
- 15.4** Contracting Parties applying this Regulation shall continue to grant approvals to those types of direction indicators which comply with the requirements of this Regulation as amended by the preceding series of amendments during the 12 months period which follows the date of entry into force of Supplement 8 to the 01 series of amendments.
- 15.5** ECE approvals granted under this Regulation earlier than 12 months after the date of entry into force and all extensions of approvals, including those to a preceding series of amendments to this Regulation granted subsequently, shall remain valid indefinitely. When the type of direction indicator approved to the preceding series of amendments meets the requirements of this Regulation as amended by Supplement 8 to the 01 series of amendments, the Contracting Party which granted the approval shall notify the other Contracting Parties applying this Regulation thereof.
- 15.6** No Contracting Party applying this Regulation shall refuse a type of direction indicator approved to Supplement 8 to the 01 series of amendments to this Regulation.

²⁰ See point 14 of Regulation No. X.

- 15.7** Until 36 months after the date of entry into force of Supplement 8 to the 01 series of amendments to this Regulation, no Contracting Party applying this Regulation shall refuse a type of direction indicator approved to the preceding series of amendments to this Regulation.
- 15.8** Starting 36 months after the date of entry into force of Supplement 8 to the 01 series of amendments to this Regulation, Contracting Parties applying this Regulation may refuse the sale of a type of direction indicator which does not meet the requirements of Supplement 8 to the 01 series of amendments to this Regulation unless the direction indicator is intended as a replacement for fitting on vehicles in use.
- 15.9** Contracting Parties applying this Regulation shall continue to issue approvals for direction indicators on the basis of any previous series of amendments, provided that the direction indicators are intended as replacements for fitting to vehicles in use.
- 15.10** As from the official date of entry into force of Supplement 8 to the 01 series of amendments, no Contracting Party applying this Regulation shall prohibit the fitting on a vehicle of a direction indicator approved under this Regulation as amended by Supplement 8 to the 01 series of amendments.
- 15.11** Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of a direction indicator 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 8 to the 01 series of amendments.
- 15.12** Upon the expiration of a period of 48 months after the date of entry into force of Supplement 8 to the 01 series of amendments, Contracting Parties applying this Regulation may prohibit the fitting of a direction indicator which does not meet the requirements of this Regulation as amended by Supplement 8 to the 01 series of amendments on a new vehicle for which national type or individual approval was granted more than 24 months after the date of entry into force of Supplement 8 to the 01 series of amendments to this Regulation.
- 15.13** Upon the expiration of a period of 60 months after the date of entry into force, Contracting Parties applying this Regulation may prohibit the fitting of a direction indicator which does not meet the requirements of this Regulation as amended by Supplement 8 to the 01 series of amendments on a new vehicle first registered more than 60 months after the date of entry into force of Supplement 8 to the 01 series of amendments to this Regulation.

Annex 1

~~CATEGORIES OF DIRECTION INDICATORS:~~

MINIMUM ANGLES REQUIRED FOR LIGHT DISTRIBUTION IN SPACE
OF THESE CATEGORIES OF DIRECTION INDICATORS¹

1. MINIMUM VERTICAL ANGLES FOR LIGHT DISTRIBUTION IN SPACE:

In all cases, the minimum vertical angles of light distribution in space of direction indicator lamps are 15° above and 15° below the horizontal, except:

- (a) Direction indicator lamps with a mounting height of equal to or less than 750 mm above the ground, for which they are 15° above and 5° below the horizontal;
- (b) Direction indicator lamps of Category 6, for which they are 30° above and 5° below the horizontal.

2. MINIMUM HORIZONTAL ANGLES OF LIGHT DISTRIBUTION IN SPACE:

Categories 1, 1a and 1b:

Direction indicators for the front of the vehicle

Category 1:

For use at a distance not less than 40 mm from the headlamp;

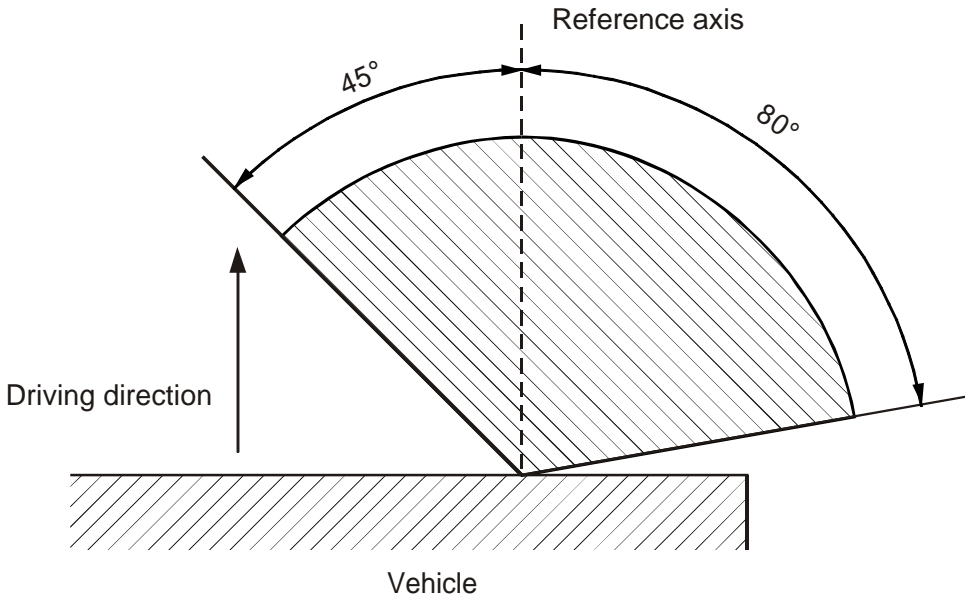
Category 1a:

For use at a distance greater than 20 mm but less than 40 mm from the headlamp;

Category 1b:

For use at a distance less than 20 mm from the headlamp.

¹ The angles shown in these arrangements are correct for devices to be mounted on the right side of the vehicle. The arrows in these diagrams point towards the front of the vehicle.



Categories 2a and 2b:

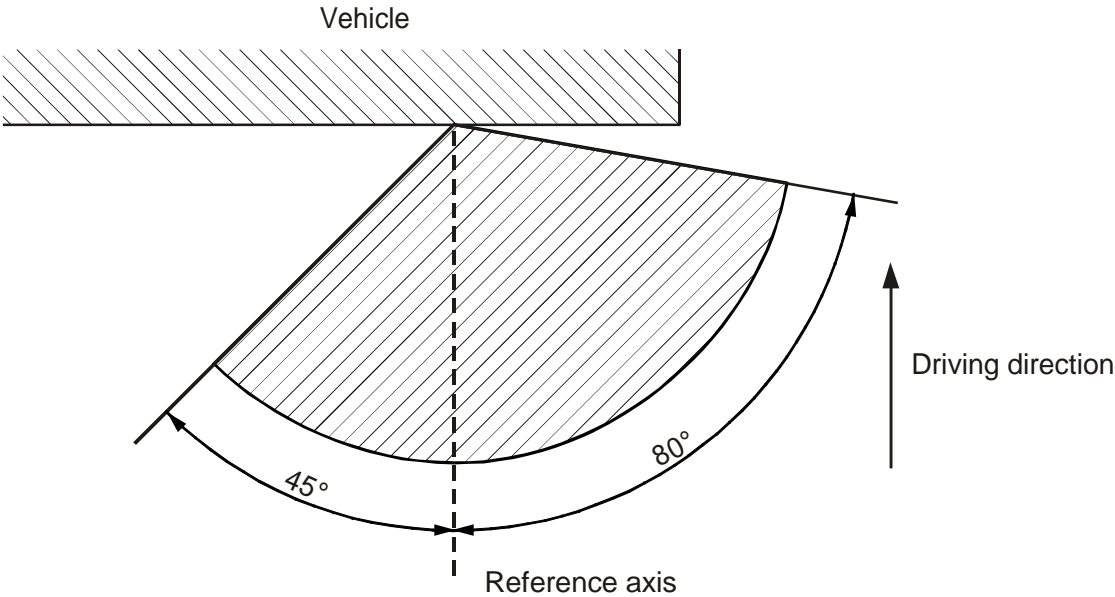
Direction indicators for the rear of the vehicle

Category 2a:

Rear direction indicator lamps with steady luminous intensity;

Category 2b:

Rear direction indicator lamps with variable luminous intensity.

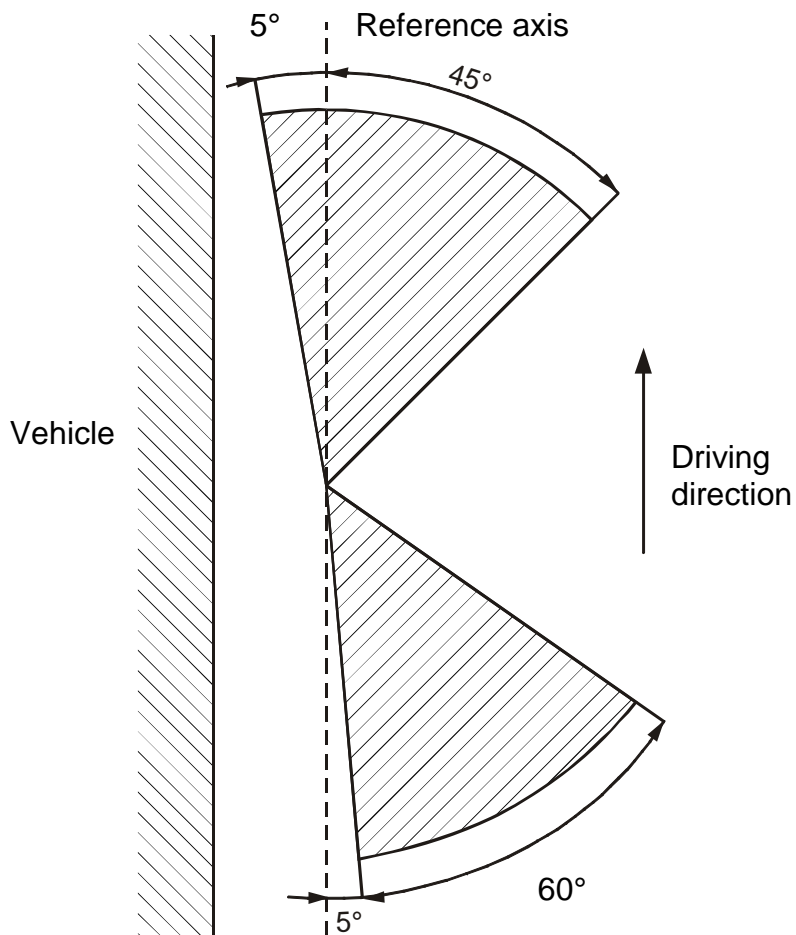


Categories 3 and 4:

Front-side direction indicators

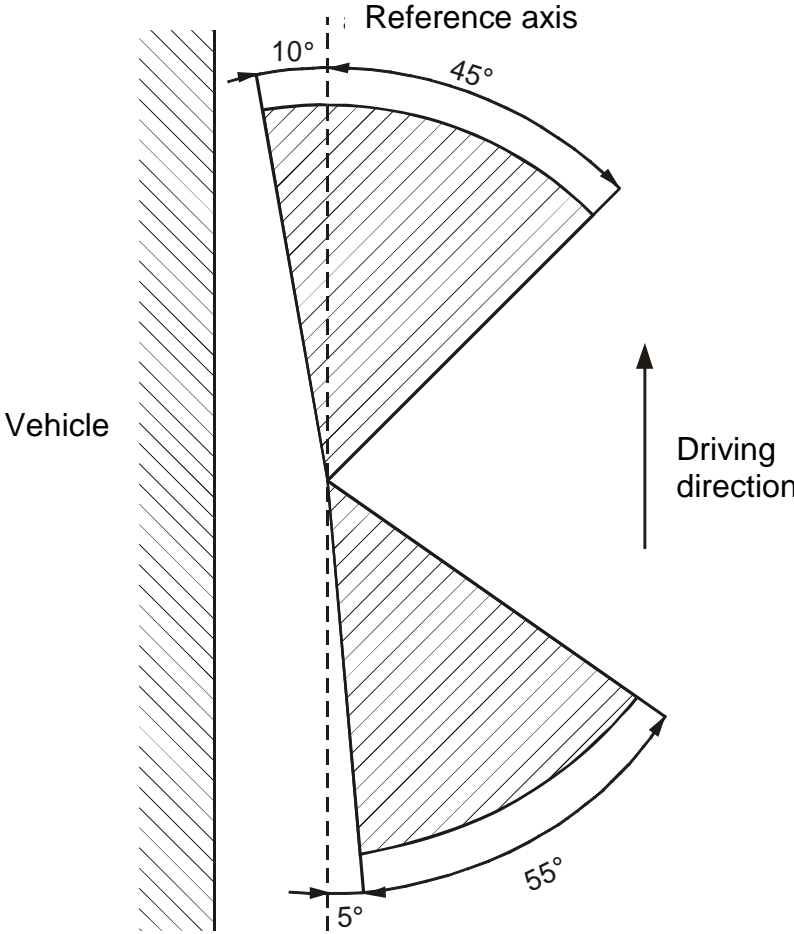
Category 3:

Front-side direction indicators for use on a vehicle equipped with this category of direction indicator only;



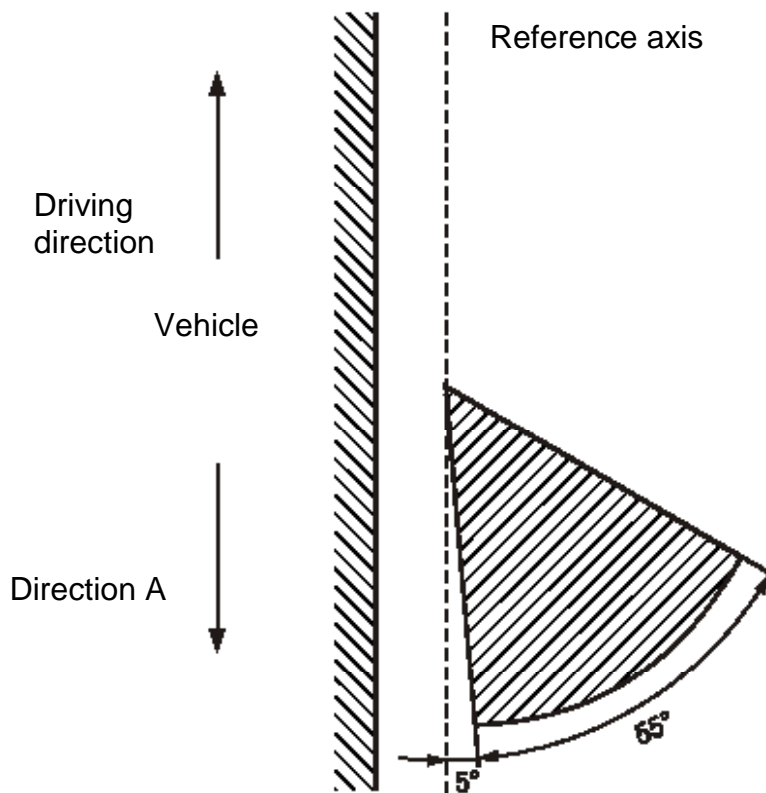
Category 4:

Front-side direction indicators for use on a vehicle also equipped with category 2a or 2b direction indicators.



Categories 5 and 6:

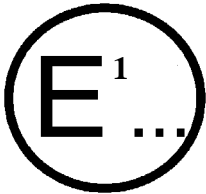
Supplementary side direction indicators for use on a vehicle also equipped with categories 1, 1a or 1b and 2a or 2b direction indicators.



Annex 2

COMMUNICATION

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



issued by: Name of administration:

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

concerning:²

- APPROVAL GRANTED
- APPROVAL EXTENDED
- APPROVAL REFUSED
- APPROVAL WITHDRAWN
- PRODUCTION DEFINITELY DISCONTINUED

of a type of direction indicator pursuant to Regulation No. 6

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 test report issued by that service:

¹ Distinguishing number of the country which has issued/extended/refused/withdrawn approval (see the provisions of the Regulation relating to approval), **according to the list in note ¹ of point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

8. Number of test report issued by that service:

9. Concise description:

Category: 1, 1a, 1b, 2a, 2b, 3, 4, 5, 6²

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

Light source module: yes/no²

Light source module specific identification code:

Voltage and wattage:

Variable luminous intensity: yes/no²

Application of an electronic light source(s) 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):

Geometrical **conditions** of installation and relating variations, if any:

Mounting height limited to 750 mm above the ground: yes/no²

10. Position of the approval mark:

11. Remarks (if any):

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

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

14. Place:

15. Date:

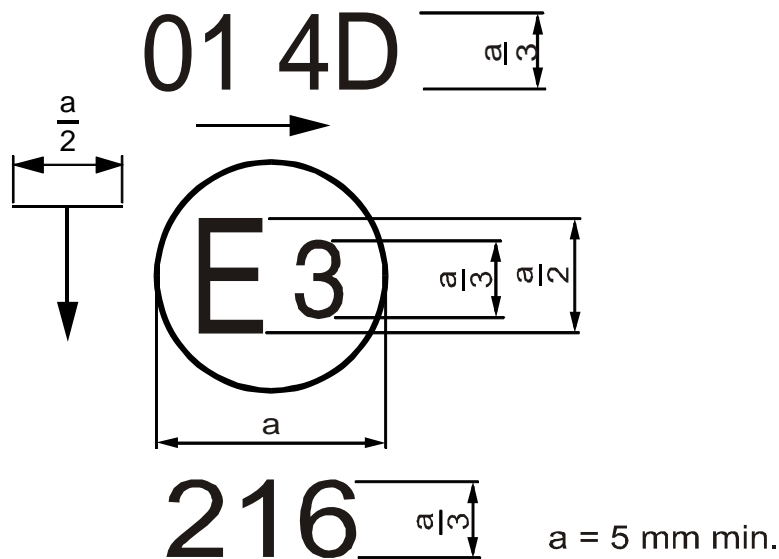
16. Signature:

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 3

ARRANGEMENT OF THE APPROVAL MARK

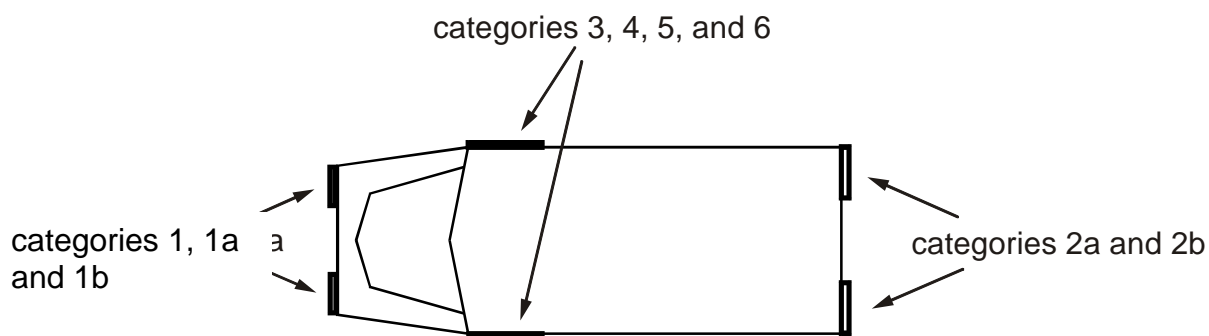
1. Marking of an independent lamp



The device bearing the approval marking shown above is a category-4 device (front-side direction indicator) approved in Italy (E3) under No. 216, which may also be used in an assembly of two lamps. The horizontal arrow shows in what position this device, which cannot be mounted on either side of the vehicle indiscriminately, is to be mounted. The arrow points towards the front of the vehicle. The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height of equal to or less than 750 mm from the ground for this device.

The number mentioned close to the symbol “4D” indicates that the approval was granted according to the requirements of Regulation No. 6 as amended by the 01 series of amendments.

The direction in which the arrows on the approval mark point, according to the category of the device, is shown below:



Note:¹ The approval number and the additional symbols shall be placed close to the circle and either above or below the letter "E", or to the right or left of that letter. The digits of the approval 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.

2. Simplified marking of grouped, combined or reciprocally incorporated lamps when two or more lamps are part of the same assembly²
3. Marking of a lamp reciprocally incorporated with a headlamp³
4. Marking of independent lamps using the same lens⁴
5. Marking of light source modules⁵

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

³ See point 3 of annex 3 of Regulation No. X.

⁴ See point 4 of annex 3 of Regulation No. X.

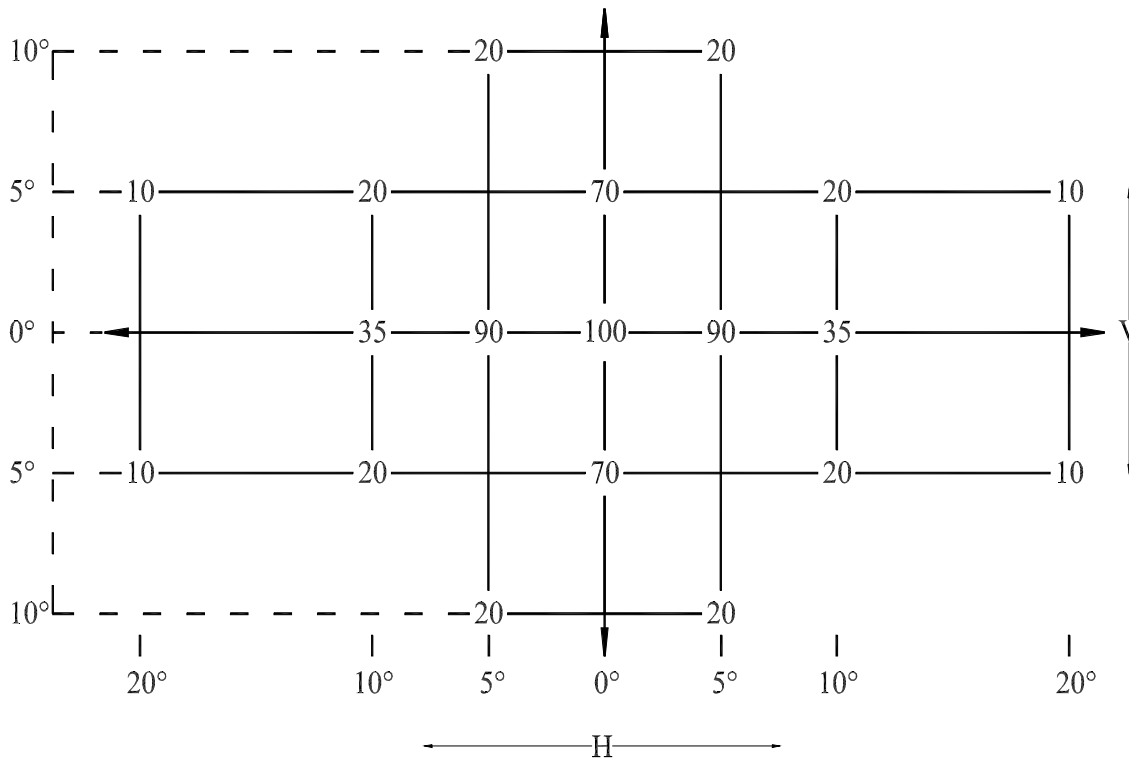
⁵ See point 5 of annex 3 of Regulation No. X.

Annex 4

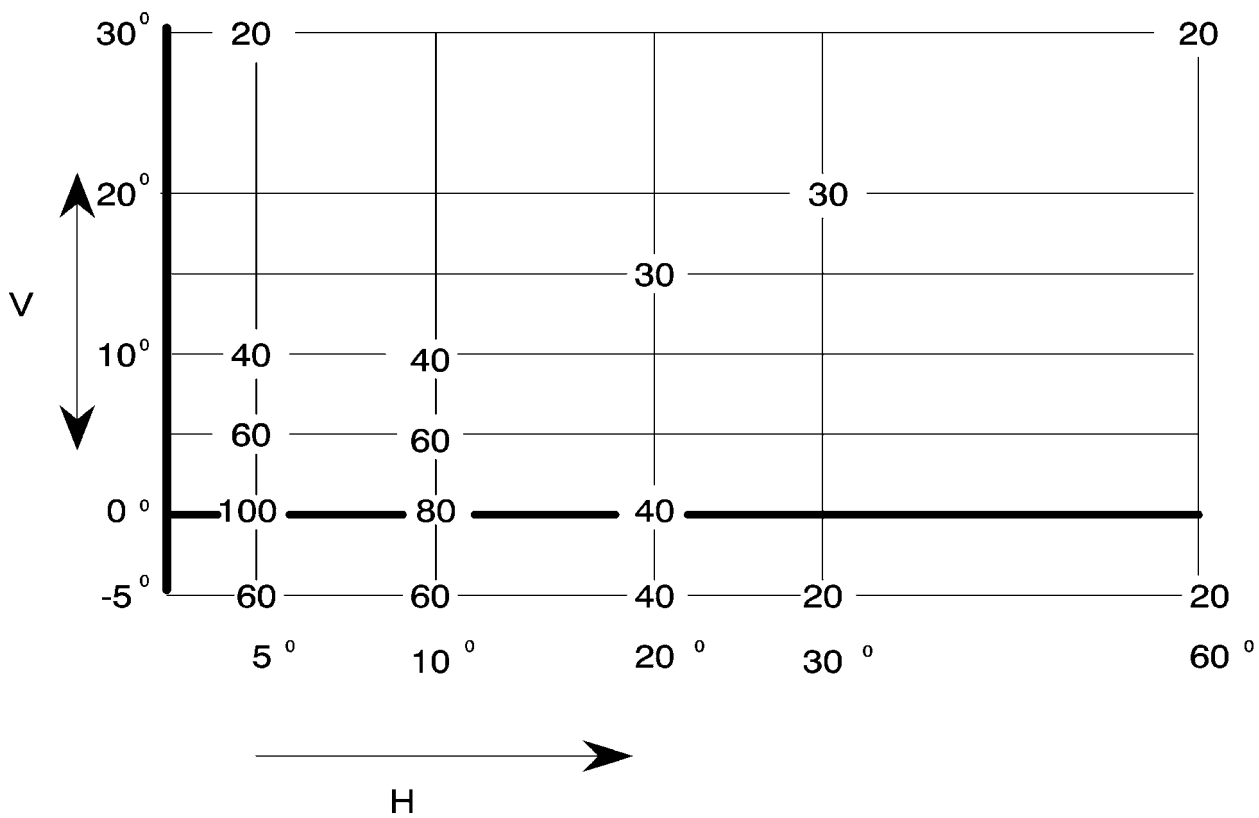
PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - 1.1. ~~During photometric measurements, stray reflections shall be avoided by appropriate masking.~~
 - 1.2. ~~In case the results of measurements should be challenged, measurements shall be carried out 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 angular aperture of the receiver viewed from the reference centre of the light is comprised between 10' and 1 degree;~~
 - 1.2.3. ~~The intensity requirement for a particular direction of observation shall be deemed to be satisfied if that requirement is met 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 of the field of the reference axis specified by the manufacturer.~~
2. Table of standard light distribution in space
 - (a) **For direction indicator lamps of categories 1, 1a, 1b, 2a, 2b, 3 and 4 (forward only).**

¹ See point 1 of annex 4 of Regulation No. X.



(b) For direction indicator lamps of category 6.



(outer side of the vehicle)

- 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 tables give, for the various directions of measurement, the minimum intensities as a percentage of the minimum intensities required in the table in paragraph 7.1:
- 2.1.1 In the direction $H = 0^\circ$ and $V = 0^\circ$ for categories 1, 1a, 1b, 2a, 2b, 3 and in the case of category 4, to the front only;
- 2.1.2 In the direction $H = 5^\circ$ and $V = 0^\circ$ for category 6;
- 2.1.3 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.
- 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. insofar as 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.

3. Photometric measurement of lamps²

~~————— The photometric performance shall be checked:~~

~~3.1. ——— For non-replaceable light sources (filament lamps and other):~~

~~with the light sources present in the lamp, in accordance with the relevant sub-paragraph of paragraph 7.1. of this Regulation.~~

~~3.2. ——— For replaceable filament lamps:~~

~~when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than $\pm 5\%$ from the mean value.~~

² See point 2 of annex 4 of Regulation No. X.

~~Alternatively 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.~~

~~3.3. For any direction indicator lamp except those equipped with filament lamp(s), the luminous intensities measured after one minute and after 30 minutes of operation in flashing mode ($f = 1.5$ Hz, duty factor 50%), shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated by applying at each test point the ratio of luminous intensity measured in HV after one minute and after 30 minutes of operation as above described.~~

Annex 5

COLOUR OF AMBER LIGHTS¹

TRICHROMATIC CO-ORDINATES

~~Limit towards green — : — $y \leq x - 0.120$~~

~~Limit towards red — : — $y \geq 0.390$~~

~~Limit towards white — : — $y \geq 0.790 - 0.670 x$~~

~~For checking these colorimetric characteristics, the test procedure described in paragraph 7. of this Regulation shall be applied.~~

~~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, in accordance with the relevant sub-paragraph of paragraph 7.1. of this Regulation.~~

¹ See annex 5 of Regulation No. X.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY OF
PRODUCTION CONTROL PROCEDURES¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random according to paragraph 7. of this Regulation:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a direction indicator equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on direction indicators shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied when tested under conditions of paragraph 7. of this Regulation.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY
THE MANUFACTURER~~

~~For each type of direction indicator the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of direction indicators shall be selected at random from the production of a uniform batch. A uniform batch means a set of direction indicators of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled direction indicator shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4, and the chromaticity coordinates listed in Annex 5, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 10.1. of this Regulation. The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with Annex 7 (first sampling) would be 0.95.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~
- ~~1.2. With respect to photometric performances, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random according to paragraph 7. of this Regulation:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a direction indicator equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on direction indicators shall be repeated using another standard filament lamp.~~
- ~~1.2.3. Direction indicators with apparent defects are disregarded.~~
- ~~1.3. The chromaticity coordinates shall be complied when tested under conditions of paragraph 7. of this Regulation.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four direction indicators are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

- ~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced direction indicators shall not be contested if the deviation of the measured values of the direction indicators in the unfavourable directions are:~~

~~2.1.1.1. sample A~~

~~A1: one direction indicator ————— 0%~~

~~one direction indicator not more than — 20%~~

¹ See annex 7 of Regulation No. X.

~~A2: both direction indicators more than 0%
but not more than 20%
go to sample B~~

~~2.1.1.2. sample B~~

~~B1: both direction indicators 0%~~

~~2.1.2. or if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

~~2.2. The conformity is contested~~

~~2.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced direction indicators shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the direction indicators are:~~

~~2.2.1.1. sample A~~

~~A3: one direction indicator not more than 20%
one direction indicator more than 20%
but not more than 30%~~

~~2.2.1.2. sample B~~

~~B2: in the case of A2
one direction indicator more than 0%
but not more than 20%
one direction indicator not more than 20%~~

~~B3: in the case of A2
one direction indicator 0%
one direction indicator more than 20%
but not more than 30%~~

~~2.2.2. or if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 11. applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the direction indicators are:~~

~~2.3.1. sample A~~

~~A4: one direction indicator not more than 20%~~

~~one direction indicator more than 30%~~

~~A5: both direction indicators more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one direction indicator more than 0%~~

~~but not more than 20%~~

~~one direction indicator more than 20%~~

~~B5: in the case of A2~~

~~both direction indicators more than 20%~~

~~B6: in the case of A2~~

~~one direction indicator 0%~~

~~one direction indicator more than 30%~~

~~2.3.3. or if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two direction indicators and fourth sample D of two direction indicators, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced direction indicators shall not be contested if the deviations of the measured values of the direction indicators are:~~

~~3.1.1.1. sample C~~

~~C1: one direction indicator 0%~~

~~one direction indicator not more than 20%~~

~~C2: both direction indicators more than 0%~~

~~but not more than 20%~~

~~go to sample D~~

~~3.1.1.2. sample D~~

~~D1: in the case of C2~~

~~both direction indicators 0%~~

~~3.1.2. or if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

~~3.2. The conformity is contested~~

~~3.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced direction indicators shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the direction indicators are:~~

~~3.2.1.1. sample D~~

~~D2: in the case of C2~~

~~one direction indicator more than 0%~~

~~but not more than 20%~~

~~one direction indicator not more than 20%~~

~~3.2.1.2. or if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

~~3.3. Approval withdrawn~~

~~3.3.1. sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.3 PROPOSAL

REGULATION No. 7 - (Front and rear position (side) lamps, stop-lamps and end-outline marker lamps)

(The following text is based on Supplement 12 to the 02 series of amendments.)

Regulation No. 7

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF FRONT AND
REAR POSITION (SIDE) LAMPS, STOP-LAMPS AND END-OUTLINE
MARKER LAMPS FOR MOTOR VEHICLES AND THEIR TRAILERS

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ANNEXES

Annex 1: **Minimum angles required for light distribution in space**

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1. SCOPE

This Regulation applies to:

- 1.1 Front and rear position (side) lamps and stop-lamps for vehicles of categories L, M, N, O and T¹; and,
- 1.2 End-outline marker lamps for vehicles of categories M, N, O and T.¹

2. DEFINITIONS

For the purpose of this Regulation,

- 2.1 “Front position (side) lamp” means the lamp used to indicate the presence and the width of the vehicle when viewed from the front;
- 2.2 “Rear position (side) lamp” means the lamp used to indicate the presence and the width of the vehicle when viewed from the rear;
- 2.3 “Stop-lamp” means the lamp used to indicate to other road-users to the rear of the vehicle that its driver is applying the service brake. The stop-lamps may be activated by the application of a retarder or a similar device;
- 2.4 “End-outline marker lamp” means a lamp fitted near to the extreme outer edges and as close as possible to the top of the vehicle and intended to indicate clearly the vehicle’s overall width. In the case of certain power-driven vehicles and trailers, this lamp is intended to complement the vehicle’s position (side) lamps and draw special attention to its outline;
- 2.5 “Definitions of terms” **means:**²

~~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.~~
- 2.6 “Front and rear position lamps, stop-lamps and end-outline marker lamps of different type” means:³

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

~~1.6. "Front and rear position lamps, stop lamps and end-outline marker lamps of different type" means lamps which differ in each said category 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.);~~
- ~~(c) the variable intensity control, if any.~~

~~A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.~~

3. APPLICATION FOR APPROVAL⁴

~~3.1 The application for approval shall be submitted by the holder of the trade name or mark or by his duly accredited representative. It shall specify:~~

- ~~(a) 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;~~
- ~~(b) In the case of an end-outline marker lamp, whether it is intended to emit white or red light;~~
- ~~(c) 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;~~
- ~~(d) Whether the device produces steady luminous intensity (category R1, S1 or S3) or variable luminous intensity (category R2, S2 or S4).~~

~~2.1.4. At the choice of the applicant, 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.~~

~~3.2~~ ⁵

~~3.2.1~~ ⁶ **The drawings shall, if applicable, for category S3 or S4 lamps show in what position the rear window may be mounted.**

⁴ See points 3 and 3.1 of Regulation No. X and supplement with the following paragraph.

⁵ See point 3.2 of Regulation No. X.

⁶ See point 3.2.1 of Regulation No. X and supplement with the following paragraph.

- 3.2.2** ⁷ The technical description **shall specify**, in the case of a category S3 or S4 stop-lamp, which is intended to be mounted inside the vehicle, the optical properties (transmission, colour, inclination, etc.) of the rear window(s).
- 3.2.3** ⁸
- 3.2.4** ⁹ In the case of a category S3 or S4 stop-lamp which is intended to be mounted inside the vehicle, **the two sample plates shall be supplemented with** 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).
- ~~2.2.5. In the case of a category S3 stop lamp which is intended to be mounted inside the vehicle, 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).~~
4. MARKINGS¹⁰
- Devices submitted for approval:
- ~~3.1. Must bear the trade name or mark of the applicant; this marking must be clearly legible and be indelible;~~
- ~~3.2. With the exception of lamps with non-replaceable light sources it must bear a clearly legible and indelible marking indicating:~~
- ~~(a) the category or categories of filament lamp(s) prescribed; and/or~~
- ~~(b) the light source module specific identification code.~~
- ~~3.3. Must comprise a space of sufficient size for the approval marking and the additional symbols prescribed in paragraph 4.2 below; this space shall be shown in the drawings mentioned in paragraph 2.2.1 above.~~
- ~~3.4. In the case of lamps with non-replaceable light sources or light source module(s), the lamp shall bear the marking of the rated voltage or the range of voltage and the rated wattage.~~

⁷ See point 3.2.2 of Regulation No. X and supplement with the following paragraph.

⁸ See point 3.2.3 of Regulation No. X.

⁹ See point 3.2.4 of Regulation No. X and supplement with the following paragraph.

¹⁰ See points 4-4.6 of Regulation No. X and supplement with paragraph 4.1, as follows.

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

~~3.6. In the case of lamps with light source module(s), the light source module(s) shall bear:~~

~~3.6.1. The trade name or mark of the applicant; this marking must be clearly legible and indelible;~~

~~3.6.2. The specific identification code of the module; this marking must be clearly legible and indelible.~~

~~This specific identification code shall comprise the starting letters “MD” for “MODULE” followed by the approval marking without the circle as prescribed in paragraph 4.2.1.1 below; this specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1 above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant.~~

~~3.6.3. The marking of the rated voltage and rated wattage.~~

5. APPROVAL

5.1 General

5.1.1 ¹¹

5.1.2 ¹² This provision shall not apply to headlamps fitted with a double-filament **lamp**, where only one beam is approved.

5.1.3 ¹³ The first two digits of the approval number: “at present 02 corresponding to the 02 series of amendments”.

¹¹ See point 5.1.1 of Regulation No. X.

¹² See point 5.1.2 of Regulation No. X and supplement with the following paragraph.

¹³ See point 5.1.3 of Regulation No. X and supplement with the following paragraph.

5.2 Composition of the approval mark

The approval mark shall consist of:

- 5.2.1** An international approval mark, comprising:
- 5.2.2.** The additional symbol or symbols specified in the Regulation under which the lamp is approved;
- 5.2.2.1** On devices meeting the requirements of this Regulation in respect of the front position (side) lamps, the letter “A”;
- 5.2.2.2** On devices meeting the requirements of this Regulation in respect of the position (side) lamps, the letter “R” followed by the figure “1” when the device produces steady luminous intensity and by the figure “2” when the device produces variable luminous intensity;
- 5.2.2.3** On devices meeting the requirements of this Regulation in respect of the stop-lamps, the letter “S” followed by the figure:
- “1” when the device produces steady luminous intensity;.
- “2” when the device produces variable luminous intensity;
- “3” when the device meets the specific requirements for category S3 stop-lamps and produces steady luminous intensity;
- “4” when the device meets the specific requirements for category S4 stop-lamps and produces variable luminous intensity;
- 5.2.2.4** On devices comprising both a rear position (side) lamp and a stop-lamp meeting the requirements of this Regulation in respect of such lamps, the letters “R1” or “R2” and “S1” or “S2” as the case may be, separated by a horizontal dash;
- 5.2.2.5** On front or rear position lamps of which the visibility angles are asymmetrical with regard to the reference axis in a horizontal direction, a horizontal arrow pointing towards the side on which the photometric specifications are met up to an angle of 80° H;
- 5.2.2.6** On devices which may be used as part of an assembly of two lamps, the additional letter “D” to the right of the symbol mentioned in paragraphs 5.2.2.1 and 5.2.2.4;
- 5.2.2.7** On devices with reduced light distribution in conformity to paragraph 2.1 in Annex 4 to this Regulation, a vertical arrow starting from a horizontal segment and directed downwards.

4.2.3. ~~The two digits of the approval number (at present 02 corresponding to the 02 series of amendments which entered into force on 5 May 1991), which indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval and, if necessary, the required arrow may be marked close to the above additional symbols.~~

4.2.4. ~~The marks and symbols referred to in paragraphs 4.2.1. and 4.2.2. above shall be clearly legible and indelible even when the device is fitted in the vehicle.~~

4.3. Arrangement of the approval mark

4.3.1. Independent lamps

~~Annex 3, paragraphs 1 to 4, gives examples of the approval mark with the above mentioned additional symbols.~~

~~If different types of lamps complying with the requirements of several Regulations uses the same outer lens having the same or different colour, a single international approval mark may be affixed, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the lamp, provided that:~~

4.3.1.1. ~~It is visible after their installation.~~

4.3.1.2. ~~The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and if necessary, the required arrow shall be marked.~~

4.3.1.3. ~~The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which approval has been granted.~~

4.3.1.4. ~~The main body of the lamp shall include the space described in paragraph 3.3. above and shall bear the approval mark of the actual function(s).~~

4.3.1.5. ~~Example 5 of Annex 3 to this Regulation gives examples of an approval mark with the above mentioned additional symbols.~~

4.3.2. Grouped, combined or reciprocally incorporated lamps

4.3.2.1. ~~Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be affixed, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:~~

- ~~4.3.2.1.1. It is visible after their installation;~~
- ~~4.3.2.1.2. No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~
- ~~4.3.2.2. The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow shall be marked:~~
- ~~4.3.2.2.1. Either on the appropriate light emitting surface,~~
- ~~4.3.2.2.2. Or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified.~~
- ~~4.3.2.3. The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which approval has been granted.~~
- ~~4.3.2.4. An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~
- ~~4.3.2.5. Paragraph 6 of Annex 3 to this Regulation gives examples of approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols.~~
- ~~4.3.3. Lamps reciprocally incorporated with a type of headlamp of which the lens is also used for other types of headlamps~~
- ~~The provisions laid down in paragraph 4.3.2. above are applicable.~~
- ~~4.3.3.1. However, if different types of headlamps or of units of lamps including a headlamp comprise the same lens, the latter may bear the different approval marks relating to these types of headlamps or units or lamps, provided that the main body of the headlamp, even if it cannot be separated from the lens, also comprises the space described in paragraph 3.3. above and bears the approval marks of the actual functions. If different types of headlamps comprise the same main body, the latter may bear the different approval marks.~~
- ~~4.3.3.2. Paragraph 7 of Annex 3 to this Regulation gives examples of approval marks relating to lamps which are reciprocally incorporated with a headlamp.~~
- ~~4.3.4. The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.~~

6. GENERAL SPECIFICATIONS¹⁴

~~5.1. Each device supplied shall conform to the specifications set forth in paragraphs 6 and 8 below.~~

~~5.2. The devices must be so designed and constructed that in normal conditions of use, and notwithstanding the vibrations to which they may be subjected in such use, their satisfactory operation remains assured and they retain the characteristics prescribed by this Regulation.~~

6.1 Lamps having been approved as front or rear position (side) lamps are deemed being also approved end-outline marker lamps.

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

6.3 Position (side) 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.

6.3.1 However, in the case of rear (side) position lamps 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.

~~5.6. Light source module~~

~~5.6.1. The design of the light source module(s) shall be such that even in darkness the light source module(s) can be fitted in no other position, but the correct one.~~

~~5.6.2. The light source module(s) shall be tamperproof.~~

6.4 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).

¹⁴ See points 6-6.6 of Regulation No. X and supplement with the following paragraphs.

6.5 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 R1;
- (b) A stop-lamp category S2 emitting more than the maximum value of category S1;
- (c) 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.

6.6 Remarks concerning colours and particular devices:*

The Parties to the Agreement to which this Regulation is annexed are not precluded by Article 3 of that Agreement from prohibiting, for devices installed on vehicles registered by them, certain colours for which provision is made in this Regulation, or from prohibiting for all categories or for certain categories of vehicles registered by them stop-lamps having only steady luminous intensity.

7. INTENSITY OF LIGHT EMITTED

7.1 In the reference axis, the light emitted by each of the two devices supplied must be of not less than the minimum intensity and of not more than the maximum intensity specified below.

* **These remarks may no longer be necessary.**

15	Minimum luminous intensities cd	Maximum values in cd when used as			
		Single lamp	Lamp (single) marked "D" (para. 5.2.2.6)	Total for the assembly of two or more lamps ¹⁶	
7.1.1	Front position (side) lamps, front end-outline marker lamp	4	60	42	84
7.1.2	Front position (side) lamps incorporated in headlamp	4	100	-	-
7.1.3	Rear position (side) lamps, rear end-outline marker lamp				
7.1.3.1	R1 (steady)	4	12	8.5	17
7.1.3.2	R2 (variable)	4	30	21	42
7.1.4	Stop-lamps				
7.1.4.1	S1 (steady)	60	185	130	260
7.1.4.2	S2 (variable)	60	520	365	730
7.1.4.3	S3 (steady)	25	80	55	110
7.1.4.4	S4 (variable)	25	114	80	160

¹⁵ The installation of the devices referred to above in power-driven vehicles and their trailers is provided for in the Regulations concerning the installation of lighting and light-signalling devices (Regulations Nos. 48 and 53).

¹⁶ The total value of maximum intensity for an assembly of two or more lamps is given by multiplying by 1.4 the value prescribed for a single lamp.

When an assembly of two or more lamps having the same function is deemed to be, for the purpose of installation on a vehicle, a "single lamp" (following the definition of Regulation No. 48 and its series of amendments in force at the time of application for type approval), this assembly shall comply with the minimum intensity required when one lamp has failed, and all the lamps together shall not exceed the admissible maximum intensity (last column of the table).

In the case of a single lamp containing more than one light source:

- (a) All light sources which are connected in series are considered to be one light source;
- (b) The lamp shall comply with the minimum intensity required when any one light source has failed. However, for lamps designed for only two light sources, 50% 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;
- (c) When all light sources are illuminated the maximum intensity specified for a single lamp may be exceeded provided that the single lamp is not marked "D" and the maximum intensity specified for an assembly of two or more lamps (last column of the table) is not exceeded.

- 7.2 Outside the reference axis and within the angular fields defined in the diagrams in Annex 1 to this Regulation, the intensity of the light emitted by each of the two devices supplied must:
- 7.2.1 In each direction corresponding to the points in the light distribution table reproduced in Annex 4 to this Regulation, be not less than the product of the minimum specified in paragraph 6.1 above by the percentage specified in the said table of the direction in question;
- 7.2.2 In no direction within the space from which the light-signalling device is visible, exceed the maximum specified in paragraph 6.1 above;
- 7.2.3 However, a luminous intensity of 60 cd shall be permitted for rear position (side) lamps reciprocally incorporated with stop-lamps (see para. 6.1.3 above) below a plane forming an angle of 5° with and downward from the horizontal plane;
- 7.2.4 Moreover,
- 7.2.4.1 Throughout the fields defined in the diagrams in Annex 1, the intensity of the light emitted must be not less than 0.05 cd for front and rear position (side) lamps and end-outline marker lamps, not less than 0.3 cd for stop-lamps with one level of intensity, and for stop-lamps with two levels of intensity 0.3 cd by day and 0.07 cd by night;
- 7.2.4.2 If a rear position (side) lamp is reciprocally incorporated with a stop-lamp, the ratio between the luminous intensities actually measured of the two lamps when turned on simultaneously at the intensity of the rear position (side) 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 stop-lamp has two levels of intensity, this requirement must be satisfied when the night condition is switched on;
- If the rear position (side) lamp or the stop-lamp or both contain more than one light source and are considered as a single lamp as defined in note 2 of the table in paragraph 6.1 above, the values to be considered are those obtained with all sources in operation;
- 7.2.4.3 The provisions of paragraph 2.2 of Annex 4 to **Regulation No. X** on local variations of intensity must be observed.
- 7.3 The intensities shall be measured with the filament lamp(s) continuously alight [and, in the case of devices emitting red light, in coloured light].**

** The part of the sentence in square brackets may no longer be necessary.

- 7.4 In the case of devices of variable luminous intensity of categories R2, S2 and S4 the time that elapses between energizing the light source(s) and the light output measured on the reference axis to reach 90% of the value measured in accordance with paragraph 7.3 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.
- 7.5 The variable intensity control shall not generate signals which cause luminous intensities:
- 7.5.1. Outside the range specified in paragraph 7.1. above and
- 7.5.2 Exceeding the respective steady luminous intensity maximum specified in paragraph 7.1 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 conditions.¹⁷
- 7.6 Annex 4, to which reference is made in paragraph 7.2.1 above, gives particulars of the methods of measurement to be used.

8. TEST PROCEDURE¹⁸

~~7.1 All measurements, photometric and colorimetric, shall be made:~~

~~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 uncoloured or coloured 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;~~

~~7.1.2 In case of a lamp equipped with non-replaceable light sources (filament lamps and others), at 6.75 V, 13.5 V or 28.0 V, respectively;~~

*** The phrase in square brackets may no longer be valid. If it remains valid, the term “daytime and night-time conditions” should be modified, employing the concept of “variability”.

¹⁷ 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.

¹⁸ See points 8-8.4 of Regulation No. X and supplement with paragraph 8.1, as follows.

- ~~7.1.3~~ — In the case of a system that uses an electronic light source control gear or a variable intensity control being part of the lamp,⁶ 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;
- ~~7.1.4~~ — In the case of a system that uses an electronic light source control gear or a variable intensity control not being part of the lamp, the voltage declared by the manufacturer shall be applied to the input terminals of the lamp.
- ~~7.2~~ — However, in the case of light sources operated by a variable intensity control to obtain variable luminous intensity, photometric measurements shall be performed according to the applicant's description.
- ~~7.3~~ — The test laboratory shall require from the manufacturer the light source control gear or a variable intensity control needed to supply the light source and the applicable functions.
- ~~7.4~~ — The voltage to be applied to the lamp shall be noted in the communication form in Annex 2 of this Regulation.
- ~~7.5~~ — The limits of the apparent surface in the direction of the reference axis of a light-signalling device shall be determined.
- 8.1** In the case of a category S3 or S4 stop-lamp, which is intended to be mounted inside the vehicle, a sample plate or sample plates (in case of different possibilities) as supplied (see para. 3.2.4) shall be positioned in front of the lamp to be tested, in the geometrical position(s) as described in the application drawing(s) (see para. 3.2.1).

9. COLOUR OF LIGHT EMITTED¹⁹

~~The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2 of Annex 4 shall be within the limits of the coordinates prescribed in Annex 5 to this Regulation. Outside this field, no sharp variation of colour shall be observed.~~

The colour of the light emitted by:

A front position lamp shall be: white;

A rear position lamp shall be: red;

An end-outline marker lamp shall be: white at the front and red at the rear;

A stop-lamp shall be: red.****

¹⁹ See point 9 of Regulation No. X and supplement with the following paragraph. The last sentence concerns devices of variable luminous intensity.

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

- (a) Rear position lamps of category R2;**
- (b) Stop-lamps of categories S2 and S4.**

10. MODIFICATION OF A TYPE OF FRONT AND REAR POSITION LAMP, STOP-LAMP AND END-OUTLINE MARKER LAMP FOR MOTOR VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL²⁰

11. CONFORMITY OF PRODUCTION²¹

~~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:~~

- ~~9.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6 and 8 above.~~
- ~~9.2. The minimum requirements for Conformity of Production control procedures set forth in Annex 6 to this Regulation shall be complied with.~~
- ~~9.3. The minimum requirements for sampling by an inspector set forth in Annex 7 to this Regulation shall be complied with.~~
- ~~9.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION²²

- ~~10.1. The approval granted in respect of a device may be withdrawn if the foregoing conditions are not satisfied.~~
- ~~10.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in Annex 2 to this Regulation.~~

****** Delete this paragraph if Regulation No. X refers to Regulation No. 48.**

²⁰ See points 10-10.3 of Regulation No. X.

²¹ See points 11-11.4 of Regulation No. X.

²² See points 12-12.2 of Regulation No. X.

13. PRODUCTION DEFINITELY DISCONTINUED²³

~~If the holder of the approval completely ceases to manufacture a device, 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 applying this Regulation, by means of a copy of a communication form conforming to the model in Annex 2 to this Regulation.~~

~~12. REMARKS CONCERNING COLOURS AND PARTICULAR DEVICES~~

~~The Parties to the Agreement to which this Regulation is annexed are not precluded by article 3 of that Agreement from prohibiting, for devices installed on vehicles registered by them, certain colours for which provision is made in this Regulation, or from prohibiting for all categories or for certain categories of vehicles registered by them stop lamps having only one level of luminous intensity.~~

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS²⁴

~~The Parties to the 1958 Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the Technical Services responsible for conducting approval tests and of the Administrative Departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval or production definitely discontinued, issued in other countries, are to be sent.~~

15. TRANSITIONAL PROVISIONS

15.1 Signalling lamps not equipped with filament lamps and category S3 stop-lamps intended to be mounted inside a vehicle.

15.1.1 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.

15.1.2 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 **15.1** above meets the requirements of this Regulation as amended by Supplement 6 to the 02 series of amendments.

²³ See point 13 of Regulation No. X.

²⁴ See point 14 of Regulation No. X.

- 15.1.3** Contracting Parties applying this Regulation shall not refuse to grant extensions of approvals to the preceding series of amendments to this Regulation.
- 15.1.4** Contracting Parties applying this Regulation shall continue to grant approvals to those types of lamps as described in paragraph **15.1** 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.
- 15.2** Fitting of lamps described in paragraph **15.1** above on a vehicle:
- 15.2.1** 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 **15.1** above approved under this Regulation as amended by Supplement 6 to the 02 series of amendments.
- 15.2.2** Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of lamps described in paragraph **15.1** 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.
- 15.2.3** 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 **15.1** 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.
- 15.2.4** 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 **15.1** 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

MINIMUM ANGLES REQUIRED FOR LIGHT DISTRIBUTION
IN SPACE OF FRONT AND REAR POSITION (SIDE) LAMPS,
END-OUTLINE MARKER LAMPS AND STOP-LAMPS¹

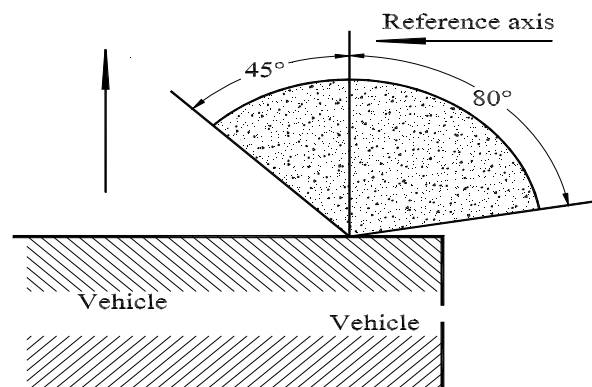
MINIMUM VERTICAL ANGLES OF LIGHT DISTRIBUTION IN SPACE:

In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal, except:

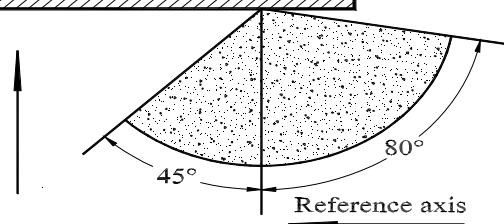
- (a) For lamps with a permissible mounting height equal to or less than 750 mm above the ground, for which they are 15° above and 5° below the horizontal;
- (b) For category S3 or S4 stop-lamps, for which they are 10° above and 5° below the horizontal.

MINIMUM HORIZONTAL ANGLES OF LIGHT DISTRIBUTION IN SPACE

Front position (side) lamps
end-outline marker lamps

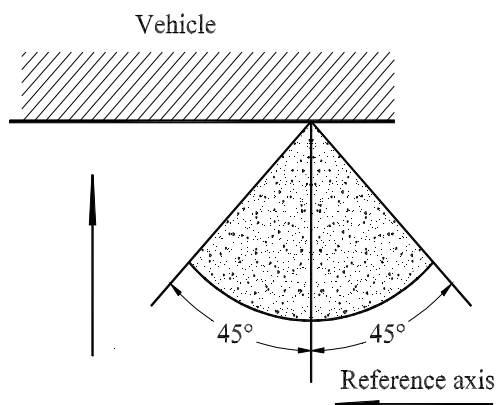


Rear position lamps,
end-outline marker lamps

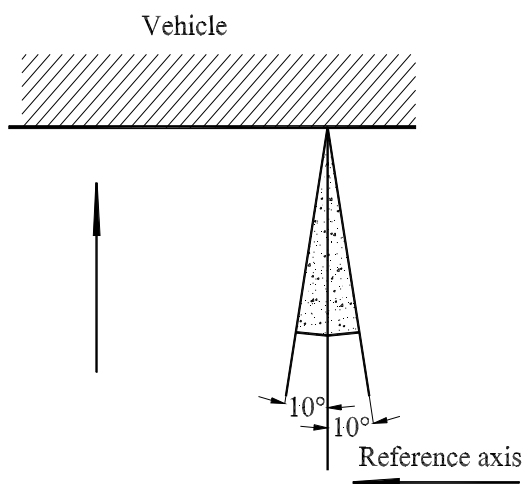


¹ The angles shown in these diagrams are correct for devices to be mounted on the right side of the vehicle. The arrows point to the front of the vehicle.

Stop-lamps (S1 and S2)



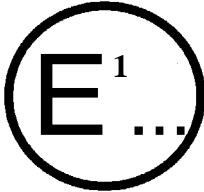
Stop-lamps (S3)



Annex 2

COMMUNICATION

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



issued by: [Name of administration:
.....
.....]

- concerning:²
- APPROVAL GRANTED
 - APPROVAL EXTENDED
 - APPROVAL REFUSED
 - APPROVAL WITHDRAWN
 - PRODUCTION DEFINITELY 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:

¹ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation), **in accordance with the list in note ¹ to point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

9. Concise description:

By category of lamp:

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

Light source module: yes/no

Light source module specific identification code:

Voltage and wattage:

Variable luminous intensity: yes/no²

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 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):

Geometrical conditions of installation and relating variations, if any:

Only for limited mounting height of equal to or less than 750 mm above the ground: yes/no

10. Position of the approval mark:

11. Remarks (if applicable):

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

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

14. Place:

15. Date:

16. Signature:

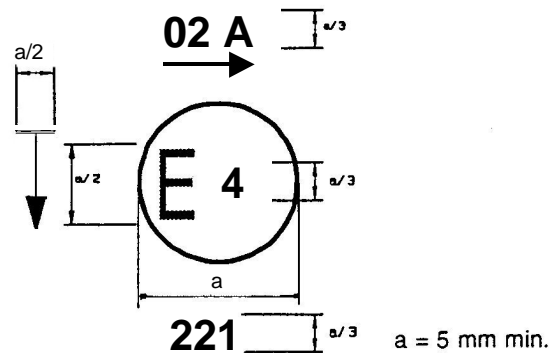
17. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.

Annex 3

EXAMPLES OF ARRANGEMENTS OF APPROVAL MARKS

1. Marking of independent lamps

1.1 Front position (side) lamp



The device bearing the approval mark shown above is a front position (side) lamp approved in the Netherlands (E4), under approval number 221 pursuant to Regulation No. 7.

The number mentioned close to the symbol "A" indicates that approval was granted in accordance with the requirements of Regulation No. 7 as amended by the 02 series of amendments. The horizontal arrow indicates the side on which the required photometric specifications are met up to an angle of 80° H. The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height of equal to or less than 750 mm from the ground for this device.

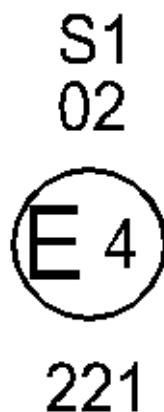
1.2 Rear position (side) lamp



The device bearing the approval mark shown above is a rear position (side) lamp **with steady luminous intensity** approved in the Netherlands (E4) under approval number 221 pursuant to Regulation No. 7, which may also be used in an assembly of two rear position (side) lamps.


The number mentioned below the symbol “R1D” indicates that approval was granted in conformity with the requirements of Regulation No. 7 as amended by the 02 series of amendments. The absence of an arrow means that, both right and left, the required photometric specifications are met up to an angle of 80° H.

1.3 Stop-lamp



The device bearing the approval mark shown above is a stop-lamp with ~~one level of illumination~~ **steady luminous intensity** approved in the Netherlands (E4) under approval number 221 pursuant to Regulation No. 7. The number mentioned below the symbol “S1” indicates that the approval was granted in conformity with the requirements of Regulation No. 7 as amended by the 02 series of amendments.

1.4 Device comprising both a rear position (side) lamp and a stop-lamp

R2D - S2 D
02

221

The device bearing the approval mark shown above is a device comprising both a rear position (side) lamp and a stop-lamp with variable luminous intensity approved in the Netherlands (E4) under approval number 221 pursuant to Regulation No. 7.

The number mentioned below the symbol "R2D-S2D" indicates that approval was granted in conformity with the requirements of Regulation No. 7 as amended by the 02 series of amendments. The rear position (side) lamp is **reciprocally** incorporated into a stop-lamp ~~with two levels of illumination~~; both **produce** variable luminous intensity, ~~which~~ **and** may also be used in an assembly of two lamps. The absence of an arrow means that, both right and left, the required photometric specifications are met up to an angle of 80° H.

Note:¹

2. Simplified marking of grouped, combined or reciprocally incorporated lamps when two or more lamps are part of the same assembly²
3. **Marking of a lamp reciprocally incorporated with a headlamp**³
4. Marking of independent lamps using the same lens⁴
5. **Marking of light source modules**⁵

¹ See point 1 of annex 3 to Regulation No. X.

² See point 2 of annex 3 to Regulation No. X.

³ See point 3 of annex 3 to Regulation No. X.

⁴ See point 4 of annex 3 to Regulation No. X.

⁵ See point 5 of annex 3 to Regulation No. X.

Annex 4

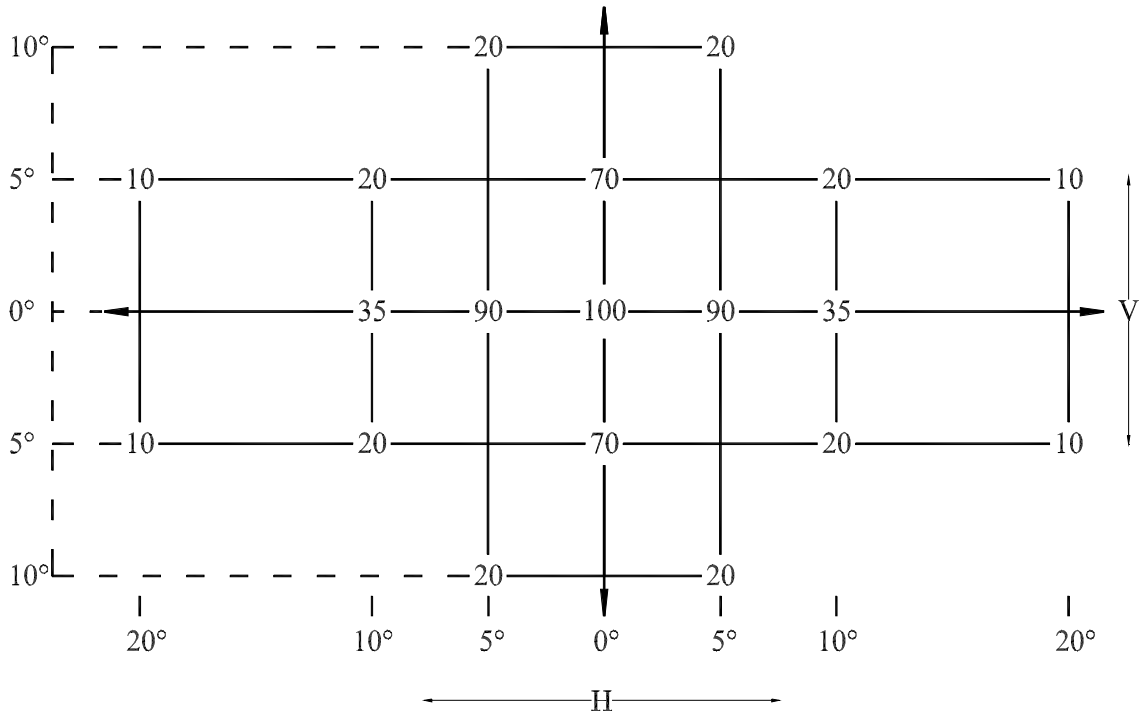
PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - 1.1. ~~During photometric measurements, stray reflections shall be avoided by appropriate masking.~~
 - 1.2. ~~In case the results of measurements should be challenged, measurements shall be carried out 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 angular aperture of the receiver viewed from the reference centre of the lamp is comprised between 10 angular minutes and one degree;~~
 - 1.2.3. ~~The intensity requirement for a particular direction of observation shall be deemed to be satisfied if that requirement is met 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 of the field of the reference axis specified by the manufacturer.~~

¹ See point 1 of annex 4 to Regulation No. X.

2. Table of standard light distribution

(a) For all lamps concerned by this Regulation except category S3 stop-lamps



(b) For category S3 stop-lamps

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

- 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 $V = 0^\circ$).

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.

- 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.

3. Photometric measurement of lamps²

The photometric performance shall be checked:

- ~~3.1. For non-replaceable light sources (filament lamps and other):~~

~~with the light sources present in the lamp, in accordance with paragraph 7.1.1. of this Regulation.~~

- ~~3.2. For replaceable filament lamps: when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than ∇ 5% from the mean value. Alternatively 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.~~

- ~~3.3. For any signalling lamp except those equipped with filament lamp(s), 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.~~

² See point 2 of annex 4 to Regulation No. X.

Annex 5

COLOURS OF LIGHTS¹

TRICHROMATIC COORDINATES

RED:	Limit towards yellow:	$y \leq 0.335$
	Limit towards purple:	$y \geq 0.980 - x$
WHITE:	Limit towards blue:	$x \geq 0.310$
	Limit towards yellow:	$x \leq 0.500$
	Limit towards green:	$y \leq 0.150 + 0.640x$
	Limit towards green:	$y \leq 0.440$
	Limit towards purple:	$y \geq 0.050 + 0.750x$
	Limit towards red:	$y \geq 0.382$

~~For checking these colorimetric characteristics, a source of light at a colour temperature of 2,856 K corresponding to illuminant A of the International Commission on Illumination (CIE) shall be used. 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, in accordance with paragraph 7.1.1. of this Regulation.~~

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).

¹ See annex 5 to Regulation No. X.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY
OF PRODUCTION CONTROL PROCEDURES¹

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~

~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~

~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY
THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

¹ See annex 6 to Regulation No. X.

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a Competent Authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity coordinates listed in Annex 5, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the Competent Authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 9.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with Annex 7 (first sampling) would be 0.95.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~
- ~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.2.3. Lamps with apparent defects are disregarded.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

- ~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 to Regulation No. X.

~~2.1.1.1. sample A~~

~~A1: one lamp 0%~~

~~one lamp not more than 20%~~

~~A2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample B~~

~~2.1.1.2. sample B~~

~~B1: both lamps 0%~~

~~2.1.2. or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

~~2.2. The conformity is contested~~

~~2.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~2.2.1.1. sample A~~

~~A3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.1.2. sample B~~

~~B2: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~B3: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

~~3.1.1.1. sample C~~

~~C1: one lamp 0%~~

~~one lamp not more than 20%~~

~~C2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample D~~

~~3.1.1.2. sample D~~

~~D1: in the case of C2~~

~~both lamps 0%~~

~~3.1.2. or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

~~3.2. The conformity is contested~~

~~3.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~3.2.1.1. sample D~~

~~D2: in the case of C2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~3.2.1.2. or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

~~3.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~3.3.1. sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.4 PROPOSAL

REGULATION No. 23 - (Reversing lamps)

(The following text was drawn up on the basis of Supplement 13 to this Regulation.)

Regulation No. 23

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

CONTENTS

REGULATION	<u>Page</u>
1. Scope	
2. Definitions	
3. Application for approval	
4. Markings	
5. Approval	
6. General specifications	
7. Intensity of light emitted	
8. Test procedures	
9. Colour of light emitted	
10. Modification of a type of lamp for power-driven vehicles and their trailers and extension of approval	
11. Conformity of production	
12. Penalties for non-conformity of production	
13. Production definitely discontinued	
14. Names and addresses of technical services responsible for conducting approval tests, and of administrative departments	

ANNEXES

- Annex 1: Not applicable
- Annex 2: Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a type of reversing lamp pursuant to Regulation No. 23
- Annex 3: Examples of arrangements of approval marks
- Annex 4: Photometric measurements
- Annex 5: Colour of lamps
- Annex 6: Minimum requirements for conformity of production control procedures
- Annex 7: Minimum requirements for sampling by an inspector

1. SCOPE

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

2. DEFINITIONS

For the purposes of this Regulation,

2.1 “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.

2.2 “Definitions of terms”²

~~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.~~

2.3 “Front and rear position lamps of different types”³

~~“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.);~~

~~(c) — the variable intensity control, if any.~~

~~A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.”~~

3. APPLICATION FOR APPROVAL⁴

2.1. ~~———— The application for approval shall be submitted by the holder of the trade name or mark, or by his duly accredited representative.~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

⁴ See points 3 to 3.2.4 of Regulation No. X.

~~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, the application shall be accompanied by:~~

~~2.2.1. drawings, in triplicate, in sufficient detail to permit identification of the type of the reversing 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;~~

~~2.2.2. A brief technical description stating in particular, with the exception of lamps with non-replaceable light sources:~~

~~(a) the category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those contained in Regulation No. 37; and/or~~

~~(b) the light source module specific identification code.~~

~~2.2.3. Two samples. If the devices are not identical but are symmetrical and suitable for mounting one on the left and one on the right side of the vehicle, the two samples submitted may be identical and be suitable for mounting only on the right or only on the left side of the vehicle.~~

4. MARKINGS⁵

4.1 ⁵

4.2 ⁶**Reversing lamps shall**, if necessary in order to prevent any mistake in mounting the reversing lamp on the vehicle, bear the word "TOP" marked horizontally on the uppermost part of the illuminating surface.

4.3 ⁷

4.4 ⁸

⁵ See points 4 to 4.1 of Regulation No. X, and supplement with paragraph 4.1, following.

⁶ See point 4.2 of Regulation No. X, and supplement with paragraph 4.2, following.

⁷ See point 4.3 of Regulation No. X.

⁸ See point 4.4 of Regulation No. X.

4.5 9

4.6 10

5. APPROVAL

5.1 **General**¹¹

The first two figures of the approval number: “currently 00 for the Regulation in its original form”

5.1.1 12

5.2 13

5.2.1 14

5.2.2 15

~~4.1. If the two samples of a type of reversing 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 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 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:~~

⁹ See point 4.5 of Regulation No. X.

¹⁰ See point 4.6 of Regulation No. X.

¹¹ See points 5.1.1 to 5.1.5 of Regulation No. X.

¹² See points 5.1.1 to 5.1.5 of Regulation No. X.

¹³ See point 5.2 of Regulation No. X.

¹⁴ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

¹⁵ See point 5.2.2 of Regulation No. X.

~~4.3.1. — an international approval mark consisting of:~~

~~4.3.1.1. — a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval;¹ and~~

~~4.3.1.2. — an approval number;~~

5.2.2.1 ~~An additional~~ symbol consisting of letters A and R, [mingled]* as shown in annex 3 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 symbol “AR.”~~

5.2.2.2 On lamps of which the visibility angles are symmetrical 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.

5.2.3 ¹⁶

4.4. When two or more lamps are part of the same assembly of grouped, combined or reciprocally incorporated lamps, approval is granted only if each of these lamps satisfies the requirements of this Regulation or of another Regulation. Lamps not satisfying any one of those Regulations shall not be part of such an assembly of grouped, combined or reciprocally incorporated lamps.

~~4.4.1. — Where grouped, combined or reciprocally incorporated lamps comply with the requirements of several Regulations, a single international approval mark may be applied, consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, an approval number and, if necessary, the required arrow. This approval mark may be placed anywhere on the grouped, combined or reciprocally incorporated lamps provided that;~~

~~4.4.1.1. — It is visible after their installation;~~

~~4.4.1.2. — No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~

~~4.4.2. — The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval, shall be marked:~~

* The part in brackets [...] is perhaps no longer necessary.

¹⁶ See points 5.2.3 to 5.4 of Regulation No. X.

- ~~4.4.2.1. — Either on the appropriate light emitting surface,~~
- ~~4.4.2.2. — Or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see three possible examples in annex 2).~~
- ~~4.4.3. — The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by a Regulation under which approval has been granted.~~
- ~~4.4.4. — An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~
- ~~4.5. — 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 is mounted on the vehicle.~~
- ~~4.6. — 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 are mingled.~~

6. GENERAL SPECIFICATIONS¹⁷

- ~~5.1. — Each sample shall conform to the specifications set forth in the paragraphs below.~~
- ~~5.2. — Reversing lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.~~

7. INTENSITY OF LIGHT EMITTED

- 7.1 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).
- 7.2 The intensity along the axis of reference shall be not less than 80 candelas.
- 7.3 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:

¹⁷ See points 6 to 6.6 of Regulation No. X.

600 candelas between h-h and 5° D; and

8,000 candelas below 5° D.

7.4 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 3 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 2 to this Regulation), will inform that the device shall only be installed in a pair.

7.5 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.

8. TEST PROCEDURES¹⁸

9. COLOUR OF LIGHT EMITTED

The colour of light emitted by a reversing lamp shall be: white.**¹⁹

10. **MODIFICATION OF A TYPE OF LAMP FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL**²⁰

11. CONFORMITY OF PRODUCTION²¹

~~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:~~

~~9.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6. and 8. above.~~

¹⁸ See points 8 to 8.4 of Regulation No. X.

** To be deleted if Regulation No. X refers to Regulation No. 48.

¹⁹ See point 9 of Regulation No. X and supplement with the following paragraph.

²⁰ See points 10 to 10.3 of Regulation No. X.

²¹ See points 11 to 11.4 of Regulation No. X.

- ~~9.2. The minimum requirements for conformity of production control procedures set forth in annex 5 to this Regulation shall be complied with.~~
- ~~9.3. The minimum requirements for sampling by an inspector set forth in annex 6 to this Regulation shall be complied with.~~
- ~~9.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION²²

- ~~10.1. The approval granted in respect of a type of reversing lamp pursuant to this Regulation may be withdrawn if the foregoing requirements are not complied with or if the reversing lamp bearing the mark referred to in paragraphs 4.3.1. and 4.3.2. does not conform to the type approved.~~
- ~~10.2. If a Contracting Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in annex 1 to this Regulation.~~

13. PRODUCTION DEFINITELY DISCONTINUED²³

~~If the holder of the approval completely ceases to manufacture a type of reversing 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.~~

~~registered by them, certain colours for which provision is made in this Regulation, or from prohibiting for all categories or for certain categories of vehicles registered by them stop lamps having only one level of luminous intensity.~~

²² See points 12 to 12.2 of Regulation No. X.

²³ See point 13 of Regulation No. X.

14. NAMES AND ADDRESSES OF THE TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS²⁴

~~The Parties to the 1958 Agreement which apply this Regulation shall communicate to the United Nations secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, or production definitely discontinued issued in other countries, are to be sent.~~

²⁴ See point 14 of Regulation No. X.

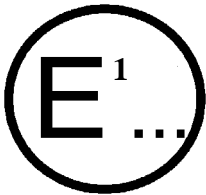
Annex 1

Not applicable

Annex 2

COMMUNICATION

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



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:

¹ Distinguishing number of the country which has issued/extended/refused/withdrawn approval (see the provisions of the Regulation relating to approval), **according to the list in note ¹ of point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

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):

Light source module: yes/no ²

Light source module specific identification code:

Voltage and wattage:

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

(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/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):

Geometrical conditions of installation and relating variations; if any:

10. Position of the approval mark:

11. Comments:

This device shall be installed on a vehicle only as part of a pair of devices: yes/no²

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

13. Approval granted/extended/refused/withdrawn²

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.

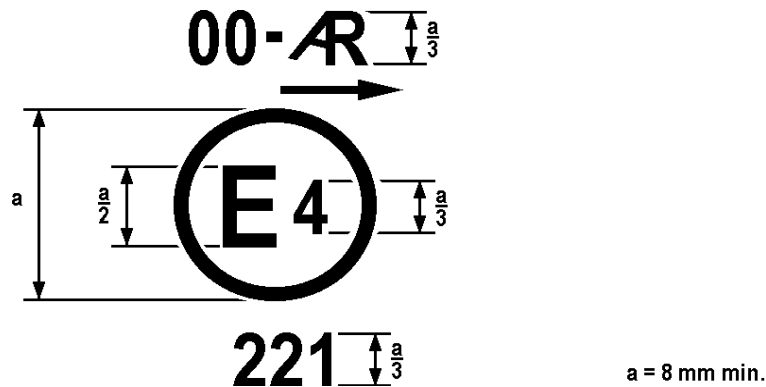
Annex 3

EXAMPLES OF ARRANGEMENTS OF APPROVAL MARKS

1. Marking for single lamps

Figure 1

Model A



The device bearing the approval mark shown above is a reversing lamp approved in the Netherlands (E4) pursuant to Regulation No. 23 under approval number 221. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 23 **in its original form. In the additional symbol, the letters A and R are combined.*** The arrow indicates the side on which the required photometric specifications are met up to an angle of 45° H.

Note:¹

2. Simplified marking for grouped, combined or reciprocally incorporated lamps **when two or more lamps are part of a single set**²
3. Marking of independent lamps **using the same lens**³
4. Marking of light source modules⁴

* It may no longer be necessary to combine A and R, or to place a dash between 00 and AR.

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

³ See point 4 of annex 3 of Regulation No. X.

⁴ See point 5 of annex 3 of Regulation No. X.

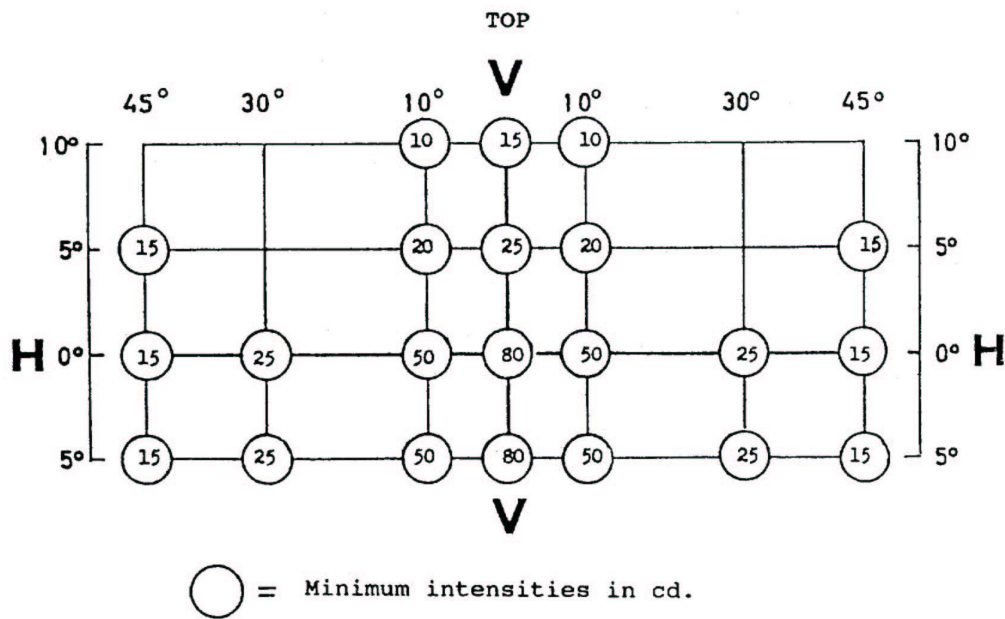
Annex 4

PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - ~~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. Tables of standard light distribution in space

Measuring points expressed in degrees of angle with the axis of reference and values of the minimum intensities of the light emitted, in cd.

¹ See point 1 of annex 4 of Regulation No. X.



- 2.1 The directions $H = 0^\circ$ and $V = 0^\circ$ correspond to the axis of reference. On the vehicle they are horizontal, parallel to the median longitudinal plane of the vehicle and oriented in the required direction of visibility. They pass through the centre of reference.
- 2.2 If visual examination of a lamp appears to reveal substantial local variations of intensity, a check shall be made to ensure that no intensity measured between two of the directions of measurement referred to above is below 50% of the lower minimum intensity of the two prescribed for these directions of measurement.
3. Photometric measurement of lamps²
- The photometric performance shall be checked:
- 3.1. ~~For non-replaceable light sources (filament lamps and other):~~
- ~~with the light sources present in the lamp, in accordance with paragraph 7.1.1. of this Regulation;~~

² See point 2 of annex 4 of Regulation No. X.

~~3.2. For replaceable filament lamps:~~

~~when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than $\pm 5\%$ from the mean value. Alternatively 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.~~

Annex 5

COLOUR OF LAMPS¹

~~COLOUR OF WHITE LIGHT~~

(Trichromatic coordinates)

~~Limit towards blue: — : — x \exists 0.310~~

~~Limit towards yellow : — x # 0.500~~

~~Limit towards green — : — y # 0.150 + 0.640x~~

~~Limit towards green — : — y # 0.440~~

~~Limit towards purple : — y \exists 0.050 + 0.750x~~

~~Limit towards red — : — y \exists 0.382~~

~~For checking these colorimetric characteristics, a source of light at a colour temperature of 2,854° K corresponding to illuminant A of the International Commission on Illumination (ICI) shall be used.~~

~~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, in accordance with paragraph 7.1.1. of this Regulation.~~

¹ See annex 5 of Regulation No. X.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION CONTROL PROCEDURES¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in annex 3 and the chromaticity coordinates listed in annex 4, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 9.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with annex 6 (first sampling) would be 0.95.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~

~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~

~~1.2.3. Lamps with apparent defects are disregarded.~~

~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

~~2.1.1.1. sample A~~

~~A1: one lamp 0%~~

~~one lamp not more than 20%~~

~~A2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample B~~

~~2.1.1.2. sample B~~

~~B1: both lamps 0%~~

~~2.1.2. or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

~~2.2. The conformity is contested~~

~~2.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~2.2.1.1. sample A~~

~~A3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.1.2. sample B~~

~~B2: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~B3: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

~~3.1.1.1. sample C~~

~~C1: one lamp ————— 0%~~

~~one lamp not more than ————— 20%~~

~~C2: both lamps more than ————— 0%~~

~~but not more than ————— 20%~~

~~go to sample D~~

~~3.1.1.2. sample D~~

~~D1: in the case of C2~~

~~both lamps ————— 0%~~

~~3.1.2. or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

~~3.2. The conformity is contested~~

~~3.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~3.2.1.1. sample D~~

~~D2: in the case of C2~~

~~one lamp more than ————— 0%~~

~~but not more than ————— 20%~~

~~one lamp not more than ————— 20%~~

~~3.2.1.2. or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

~~3.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

3.3.1. ~~sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

3.3.2. ~~sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

3.3.3. ~~or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.4 PROPOSAL

REGULATION No. 38 - (Rear fog lamps)

(The text below has been based on Supplement 12 to the Regulation.)

Regulation No. 38

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF REAR FOG LAMPS
FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS

CONTENTS

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ANNEXES

Annex 1: **Not applicable**

Annex 2: Communication

Annex 3: Arrangements of approval marks

Annex 4: Photometric measurements

Annex 5: Colour of lamps

Annex 6: Minimum requirements for conformity of production control procedures

Annex 7: Minimum requirements for sampling by an inspector

1. SCOPE

This Regulation applies to rear fog lamps for vehicles of categories L₃, L₄, L₅, L₇, M, N, O, and T.¹

2. DEFINITIONS

For the purposes of this Regulation:

2.1 “Rear fog lamp” means a lamp used to make the vehicle more easily visible from the rear by giving a red signal of greater intensity than the rear position (side) lamps;

2.2 “Definitions of terms”:²

~~1.2. 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.~~

2.3 “Rear fog lamps of different types”³

~~1.3. “Rear fog 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.);~~

~~(c) the variable intensity control, if any.~~

~~A change of the colour of the filament lamp or the colour of any filter does not constitute a change of type.”~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3) (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

3. APPLICATION FOR APPROVAL

3.1 The application for approval of a type of lamp shall be submitted by the holder of the trade name or mark or by his duly accredited representative. It shall specify, when applicable, as indicated in each Regulation, the categories of the device and some of its characteristics. If the applicant so desires, it may also 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.

3.2 ⁴

~~2.2. For each type of rear fog lamp, the application shall be accompanied by:~~

~~2.2.1. drawings (three copies) in sufficient detail to permit identification of the type of the rear fog lamp and showing geometrically the position(s) in which the rear fog lamp may be fitted to the vehicle; the axis of observation to be taken as 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;~~

~~2.2.2. a brief technical description stating, in particular, with the exception of lamps with non-replaceable light sources:~~

~~the category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those contained in Regulation No. 37; and/or~~

~~the light source module specific identification code.~~

~~2.2.3. two samples; if the rear fog lamp cannot be mounted indiscriminately on either side of the vehicle, the two samples submitted may be identical and may be suitable for mounting only on the right or only on the left side of the vehicle.~~

4. ~~MARKINGS~~⁵

~~The samples of a type of rear fog lamp submitted for approval shall:~~

~~3.1. bear the trade name or mark of the applicant; this marking must be clearly legible and be indelible;~~

⁴ See points 3.2 to 3.2.4 of Regulation No. X.

⁵ See points 4 to 4.6 of Regulation No. X.

- ~~3.2. with the exception of lamps with non-replaceable light sources bear a clearly legible and indelible marking indicating:~~
- ~~the category or categories of filament lamp prescribed; and/or~~
- ~~the light source module specific identification code.~~
- ~~3.3. provide adequate space for the approval mark and for the additional symbols prescribed in paragraph 4.3. below; the said space shall be shown in the drawings referred to in paragraph 2.2.1. above.~~
- ~~3.4. in the case of lamps with non-replaceable light sources or light source module(s), bear the marking of the rated voltage and rated wattage.~~
- ~~3.5. in the case of lamps with light source module(s), the light source module(s) shall bear:~~
- ~~3.5.1. the trade name or mark of the applicant; this marking must be clearly legible and indelible;~~
- ~~3.5.2. the specific identification code of the module; this marking must be clearly legible and indelible.~~

~~This specific identification code shall comprise the starting letters “MD” for “MODULE” followed by the approval marking without the circle as prescribed in paragraph 4.3.1.1. below; this specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1. above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant.~~

- ~~3.5.3. the marking of the rated voltage and rated wattage.~~

5. APPROVAL

5.1 General

The first two figures in the approval number: “currently 00 for the Regulation in its original form”.

5.1.1 ⁶

⁶ See points 5.1.1 to 5.1.5 of Regulation No. X.

5.2 7

5.2.1 8

5.2.2 9

~~4.1. If the two samples of a type of rear fog lamp meet the requirements of this Regulation, approval shall be granted.~~

~~4.2. An approval number shall be assigned to each type approved; the number so assigned may not subsequently be assigned by the same Contracting Party to another type of rear fog lamp covered by this Regulation. The first two digits of the approval number shall indicate the most recent series of amendments incorporated in the Regulation at the time of issue of the approval. Notice of approval or of refusal of approval of a type of rear fog lamp shall be communicated to the Parties to the Agreement which apply this Regulation by means of a form conforming to the model in Annex 1 to this Regulation and of an attached drawing, supplied by the applicant for approval, in a format not exceeding A 4 (210 x 297 mm) and, if possible, on a scale of 1:1.~~

~~4.3. Every rear fog lamp conforming to a type approved under this Regulation shall bear in the space referred to in paragraph 3.3. above, in addition to the mark and the particulars prescribed in paragraphs 3.1. and 3.2. above:~~

~~4.3.1. an international approval mark consisting of:~~

~~4.3.1.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval;⁷~~

~~4.3.1.2. an approval number;~~

5.2.2.1 An additional symbol "F" followed by the figure "1" if the lamp produces a steady luminous intensity, and by the figure "2" if it produces a variable luminous intensity.

5.2.3 10

~~4.3.2. the additional symbol "F" followed by the figure "1" when the device produces steady luminous intensity and by the figure "2" when the device produces variable luminous intensity."~~

⁷ See point 5.2 of Regulation No. X.

⁸ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

⁹ See point 5.2.2 of Regulation No. X.

¹⁰ See points 5.2.3 to 5.4 of Regulation No. X.

- ~~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 symbol “F”.~~
- ~~4.4. — The mark and the symbol referred to in paragraphs 4.3.1. and 4.3.2. shall be indelible and shall be clearly legible even when the rear fog lamp is fitted to the vehicle.~~
- ~~4.5. — Independent lamps~~
- ~~— If different types of lamps complying with the requirements of several Regulations, uses the same outer lens having the same or different colour, a single international approval mark may be affixed, consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the lamp, provided that:~~
- ~~4.5.1. — It is visible after their installation.~~
- ~~4.5.2. — The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and if necessary, the required arrow shall be marked.~~
- ~~4.5.3. — The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which approval has been granted.~~
- ~~4.5.4. — The main body of the lamp shall include the space described in paragraph 3.3. above and shall bear the approval mark of the actual function(s).~~
- ~~4.5.5. — Model E in Annex 2 to this Regulation gives examples of an approval mark with the above mentioned additional symbols.~~
- ~~4.6. — When two or more lamps are part of the same unit of grouped, combined or reciprocally incorporated lamps, approval is granted only if each of these lamps satisfies the requirements of this Regulation or of another Regulation. Lamps not satisfying any one of those Regulations shall not be part of such a unit of grouped, combined or reciprocally incorporated lamps.~~
- ~~4.6.1. — Where grouped, combined or reciprocally incorporated lamps comply with the requirements of several Regulations, a single international approval mark may be applied, consisting of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval, an approval number and, if necessary, the required arrow. This approval mark may be placed anywhere on the grouped, combined or reciprocally incorporated lamps provided that:~~
- ~~4.6.1.1. — it is visible after their installation;~~

- ~~4.6.1.2. — no part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~
- ~~4.6.2. — The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval, shall be marked:~~
- ~~4.6.2.1. — either on the appropriate light emitting surface;~~
- ~~4.6.2.2. — or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see three possible examples in Annex 2).~~
- ~~4.6.3. — The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by a Regulation under which approval has been granted.~~
- ~~4.6.4. — An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~
- ~~4.7. — Annex 2 gives examples of arrangements 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.~~

6. GENERAL SPECIFICATIONS

6.1	11
6.2	12
6.3	13
6.4	14
6.5	15

¹¹ See point 6.1 of Regulation No. X.

¹² See points 6.2 to 6.6 of Regulation No. X.

¹³ See points 6.3 to 6.6 of Regulation No. X.

¹⁴ See points 6.4 to 6.6 of Regulation No. X.

¹⁵ See points 6.5 to 6.6 of Regulation No. X.

6.6 Heat resistance test

6.6.1 The lamp must be subjected to a one-hour test of continuous operation following a warm-up period of 20 minutes. The ambient temperature shall be $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$. The bulb used shall be a bulb of the category prescribed for the lamp, and shall be supplied with a current at a voltage such that it gives the specified average power at the corresponding test voltage.

6.6.2 Where only the maximum power is specified, the test shall be carried out by regulating the voltage to obtain a power equal to 90% of the specified power. The specified average or maximum power referred to above shall in all cases be chosen from the voltage range of 6, 12 or 24 V at which it reaches the highest value.

6.6.3 In the case of light sources operated by an electronic control gear to obtain variable luminous intensity, the test shall be carried out under the conditions given at minimum 90% of the higher luminous intensity.

6.6.4 After the lamp has been stabilized at the ambient temperature, no distortion, deformation, cracking or colour modification shall be perceptible.

~~5.1. Each sample shall conform to the specifications set forth in the paragraphs below.~~

~~5.2. Rear fog lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.~~

~~5.3. Light source module~~

~~5.3.1. The design of the light source module(s) shall be such that even in darkness the light source module(s) can be fitted in no other position, but the correct one.~~

~~5.3.2. The light source module(s) shall be tamperproof.~~

6.7 In case of failure of the variable intensity control regulating the variable luminous intensity of a rear fog lamp of category F2 emitting more than the maximum value of category F1, requirements of steady luminous intensity of category F1 shall be fulfilled automatically.

7. INTENSITY OF LIGHT EMITTED

7.1 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 references in the directions shown below (expressed in degrees of angle with the axis of reference).

7.2 The intensity along the H and V axes, between 10° to the left and 10° to the right and between 5° up and 5° down, shall not be less than 150 cd.

- 7.3 The intensity of the light emitted in all directions in which the light(s) can be observed shall not exceed 300 cd for a device with steady luminous intensity (F1) and 840 cd for a device with variable luminous intensity (F2).
- 7.4 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.
- 7.5 **In the case of variable luminous intensity lamps**, the variable intensity control shall not generate signals which cause luminous intensities:
outside the range **limits** specified in paragraphs 7.2 and 7.3 above and
- 7.5.2 exceeding the category F1 maximum specified in paragraph 7.3:
- [(a) for systems depending only on daytime and night time conditions: under night time conditions;]*
- (b) for other systems: under standard conditions.¹⁶
- 7.6 The apparent surface in the direction of the reference axis shall not exceed 140 cm².
- 7.7 Annex 4 gives particulars of the measurement method to be used in case of doubt.

8. TEST PROCEDURES¹⁷

~~7.1. All measurements, photometric and colorimetric, shall be made:~~

~~7.1.1. In the 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 uncoloured or coloured 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,~~

~~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.~~

* **This phrase in brackets [...] is perhaps no longer valid. If it is, then refer to “day” and “night” levels without referring to their “variability”.**

¹⁶ 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.

¹⁷ See points 8 to 8.4 of Regulation No. X.

- ~~7.1.3. In the case of a system that uses an electronic light source control gear or a variable intensity control, being part of the lamp⁴ 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.~~
- ~~7.1.4. In the case of a system that uses an electronic light source control gear or a variable intensity control, not being part of the lamp the voltage declared by the manufacturer shall be applied to the input terminals of the lamp.~~
- ~~7.2. The test laboratory shall require from the manufacturer the light source control gear or a variable intensity control needed to supply the light source and the applicable functions.~~
- ~~7.3. However in the case of a rear fog lamp of category f2 operated by a variable intensity control to obtain variable luminous intensity, photometric measurements shall be performed according to the applicant's description.~~
- ~~7.4. The voltage to be applied to the lamp shall be noted in the communication for in Annex 1 of this Regulation.~~
- ~~7.5. 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.~~
- ~~7.6. The limits of the apparent surface in the direction of the reference axis of a light-signalling device shall be determined.~~

~~8. HEAT RESISTANCE TEST~~

~~9. COLOUR OF LIGHT EMITTED~~

~~The colour of light emitted by a rear fog lamp shall be: red.**¹⁸~~

~~These requirements shall also apply to the entire range of luminous intensities produced by rear fog lamps of category F2.~~

** To be deleted if Regulation No. X refers to Regulation No. 48.

¹⁸ See point 9 of Regulation No. X, and supplement with the following paragraph relating to lamps with variable luminous intensity.

10. MODIFICATION OF A TYPE OF LAMP FOR MOTOR VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL¹⁹

11. CONFORMITY OF PRODUCTION²⁰

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

- ~~10.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6. and 9. above.~~
- ~~10.2. The minimum requirements for conformity of production control procedures set forth in Annex 4 to this Regulation shall be complied with.~~
- ~~10.3. The minimum requirements for sampling by an inspector set forth in Annex 5 to this Regulation shall be complied with.~~
- ~~10.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION²¹

~~The approval granted for a type of rear fog lamp may be withdrawn if the foregoing requirements are not complied with or if a rear fog lamp bearing the mark referred to in paragraphs 4.3.1. and 4.3.2. does not conform to the type approved.~~

- ~~11.2. If a Contracting Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith notify the other Contracting Parties which apply this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.~~

¹⁹ See points 10 to 10.3 of Regulation No. X.

²⁰ See points 11 to 11.4 of Regulation No. X.

²¹ See points 12 to 12.2 of Regulation No. X.

13. PRODUCTION DEFINITELY DISCONTINUED²²

~~If the holder of the approval completely ceases to manufacture a type of rear fog lamp approved under this Regulation, he shall inform thereof the authority which granted the approval. Upon receiving the relevant communication, that authority shall inform the other Parties to the Agreement which apply this Regulation thereof, by means of a communication form conforming to the model in Annex 1 to this Regulation.~~

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS²³

~~The Contracting Parties to the Agreement which apply this Regulation shall communicate to the secretariat of the United Nations the names and addresses of the technical services conducting approval tests and of the administrative departments which grant approval and to which the forms certifying approval or refusal or withdrawal of approval, issued in other countries, are to be sent.~~

²² See point 13 of Regulation No. X.

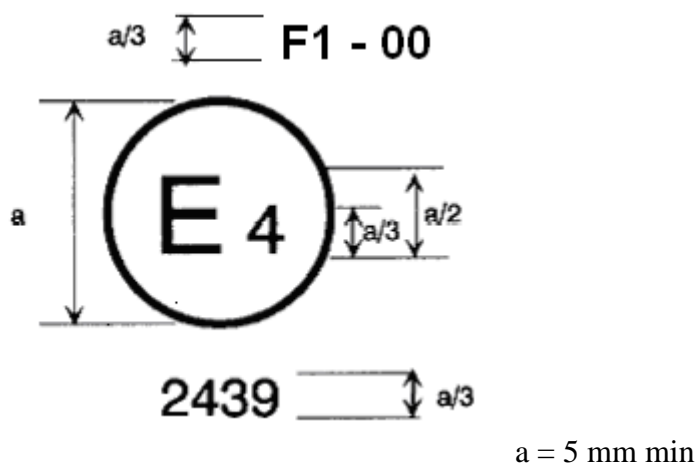
²³ See point 14 of Regulation No. X.

6. Technical service responsible for conducting approval tests
7. Date of report issued by that service
8. Number of reports issued by that service
9. **Concise** description:
Number, category and kind of light source(s):
Light source module: yes/no²
Light source module specific identification code:
Voltage and wattage:
Application of an electronic light source control gear or 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:
Name of manufacturer and device identification number of the electronic light source control gear or the variable intensity control (when the light source control gear is part of the lamp, but is not incorporated in the lamp body): .
Geometrical conditions of installation and relating variations; if any:
.....
10. Position of the approval mark:
11. Comments (if any)
12. Reason(s) for extension (if applicable):
13. Approval granted/extended/refused/withdrawn²
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 3

EXAMPLES OF APPROVAL MARKS

1. Marking for single lamps



The device bearing the approval mark shown above is a rear fog lamp producing steady luminous intensity, approved in the Netherlands (E 4) pursuant to Regulation No. 38 under approval number 2439. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 38 in its original version.

Note:¹

2. Simplified marking for grouped, combined or reciprocally incorporated lamps when two or more lamps are part of a single set²
3. Marking of independent lamps using the same lens³
4. Marking of light source modules⁴

See point 5 of annex 3 of Regulation No. X.

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

³ See point 4 of annex 3 of Regulation No. X.

⁴ See point 5 of annex 3 of Regulation No. X.

Annex 4

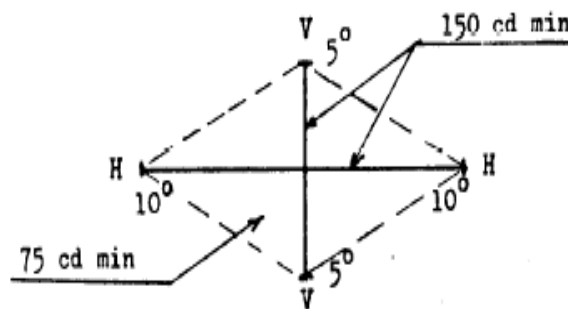
PHOTOMETRIC MEASUREMENTS

1. Measurement method¹

1. ~~When photometric measurements are taken, stray reflexions shall be avoided by appropriate masking.~~
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:~~
 - 2.1. ~~the distance of measurement shall be such that the law of the inverse of the square of the distance is applicable;~~
 - 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°;~~
 - 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.~~

2. Tables of standard light distribution in space

Measuring points expressed in degrees of angle with the axis of reference and values of the minimum intensities of the light emitted, in cd.



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 of the field of the reference axis specified by the manufacturer.~~

¹ See point 1 of annex 4 of Regulation No. X.

2.1 If visual examination of a light appears to reveal substantial local variations of intensity, a check shall be made to ensure that, outside the axes, no intensity measured within the rhombus defined by the extreme directions of measurement is below 75 cd (see diagram above).

3. Photometric measurement ~~on lamps equipped with several light sources~~²

The photometric performance shall be checked:

~~5.1. For non-replaceable light sources (filament lamps and other):~~

~~With the light sources present in the lamp, in accordance with paragraph 7.1. of this Regulation.~~

~~5.2. For replaceable filament lamps:~~

~~When equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than ∇ 5% from the mean value. Alternatively 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.~~

² See point 2 of annex 4 of Regulation No. X.

Annex 5

COLOUR OF LAMPS¹

¹ See annex 5 of Regulation No. X.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION CONTROL PROCEDURES¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. No measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 3 and for the chromaticity coordinates provided for in paragraph 9. of the Regulation.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~
- ~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. No measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.2.3. Lamps with apparent defects are disregarded.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

- ~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

~~2.1.1.1. sample A~~

~~A1: one lamp 0%~~

~~one lamp not more than 20%~~

~~A2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample B~~

~~2.1.1.2. sample B~~

~~B1: both lamps 0%~~

~~2.1.2. or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

~~2.2. The conformity is contested~~

~~2.2.1 Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~2.2.1.1. sample A~~

~~A3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.1.2. sample B~~

~~B2: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~B3: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 11 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

~~3.1.1.1. sample C~~

~~C1: one lamp ————— 0%~~

~~one lamp not more than ————— 20%~~

~~C2: both lamps more than ————— 0%~~

~~but not more than ————— 20%~~

~~go to sample D~~

~~3.1.1.2. sample D~~

~~D1: in the case of C2~~

~~both lamps ————— 0%~~

~~3.1.2. or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

~~3.2. The conformity is contested~~

~~3.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~3.2.1.1. sample D~~

~~D2: in the case of C2~~

~~one lamp more than ————— 0%~~

~~but not more than ————— 20%~~

~~one lamp not more than ————— 20%~~

~~3.2.1.2. or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

~~3.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 11 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~3.3.1. sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.5 PROPOSAL

REGULATION No. 77 - (Parking lamps)

(The text below has been based on Supplement 10 to the Regulation.)

Regulation No. 77

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF PARKING LAMPS
FOR POWER-DRIVEN VEHICLES

CONTENTS

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ANNEXES

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1. SCOPE

This Regulation applies to parking lamps for vehicles of categories M, N and T.¹

2. DEFINITIONS

For the purposes of this Regulation:

2.1 “Parking lamp” means the lamp used to draw attention to the presence of a stationary vehicle;

2.2 **“Definitions of terms”**.²

~~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.~~

2.3 **“Parking lamps of different types”**.³

~~“Parking 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.~~

3. APPLICATION FOR APPROVAL⁴

~~3.1 The application for approval of a type of lamp 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.~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

⁴ See points 3. to 3.2.4 of Regulation No. X.

~~3.2. For each type of parking lamp the application shall be accompanied by:~~

~~3.2.1. A brief technical description stating, in particular, with the exception of lamps with non-replaceable light sources, the categories of filament lamps prescribed; each filament lamp category shall be one or other of those contained in Regulation No. 37;~~

~~3.2.2. Drawings (three copies), in sufficient detail to permit identification of the type of the parking lamp and showing geometrically the position in which the lamp is to be mounted on the vehicle, the axis of observation to be taken as 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;~~

~~3.2.3. Two samples; if the parking lamps are such that they can be mounted only on one side of the vehicle, the two samples submitted may be identical and be suitable for mounting only on the right or only on the left side of the vehicle.~~

~~4. MARKINGS~~

~~4.1. Parking lamps submitted for approval shall clearly, legibly and indelibly bear:~~

~~4.1.1. The trade name or mark of the applicant;~~

~~4.1.2. A clearly legible and indelible marking indicating the category or categories of filament lamps prescribed; this is not valid for parking lamps with non-replaceable light sources;~~

~~4.1.3. In the case of parking lamps with non-replaceable light sources the marking of rated voltage and rated wattage.~~

~~4.2. Each lamp shall have a space of adequate dimensions for the approval mark and for the additional symbol prescribed in paragraph 5.5. below; this space shall be indicated in the drawings referred to in paragraph 3.2.2. above.~~

~~4.3. in the case of lamps with light source module(s), the light source module(s) shall bear:~~

~~4.3.1. the trade name or mark of the applicant; this marking must be clearly legible and indelible;~~

~~4.3.2. the specific identification code of the module; this marking must be clearly legible and indelible.~~

~~This specific identification code shall comprise the starting letters "MD" for "MODULE" followed by the approval marking without the circle as prescribed in paragraph 4.3.1.1. below; this specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1. above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant.~~

~~4.3.3. the marking of the rated voltage and rated wattage.~~

4. **MARKINGS⁵**

5. **APPROVAL**

5.1 **General**

The first two figures of the approval number: “currently 00 for the Regulation in its original form”

5.1.1 ⁶

5.2 ⁷

5.2.1 ⁸

5.2.2 ⁹

~~5.1. If the two samples of a parking lamp type submitted in accordance with paragraph 3.2.3. above meet the requirements of this Regulation, approval shall be granted.~~

~~5.2. An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of parking lamp.~~

~~5.3. Where approval is requested for a type of lighting and light signalling device comprising a parking lamp and other lamps a single approval mark may be issued provided that the lamp in question complies with the requirements of this Regulation and that each of the other lamps forming part of the lighting and light signalling device for which approval is requested, comply with the specific Regulation applying to them.~~

~~5.4. Notice of approval or refusal or extension or withdrawal of approval or production definitely discontinued shall be communicated to the Parties to the Agreement which apply this Regulation by means of a form conforming to the model in annex 1 to this Regulation.~~

⁵ See points 4 to 4.6 of Regulation No. X.

⁶ See points 5.1.1 to 5.1.5 of Regulation No. X.

⁷ See point 5.2 of Regulation No. X.

⁸ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

⁹ See point 5.2.2 of Regulation No. X.

~~5.5. Every parking lamp conforming to a type approved under this Regulation shall bear in the spaces referred to in paragraph 4.2. above, in addition to the marking prescribed in paragraph 4.1. an international approval mark consisting of:~~

~~5.5.1. A circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval;+~~

5.2.2.1 On devices meeting the requirements of this Regulation: the number of this Regulation, followed by the letter "R", a dash and the approval number.

5.2.2.2 When a lamp emits a light of amber colour towards the front and rear, the lamp must be marked with an arrow indicating its orientation, the arrow showing the front of the vehicle.

~~5.5.4. Where a single approval number is issued, as under paragraph 5.3., for a type of lighting and light signalling device comprising a parking lamp, and other lamps, a single approval mark may be affixed, consisting of the additional symbols prescribed by the various Regulations under which approval has been granted.~~

5.2.2.3 On devices with reduced light distribution in conformity to paragraph 2.3 in annex 4 to this Regulation a vertical arrow starting from a horizontal segment and directed downwards.

~~5.6. The marking according to paragraphs 4.1.1. and 5.5. shall be clearly legible and be indelible even when the parking lamps are fitted on the vehicles.~~

~~5.7. The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.~~

~~5.8. Annex 2 to this Regulation gives an example of an arrangement of the approval mark.~~

6. GENERAL SPECIFICATIONS¹⁰

~~6.1. Each sample shall conform to the specifications of paragraphs 7 and 9 of this Regulation.~~

~~6.2. Parking lamps shall be so designed and constructed that in normal use, despite the vibrations to which they may be subjected, their satisfactory operation continues to be ensured and they retain the characteristics prescribed by this Regulation.~~

¹⁰ See points 6.2 to 6.6 of Regulation No. X.

7. **INTENSITY OF LIGHT EMITTED**

7.1 In the reference axis, the light emitted by each of the two samples shall be of not less than the minimum intensity and of not more than the maximum intensity specified below:

	Minimum	Maximum
	(cd)	(cd)
7.1.1 Intensity of forward facing parking lamps	2	60
7.1.2 Intensity of rearward facing parking lamps	2	30

7.1.3 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.

7.2 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 samples shall:

7.2.1 In each direction corresponding to the points in the luminous intensity distribution table reproduced in annex 4 to this Regulation be not less than the value shown in the said table for the direction in question, expressed as a percentage of the minimum specified in paragraph 7.1;

7.2.2 In any direction within the space from which the light in question is visible, not exceed the maximum specified in paragraph 7.1;

7.2.3 However, a luminous intensity of 60 cd shall be permitted for parking lamps directed to the rear incorporated with stop-lamps (see paragraph 7.1.2) below a plane forming an angle of 5° with and downward from the horizontal plane;

7.2.4 Moreover,

7.2.4.1 Throughout the fields defined in annex 3 the intensity of the light emitted shall be not less than 0.05 cd,

7.2.4.2 The requirements of paragraph 2.2 of annex 4 on local variations of intensity shall be observed.

7.3 Annex 4 of this Regulation to which reference is made in paragraph 7.2.1, gives particulars of the methods of measurement to be used.

8. TEST PROCEDURES¹¹

~~All measurements shall be carried out with uncoloured standard filament lamps of the types prescribed for the device, adjusted to produce the normal luminous flux prescribed for those types of lamps.~~

~~8.1. All measurements on lamps equipped with non-replaceable light sources (filament lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V respectively.~~

~~In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply. The test laboratory may require from the manufacturer the special power supply needed to supply the light sources.~~

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted by a parking lamp shall be:

- (a) white in the front, red in the rear; or
- (b) amber.*¹²

Every approval under this Regulation is, by virtue of paragraph 5 above, granted for a type of device emitting light of a particular colour or uncoloured light; the Contracting Parties to the Agreement to which this Regulation is annexed are accordingly not precluded by article 3 of that Agreement from prohibiting, for devices fitted on the vehicles registered by them, certain colours provided for in this Regulation.**

~~The colour of the light emitted inside the field of the light distribution grid defined at paragraph 2 of annex 4, measured by using a source of light with a colour temperature of 2,856 K, corresponding to illuminant A of the International Commission on Illumination (CIE), shall be within the limits of the co-ordinates prescribed for the colour in question in annex 5 to this Regulation. Outside this field no sharp variation of colour shall be observed.~~

~~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, in accordance with paragraph 8.1. of this Regulation.~~

¹¹ See points 8 to 8.4 of Regulation No. X.

* To be deleted if Regulation No. X refers to Regulation No. 48.

¹² See point 9 of Regulation No. X, and supplement with the following paragraph.

** This comment is perhaps no longer necessary.

~~10. REMARKS CONCERNING COLOURS~~

~~Every approval under this Regulation is, by virtue of paragraph 5 above, granted for a type of device emitting light of a particular colour or uncoloured light; the Contracting Parties to the Agreement to which this Regulation is annexed are accordingly not precluded by article 3 of that Agreement from prohibiting, for devices fitted on the vehicles registered by them certain colours provided for in this Regulation.~~

10. MODIFICATIONS OF A TYPE OF PARKING LAMP AND EXTENSION OF APPROVAL¹³

~~11.1. Every modification of the type of parking lamp shall be notified to the administrative department which approved the type of parking lamp. The department may then either:~~

~~11.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the parking lamp still complies with the requirements; or~~

~~11.1.2. Require a further test report from the technical service responsible for conducting the tests.~~

~~11.2. Confirmation or refusal of approval, specifying the modification shall be communicated by the procedure specified in paragraph 5.4. above.~~

~~11.3. The competent authority issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension.~~

11. CONFORMITY OF PRODUCTION¹⁴

~~— 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:~~

~~12.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 7 and 9 above.~~

~~12.2. The minimum requirements for conformity of production control procedures set forth in annex 6 to this Regulation shall be complied with.~~

~~12.3. The minimum requirements for sampling by an inspector set forth in annex 7 to this Regulation shall be complied with.~~

¹³ See points 10 to 10.3 of Regulation No. X.

¹⁴ See points 11 to 11.4 of Regulation No. X.

~~12.4. — 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION¹⁵

~~13.1. — The approval granted in respect of a type of parking lamp pursuant to this Regulation may be withdrawn if the requirements set forth above are not complied with or if a parking lamp bearing the approval mark does not conform to the type approved.~~

~~13.2. — If a Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.~~

13. PRODUCTION DEFINITELY DISCONTINUED¹⁶

~~If the holder of the approval completely ceases to manufacture a parking lamp under 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 Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.~~

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS¹⁷

~~The Contracting Parties to the Agreement which apply this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.~~

15. TRANSITIONAL PROVISIONS

15.1 As from the official date of entry into force of Supplement 5 to the Regulation, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by Supplement 5.

¹⁵ See points 12 to 12.2 of Regulation No. X.

¹⁶ See point 13 of Regulation No. X.

¹⁷ See point 14 of Regulation No. X.

- 15.2** As from 24 months after the date of entry into force, Contracting Parties applying this Regulation shall grant ECE approvals only if the type of parking lamp to be approved meets the requirements of this Regulation as amended by Supplement 5.
- 15.3** Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to this Regulation in its original form and the subsequent supplements.
- 15.4** Contracting Parties applying this Regulation shall continue to grant approvals to those types of parking lamp which comply with the requirements of this Regulation in its original form and the subsequent supplements during the 12 months period which follows the date of entry into force of Supplement 5 to the Regulation.
- 15.5** ECE approvals granted under this Regulation earlier than 12 months after the date of entry into force and all extensions of approvals, including those to this Regulation in its original form and the subsequent supplements shall remain valid indefinitely. When the type of parking lamp approved to this Regulation in its original form and the subsequent supplements meets the requirements of this Regulation as amended by Supplement 5, the Contracting Party which granted the approval shall notify the other Contracting Parties applying this Regulation thereof.
- 15.6** No Contracting Party applying this Regulation shall refuse a type of parking lamp approved to Supplement 5 to this Regulation.
- 15.7** Until 36 months after the date of entry into force of Supplement 5 to the Regulation, no Contracting Party applying this Regulation shall refuse a type of parking lamp approved to the Regulation in its original form and the subsequent supplements.
- 15.8** Starting 36 months after the date of entry into force of Supplement 5 to the Regulation, Contracting Parties applying this Regulation may refuse the sale of a type of parking lamp which does not meet the requirements of Supplement 5 to this Regulation unless the parking lamp is intended as a replacement for fitting on vehicles in use.
- 15.9** Contracting Parties applying this Regulation shall continue to issue approvals for parking lamps on the basis of any previous Supplements to the Regulation, provided that parking lamps are intended as replacements for fitting to vehicles in use.
- 15.10** As from the official date of entry into force of Supplement 5 to the Regulation, no Contracting Party applying this Regulation shall prohibit the fitting on a vehicle of a parking lamp approved under this Regulation as amended by Supplement 5.
- 15.11** Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of a parking lamp approved to this Regulation in its original form and the subsequent supplements during the 48 months period which follows the date of entry into force of Supplement 5 to the Regulation.
- 15.12** Upon the expiration of a period of 48 months after the date of entry into force of Supplement 5 to the Regulation, Contracting Parties applying this Regulation may

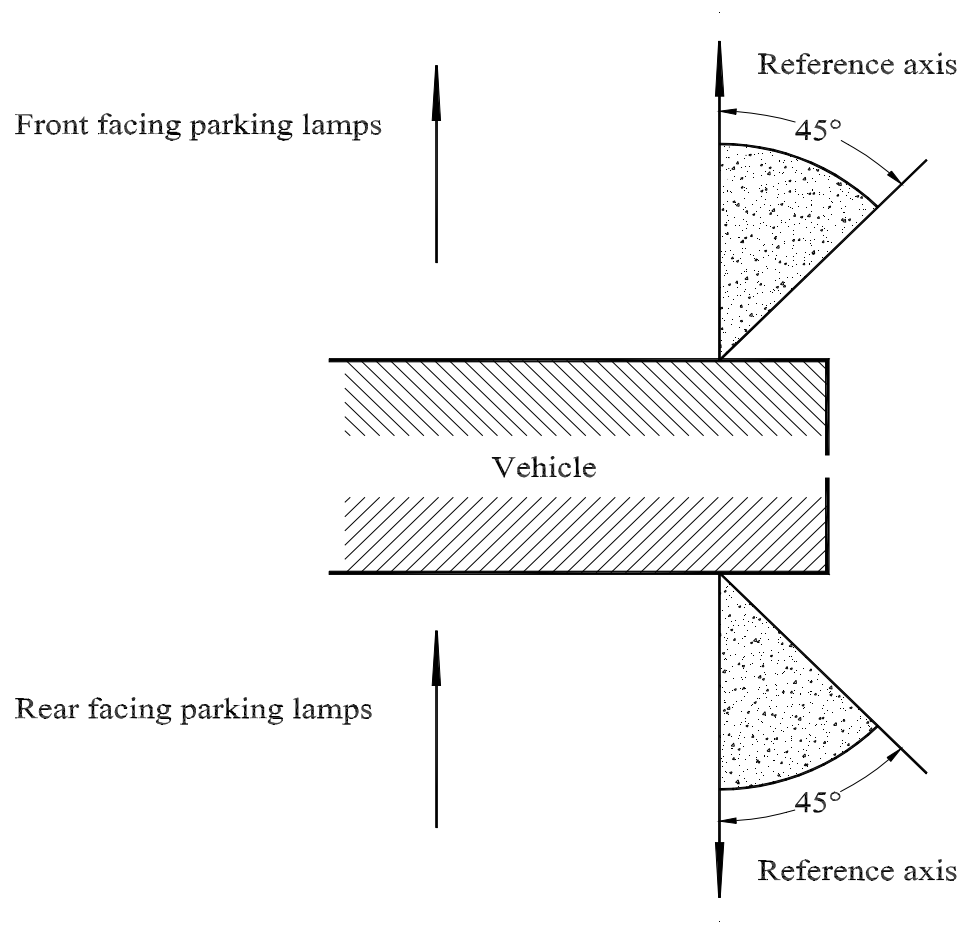
prohibit the fitting of a parking lamp which does not meet the requirements of this Regulation as amended by Supplement 5 on a new vehicle for which national type or individual approval was granted more than 24 months after the date of entry into force of Supplement 5 to the Regulation.

- 15.13** Upon the expiration of a period of 60 months after the date of entry into force, Contracting Parties applying this Regulation may prohibit the fitting of a parking lamp which does not meet the requirements of this Regulation as amended by Supplement 5 on a new vehicle first registered more than 60 months after the date of entry into force of Supplement 5 to the Regulation.

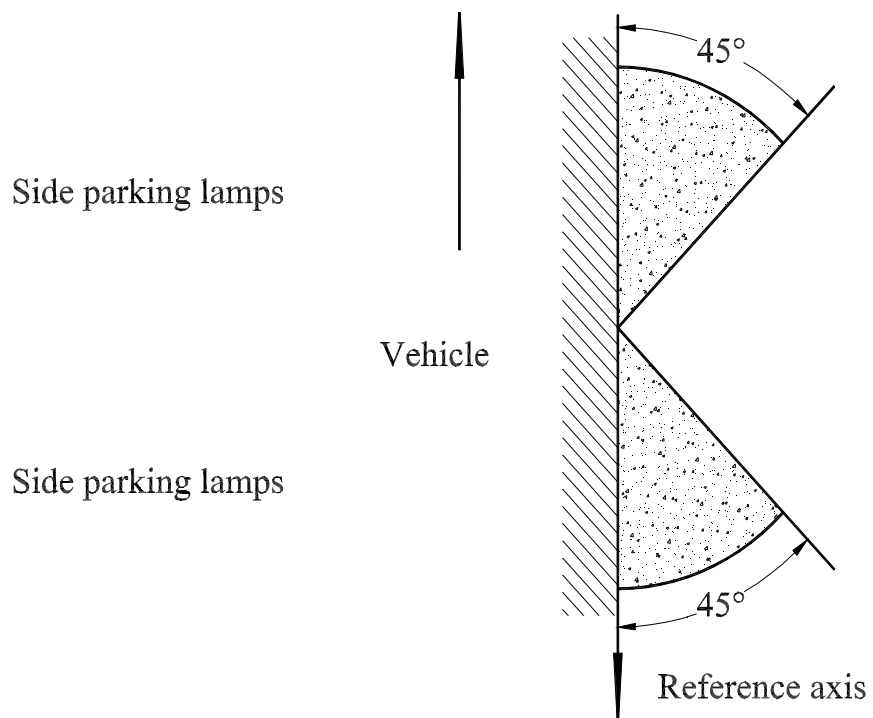
Annex 1

MINIMUM ANGLES REQUIRED FOR THE LIGHT DISTRIBUTION IN SPACE¹

In all cases, the minimum vertical angles of light distribution in space are 15° above and 15° below the horizontal except for lamps with a mounting height of equal to or less than 750 mm above the ground, for which they are 15° above and 5° below the horizontal.



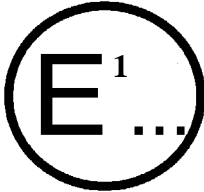
¹ The angles shown in these diagrams are correct for devices to be mounted on the right side of the vehicle. The arrows point to the front of the vehicles.



Annex 2

COMMUNICATION

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



issued by :

Name of administration:

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

concerning:²

APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITELY DISCONTINUED

of a type of parking lamp pursuant to Regulation No. 77

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
-

¹ Distinguishing number of the country which has issued/extended/refused/withdrawn approval (see approval provisions in the Regulation), **as in the list in note¹ of point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

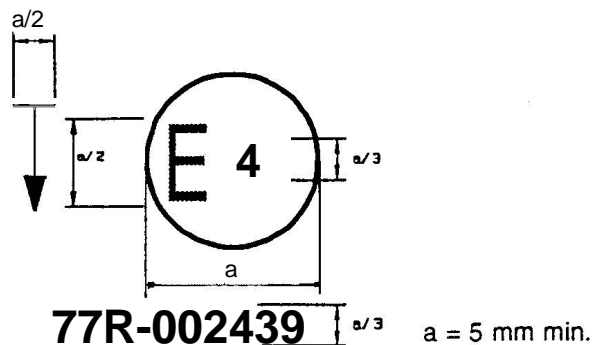
5. Submitted for approval on
6. Technical service responsible for conducting approval tests
7. Date of report issued by that service
8. Number of reports issued by that service
9. Concise description:
Number, category and kind of light source(s):
Light source module: yes/no²
Light source module specific identification code:
Voltage and wattage:
Application of an electronic light source control gear:
(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:
Name of manufacturer and device identification number of the electronic light source control gear (when the light source control gear is part of the lamp, but is not incorporated in the lamp body):
Colour of light emitted: red/white/amber²
Mounting height equal to or less than 750 mm off the ground: yes/no²
Geometrical conditions of installation and relating variations; if any:
.....
10. Position of the approval mark:
11. Comments (if any)
12. Reason(s) for extension (if applicable):.....

- 13. Approval granted/extended/refused/withdrawn²
- 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 3

ARRANGEMENTS OF APPROVAL MARKS

1. Marking for an independent lamp



The lamp bearing the above approval mark has been approved in the Netherlands (E4) pursuant to Regulation No. 77 under the approval number 002439. The first two digits of the approval number indicate that the approval was granted according to the requirements of Regulation No. 77 in its original form.

The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height of equal to or less than 750 mm from the ground for this device.

Note: ¹

2. Marking of light source modules²

¹ See point 1 of annex 3 of Regulation No. X.

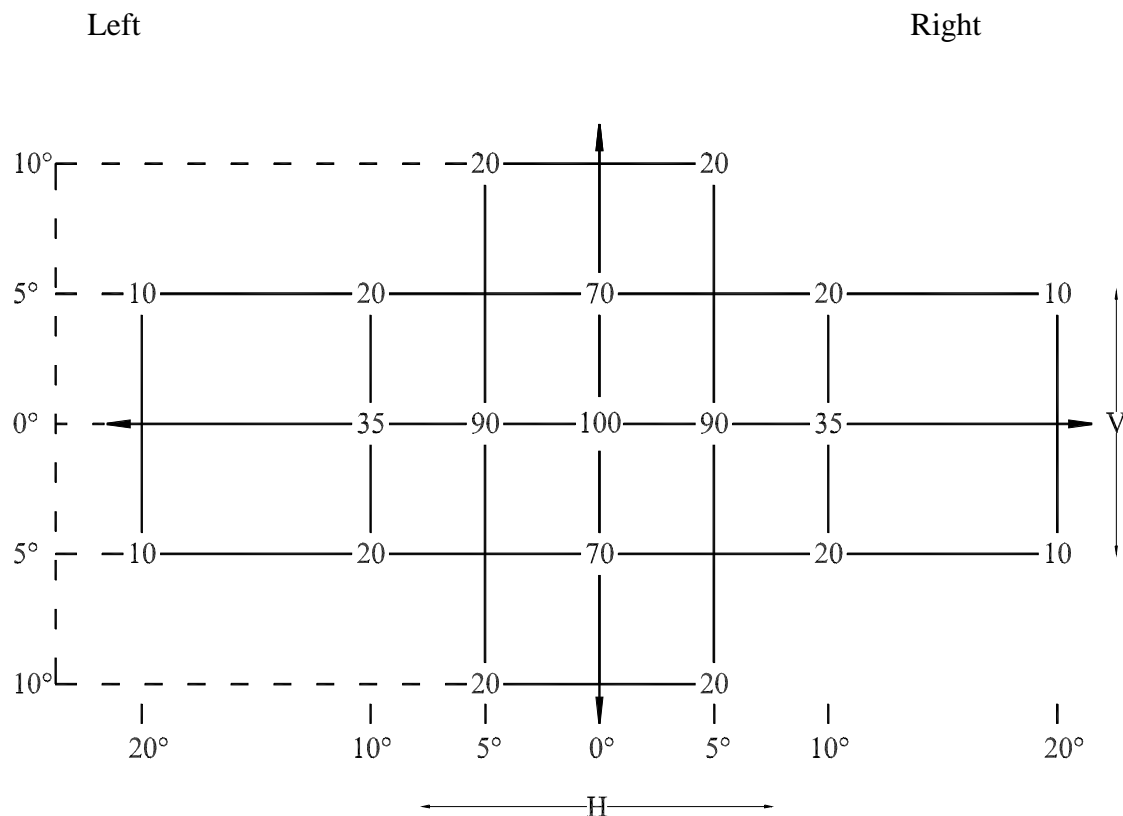
² See point 5 of annex 3 of Regulation No. X.

Annex 4

PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - ~~1.1. During photometric measurements, stray reflections shall be prevented by appropriate masking.~~
 - ~~1.2. Should the results of measurements be challenged, measurements shall be carried out in such a way as to meet the following requirements:~~
 - ~~1.2.1. the distance of measurements 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 angular aperture of the receiver viewed 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 deemed to be satisfied if that requirement is met in a direction deviating by not more than 15' 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 of the field of the reference axis specified by the manufacturer.~~
2. Standard luminous intensity distribution table

¹ See point 1 of annex 4 of Regulation No. X.



- 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 measurements, 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 in so far as the light intensity in each direction of a part of the field formed by the grid lines meets at least the lowest minimum percentage value being shown (available) on the grid lines surrounding the questioned direction.
- 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.

3. Photometric measurement of lamps²

~~The photometric performance shall be checked:~~

~~3.1. For non-replaceable light sources (filament lamps and other):~~

~~with the light sources present in the lamp, in accordance with paragraph 8.1. of this Regulation.~~

~~3.2. For replaceable filament lamps:~~

~~when equipped with mass production filament lamps at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall lie between the maximum limit given in this Regulation and the minimum limit of this Regulation increased according to the permissible deviation of the luminous flux permitted for the type of filament lamp chosen, as stated in Regulation No. 37 for production of filament lamps; alternatively, 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.~~

~~3.3. For any signalling lamp except those equipped with filament lamp(s), 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.~~

² See point 2 of annex 4 of Regulation No. X.

Annex 5

COLOUR OF LAMPS¹

TRICHROMATIC CO-ORDINATES

RED: limit towards yellow: $y \leq 0.335$

limit towards purple: $z \leq 0.008$

WHITE: limit towards blue: $x \geq 0.310$

limit towards yellow: $x \leq 0.500$

limit towards green: $y \leq 0.150 + 0.640 x$

limit towards green: $y \leq 0.440$

limit towards purple: $y \geq 0.050 + 0.750 x$

limit towards red: $y \geq 0.382$

AMBER: limit towards yellow: $y \leq 0.429$

limit towards red: $y \geq 0.398$

limit towards white: $z \leq 0.007$

For checking those colorimetric characteristics, a source of light at a colour temperature of 2,854 K corresponding to illuminant A of the International Commission on Illumination (CIE) shall be used. 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, in accordance with paragraph 8.1. of this Regulation.

¹ See annex 5 of Regulation No. X.

Annex 6¹

MINIMUM REQUIREMENTS FOR CONFORMITY OF
PRODUCTION CONTROL PROCEDURES

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY
THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in annex 4 and the chromaticity coordinates listed in annex 5, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 12.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with annex 7 (first sampling) would be 0.95.~~

Annex 7¹

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~

~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~

~~1.2.3. Lamps with apparent defects are disregarded.~~

~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

2.1.1.1. ~~sample A~~

A1: ~~one lamp~~ ~~0%~~

~~one lamp not more than~~ ~~20%~~

A2: ~~both lamps more than~~ ~~0%~~

~~but not more than~~ ~~20%~~

~~go to sample B~~

2.1.1.2. ~~sample B~~

B1: ~~both lamps~~ ~~0%~~

2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

2.2. ~~The conformity is contested~~

2.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

2.2.1.1. ~~sample A~~

A3: ~~one lamp not more than~~ ~~20%~~

~~one lamp more than~~ ~~20%~~

~~but not more than~~ ~~30%~~

2.2.1.2. ~~sample B~~

B2: ~~in the case of A2~~

~~one lamp more than~~ ~~0%~~

~~but not more than~~ ~~20%~~

~~one lamp not more than~~ ~~20%~~

B3: ~~in the case of A2~~

~~one lamp~~ ~~0%~~

~~one lamp more than~~ ~~20%~~

~~but not more than~~ ~~30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 13 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

3.1.1.1. ~~sample C~~

~~C1: one lamp 0%~~

~~one lamp not more than 20%~~

~~C2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample D~~

3.1.1.2. ~~sample D~~

~~D1: in the case of C2~~

~~both lamps 0%~~

3.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

3.2. ~~The conformity is contested~~

3.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

3.2.1.1. ~~sample D~~

~~D2: in the case of C2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

3.2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

3.3. ~~Approval withdrawn~~

~~Conformity shall be contested and paragraph 13 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

3.3.1. ~~sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

3.3.2. ~~sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

3.3.3. ~~or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.6 PROPOSAL

REGULATION No. 87 - (Daytime running lamps)

(The text below has been based on Supplement 10 to the Regulation.)

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ANNEXES

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Annex 2: Communication

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Annex 7: Minimum requirements for sampling by an inspector

1. **SCOPE**

This Regulation applies to daytime running lamps for vehicles of categories M, N and T.¹

2. **DEFINITIONS**

For the purposes of this Regulation:

2.1 “Daytime running lamp” means a lamp facing in a forward direction used to make the vehicle more easily visible when driving during daytime;

2.2 **“Definitions of terms”**.²

~~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.~~

2.3 **“Daytime running lamps of different “types”**.³

~~“Parking lamps of different types” means lamps which differ in such essential respects as:~~

~~The trade name or mark;~~

~~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.~~

3. **APPLICATION FOR APPROVAL**⁴

~~3.1. The application for approval shall be transmitted by the holder of the trade name or mark or 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.~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

⁴ See points 3. to 3.2.4 of Regulation No. X.

- ~~3.2. For each type of daytime running lamp, the application shall be accompanied by:~~
- ~~3.2.1. drawings (three copies) in sufficient detail to permit identification of the type of the daytime running lamp and showing geometrically the position(s) in which the daytime running lamp may be mounted on the vehicle, the axis of observation to be taken as the axis of reference in the tests (horizontal angle $H = 0^\circ$, vertical angle $V = 0^\circ$) and the point to be taken as the centre of reference in the said tests; and the illuminating surface,~~
- ~~3.2.2 a brief technical description stating, in particular, with the exception of lamps with non-replaceable light sources, the category (ies) of filament lamps (s) which is to be used; the filament lamp category shall be one of those contained in Regulation No. 37,~~
- ~~3.2.3 two lamps.~~

4. MARKINGS⁵

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 being not part of the lamp, must also bear a marking denoting the rated secondary design voltage.

~~Daytime running lamps submitted for approval shall,~~

- ~~4.1. bear on the lens the trade name or mark of the applicant; this marking must be clearly legible and be indelible,~~
- ~~4.2. bear a clearly legible and indelible marking showing the category (ies) of the filament lamp (s) which is (are) to be used; this is not valid for lamps with non-replaceable light sources,~~
- ~~4.3. in the case of a daytime running lamp with non-replaceable light sources bear the marking of rated voltage and rated wattage,~~
- ~~4.4. provide adequate space for the approval mark and for the additional symbols prescribed in paragraph 5.2. below; the said space shall be shown in the drawings referred to in paragraph 3.2.1. above.~~
- ~~4.5. in the case of lamps with light source module(s), the light source module(s) shall bear:~~
- ~~4.5.1. the trade name or mark of the applicant; this marking must be clearly legible and indelible;~~

⁵ See points 4 to 4.6 of Regulation No. X and supplement with the following paragraph.

~~4.5.2. the specific identification code of the module; this marking must be clearly legible and indelible.~~

~~This specific identification code shall comprise the starting letters “MD” for “MODULE” followed by the approval marking without the circle as prescribed in paragraph 4.3.1.1. below; this specific identification code shall be shown in the drawings mentioned in paragraph 2.2.1. above. The approval marking does not have to be the same as the one on the lamp in which the module is used, but both markings shall be from the same applicant.~~

~~4.5.3. the marking of the rated voltage and rated wattage.~~

~~4.6 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 secondary operating mode, must also bear a marking denoting the rated secondary design voltage.~~

~~4.7 An electronic light source control gear being part of the lamp but not included into the lamp body shall bear the name of the manufacturer and its identification number.~~

5. APPROVAL

5.1 General

The first two figures of the approval number: “currently 00 for the Regulation in its original form”

5.1.1 ⁶

5.2 ⁷

5.2.1 ⁸

5.2.2 ⁹With the symbol “RL”

5.2.3 ¹⁰

⁶ See points 5.1.1 to 5.1.5 of Regulation No. X.

⁷ See point 5.2 of Regulation No. X.

⁸ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

⁹ See point 5.2.2 of Regulation No. X and add the following sentence.

¹⁰ See points 5.2.3 to 5.4 of Regulation No. X.

- 5.1.1. ~~If the two lamps which are submitted in pursuance of paragraph 3.2.3. above satisfy the requirements to this Regulation, approval shall be granted.~~
- 5.1.2. ~~Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations annexed to the 1958 Agreement, a single international approval mark may be applied provided that such lamps are not grouped, combined or reciprocally incorporated with a lamp or lamps not satisfying any one of these Regulations.~~
- 5.1.3. ~~An approval number shall be assigned to each type approved. Its first two digits (at present 00 for the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign this number to another type of lamp covered by this Regulation.~~
- 5.1.4. ~~Notice of approval or of extension or refusal or withdrawal of approval or production definitely discontinued of a type of lamp pursuant to this Regulation shall be communicated to the Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in annex 1 to this Regulation.~~
- 5.1.5. ~~Every lamp conforming to a type approved under this Regulation shall bear, in the space referred to in paragraphs 4.4. above, an approval mark as described in paragraphs 5.2. and 5.3. below.~~
- 5.1.6. ~~The mark and symbols mentioned in paragraph 5.2. shall be indelible and clearly legible even when the lamp is mounted on the vehicle.~~
- 5.2. ~~Composition of the approval mark~~
- ~~The approval mark shall consist of:~~
- 5.2.1. ~~an international approval marking, comprising:~~
- 5.2.1.1. ~~a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval^{1/};~~
- 5.2.1.2. ~~an approval number;~~
- 5.2.2. ~~the additional symbol "RL".~~
- 5.2.3. ~~The two digits of the approval number which indicate the series of amendments in force at the time of issue of the approval, may be marked close to the above additional symbols.~~
- 5.3. ~~Arrangement of the approval mark~~

5.3.1. ~~Independent lamps~~

~~Annex 2, figure 1, to this Regulation gives an example of arrangement of the approval mark with the above mentioned additional symbols.~~

5.3.2. ~~Grouped, combined or reciprocally incorporated lamps~~

5.3.2.1. ~~Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be affixed, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:~~

5.3.2.1.1. ~~it is visible after their installation.~~

5.3.2.1.2. ~~no part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~

5.3.2.2. ~~The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow shall be marked:~~

5.3.2.2.1. ~~either on the appropriate illuminating surface,~~

5.3.2.2.2. ~~or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified.~~

5.3.2.3. ~~The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by the Regulation under which approval has been granted.~~

5.3.2.4. ~~An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~

5.3.2.5. ~~Annex 2, figure 2, to this Regulation gives examples of arrangements of approval marks for grouped, combined or reciprocally incorporated lamps with all the above mentioned additional symbols.~~

5.3.3. ~~Lamps reciprocally incorporated with other lamps, of which the lens may also be used for other types of devices~~

~~The provisions laid down in paragraph 5.3.2. above are applicable.~~

~~5.3.3.1. In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the device, even if it cannot be separated from the lens, also comprises the space described in paragraph 4.4. above and bears the approval marks of the actual functions.~~

~~If different types of devices comprise the same main body, the latter may bear the different approval marks.~~

~~5.3.3.2. Annex 2, figure 3, to this Regulation gives examples of arrangements of approval marks relating to the above case.~~

6. GENERAL SPECIFICATIONS

6.1 11

6.2 12

6.3 13

6.4 14

6.5 15

6.6 Heat resistance test

6.6.1 The lamp must be subjected to a one-hour test of continuous operation following a warm-up period of 20 minutes. The ambient temperature shall be $23^{\circ}\text{C} \pm 5^{\circ}$. The filament lamp used shall be a filament lamp of the category specified for the lamp, and shall be supplied with a current at a voltage such that it gives the specified average power at the corresponding test voltage. However, for lamps equipped with non-replaceable light sources (filament lamps and other), the test shall be made with the light sources present in the lamp, in accordance with paragraph **8.1 of Regulation No. X.**

6.6.2 Where only the maximum power is specified, the test shall be carried out by regulating the voltage to obtain a power equal to 90% of the specified power. The

¹¹ See point 6.1 of Regulation No. X.

¹² See point 6.2 of Regulation No. X.

¹³ See point 6.3 of Regulation No. X.

¹⁴ See point 6.4 of Regulation No. X.

¹⁵ See point 6.5 of Regulation No. X.

specified average or maximum power referred to above shall in all cases be chosen from the voltage range of 6, 12 or 24 V at which it reaches the highest value; for lamps equipped with non-replaceable light sources (filament lamps and other) the test conditions set in paragraph **8.1 of Regulation No. X** shall be applied.

6.6.3 After the lamp has been stabilized at the ambient temperature, no distortion, deformation, cracking or colour modification shall be perceptible. In case of doubt the intensity of light according to paragraph 7 **below** shall be measured. At that measurement the values shall reach at least 90% of the values obtained before the heat resistance test on the same device.

6.7 Daytime running lamps, which are reciprocally incorporated with another function, using a common light source, and designed to operate permanently with an electronic light source control gear to regulate the intensity of the light emitted, are permitted.

~~6.1. Each lamp shall conform to the specifications set forth in the paragraphs below.~~

~~6.2. Daytime running lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.~~

~~6.3 Light source modules~~

~~6.3.1. The design of the light source module(s) shall be such that even in darkness the light source module (s) can be fitted in no other position, but the correct one.~~

~~6.3.2. The light source module(s) shall be tamperproof.~~

7. INTENSITY OF LIGHT EMITTED

7.1 The intensity of the light emitted by each lamp shall not be less than 400 cd in the axis of reference.

7.2 Outside the reference axis, in each direction corresponding to the points in the light distribution table reproduced in annex 1 to this Regulation, the intensity of the light emitted by each lamp shall:

7.2.1 In each direction corresponding to the points in the luminous intensity distribution table reproduced in annex 4 to this Regulation be not less than the value shown in paragraph 7.1, above, and the percentage of the minimum indicated by that table for the direction in question; and

7.2.2 Not exceed 1,200 cd in any direction in which the lamp is visible.

7.3 Furthermore, in the entire field defined in the diagrams in annex 1, the intensity of the light emitted shall be at least 1.0 cd.

7.4 The apparent surface in the direction of the reference axis shall be between 25 cm² and 200 cm².

~~8. ILLUMINATING SURFACE~~

~~The area of the illuminating surface shall be not less than 40 cm².~~

8. TEST PROCEDURES¹⁶

~~10.1. All measurements shall be carried out with a colourless standard filament lamp of the category indicated for the daytime running lamp adjusted to produce the reference luminous flux specified for this category of filament lamp.~~

~~10.2. All measurements on lamps equipped with non-replaceable light sources (filament lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V respectively.~~

~~In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply. The test laboratory may require from the manufacturer the special power supply needed to supply the light sources.~~

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted by a daytime running light shall be: white^{*17}

~~The colour of the light shall be white. It shall be measured under the conditions as prescribed in paragraph 10. below.~~

~~The colour must be within the limits of the trichromatic co-ordinates prescribed in Annex 4 to this Regulation.”~~

~~11. HEAT RESISTANCE TEST~~

10. MODIFICATION OF A TYPE OF DAYTIME RUNNING LAMP FOR MOTOR VEHICLES AND EXTENSION OF APPROVAL¹⁸

~~12.1. Every modification of the type of lamp shall be notified to the administrative department which approved the type of lamp. The department may then either:~~

¹⁶ See point 8 of Regulation No. X.

* To be deleted if Regulation No. X refers to Regulation No. 48.

¹⁷ See point 9 of Regulation No. X.

¹⁸ See point 10 of Regulation No. X.

- ~~12.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the lamp still complies with the requirements; or~~
- ~~12.1.2. Require a further test report from the technical service responsible for conducting the tests.~~
- ~~12.2. Confirmation or refusal of approval, specifying the alterations shall be communicated by the procedure specified in paragraph 5.1.4. above to the Parties to the Agreement applying this Regulation.~~
- ~~12.3. The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.~~

11. CONFORMITY OF PRODUCTION¹⁹

- ~~13.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6, 7, 8 and 9 above.~~
- ~~13.2. The minimum requirements for conformity of production control procedures set forth in annex 5 to this Regulation shall be complied with.~~
- ~~13.3. The minimum requirements for sampling by an inspector set forth in annex 8 to this Regulation shall be complied with.~~
- ~~13.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION²⁰

- ~~14.1. The approval granted in respect of a type of daytime running lamp pursuant to this Regulation may be withdrawn if the requirements are not complied with or if a daytime running lamp bearing the approval mark does not conform to the type approved.~~
- ~~14.2. If a Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.~~

¹⁹ See point 11 of Regulation No. X.

²⁰ See point 12 of Regulation No. X.

13. PRODUCTION DEFINITELY DISCONTINUED²¹

~~If the holder of the approval completely ceases to manufacture a type of daytime running 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 Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.~~

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS²²

~~The Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, or production definitely discontinued, issued in other countries, are to be sent.~~

²¹ See point 13 of Regulation No. X.

²² See point 14 of Regulation No. X.

Annex 1

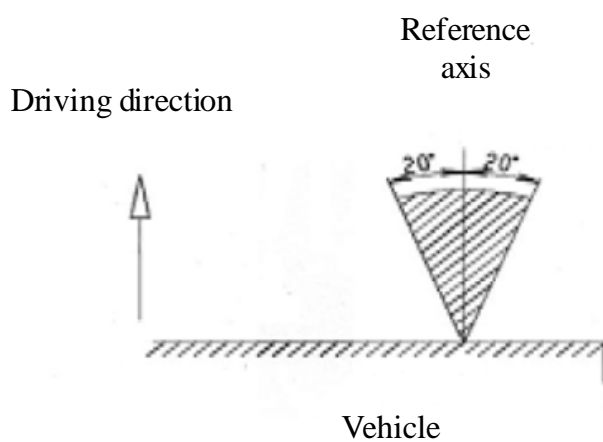
MINIMUM ANGLES REQUIRED FOR THE LIGHT DISTRIBUTION IN SPACE

1. VERTICAL ANGLES

In all cases, the minimum vertical angles of light distribution in space are 10° above and 5° below the horizontal for the daytime running lights covered by this Regulation.

2. HORIZONTAL ANGLES

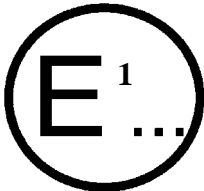
Minimum horizontal angles of light distribution in space:



Annex 2

COMMUNICATION

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



issued by :

Name of administration:

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

concerning:²

- APPROVAL GRANTED
- APPROVAL EXTENDED
- APPROVAL REFUSED
- APPROVAL WITHDRAWN
- PRODUCTION DEFINITELY DISCONTINUED

of a type of daytime running lamp pursuant to Regulation No. 87

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

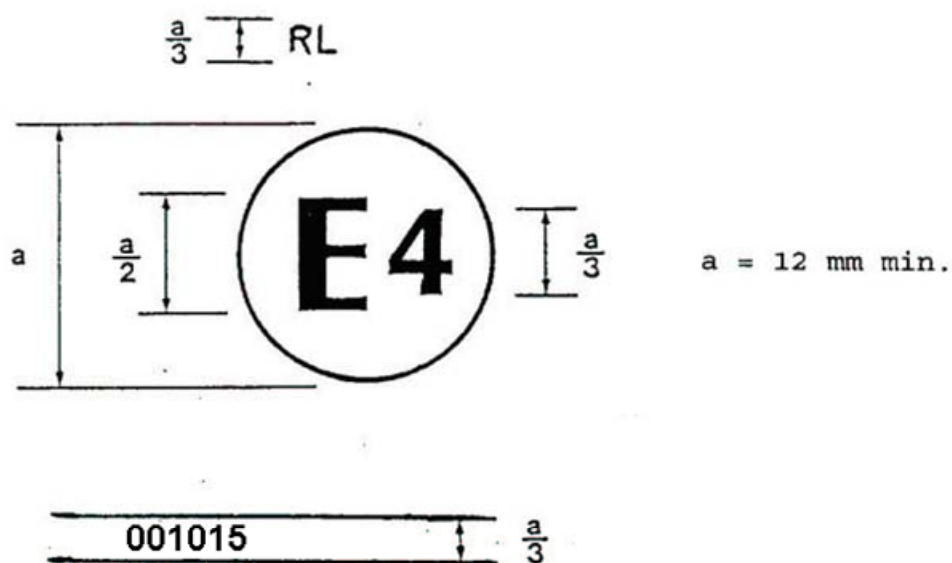
¹ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation), **as in the list in note¹ of point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

7. Date of report issued by that service
8. Number of reports issued by that service
9. **Concise** description:
By category of lamp:
Number, category and kind of light source(s):
- Light source module: yes/no²**
- Light source module specific identification code:**
- Voltage and wattage:
- Application of an electronic light source control gear:**
- (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:
- Name of manufacturer and device identification number** of the electronic light source control gear **or of the light source(s)** (when the light source control gear is part of the lamp, but is not incorporated in the lamp body):
- Geometrical conditions of installation and relating variations; if any:
-
10. Position of the approval mark:
11. Comments (if any)
12. Reason(s) for extension (if applicable):
13. Approval granted/extended/refused/withdrawn²
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 3

ARRANGEMENTS OF APPROVAL MARKS



The daytime running lamp bearing the approval mark shown above has been approved in the Netherlands (E4) under number 001015. The approval number indicates that the approval was granted according to the requirements of this Regulation in its original form.

Note:¹

2. **Simplified marking of grouped, combined or reciprocally incorporated lamps when two or more lamps are part of the same assembly²**
3. **Marking of a lamp reciprocally incorporated with a headlamp³**
4. **Marking of light source modules⁴**

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

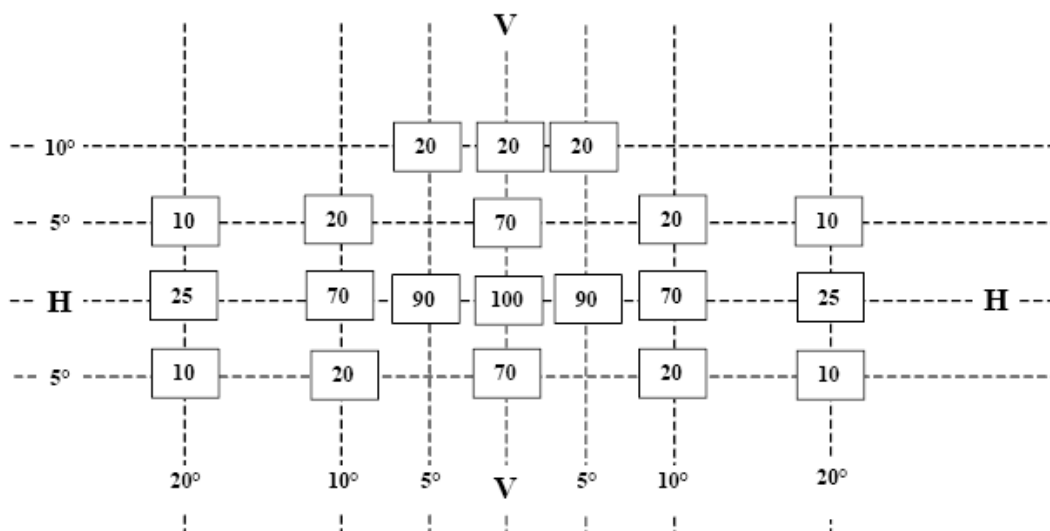
³ See point 3 of annex 3 of Regulation No. X.

⁴ See point 4 of annex 3 of Regulation No. X.

Annex 4

PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
2. Standard luminous intensity distribution table



- 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 ²

3. Photometric measurements of lamps³

1. ~~When photometric measurements are taken, stray reflections shall be avoided by appropriate masking.~~
2. ~~In the event that the results of measurements are challenged, measurements shall be taken in such way as to meet the following requirements:~~

¹ See point 1 of annex 4 of Regulation No. X.

² See point 2.2 of annex 4 of Regulation No. X.

³ See point 2 of annex 4 of Regulation No. X.

- ~~2.1. the distance of measurement shall be such that the law of the inverse of the square of the distance is applicable:~~
- ~~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° :~~
- ~~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.~~
- ~~3. In the case where the daytime running lamp 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 the reference axis specified by the manufacturer.~~
- ~~4. Photometric measurement of lamps~~
- ~~The photometric performance shall be checked:~~
- ~~4.1 For non-replaceable light sources (filament lamps or other):~~
- ~~with the light sources present in the lamp, in accordance with paragraph 10. of this Regulation.~~
- ~~4.2 For replaceable filament lamps:~~
- ~~when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than $\pm 5\%$ from the mean value. Alternatively 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.~~
- ~~4.3. For any daytime running lamp except those equipped with filament lamp(s), 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.~~
- ~~5. Table of standard light distribution~~

- 5.1. ~~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 $V = 0^\circ$).~~
- 5.2. ~~Within the field of light distribution of paragraph 3. above schematically shown as a grid, the light pattern should be substantially uniform, i.e. in so far as 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.~~

Annex 5

COLOUR OF LAMPS

Trichromatic coordinates and measurement method:¹

~~COLOUR OF LIGHTS~~

TRICHROMATIC COORDINATES

WHITE

Limit towards blue ————— $X \geq 0.310$

Limit towards yellow ————— $X \leq 0.500$

Limit towards green ————— $(Y \leq 0.150 + 0.640 X$
 $(Y \leq 0.440$

Limit towards purple ————— $Y \geq 0.050 + 0.750 X$

Limit towards red ————— $Y > 0.382$

CORNER POINTS	<u>X</u>	<u>Y</u>
	0.310	0.348
	0.310	0.283
	0.443	0.382
	0.500	0.382
	0.500	0.440
	0.453	0.440

¹ See annex 5 of Regulation No. X.

Annex 6

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION CONTROL PROCEDURES¹

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. — Methods used in tests~~

~~2.2.1. — Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. — In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. — The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. — In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. — Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. — Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in annex 3 and the chromaticity coordinates listed in annex 4, provided for in the Regulation.~~

~~2.5. — Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 13.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with annex 6 (first sampling) would be 0.95.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~

~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~

~~1.2.3. Lamps with apparent defects are disregarded.~~

~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

~~2.1.1.1. sample A~~

~~A1: one lamp 0%~~

~~one lamp not more than 20%~~

~~A2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample B~~

~~2.1.1.2. sample B~~

~~B1: both lamps 0%~~

~~2.1.2. or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

~~2.2. The conformity is contested~~

~~2.2.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

~~2.2.1.1. sample A~~

~~A3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.1.2. sample B~~

~~B2: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~B3: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 14. applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

3.1.1.1. ~~sample C~~

~~C1: one lamp ————— 0%~~
~~one lamp not more than ————— 20%~~
~~C2: both lamps more than ————— 0%~~
~~but not more than ————— 20%~~
~~go to sample D~~

3.1.1.2. ~~sample D~~

~~D1: in the case of C2~~
~~both lamps ————— 0%~~

3.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

3.2. ~~The conformity is contested~~

3.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

3.2.1.1. ~~sample D~~

~~D2: in the case of C2~~
~~one lamp more than ————— 0%~~
~~but not more than ————— 20%~~
~~one lamp not more than ————— 20%~~

3.2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

3.3. ~~Approval withdrawn~~

~~Conformity shall be contested and paragraph 14. applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~3.3.1. sample C~~

~~C3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~C4: both lamps more than 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than 0%~~

~~one lamp more than 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.7 PROPOSAL

REGULATION No. 91 - (Side-marker lamps)

(The text below has been based on Supplement 9 to the Regulation.)

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ANNEXES

Annex 1: Minimum angles required for the light distribution of lamps in space

Annex 2: Communication

Annex 3: Arrangements of approval marks

Annex 4: Photometric measurements

Annex 5: **Colour of lamps**

Annex 6: Minimum requirements for conformity of production control procedures

Annex 7: Minimum requirements for sampling by an inspector

1. SCOPE

This Regulation applies to side-marker lamps for vehicles of categories M, N, O and T.¹

2. DEFINITIONS

For the purposes of this Regulation:

2.1 “Side-marker lamp” means a lamp used to indicate the presence of the vehicle when viewed from the side;

2.2 **“Definitions of terms”**:²

~~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.~~

2.3 **“Side-marker lamps of different types”**³

~~“Side-marker lamps of different types” means lamps which differ in such essential respects as:~~

~~The trade name or mark;~~

~~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.~~

3. APPLICATION FOR APPROVAL⁴

~~3.1. 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~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

⁴ See points 3 to 3.2.4 of Regulation No. X, and supplement with the following paragraph.

~~reference planes and to the ground or rotate around its reference axis; these different conditions of installation shall be indicated in the communication form. It shall specify:~~

~~3.1.1. whether the side marker lamp is intended to emit amber or red light.~~

~~3.2. For each type of side marker lamp the application shall be accompanied by:~~

~~3.2.1. Drawings in triplicate, sufficiently detailed to permit identification of the type of lamp and showing geometrically in what position(s) it may be mounted on the vehicle; the axis of observation to be taken as the axis of reference in the tests (horizontal angle $H = 0^\circ$, vertical angle $V = 0^\circ$); the point to be taken as the centre of reference in the said tests; the vertical and horizontal tangents to the illuminating surface and their distances from the centre of reference of the lamp. The drawings shall show the position intended for the approval number and the additional symbols in relation to the circle of the approval mark.~~

~~“3.2.2. a brief technical description stating, in particular, with the exception of lamps with non-replaceable light sources:~~

~~the category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those contained in Regulation No. 37; and/or~~

~~the light source module specific identification code.”~~

3.1 Two samples of the side-marker lamp; if the application is made for side-marker lamps which are not identical but are symmetrical and suitable for mounting one on the left and one on the right side of the vehicle and/or, alternatively, one towards the front and one towards the rear, the two samples submitted may be identical and be suitable for mounting only on the right or only on the left side of the vehicle and/or, alternatively, only towards the front or only towards the rear.

4. MARKINGS⁵

~~4.1. Side marker lamps submitted for approval:~~

~~4.2. Must bear the trade name or mark of the applicant; this marking must be clearly legible and indelible;~~

~~4.3. Must bear a clearly legible and indelible marking indicating the category or categories of filament lamps prescribed; this is not valid for lamps with non-replaceable light sources;~~

⁵ See points 4 to 4.6 of Regulation No. X.

~~4.4. Must comprise a space of sufficient size for the approval marking and the additional symbols prescribed in paragraph 5.4. below; this space shall be shown in the drawings mentioned in paragraph 3.2.1. above;~~

~~4.5. In the case of lamps with non-replaceable light sources, must bear the marking of rated voltage and rated wattage.~~

5.1 **General**

The first two figures of the approval number: “currently 00 for the Regulation in its original form”

5.1.1 ⁶

5.2 ⁷

5.2.1 ⁸

5.2.2 ⁹

~~5.1. If the two side marker lamps submitted for approval pursuant to paragraph 3.2.3. above satisfy the provisions of this Regulation, approval shall be granted.~~

~~5.2. An approval number shall be assigned to each type approved. Its first two digits shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign this number to another type of side marker lamp covered by this Regulation except in the case of the extension of the approval to a side marker lamp differing only in the colour of the light emitted.~~

~~5.3. Notice of approval or of extension or of refusal of approval of a type of side marker lamp shall be communicated to the Parties to the Agreement which apply this Regulation, by means of a form conforming to the model in annex 2 to this Regulation.~~

~~5.4. Every side marker lamp conforming to a type approved under this Regulation shall bear, in the space referred to in paragraph 4.4. above, and in addition to the markings prescribed in paragraphs 4.2. and 4.3. or 4.4. respectively:~~

⁶ See points 5.1.1 to 5.1.5 of Regulation No. X.

⁷ See point 5.2 of Regulation No. X.

⁸ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

⁹ See point 5.2.2 of Regulation No. X and add the following paragraphs.

- ~~5.4.1. — an international approval mark consisting of:~~
- ~~5.4.1.1. — a circle surrounding the letter “E” followed by distinguishing number of the country which has granted the approval, ¹⁰/ and~~
- ~~5.4.1.2. — the approval number prescribed in paragraph 5.2. above.~~
- 5.2.2.1** With the symbol “SM1” or “SM2”;
- ~~5.4.3. — The two digits of the approval number which indicate the series of amendments in force on the date of issue of the approval may be marked close to the above additional symbol.~~
- 5.2.2.2** On devices with reduced light distribution in conformity to paragraph 2.5 in annex 4 to this Regulation a vertical arrow starting from a horizontal segment and directed downwards.
- ~~5.5. — The marks and symbols mentioned in paragraphs 5.4.1. to 5.4.3. above shall be indelible and clearly legible even when the device is mounted on the vehicle.~~
- ~~5.6. — Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be applied provided that such lamps are not grouped, combined or reciprocally incorporated with a lamp or lamps not satisfying any one of those Regulations.~~
- ~~5.6.1. — The approval mark shall consist of a circle surrounding the letter “E” followed by the distinguishing number of the country which has granted the approval; an approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps provided that:~~
- ~~5.6.1.1. — It is visible after their installation;~~
- ~~5.6.1.2. — No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~
- ~~5.7. — The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of approval shall be marked;~~
- ~~5.7.1. — either on the appropriate light emitting surface, or~~
- ~~5.7.2. — in a group, in such a way that each lamp may be clearly identified (see three possible models in example 2 shown in annex 3).~~
- ~~5.8. — The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks under which the approval was granted.~~

- ~~5.9. An approval number shall be assigned to each type approved. The same Contracting Party shall not assign the same number to another type of assembly covered by this Regulation.~~
- ~~5.10. Annex 3 to this Regulation gives examples of arrangements of approval marks for a single lamp (example 1) and for an assembly (example 2).~~
- ~~5.11. Lamps grouped with a type of headlamp of which the lens is also used for another type of headlamp. The provisions laid down in paragraphs 5.6. to 5.9. above are applicable.~~
- ~~5.11.1. However, if different types of headlamps or units of lamps including a headlamp comprise the same lens, the latter may bear the different approval marks relating to these types of headlamp or units of lamps, provided that the main body of the headlamp, even if it cannot be separated from the lens, bears the approval marks of the actual functions. If different types of headlamps comprise the same main body, the latter may bear the different approval marks.~~
- ~~5.11.2. Annex 3 to this Regulation gives examples of approval marks relating to lamps which are grouped with a headlamp (example 3).~~
- ~~5.12. The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.~~

5.2.3 10

6. GENERAL SPECIFICATIONS¹¹

- ~~6.1. Each side marker lamp submitted for approval shall conform to the specifications set out in paragraphs 7 and 8 of this Regulation.~~
- ~~6.2. Side marker lamps shall be so designed and made that, in normal use, despite the vibrations to which they may then be subjected, their satisfactory operation continues to be ensured and they retain the characteristics prescribed by this Regulation.~~

7. INTENSITY OF LIGHT EMITTED

- 7.1 The intensity of the light emitted by each of the two samples submitted shall be:

¹⁰ See points 5.2.3 to 5.4 of Regulation No. X.

¹¹ See points 6.1 to 6.6 of Regulation No. X.

Side-marker lamp category		SM1	SM2
7.1.1	Minimum intensity	4.0 cd	0.6 cd
	In the axis of reference		
	Within the specified angular field, other than above	0.6 cd	0.6 cd
7.1.2	Maximum intensity ¹²	25.0 cd	25.0 cd
7.1.3	Angular field	± 45 deg.	± 30 deg.
	Horizontal		
	Vertical	± 10 deg.	± 10 deg.

7.1.4 In the case of a lamp containing more than one light source:

The lamp shall comply with the minimum intensity required when any one light source has failed;

When all light sources are in **operation**, the maximum intensity specified may not be exceeded.

All light sources which are connected in series are considered to be one light source.

7.2 Outside the reference axis and within the angular fields defined in the diagrams in annex 1 to this Regulation, the intensity of the light emitted by each of the two side-marker lamps supplied must:

7.2.1 In each direction corresponding to the points in the light distribution table reproduced in annex 4 to this Regulation, be not less than the ~~[product of the]~~ minimum specified in paragraph 7.1 above ~~[by the percentage specified in the said table for the direction in question];*~~

7.2.2 In no direction within the space from which the side-marker lamp is visible, exceed the maximum specified in paragraph 7.1 above;

7.2.3 The provisions of paragraph 2.4 of annex 4 to this Regulation on local variations of intensity must be observed.

7.3 Annex 4, to which reference is made in paragraph 7.2.1 above, gives particulars of the measurement methods to be used.

¹² In addition, for red side-marker lamp, in the angular field from 60° to 90° in horizontal direction and ± 20° in vertical direction towards the front of the vehicle, the maximum intensity is limited to 0.25 cd.

* Delete the phrase in square brackets [...], as there are no percentages in the tables.

8. TEST PROCEDURES¹³

~~9.1. Measurements shall be carried out with a colourless standard filament lamp of the type recommended for the side marker lamp and so regulated as to produce the reference luminous flux prescribed for this type of lamp, taking into account the provisions of paragraph 9.2. below.~~

~~9.2. All measurements on lamps equipped with non-replaceable light sources (filament lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V respectively.~~

~~In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply.~~

~~The test laboratory may require from the manufacturer the special power supply needed to supply the light sources.~~

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted by a side-marker lamp shall be:

(a) amber;

(b) however, it may emit red light, if it is grouped or combined or reciprocally incorporated with the rear position lamp, the rear end-outline marker lamp, the rear fog lamp, the stop-lamp, or is grouped with or has part of the light emitting surface in common with the rear retro-reflector.**¹⁴

10. MODIFICATION OF SIDE-MARKER LAMP TYPE FOR MOTOR VEHICLES AND THEIR TRAILERS AND EXTENSION OF APPROVAL¹⁵

~~10.1. Any modification of a side marker lamp type shall be notified to the administration authority which approved the lamp. The authority may then either:~~

~~10.1.1. consider that the modifications are unlikely to have an appreciable adverse effect and that, in any case, the side marker lamp still meets the requirements; or~~

~~10.1.2. require a further test report from the technical service responsible for conducting the tests.~~

¹³ See point 8 of Regulation No. X.

** Paragraph to be deleted if Regulation No. X refers to Regulation No. 48.

¹⁴ See point 9 of Regulation No. X.

¹⁵ See point 10 of Regulation No. X.

~~10.2. Confirmation or refusal of approval, specifying the alterations, shall be communicated by the procedure specified in paragraph 5.3. above to the Parties to the Agreement which apply this Regulation.~~

~~10.3. The competent authority issuing the extension of approval shall assign a series number to each communication form drawn up for such an extension and inform thereof the other Parties to the Agreement applying this Regulation by means of a communication form conforming to the model in annex 2 to this Regulation.~~

11. CONFORMITY OF PRODUCTION¹⁶

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:

~~11.1. Any side marker lamp approved according to this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 7. and 8. above.~~

~~11.2. The minimum requirements for conformity of production control procedures set forth in annex 6 to this Regulation shall be complied with.~~

~~11.3. The minimum requirements for sampling by an inspector set forth in annex 7 to this Regulation shall be complied with.~~

~~11.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION¹⁷

~~12.1. The approval granted in respect of a side marker lamp may be withdrawn if the foregoing conditions are not satisfied.~~

~~12.2. If a Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in annex 2 to this Regulation.~~

¹⁶ See point 11 of Regulation No. X.

¹⁷ See point 12 of Regulation No. X.

13. PRODUCTION DEFINITELY DISCONTINUED¹⁸

~~If the holder of an approval completely ceases to manufacture a side-marker 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 the other Parties to the Agreement applying this Regulation, by means of a communication form conforming to the model in annex 2 to this Regulation.~~

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS¹⁹

~~The Parties to the Agreement applying this Regulation shall communicate to the United Nations secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which communication forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.~~

15. TRANSITIONAL PROVISIONS

15.1 As from the official date of entry into force of Supplement 3 to the Regulation, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by Supplement 3.

15.2 As from 24 months after the date of entry into force of Supplement 3 to the Regulation, Contracting Parties applying this Regulation shall grant ECE approvals only if the type of side-marker lamp to be approved meets the requirements of this Regulation as amended by Supplement 3.

15.3 Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to this Regulation in its original form and the subsequent supplements.

15.4 Contracting Parties applying this Regulation shall continue to grant approvals to those types of side-marker lamps which comply with the requirements of this Regulation in its original form and the subsequent supplements during the 12 months period which follows the date of entry into force of Supplement 3 to this Regulation.

15.5 ECE approvals granted under this Regulation earlier than 12 months after the date of entry into force and all extensions of approvals, including those to this Regulation in its original form and the subsequent supplements granted subsequently, shall remain

¹⁸ See point 13 of Regulation No. X.

¹⁹ See point 14 of Regulation No. X.

valid indefinitely. When the type of side-marker lamp approved to this Regulation in its original form and the subsequent supplements meets the requirements of this Regulation as amended by Supplement 3, the Contracting Party which granted the approval shall notify the other Contracting Parties applying this Regulation thereof.

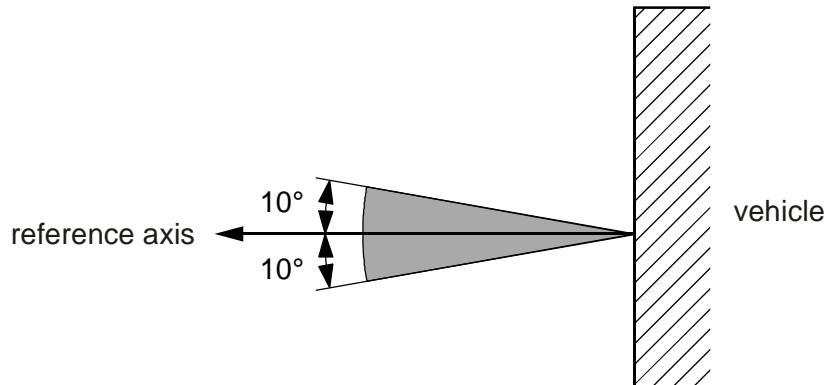
- 15.6 No Contracting Party applying this Regulation shall refuse a type of side-marker lamp approved to Supplement 3 to this Regulation.
- 15.7 Until 36 months after the date of entry into force of Supplement 3 to this Regulation, no Contracting Party applying this Regulation shall refuse a type of side-marker lamp approved to this Regulation in its original form and the subsequent supplements.
- 15.8 Starting 36 months after the date of entry into force of Supplement 3 to this Regulation, Contracting Parties applying this Regulation may refuse the sale of a type of side-marker lamp which does not meet the requirements of Supplement 3 to this Regulation unless the side-marker lamp is intended as a replacement for fitting on vehicles in use.
- 15.9 Contracting Parties applying this Regulation shall continue to issue approvals for side-marker lamps on the basis of any previous supplement to the Regulation, provided that these side-marker lamps are intended as replacements for fitting to vehicles in use.
- 15.10 As from the official date of entry into force of Supplement 3 to the Regulation, no Contracting Party applying this Regulation shall prohibit the fitting on a vehicle of a side-marker lamp approved under this Regulation as amended by Supplement 3 to this Regulation.
- 15.11 Contracting Parties applying this Regulation shall continue to allow the fitting on a vehicle of a side-marker lamp approved to this Regulation in its original form and the subsequent supplements during the 48 months period which follows the date of entry into force of Supplement 3 to the 00 series of amendments.
- 15.12 Upon the expiration of a period of 48 months after the date of entry into force of Supplement 3 to this Regulation, Contracting Parties applying this Regulation may prohibit the fitting of a side-marker lamp which does not meet the requirements of this Regulation as amended by Supplement 3 on a new vehicle for which national type or individual approval was granted more than 24 months after the date of entry into force of Supplement 3.
- 15.13 Upon the expiration of a period of 60 months after the date of entry into force, Contracting Parties applying this Regulation may prohibit the fitting of a side-marker lamp which does not meet the requirements of this Regulation as amended by Supplement 3 on a new vehicle first registered more than 60 months after the date of entry into force of Supplement 3 to this Regulation.

Annex 1

MINIMUM ANGLES REQUIRED FOR LIGHT DISTRIBUTION IN SPACE

VERTICAL ANGLES

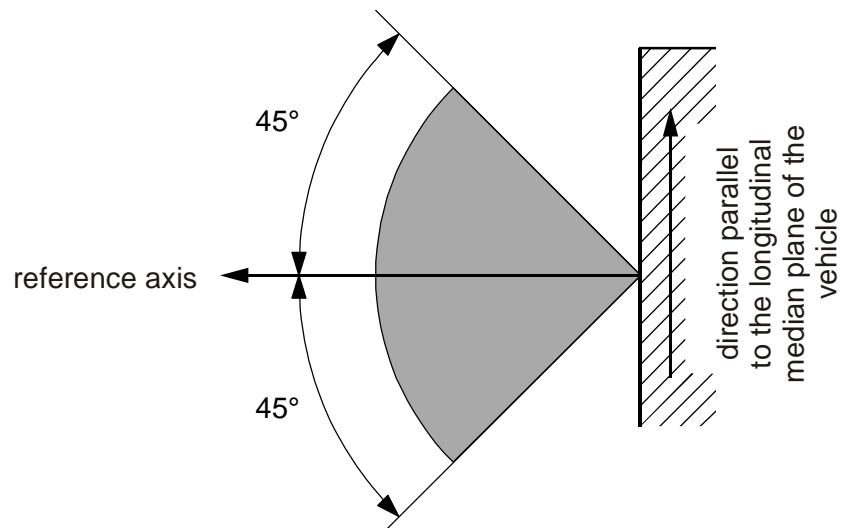
Minimum vertical angles, SM1 and SM2:



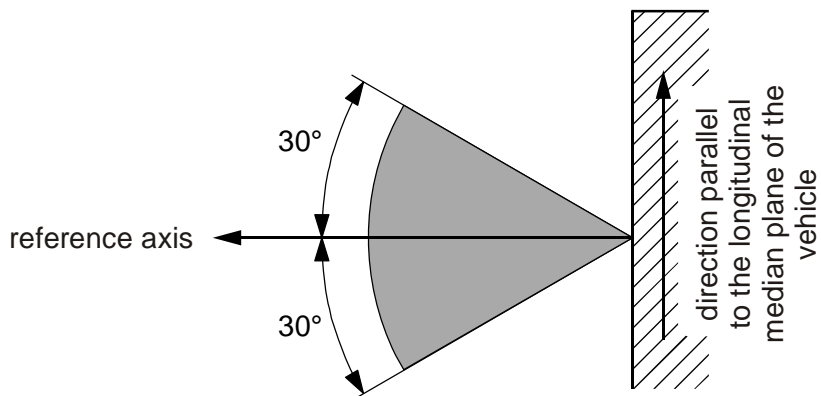
The angle of 10° below the horizontal may be reduced to 5° in case of lamps with a mounting height of equal to or less than 750 mm above the ground.

HORIZONTAL ANGLES

Minimum horizontal angles, SM1:



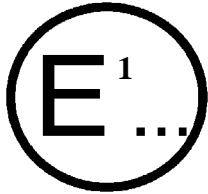
Minimum horizontal angles, SM2:



Annex 2

COMMUNICATION

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



issued by:

[Name of administration:]

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

concerning:²

APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITELY DISCONTINUED

of a type of side-marker lamp SM1/SM2² pursuant to Regulation No. 91

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

¹ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation), **as in the list in note¹ of point 5.2.1.1 of Regulation No. X.**

² Strike out what does not apply.

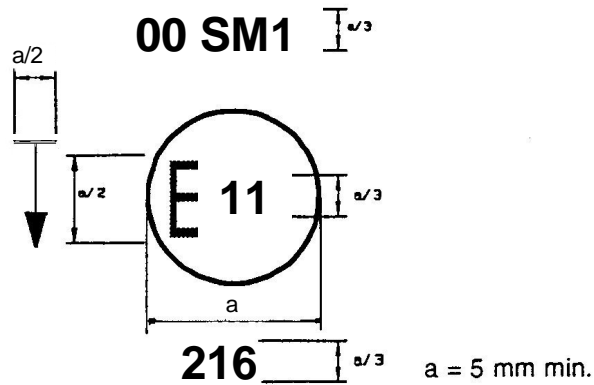
7. Date of report issued by that service
8. Number of reports issued by that service
9. Concise description:
Number, category and kind of light source(s):
Light source module: yes/no 2/
Light source module specific identification code:
Voltage and wattage:
Application of an electronic light source control gear:
(a) being part of the lamp: yes/no 2/
(b) being not part of the lamp: yes/no²
Input voltage(s) supplied by an electronic light source control gear:
Name of manufacturer and device identification number of the electronic light source control gear or of the light source(s) (when the light source control gear is part of the lamp, but is not incorporated in the lamp body):
Colour of light emitted: amber/red²
Geometrical conditions of installation and relating variations; if any:
[Mounting height limited to 750 mm above the ground: yes/no²
10. Position of the approval mark:
11. Comments (if any)
12. Reason(s) for extension (if applicable):
13. Approval granted/extended/refused/withdrawn²
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 3

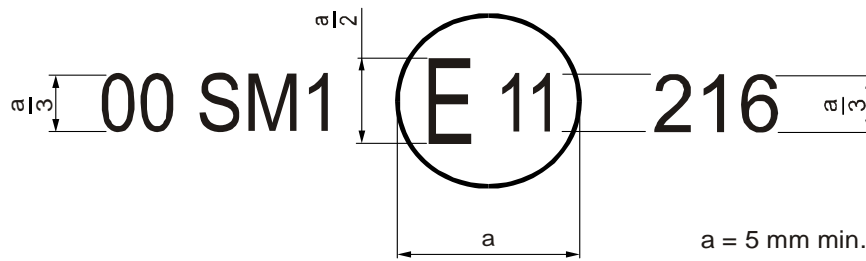
ARRANGEMENTS OF APPROVAL MARKS

1. Marking of an independent lamp

Figure 1.1



The device bearing the approval mark shown above is a side-marker lamp, approved in the United Kingdom (E11) pursuant to Regulation No. 91 under the number 216. The vertical arrow starting from a horizontal segment and directed downwards indicates a permissible mounting height of equal to or less than 750 mm from the ground for this device. The number near the “SM1” symbol indicates that the approval was granted in conformity with this Regulation in its original form.



Note:¹

2. Simplified marking of grouped, combined or reciprocally incorporated lamps when two or more lamps are part of the same assembly²
3. Marking of a lamp reciprocally incorporated with a headlamp³
4. Marking of light source modules⁴

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

³ See point 3 of annex 3 of Regulation No. X.

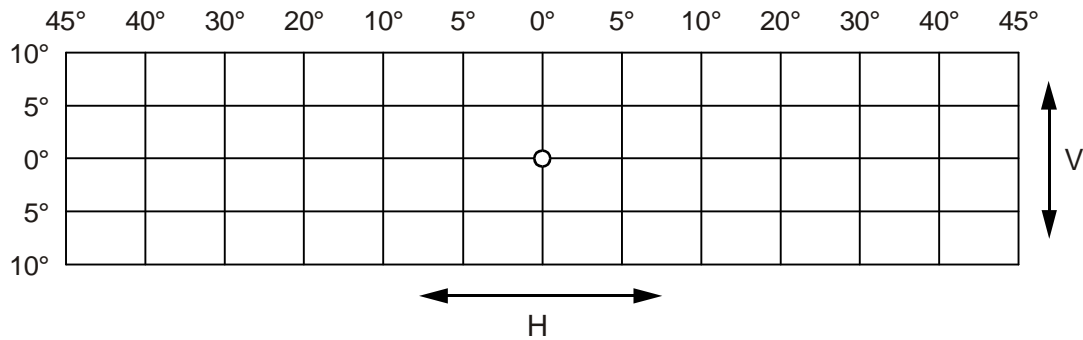
⁴ See point 5 of annex 3 of Regulation No. X.

Annex 4

PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - ~~1.1. During photometric measurement stray reflections shall be avoided by appropriate marking.~~
 - ~~1.2. In case the results of measurements should be challenged, measurements shall be carried out 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 angular aperture of the receiver viewed from the reference centre of the lamp is comprised between 10 minutes and 1 degree;~~
 - ~~1.2.3. The intensity requirement for a particular direction of observation shall be deemed to be satisfied if that requirement is met 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 of the field of the reference axis specified by the manufacturer.~~
 - ~~1.4. The direction $H = 0^\circ$ and $V = 0^\circ$ corresponds to the reference axis. (On the vehicle it is horizontal, perpendicular to the median longitudinal plane of the vehicle and oriented in the required direction of visibility.) It passes through the centre of reference.~~
- ~~2. Tables of light distribution~~
 - ~~2.1. SM1 category of side marker lamps~~
2. Tables of light distribution
 - 2.1 SM1 category of side-marker lamps

¹ See point 1 of annex 4 of Regulation No. X.



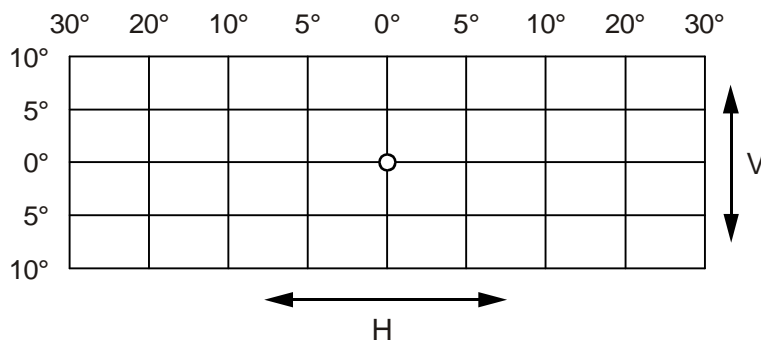
2.1.1 Minimum values:

0.6 cd at any point other than the reference axis, at which it shall be 4.0 cd.

2.1.2 Maximum values:

25.0 cd at any point

2.2 SM2 category of side-marker lamps



2.2.1 Minimum values:

0.6 cd, at any point

2.2.2 Maximum values:

25.0 cd, at any point

2.3 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.

[2.4 Within the field of light distribution shown above as a grid the light pattern should be substantially uniform, i.e. the light intensity in every direction within a part of the field formed by the grid lines shall meet at least the lowest minimum value applicable to the respective grid lines.]*

* This sentence in square brackets [...] may be deleted.

- 2.5 For SM1 and SM2 category of side-marker lamps it may be sufficient to check only five points selected by the test authority.
- 2.6 However, in the case where the 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.

3. Photometric measurement of lamps²

~~3. Photometric measurement of lamps~~

~~The photometric performance shall be checked:~~

~~3.1. For non-replaceable light sources (filament lamps and other):~~

~~with the light sources present in the lamp, in accordance with paragraph 9.2. of this Regulation.~~

~~3.2. For replaceable filament lamps:~~

~~when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than $\sqrt{5\%}$ from the mean value. Alternatively 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.~~

~~3.3. For any signalling lamp except those equipped with filament lamp(s), 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.~~

² See point 3 of annex 4 of Regulation No. X.

Annex 5¹

COLOUR OF LAMPS

**COLOUR OF LIGHT EMITTED: LIGHTS FOR
TRICHROMATIC COORDINATES**

~~Amber: — limit towards green — : — $y \cdot x - 0.120$~~

~~limit towards red : — $y \cdot 0.390$~~

~~limit towards white — : — $y \cdot 0.790 - 0.670 \cdot x$~~

~~Red: — limit towards yellow — : — $y \cdot 0.335$~~

~~limit towards purple — : — $y \cdot 0.980 - x$~~

~~For checking these colorimetric characteristics, a source of light at a colour temperature of 2,856 K, corresponding to illuminant A of the International Commission on Illumination (CIE), shall be used. 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, in accordance with paragraph 9.2. of this Regulation.~~

¹ See annex 5 of Regulation No. X.

Annex 6¹

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION
CONTROL PROCEDURES

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced side-marker lamps shall not be contested if, when testing photometric performances of any side marker lamp chosen at random and equipped with a standard filament lamp, or when the side marker lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a side marker lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on side marker lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the side marker lamp is equipped with a standard filament lamp, or for side marker lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the side marker lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY
THE MANUFACTURER~~

~~For each type of side marker lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of side marker lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of side marker lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled side marker lamp shall be subjected to photometric measurements for the minimum values at the points listed in annex 4 and the chromaticity coordinates listed in annex 5, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 11.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with annex 7 (first sampling) would be 0.95.~~

Annex 7¹

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~

~~1.2. With respect to photometric performance, the conformity of mass-produced side-marker lamps shall not be contested if, when testing photometric performances of any side marker lamp chosen at random and equipped with a standard filament lamp, or when the side marker lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a side marker lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on side marker lamps shall be repeated using another standard filament lamp.~~

~~1.2.3. Side marker lamps with apparent defects are disregarded.~~

~~1.3. The chromaticity coordinates shall be complied with when the side marker lamp is equipped with a standard filament lamp, or for the side marker lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the side marker lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four side marker lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced side marker lamps shall not be contested if the deviation of the measured values of the side marker lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

2.1.1.1. ~~sample A~~

A1: ~~one side marker lamp~~ ~~0%~~

~~one side marker lamp not more than~~ ~~20%~~

A2: ~~both side marker lamps more than~~ ~~0%~~

~~but not more than~~ ~~20%~~

~~go to sample B~~

2.1.1.2. ~~sample B~~

B1: ~~both side marker lamps~~ ~~0%~~

2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

2.2. ~~The conformity is contested~~

2.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced side marker lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the side marker lamps are:~~

2.2.1.1. ~~sample A~~

A3: ~~one side marker lamp not more than~~ ~~20%~~

~~one side marker lamp more than~~ ~~20%~~

~~but not more than~~ ~~30%~~

2.2.1.2. ~~sample B~~

B2: ~~in the case of A2~~

~~one side marker lamp more than~~ ~~0%~~

~~but not more than~~ ~~20%~~

~~one side marker lamp not more than~~ ~~20%~~

B3: ~~in the case of A2~~

~~one side marker lamp~~ ~~0%~~

~~one side marker lamp more than~~ ~~20%~~

~~but not more than~~ ~~30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 12 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the side marker lamps are:~~

~~2.3.1. sample A~~

~~A4: one side marker lamp not more than 20%~~

~~one side marker lamp more than 30%~~

~~A5: both side marker lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one side marker lamp more than 0%~~

~~but not more than 20%~~

~~one side marker lamp more than 20%~~

~~B5: in the case of A2~~

~~both side marker lamps more than 20%~~

~~B6: in the case of A2~~

~~one side marker lamp 0%~~

~~one side marker lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two side marker lamps and fourth sample D of two side marker lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced side marker lamps shall not be contested if the deviations of the measured values of the side marker lamps are:~~

3.1.1.1. ~~sample C~~

~~C1: one side marker lamp 0%~~

~~one side marker lamp not more than 20%~~

~~C2: both side marker lamps more than 0%~~

~~but not more than 20%~~

~~go to sample D~~

3.1.1.2. ~~sample D~~

~~D1: in the case of C2~~

~~both side marker lamps 0%~~

3.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

3.2. ~~The conformity is contested~~

3.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced side marker lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the side marker lamps are:~~

3.2.1.1. ~~sample D~~

~~D2: in the case of C2~~

~~one side marker lamp more than 0%~~

~~but not more than 20%~~

~~one side marker lamp not more than 20%~~

3.2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

3.3. ~~Approval withdrawn~~

~~Conformity shall be contested and paragraph 12 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the side marker lamps are:~~

~~3.3.1. sample C~~

~~C3: one side marker lamp not more than 20%~~

~~one side marker lamp more than 20%~~

~~C4: both side marker lamps more than 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one side marker lamp 0 or more than 0%~~

~~one side marker lamp more than 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

A.21 PROPOSAL

REGULATION No. 119 - (Cornering lamps)
(The text below has been based on Supplement 1 to the Regulation.)

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12. Penalties for non-conformity of production	
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ANNEXES

Annex 1: Minimum angles required for the light distribution of lamps in space

Annex 2: Communication

Annex 3: Arrangements of approval marks

Annex 4: Photometric measurements

Annex 5: Colour of lamps

Annex 6: Minimum requirements for conformity of production control procedures

Annex 7: Minimum requirements for sampling by an inspector

1. SCOPE

This Regulation applies to cornering lamps for vehicles of categories M, N, and T.¹

2. DEFINITIONS

For the purposes of this Regulation:

2.1 “Cornering lamp” means a lamp used to provide supplementary illumination of that part of the road which is located near the forward corner of the vehicle at the side towards which the vehicle is going to turn.

2.2 “**Definitions of terms**”:²

~~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.~~

2.3 “Cornering lamps of different types”³

~~1.2. “Cornering lamps of different types” means lamps which differ in such essential respects as:~~

- ~~- the trade name or mark;~~
- ~~- the characteristics of the optical system (level of intensity, light distribution angles, category of filament lamp, light source module, etc.);~~

3. APPLICATION FOR APPROVAL⁴

4. MARKINGS⁵

5. APPROVAL

~~4.1. If the two samples of a type of cornering lamp meet the requirements of this Regulation, approval shall be granted.~~

¹ As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), (document TRANS/WP.29/78/Rev.1/Amend.2 as last amended by Amend.4).

² See paragraph 2.1 of point 2 of Regulation No. X.

³ See paragraph 2.2 of point 2 of Regulation No. X.

⁴ See point 3 of Regulation No. X.

⁵ See point 4 of Regulation No. X.

- ~~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 cornering 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 cornering 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 cornering lamp conforming to a type approved under this Regulation shall bear in the space referred to in paragraph 3.3. above, in addition the mark and the particulars prescribed above in paragraphs 3.1., 3.2. and 3.3. or 3.4. respectively:~~
- ~~4.3.1. an international approval mark consisting of:~~
- ~~4.3.1.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval;¹ and~~
- ~~4.3.1.2. an approval number;~~
- ~~4.3.2. an additional symbol consisting of the letter "K" 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 letter "K".~~
- ~~4.4. When two or more lamps are part of the same assembly of grouped, combined or reciprocally incorporated lamps, approval is granted only if each of these lamps satisfies the requirements of this Regulation or of another Regulation. Lamps not satisfying any one of those Regulations shall not be part of such an assembly of grouped, combined or reciprocally incorporated lamps.~~
- ~~4.4.1. Where grouped, combined or reciprocally incorporated lamps comply with the requirements of several Regulations, a single international approval mark may be applied, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, an approval number and, if necessary, the required arrow. This approval mark may be placed anywhere on the grouped, combined or reciprocally incorporated lamps provided that;~~
- ~~4.4.1.1. It is visible after their installation;~~
- ~~4.4.1.2. No part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.~~
- ~~4.4.2. The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval, shall be marked:~~

- 4.4.2.1. ~~either on the appropriate light emitting surface;~~
- 4.4.2.2. ~~or in a group, in such a way that each lamp of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see three possible examples in Annex 2).~~
- 4.4.3. ~~The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by a Regulation under which approval has been granted.~~
- 4.4.4. ~~An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.~~
- 4.5. ~~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 cornering lamp is mounted on the vehicle.~~
- 4.6. ~~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 letter "K" indicates a cornering lamp.~~
- 4.7. ~~The approval marking shall be clearly legible and indelible. It may be placed on an inner or outer part (transparent or not) of the device which cannot be separated from the transparent part of the device emitting the light. In any case the marking shall be visible when the device is fitted on the vehicle or when a movable part such as the hood or boot lid or a door is opened.~~

5.1 General

The first two figures of the approval number: "currently 00 for the Regulation in its original form"

- 5.1.1 6
- 5.2 7
- 5.2.1 8

⁶ See points 5.1.1 to 5.1.5 of Regulation No. X.

⁷ See point 5.2 of Regulation No. X.

⁸ See points 5.2.1 to 5.2.1.2 of Regulation No. X.

5.2.2 **With the symbol comprising the letter “K”, as indicated in annex 2 of this Regulation.⁹**

5.2.3 ¹⁰

6. GENERAL SPECIFICATIONS¹¹

~~5.1. Each sample shall conform to the specifications set forth in the paragraphs below.~~

~~5.2. Cornering lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.~~

~~5.3. Light source module~~

~~5.3.1. The design of the light source module(s) shall be such that even in darkness the light source module (s) can be fitted in no other position, but the correct one.~~

~~5.3.2. The light source module(s) shall be tamperproof.~~

7. INTENSITY OF LIGHT EMITTED

7.1 The intensity of light emitted by each of two samples shall be not less than the minimum intensity and not greater than the maximum intensity specified in paragraphs 7.2 and 7.3. The intensity 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). Test points are given for a lamp mounted on the left side of the vehicle, the L designations become R designations for a lamp mounted on the right side of the vehicle.

7.2 For the left-hand device, the minimum intensity of the light at the specified measuring points shall be as follows:

- (1) 2.5D - 30L: 240 cd
- (2) 2.5D - 45L: 400 cd
- (3) 2.5D - 60L: 240 cd

The same values apply symmetrically for a right-hand device. (Shown in Annex 4)

⁹ See point 5.2.2 of Regulation No. X and add the following sentence.

¹⁰ See points 5.2.3 to 5.4 of Regulation No. X.

¹¹ See point 6 of Regulation No. X.

7.3 The intensity of the light emitted in all directions shall not exceed 300 cd above the horizontal plane, 600 cd on the 0.57D-L and R line and 10,000 cd below this line.

7.4 In the areas of 10 degrees above and below the horizontal and between 30 and 60 degrees outward the light intensity shall be at least 1.0 cd.

7.5 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.

7. TEST PROCEDURES¹²

~~7.1. All measurements shall be carried out with uncoloured standard filament lamps of the types prescribed for the device, adjusted to produce the reference luminous flux prescribed for those types of filament lamps.~~

~~7.1.1. All measurements on lamps equipped with non-replaceable light sources (filament lamps and other) shall be made at 6.75 V, 13.5 V or 28.0 V respectively.~~

~~In the case of light sources supplied by a special power supply, the above test voltages shall be applied to the input terminals of that power supply. The test laboratory may require from the manufacturer the special power supply needed to supply the light sources.~~

9. COLOUR OF LIGHT EMITTED

The colour of the light emitted shall be white.*¹³

~~8.2. The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 3 shall be within the limits of the coordinates prescribed in Annex 4 to this Regulation. Outside this field, no sharp variations of colour shall be observed.~~

10. MODIFICATION OF A TYPE OF MOTOR-VEHICLE CORNERING LAMP AND EXTENSION OF APPROVAL¹⁴

¹² See point 8 of Regulation No. X.

* To be deleted if Regulation No. X refers to Regulation No. 48.

¹³ See point 9 of Regulation No. X.

¹⁴ See point 10 of Regulation No. X.

11. CONFORMITY OF PRODUCTION¹⁵

~~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:~~

- ~~9.1. Lamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraphs 6. and 8. above.~~
- ~~9.2. The minimum requirements for conformity of production control procedures set forth in Annex 5 to this Regulation shall be complied with.~~
- ~~9.3. The minimum requirements for sampling by an inspector set forth in Annex 6 to this regulation shall be complied with.~~
- ~~9.4. 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.~~

12. PENALTIES FOR NON-CONFORMITY OF PRODUCTION¹⁶

- ~~10.1. The approval granted in respect of a type of cornering lamp pursuant to this Regulation may be withdrawn if the foregoing requirements are not complied with or if a cornering lamp bearing the mark referred to in paragraphs 4.3.1. and 4.3.2. does not conform to the type approved.~~
- ~~10.2. If a Contracting Party to the Agreement which applies this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in Annex 1 to this Regulation.~~

13. PRODUCTION DEFINITELY DISCONTINUED¹⁷

~~If the holder of the approval completely ceases to manufacture a type of cornering 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.~~

¹⁵ See point 11 of Regulation No. X.

¹⁶ See point 12 of Regulation No. X.

¹⁷ See point 13 of Regulation No. X.

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR CONDUCTING APPROVAL TESTS, AND OF ADMINISTRATIVE DEPARTMENTS¹⁸

~~The Parties to the 1958 Agreement which apply this Regulation shall communicate to the United Nations secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries or production definitely discontinued, are to be sent.~~

¹⁸ See point 14 of Regulation No. X.

Annex 1

**MINIMUM ANGLES REQUIRED FOR THE LIGHT DISTRIBUTION
OF LAMPS IN SPACE**

Figure 1: horizontal angles

Figure 2: vertical angles

Figure 1:

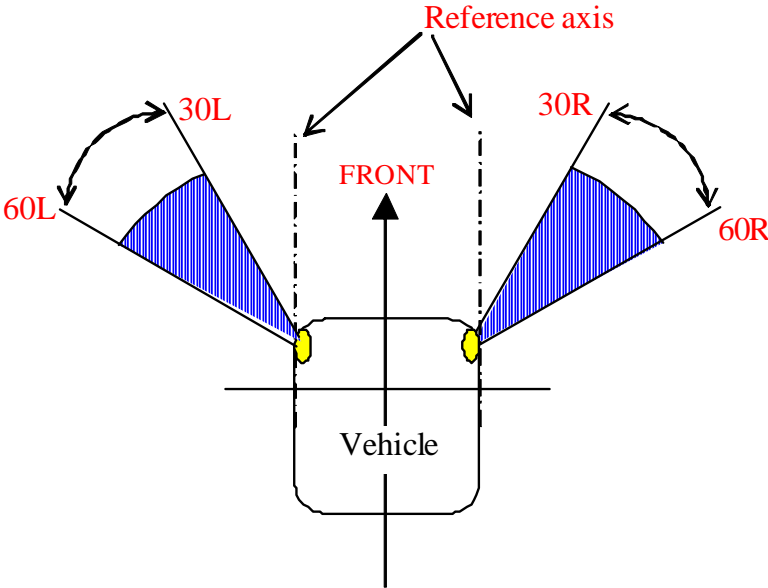
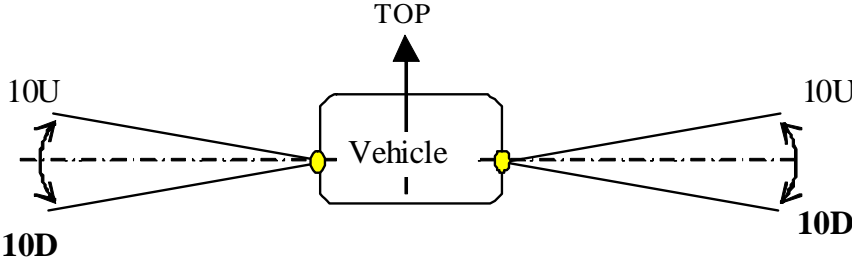


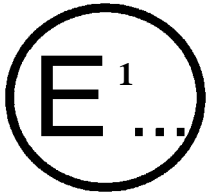
Figure 2:



Annex 2

COMMUNICATION

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



issued by:

[Name of administration]:

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

concerning:²

APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITELY DISCONTINUED

of a type of cornering lamp pursuant to Regulation No. 119

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

¹ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation), **as in the list in note¹ of point 5.2.1.1 of Regulation No. X.**

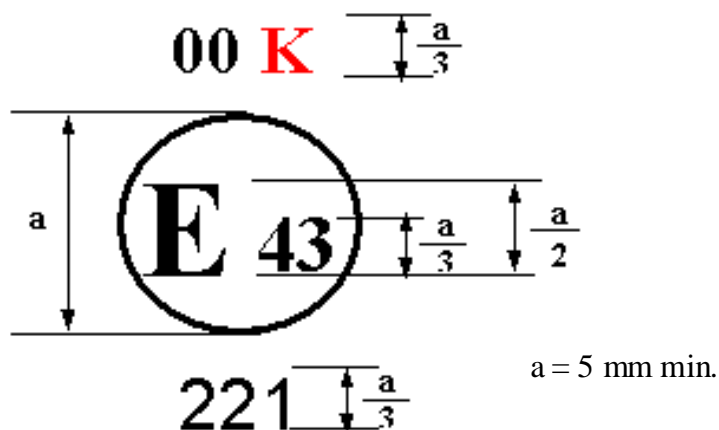
² Strike out what does not apply.

7. Date of report issued by that service
8. Number of reports issued by that service
9. Concise description:
Number, category and kind of light source(s):
Light source module: yes/no²
Light source module specific identification code:
Voltage and wattage:
- Application of an electronic light source control gear:**
 - (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:**
- Name of manufacturer and device identification number of the electronic light source control gear or of the light source(s) (when the light source control gear is part of the lamp, but is not incorporated in the lamp body):**
- Colour of light emitted: amber/red²
- Geometrical conditions of installation and relating variations; if any:
- Mounting height limited to 750 mm above the ground: yes/no²
10. Position of the approval mark:
11. Comments (if any)
12. Reason(s) for extension (if applicable):
13. Approval granted/extended/refused/withdrawn²
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 3

ARRANGEMENTS OF APPROVAL MARKS

1. Marking of an independent lamp



The device bearing the approval mark shown above is a cornering lamp approved in Japan (E 43) pursuant to Regulation No. 119 under approval number 221. The approval number indicates that the approval was granted in accordance with the requirements of Regulation No. 119 in its original form.

Note:¹

2. Simplified marking of grouped, combined or reciprocally incorporated lamps when two or more lamps are part of the same assembly²

3. Marking of light source modules³

See point 5 of annex 3 of Regulation No. X.

¹ See point 1 of annex 3 of Regulation No. X.

² See point 2 of annex 3 of Regulation No. X.

³ See point 5 of annex 3 of Regulation No. X.

Annex 4

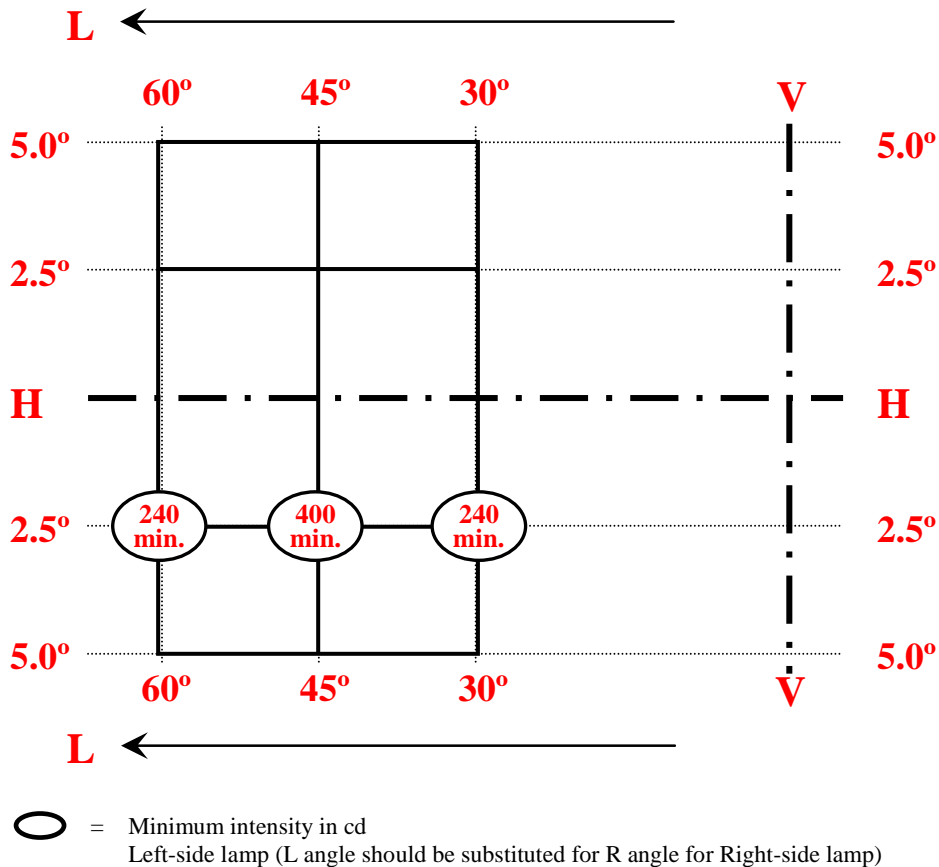
PHOTOMETRIC MEASUREMENTS

1. Measurement methods¹
 - ~~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.~~

2. **Standard luminous intensity distribution table**

Measuring points expressed in degrees of angle with the axis of reference

¹ See point 1 of annex 4 of Regulation No. X.



2.1 The direction $H = 0^\circ$ and $V = 0^\circ$ corresponds to the axis of reference. 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 in cd.

3. Photometric measurement of lamps²

~~The photometric performance shall be checked:~~

~~3.1. For non-replaceable light sources (filament lamps and other):~~

~~with the light sources present in the lamp, in accordance with paragraph 7.1.1. of this Regulation.~~

² See point 2 of annex 4 of Regulation No. X.

3.2. ~~For replaceable filament lamps:~~

~~when equipped with filament lamps at 6.75 V, 13.5 V or 28.0 V the luminous intensity values produced shall be corrected. 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). The actual luminous fluxes of each filament lamp used shall not deviate more than $\pm 5\%$ from the mean value. Alternatively 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.~~

3.3. ~~For any signalling lamp except those equipped with filament lamp(s), 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.~~

Annex 5¹

COLOUR OF LAMPS

See annex 5 of Regulation No. X.

~~(Trichromatic coordinates)~~

~~White:~~

~~Limit towards blue : $x \geq 0.310$~~

~~Limit towards yellow: $x < 0.500$~~

~~Limit towards green: $y < 0.150 + 0.640x$~~

~~Limit towards green: $y < 0.440$~~

~~Limit towards purple: $y > 0.050 + 0.750x$~~

~~Limit towards red: $y > 0.382$~~

- ~~1) For checking these colorimetric characteristics, a source of light at a colour temperature of 2,856 K, corresponding to illuminant A of the international commission (CIE), shall be used. 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, in accordance with paragraph 7.1.1. of this Regulation.~~
- ~~2) The replaceable light source shall be subjected to the intensity, which produces the same colour as the illuminant A of the CIE.~~

¹ See annex 5 of Regulation No. X.

Annex 6¹

MINIMUM REQUIREMENTS FOR CONFORMITY OF PRODUCTION CONTROL PROCEDURES

~~1. GENERAL~~

- ~~1.1. The conformity requirements shall be considered satisfied from a mechanical and geometric standpoint, if the differences do not exceed inevitable manufacturing deviations within the requirements of this Regulation.~~
- ~~1.2. With respect to photometric performances, the conformity of mass produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~
- ~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~
- ~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~
- ~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. MINIMUM REQUIREMENTS FOR VERIFICATION OF CONFORMITY BY THE MANUFACTURER~~

~~For each type of lamp the holder of the approval mark shall carry out at least the following tests, at appropriate intervals. The tests shall be carried out in accordance with the provisions of this Regulation.~~

~~If any sampling shows non-conformity with regard to the type of test concerned, further samples shall be taken and tested. The manufacturer shall take steps to ensure the conformity of the production concerned.~~

~~2.1. Nature of tests~~

~~Tests of conformity in this Regulation shall cover the photometric and colorimetric characteristics.~~

¹ See annex 6 of Regulation No. X.

~~2.2. Methods used in tests~~

~~2.2.1. Tests shall generally be carried out in accordance with the methods set out in this Regulation.~~

~~2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the competent authority responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this Regulation.~~

~~2.2.3. The application of paragraphs 2.2.1. and 2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a competent authority.~~

~~2.2.4. In all cases the reference methods shall be those of this Regulation, particularly for the purpose of administrative verification and sampling.~~

~~2.3. Nature of sampling~~

~~Samples of lamps shall be selected at random from the production of a uniform batch. A uniform batch means a set of lamps of the same type, defined according to the production methods of the manufacturer.~~

~~The assessment shall in general cover series production from individual factories. However, a manufacturer may group together records concerning the same type from several factories, provided these operate under the same quality system and quality management.~~

~~2.4. Measured and recorded photometric characteristics~~

~~The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity coordinates listed in Annex 5, provided for in the Regulation.~~

~~2.5. Criteria governing acceptability~~

~~The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the competent authority, criteria governing the acceptability of his products in order to meet the specifications laid down for verification of conformity of products in paragraph 9.1. of this Regulation.~~

~~The criteria governing the acceptability shall be such that, with a confidence level of 95%, the minimum probability of passing a spot check in accordance with Annex 6 (first sampling) would be 0.95.~~

Annex 7

MINIMUM REQUIREMENTS FOR SAMPLING BY AN INSPECTOR¹

~~1. GENERAL~~

~~1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Regulation, if any, if the differences do not exceed inevitable manufacturing deviations.~~

~~1.2. With respect to photometric performance, the conformity of mass-produced lamps shall not be contested if, when testing photometric performances of any lamp chosen at random and equipped with a standard filament lamp, or when the lamps are equipped with non-replaceable light sources (filament lamps or other), and when all measurements are made at 6.75 V, 13.5 V or 28.0 V respectively:~~

~~1.2.1. no measured value deviates unfavourably by more than 20% from the values prescribed in this Regulation.~~

~~1.2.2. If, in the case of a lamp equipped with a replaceable light source and if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard filament lamp.~~

~~1.2.3. Lamps with apparent defects are disregarded.~~

~~1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a standard filament lamp, or for lamps equipped with non-replaceable light sources (filament lamps or other), when the colorimetric characteristics are verified with the light source present in the lamp.~~

~~2. FIRST SAMPLING~~

~~In the first sampling four lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.~~

~~2.1. The conformity is not contested~~

~~2.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall not be contested if the deviation of the measured values of the lamps in the unfavourable directions are:~~

¹ See annex 7 of Regulation No. X.

2.1.1.1. ~~sample A~~

~~A1: one lamp 0%~~

~~one lamp not more than 20%~~

~~A2: both lamps more than 0%~~

~~but not more than 20%~~

~~go to sample B~~

2.1.1.2. ~~sample B~~

~~B1: both lamps 0%~~

2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample A are fulfilled.~~

2.2. ~~The conformity is contested~~

2.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass-produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

2.2.1.1. ~~sample A~~

~~A3: one lamp not more than 20%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

2.2.1.2. ~~sample B~~

~~B2: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp not more than 20%~~

~~B3: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 20%~~

~~but not more than 30%~~

~~2.2.2. or, if the conditions of paragraph 1.2.2. for sample A are not fulfilled.~~

~~2.3. Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

~~2.3.1. sample A~~

~~A4: one lamp not more than 20%~~

~~one lamp more than 30%~~

~~A5: both lamps more than 20%~~

~~2.3.2. sample B~~

~~B4: in the case of A2~~

~~one lamp more than 0%~~

~~but not more than 20%~~

~~one lamp more than 20%~~

~~B5: in the case of A2~~

~~both lamps more than 20%~~

~~B6: in the case of A2~~

~~one lamp 0%~~

~~one lamp more than 30%~~

~~2.3.3. or, if the conditions of paragraph 1.2.2. for samples A and B are not fulfilled.~~

~~3. REPEATED SAMPLING~~

~~In the cases of A3, B2, B3 a repeated sampling, third sample C of two lamps and fourth sample D of two lamps, selected from stock manufactured after alignment, is necessary within two months' time after the notification.~~

~~3.1. The conformity is not contested~~

~~3.1.1. Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall not be contested if the deviations of the measured values of the lamps are:~~

3.1.1.1. ~~sample C~~

~~C1: one lamp ————— 0%~~

~~one lamp not more than ————— 20%~~

~~C2: both lamps more than ————— 0%~~

~~but not more than ————— 20%~~

~~go to sample D~~

3.1.1.2. ~~sample D~~

~~D1: in the case of C2~~

~~both lamps ————— 0%~~

3.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are fulfilled.~~

3.2. ~~The conformity is contested~~

3.2.1. ~~Following the sampling procedure shown in Figure 1 of this annex the conformity of mass produced lamps shall be contested and the manufacturer requested to make his production meet the requirements (alignment) if the deviations of the measured values of the lamps are:~~

3.2.1.1. ~~sample D~~

~~D2: in the case of C2~~

~~one lamp more than ————— 0%~~

~~but not more than ————— 20%~~

~~one lamp not more than ————— 20%~~

3.2.1.2. ~~or, if the conditions of paragraph 1.2.2. for sample C are not fulfilled.~~

3.3. ~~Approval withdrawn~~

~~Conformity shall be contested and paragraph 10 applied if, following the sampling procedure in Figure 1 of this annex, the deviations of the measured values of the lamps are:~~

3.3.1. ~~sample C~~

~~C3: one lamp not more than ————— 20%~~

~~one lamp more than ————— 20%~~

~~C4: both lamps more than _____ 20%~~

~~3.3.2. sample D~~

~~D3: in the case of C2~~

~~one lamp 0 or more than _____ 0%~~

~~one lamp more than _____ 20%~~

~~3.3.3. or, if the conditions of paragraph 1.2.2. for samples C and D are not fulfilled.~~

B. JUSTIFICATION

The texts on signalling lamps have many parts in common, sometimes drafted in different ways and indicated in different chapters. It would seem advisable to group those common parts in a single text, "Regulation No. X", in particular so as to facilitate future developments in the regulations by making it possible to amend a single text, instead of the eight Regulations relating to signalling lamps. Each Regulation has thus been amended by referring, in certain points, to Regulation No. X.

In order to facilitate the reading of these Regulations, they have been recast to follow a single structure.

Furthermore, Regulations Nos. 6, 7 and 38 have been amended (in the latter case, to introduce variable luminous intensity lamps) several times, in line with technical developments. Supplements have sometimes been inserted, without all the existing requirements being corrected or deleted, for example, for the "day" and "night" levels, which are no longer defined, and have been replaced with variable luminous intensity lamps. Such points have not been deleted, but are indicated with notes.
