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AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM CONDITIONS OF APPROVAL AND RECIPROCAL RECOGNITION OF APPROVAL FOR MOTOR VEHICLE EQUIPMENT AND PARTS

done at Geneva on 20 March 1958

Addendum 22: Regulation No. 23

Revision 1

Incorporating:

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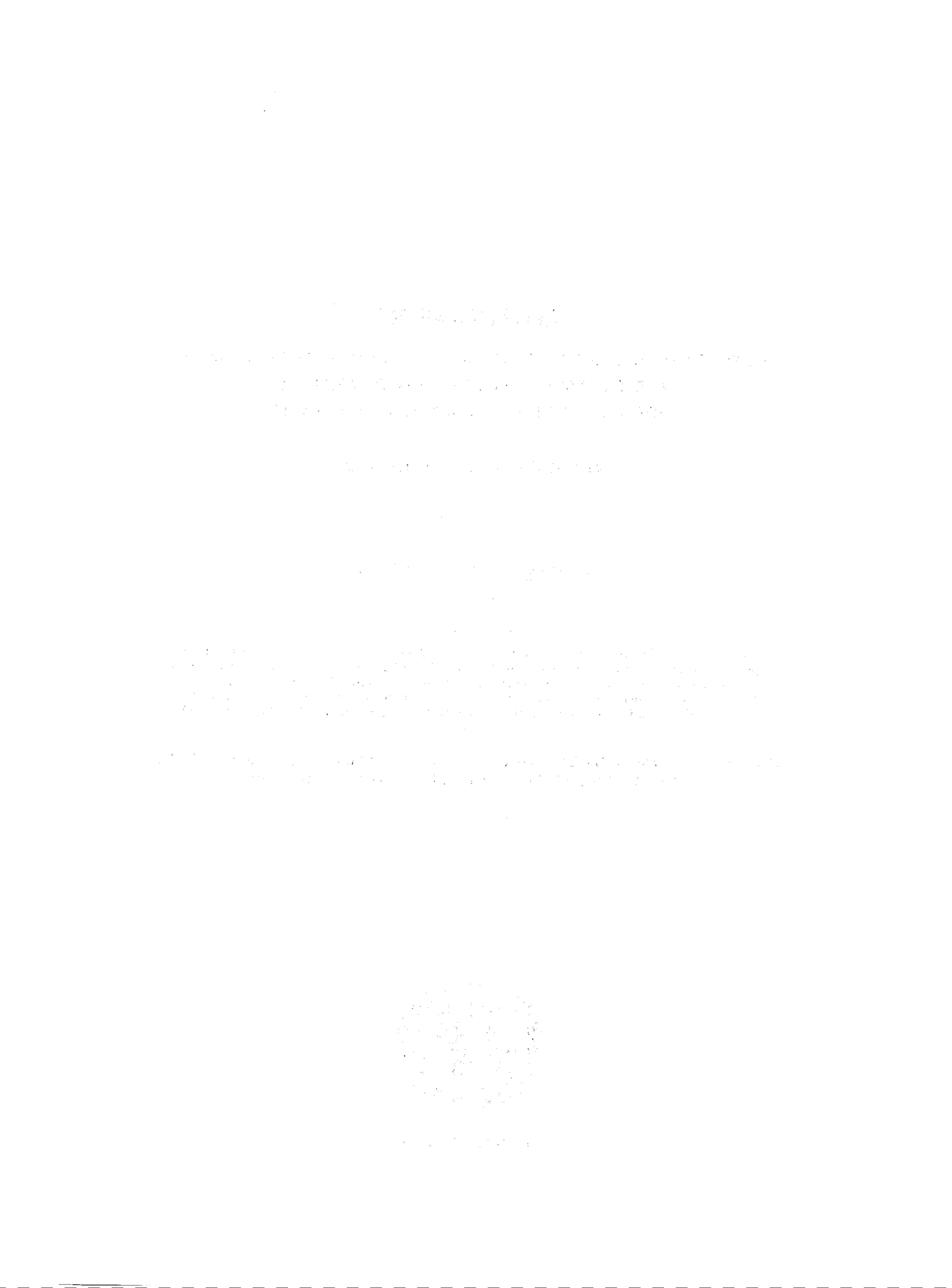
UNIFORM PROVISIONS CONCERNING THE APPROVAL OF REVERSING LAMPS FOR POWER-DRIVEN VEHICLES AND THEIR TRAILERS

UNITED NATIONS



Regulation No. 23

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1. DEFINITIONS

For the purposes of this Regulation,

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

1.2. "axis of reference" means a characteristic straight line, specified by the manufacturer, which intersects the illuminating surface of the lamp. This axis is horizontal and parallel to the median longitudinal plane of the vehicle when the device is fitted to it. It serves as a reference line for the measurement of photometric characteristics;

1.3. "centre of reference" means the intersection of the axis of reference with the illuminating surface. It is indicated by the manufacture of the lamp;

1.4. reversing lamps of different "types" are reversing lamps which differ in such essential respects as,

1.4.1. the trade name or mark;

1.4.2. the characteristics of the optical system;

1.4.3. the inclusion of components capable of altering the optical effects by reflection, refraction or absorption; and

1.4.4. the type of lamp.

2. APPLICATION FOR APPROVAL

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

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 the reversing 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, 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, the category or categories of filament lamps prescribed; this filament lamp category shall be one of those contained in Regulation No. 37;

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.

3. MARKINGS

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

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

3.2. bear a clearly legible and indelible marking indicating the category or categories of filament lamps prescribed; this is not valid for reversing lamps with non-replaceable light sources;

3.3. 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;

3.4. 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;

3.5. in the case of reversing lamps with non-replaceable light sources bear the marking of rated voltage and rated wattage.

4. APPROVAL

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:

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 letters A and R, mingled as shown in annex 2 to this Regulation.

4.3.3. The first two digits of the approval number which indicate the most recent series of amendments to this Regulation may be placed in the vicinity of the additional symbol "AR".

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.

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 and Slovak Federal Republic, 9 for Spain, 10 for Yugoslavia, 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 and 22 for the Russian Federation. Subsequent numbers will be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, and the numbers thus assigned shall be communicated to the Contracting Parties to the Agreement by the Secretary-General of the United Nations.

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 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.

5. GENERAL SPECIFICATIONS

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.

6. INTENSITY OF LIGHT EMITTED

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

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

6.3. 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; or

600 candelas in directions below the horizontal plane.

6.4. 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.

6.5. 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 PROCEDURE

7.1. 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 filament lamps. All measurements on reversing lamps with non-replaceable light sources shall be made at 13.5 V or 28.0 V respectively.

7.2. The photometric performance of lamps equipped with several light sources shall be checked in accordance with the provisions of annex 3.

8. COLOUR OF LIGHT EMITTED

The colour of the light emitted shall be white. In case of doubt, the colour may be checked on the basis of the definition of the colour of white light given in annex 4 to this Regulation.

9. CONFORMITY OF PRODUCTION

Every reversing lamp bearing an approval mark as prescribed under this Regulation shall conform to the type approved and shall comply with the photometric conditions specified in paragraphs 6. and 8. Nevertheless, in the case of a reversing lamp selected at random from series production, the requirements as to minimum intensity of the light emitted (measured with a standard filament lamp as referred to in paragraph 7. above) shall be limited in each relevant direction to 80% of the minimum value prescribed in paragraph 6. above.

10. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

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 a 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.

11. PRODUCTION DEFINITELY DISCONTINUED

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.

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

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.

Annex 1

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:

7. Date of report issued by that service:

8. Number of report issued by that service:

9. Concise description:

Number and category of filament lamp(s): (1 x P21W)

10. Position of the approval mark:

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

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

13. Place:

14. Date:

15. Signature:

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

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

2/ Strike out what does not apply.

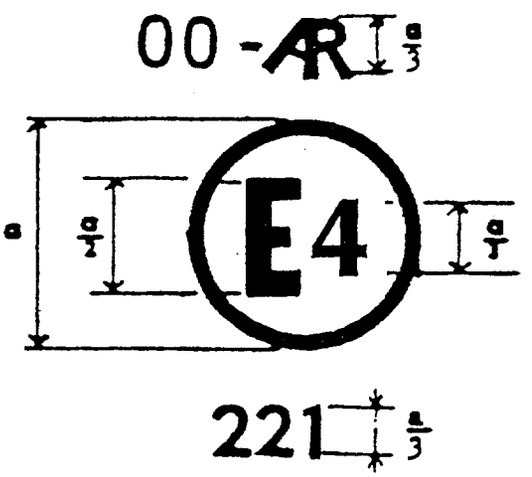
Annex 2

EXAMPLES OF ARRANGEMENTS OF APPROVAL MARKS

Figure 1

Marking for single lamps

Model A



a = 8 mm min.

The device bearing the approval mark shown above is a reversing lamp approved in the Netherlands (E 4) 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 or as amended by supplements 1 and/or 2, as the case may be.

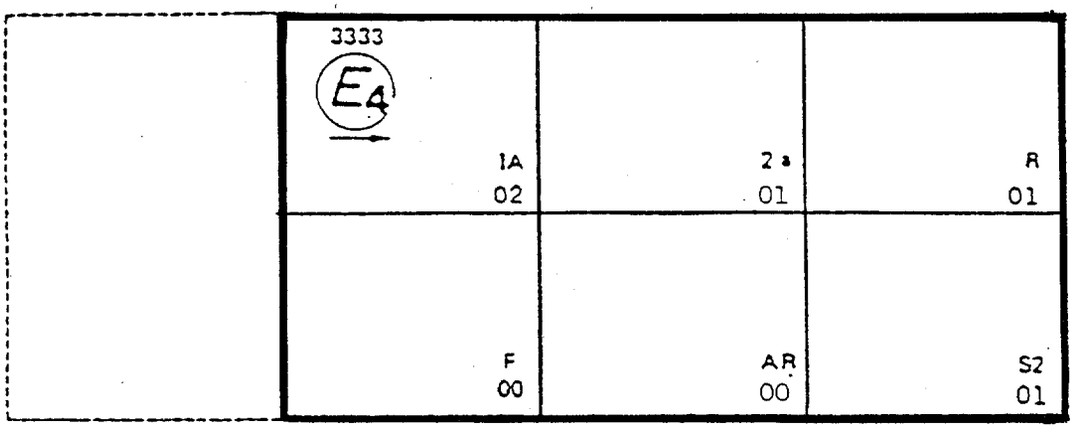
Note: The approval number and additional symbol shall be placed close to the circle and either above or below the letter "E" or to the left or right of that letter. The digits of the approval number and of the production serial number shall be on the same side of the letter "E" and face the same direction.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

Figure 2

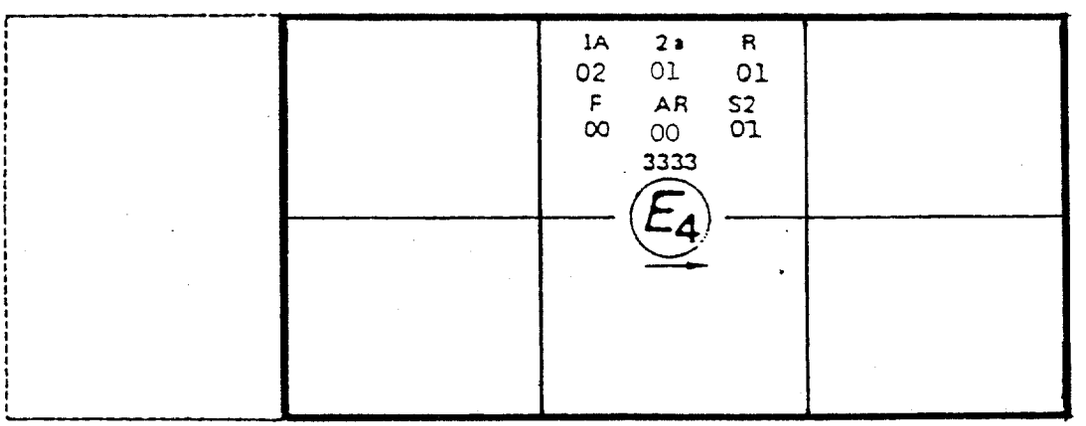
Simplified marking for grouped, combined or reciprocally incorporated lamps

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

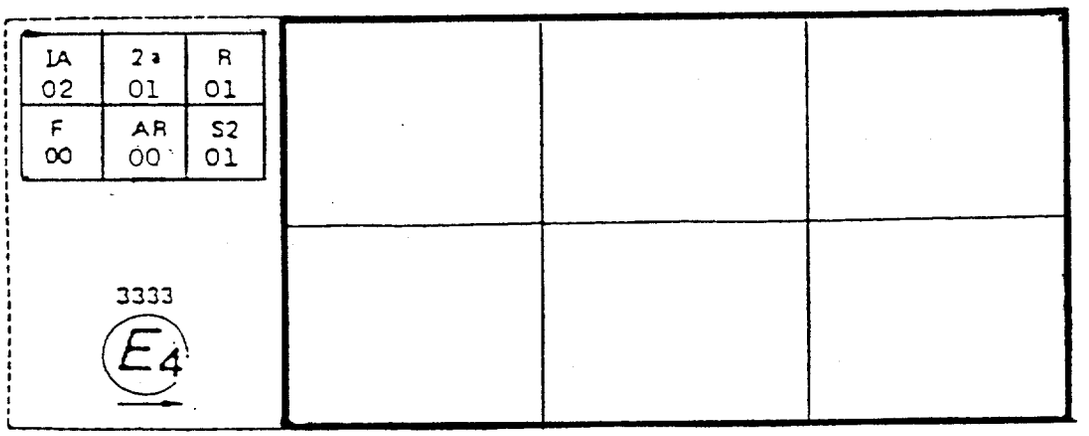
Model B



Model C



Model D



Note: The three examples of approval marks, models B, C and D represent three possible variables for the marking of a lighting device when two or more lamps are part of the same assembly or grouped, combined or reciprocally incorporated lamps. This approval mark shows that the device was approved in the Netherlands (E 4) under approval number 3333 and comprising:

A reflex-retro reflector of class IA approved in accordance with the 02 series of amendments to Regulation No. 3;

A rear direction indicator lamp of category 2a approved in accordance with the 01 series of amendments to Regulation No. 6;

A red rear position lamp (R) approved in accordance with the 02 series of amendments to Regulation No. 7;

A rear fog lamp (F) approved in accordance with Regulation No. 38 in its original form;

A reversing lamp (AR) approved in accordance with Regulation No. 23 in its original form;

A stop lamp with two levels of illumination (S2) approved in accordance with the 02 series of amendments to Regulation No. 7.

Annex 3

PHOTOMETRIC MEASUREMENTS

1. Measurement methods

1.1. When photometric measurements are taken, stray reflections shall be avoided by appropriate masking.

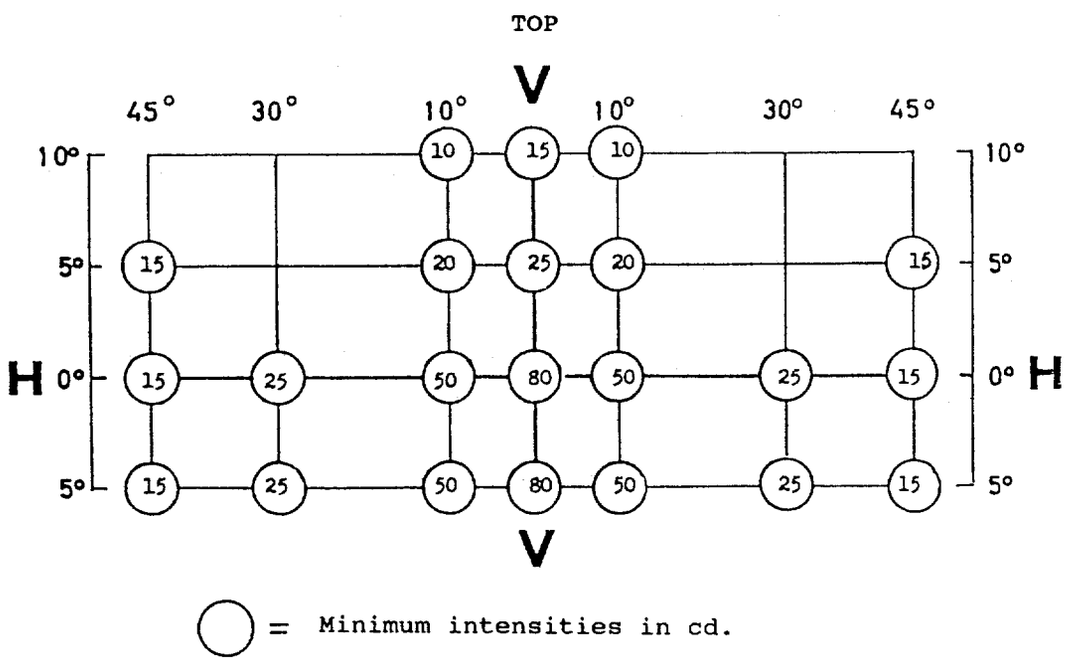
1.2. In the event that the results of measurements are challenged, measurements shall be taken in such a way as to meet the following requirements:

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



◯ = Minimum intensities in cd.

2.1. The directions H = 0° and V = 0° 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. The values shown in the table give, for the various directions of measurement, the minimum intensities in cd.

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 lamps equipped with several light sources

The photometric performance shall be checked:

3.1. For non-replaceable (fixed) filament lamps or other light sources:

at the voltage prescribed by the manufacturer; the test laboratory may require from the manufacturer the special power supply needed to supply such lamps;

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 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.

Annex 4

COLOUR OF WHITE LIGHT

(Trichromatic coordinates)

Limit towards blue	:	$x \geq 0.310$
" " yellow	:	$x \leq 0.500$
" " green	:	$y \leq 0.150 + 0.640x$
" " green	:	$y \leq 0.440$
" " purple	:	$y \geq 0.050 + 0.750x$
" " red	:	$y \geq 0.382$

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, the colorimetric characteristics should be verified with the light sources present in the lamps at a voltage of 6.75 V, 13.5 V or 28.0 V.
