

No. 4789. 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 1958¹

REGULATION No. 5:² UNIFORM PROVISIONS FOR THE APPROVAL OF MOTOR VEHICLE "SEALED BEAM" HEADLAMPS (SB) EMITTING AN ASYMMETRICAL PASSING BEAM OR A DRIVING BEAM OR BOTH; ANNEXED TO THE ABOVE-MENTIONED AGREEMENT

Official texts: English and French.

Registered ex officio on 30 September 1967.

1. *Definition*

By "sealed beam" headlamp unit (hereinafter termed "SB unit"), is meant a headlamp unit whose elements, comprising a reflector system, a lens system and one or more electrical light sources are all parts of an integral whole which has been sealed in the course of manufacture and which cannot be dismantled without rendering the unit completely unusable.

2. *Different types of SB units*

2.1. SB units are considered to be of different types if they differ in one or more of the following essentials of form or characteristics:

- 2.1.1. Trade name or mark;
- 2.1.2. Characteristics of the optical system;
- 2.1.3. Inclusion of additional components capable of altering the optical effects by reflection, refraction or absorption;
- 2.1.4. The rated voltage (the same approval number may be granted if the only change is of rated voltage);
- 2.1.5. The rated wattage;
- 2.1.6. The shape of the filament(s);
- 2.1.7. The kind of beam produced (passing beam, driving beam or both);
- 2.1.8. Suitability for right-hand or left-hand traffic or for both traffic systems;
- 2.1.9. The colour of the light emitted.

¹ United Nations, *Treaty Series*, Vol. 335, p. 211; for subsequent actions relating to this Agreement, see references in Cumulative Indexes Nos. 4 to 7, as well as Annex A in volumes 551, 552, 557, 566 and 601.

² In accordance with paragraph 5 of article 1 of the Agreement, Regulation No. 5 came into force on 30 September 1967 in respect of the Federal Republic of Germany, the Netherlands (for its territory in Europe), Sweden and the United Kingdom of Great Britain and Northern Ireland.

3. *Applications*

- 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 :
 - 3.1.1. whether the SB unit is intended to provide both a passing beam and a driving beam, or only one of these beams;
 - 3.1.2. whether, if the headlight is intended to provide a passing beam, it is designed for both left-hand and right-hand traffic or for either left-hand or right-hand traffic only;
 - 3.1.3. where applicable, that it is designed for agricultural or forest tractors and other slow-moving vehicles (see Annex 1).
- 3.2. Every application for approval shall be accompanied by :
 - 3.2.1. drawings in triplicate, sufficiently detailed to permit identification of the type and giving a front view of the unit (with, if applicable, details of the lens moulding) and a cross-section; also the filament(s) and shield(s) shall be shown on the drawings at a scale of 2 : 1 both in front view and in side view;
 - 3.2.2. brief technical description;
 - 3.2.3. samples as follows :
 - 3.2.3.1. for approval of an SB unit to emit uncoloured light : five samples;
 - 3.2.3.2. for approval of a unit to emit coloured light : one coloured-light sample and five uncoloured-light samples differing from the type submitted only in that the glass is not coloured.
 - 3.3. In the case of SB units differing only in that they are designed to emit coloured light from a type designed to emit uncoloured light and which has previously satisfied the tests in paragraphs 6, 7, and 8 below, it will be sufficient to submit one sample of the coloured-light type to undergo only the tests given in paragraph 9.

4. *Markings*⁽¹⁾

- 4.1. SB units submitted for approval shall bear the trade name or mark of the applicant;
- 4.2. They shall comprise on the front glass, a space of sufficient size for the approval mark and the additional symbols provided for in paragraph 5 below; the space must be shown on the drawings referred to in paragraph 3.2.1 above.
- 4.3. They shall carry, either on the front glass or on the body, the values of the rated voltage and of the rated wattage of the driving beam filament, followed by that of the rated wattage of the passing beam filament, as applicable.

⁽¹⁾ In the case of SB units designed to meet the requirements of traffic moving on one side of the road only (either right or left), it is further recommended that the area which can be occulted to prevent discomfort to users in a country where traffic moves on the side of the road opposite to that of the country for which the SB unit was designed should be outlined indelibly on the front glass. This marking is not necessary, however, where the area is clearly apparent from the design.

4.4. In the case of SB units designed to meet the requirements both of countries where the traffic keeps to the right and of those where the traffic keeps to the left, the two settings of the unit on the vehicle shall be marked by the letters "R/D" for the position for right-hand traffic and the letters "L/G" for the position for left-hand traffic.

4.5. The trade names or marks and markings provided for under this paragraph 4 shall be clearly legible and indelible.

5. *Approval*

5.1. If all the samples of a type of SB units which are submitted in pursuance of paragraph 3 above satisfy the provisions of this Regulation, approval shall be granted.

5.2. An approval number⁽¹⁾ shall be assigned to each type approved; the number so assigned shall not be assigned by the same Contracting Party to another type of SB unit. Notice of approval, or refusal of approval, of a type of SB unit shall be communicated to the countries which are Parties to the Agreement and which apply this Regulation, by means of a form conforming to the model of Annex 2, together with a drawing (supplied by the applicant for approval) in a format not larger than A 4 (210 × 297 mm) on the scale of 1 : 1 for the whole SB unit.

5.3. Each SB unit conforming to a type approved under this Regulation shall bear in the spaces referred to in paragraph 4.2 above, in addition to the mark prescribed in paragraph 4.1 :

5.3.1. An international approval mark consisting of :

5.3.1.1. A circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval;⁽²⁾

5.3.1.2. The approval number placed under the circle;

5.3.2. The following additional symbol or symbols :

5.3.2.1. On SB units meeting left-hand traffic requirements only, a horizontal arrow shall be placed under the circle, pointing to the right of an observer facing the SB unit, i.e. to the side of the road on which traffic moves;

5.3.2.2. On SB units designed to meet the requirements of both traffic systems by means of an appropriate adjustment of the setting of the unit, a horizontal arrow with a head on each end, the heads pointing respectively to the left and to the right, shall be placed under the circle;

⁽¹⁾ The same approval number may be granted for 6, 12, and 24 volt units which are identical in all other respects, provided the results obtained from individual tests are satisfactory.

⁽²⁾ 1 for the Federal Republic of Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for Czechoslovakia, 9 for Spain, 10 for Yugoslavia, and 11 for the United Kingdom; 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.

- 5.3.2.3. On units meeting the requirements of this Regulation in respect of the passing beam only, a square containing the letters "SC" shall be placed above the circle;
- 5.3.2.4. On units meeting the requirements of this Regulation in respect of the driving beam only, a square containing the letters "SR" shall be placed above the circle;
- 5.3.2.5. On units meeting the requirements of this Regulation in respect of both the passing beam and the driving beam, a square containing the letters "SCR" shall be placed above the circle.
- 5.4. The markings and symbols referred to in paragraphs 5.3.1 and 5.3.2.1 to 5.3.2.5 shall be clearly legible and indelible.
- 5.5. Plates SB-1a to SB-1e show samples of sketches of the approval mark and of the additional symbols referred to above.

6. *General specifications*

- 6.1. Each sample shall conform to the specifications set forth in this paragraph 6 and in paragraphs 7 and 8 below, and, if necessary, paragraph 9.
- 6.2. SB units shall be so made as to retain their prescribed photometric characteristics and to remain in good working order when in normal use, despite the vibration to which they may be subjected.
- 6.3. The terminals shall only be in electrical connexion with the appropriate filament or filaments and shall be robust and firmly fixed to the unit.
- 6.4. If the units are circular they shall provide all the physical features and electrical connexions shown in one of the Plates SB-2 — SB-7 and shall be made to the dimensions in that plate.
- 6.5. SB units designed to meet the requirements both of countries where the traffic keeps to the right and of those where the traffic keeps to the left, may be adapted for traffic on a given side of the road either by an appropriate initial setting when fitted on the vehicle, or by selective setting by the user. Such initial or selective setting may consist, for example, of fixing the angular setting of the unit on the vehicle. In all cases, only two precise setting positions, one for right-hand and one for left-hand traffic, shall be possible, and the design shall preclude inadvertent shifting of the unit from the one position to the other or its setting in an intermediate position. Conformity with the requirements of this paragraph shall be verified visually and, where necessary, by a test fitting.

7. *Rated Values*

- 7.1. The values of rated voltage are : 6, 12 and 24 volts.⁽¹⁾
- 7.2. The power consumed at the test voltage by any submitted SB unit shall not exceed the rated wattage marked on the unit, by more than the percentage

⁽¹⁾ 24-volt units are under consideration.

TABLE 1

	Circular units of 180 mm diameter		Circular units of 145 mm diameter	
Rated voltage	6	12	6	12
Test voltage	6	12	6	12
	<i>Rated Wattage and permitted tolerance</i>			
Double Filaments ⁽¹⁾ { Driving beam	60 + 0%		37.5 + 0%	
{ Passing beam	50 + 0%		50 + 0%	
Driving beam filament only	75 + 0%		50 + 0%	
Passing beam filament only	50 + 0%		50 + 0%	

specified in Table 1. No lower limit is specified for the tolerance on wattage but the minimum illumination values specified in Table 2 of paragraph 8.8 must be obtained.

8. *Illumination*⁽²⁾

- 8.1. SB units shall be so made as to give adequate illumination without dazzle for the passing beam, and good illumination for the driving beam.
- 8.2. The illumination produced by the unit shall be checked on a vertical screen set at a distance of 25 m in front of the unit and at right angles to its axis (see plates SB-8a and SB-8b).
- 8.3. The passing beam must produce a sufficiently sharp "cut-off" to permit of satisfactory alignment with its aid. The "cut-off" must be a horizontal line on the side opposite to the direction of the traffic for which the unit is intended; on the other side it should be horizontal or within an angle of 15° above the horizontal.
- 8.4. The SB unit shall be aimed so that on passing beam :
 - 8.4.1. In the case of units designed to meet the requirements of right-hand traffic, the "cut-off" on the left half of the screen⁽³⁾ is horizontal and, in the case of units designed to meet the requirements of left-hand traffic, the "cut-off" on the right half of the screen is horizontal;
 - 8.4.2. This horizontal part of the "cut-off" is situated, on the screen, 25 cm below the level of the horizontal plane passing through the focus of the unit (see plates SB-8a and SB-8b);
 - 8.4.3. The screen is in the position indicated in plates SB-8a and SB-8b.⁽⁴⁾

⁽¹⁾ In the case of SB units with double filaments, the samples may be submitted for approval for the two functions or for the passing beam only.

⁽²⁾ All the photometric measurements shall be carried out at the test voltage given in paragraph 7.

⁽³⁾ The test screen must be sufficiently wide to allow examination of the "cut-off" over a range of at least 5° from the line vv.

⁽⁴⁾ If, in the case of a unit designed to meet the requirements of this Regulation with respect to the passing beam only, the focal axis diverges appreciably in from the general direction of the beam, lateral adjustment shall be effected in the manner which best satisfies the requirements for illumination at points 75 and B 50.

- 8.5. When so aimed, the unit need, if its approval is sought solely for a passing beam, ⁽¹⁾ meet only the requirements referred to in paragraph 8.8 below; if it is intended to provide both a passing beam and a driving beam it shall meet the requirements referred to in paragraphs 8.8 and 8.9.
- 8.6. Where an SB unit so aimed does not meet the requirements referred to in paragraphs 8.8 and 8.9 below, its alignment may be changed, provided that the axis of the beam is not laterally displaced by more than 1° (= 44 cm) to the right or left.⁽²⁾ To facilitate alignment by means of the "cut-off", the unit may be partially occulted in order to sharpen the "cut-off".
- 8.7. In the case of an SB unit providing a driving beam only, it shall be so aimed that the area of maximum illumination is centred on the point of intersection of the lines hh and vv; such a unit need meet only the requirements referred to in paragraph 8.9.
- 8.8. The illumination produced on the screen by the passing beam shall meet the following requirements :

TABLE 2

<i>Point on measuring screen</i>		<i>Required illumination in lux</i>	
<i>SB units for right-hand traffic</i>	<i>SB units for left-hand traffic</i>	<i>Minimum</i>	<i>Maximum</i>
B 50 L	B 50 R	—	0.3
75 R	75 L	6	—
50 R	50 L	6	—
25 L	25 R	1.5	—
25 R	25 L	1.5	—
Every point in Zone III		—	0.7
Every point in Zone IV		2	—
Every point in Zone I		—	20

- 8.8.1. There shall be no lateral variations detrimental to good visibility in any of the zones I, II, III and IV.
- 8.8.2. SB units designed to meet the requirements of both right-hand and left-hand traffic must, in each of the two setting positions, meet the requirements set forth above for the corresponding direction of traffic.
- 8.9. In the case of an SB unit designed to provide a driving beam and a passing beam, measurements of the illumination produced on the screen by the driving beam shall be taken with the same unit alignment and voltage as for measurements under paragraph 8.8 above;

⁽¹⁾ A unit designed to emit a passing beam may incorporate a driving beam not complying with the specification.

⁽²⁾ The limit of re-alignment of 1° towards the right or left is not incompatible with vertical re-alignment, which is only limited by the conditions laid down in paragraph 8.9.

- 8.10. The illumination produced on the screen by the driving beam shall meet the following requirements :
- 8.10.1. The point of intersection H of the line hh and vv shall be situated within the isolux 90 per cent of maximum illumination. This maximum value shall not be less than 32 lux.
- 8.10.2. Starting from point H, horizontally to the right and left, illumination shall be not less than 16 lux up to a distance of 1.125 metres, and not less than 4 lux up to a distance of 2.25 metres.
- 8.11. The screen illumination values mentioned in paragraphs 8.8 and 8.9 above shall be measured by means of a photo-electric cell, the effective area of which shall be contained within a square of 65 mm side.
9. *Colour*
- The light emitted shall be uncoloured or selective yellow. In the latter case the dominant wavelength must be between 5,750 and 5,850 Ångstrom units, the purity factor shall be between 0.90 and 0.98 and the illumination produced on the screen by the passing beam must meet the requirements of Table 2 with all the figures multiplied by a factor of 0.84.⁽¹⁾
10. *Remark concerning colour*
- Any approval under this Regulation which is granted by virtue of paragraph 9, for a type of SB unit emitting uncoloured light or selective yellow light, does not prevent the Contracting Parties from prohibiting, on the vehicles which they register, SB units emitting either uncoloured or selective yellow light, according to Article 3 of the Agreement to which this Regulation is attached.
11. *Gauging of discomfort*
- The discomfort caused by the passing beam of SB units shall be gauged.⁽²⁾
12. *Conformity in manufacture*
- Every SB unit bearing an approval mark provided for in this Regulation must conform to the approved type and meet the photometric conditions stated above.⁽³⁾
13. *Penalties for non-conformity in manufacture*
- 13.1. The approval granted in respect of an SB unit may be withdrawn if the conditions stated above are not met, or if a unit bearing the approval mark does not conform to the type approved.

⁽¹⁾ These specifications correspond to the following trichromatic co-ordinates : selective yellow (yellow within the meaning of paragraph 2 of Article 15 of the 1949 Convention on Road Traffic)

Limit towards red	$y \geq 0.138 + 0.580x$
Limit towards green	$y \leq 1.29x - 0.100$
Limit towards white	$y \geq -x + 0.966$
Limit towards spectrum edge	$y \leq -x + 0.992$

⁽²⁾ This requirement will be the subject of a recommendation for the benefit of administrations.

⁽³⁾ For large-scale manufacture, this requirement will be interpreted in a recommendation for the benefit of administrations.

13.2. Should a Contracting Party to the Agreement withdraw an approval it has previously granted, it shall immediately inform the other Contracting Parties which apply this Regulation by means of a copy of the approval form bearing at the end in large letters the statement, signed and dated: "Approval withdrawn".

14. *Names and addresses of test laboratories and administrative departments*

The Contracting Parties to the Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the test laboratories authorized to issue approvals and of the administrative departments to which the forms for the granting, refusal or withdrawal of approval are to be sent.

A N N E X 1

SB UNITS FOR AGRICULTURAL OR FOREST TRACTORS AND OTHER SLOW-MOVING VEHICLES

1. The provisions of this Regulation shall also apply to the approval of special SB units for agricultural or forest tractors and other slow-moving vehicles, such units being intended to provide both a driving beam and a passing beam and having a diameter⁽¹⁾ of less than 160 mm with the following modifications:

1.1. The minimum requirements for illumination laid down in paragraph 8.8 shall be reduced in the ratio

$$\frac{(D - 45)^2}{(160 - 45)}$$

subject to the following absolute lower limits:

- 3 lux at either point 75R or point 75L;
- 5 lux at either point 50R or point 50L;
- 1.5 lux in Zone IV;

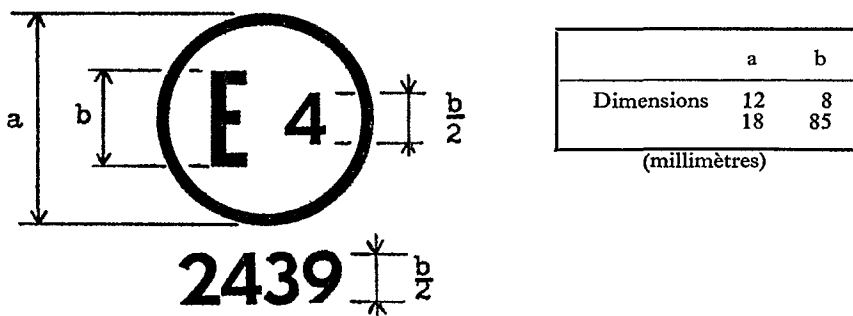
1.2. Instead of the symbols in a *square* provided for in paragraph 5.3.2 of the Regulation, the unit shall be marked with the letters "SM" in an *inverted triangle*.

⁽¹⁾ If the projected area of the reflector is not circular, the diameter shall be that of a circle having the same area as the projected area of the apparent useful surface of the reflector.

PLATES — PLANCHES

PLATE SB-1a — PLANCHE SB-1a

APPROVAL MARK — MARQUE D'HOMOLOGATION



The SB unit bearing the approval mark above has been approved in the Netherlands (E4) under number 2439.

Le projecteur SB portant la marque d'homologation ci-dessus a été homologué aux Pays-Bas (E4) sous le numéro 2439.

PLATE SB-1b — PLANCHE SB-1b

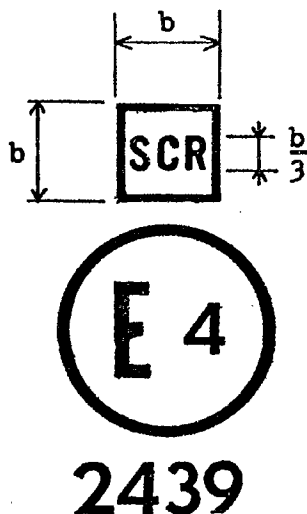


Fig. 1

The SB unit bearing the approval mark above is a unit meeting the requirements of this Regulation with respect to both the passing beam and the driving beam and designed for right-hand traffic only.

Le projecteur SB portant la marque d'homologation ci-dessus est un projecteur satisfaisant aux conditions du présent Règlement à la fois pour le faisceau-croisement et pour le faisceau-route, et conçu pour la circulation à droite seulement.

PLATE SB-1c — PLANCHE SB-1c

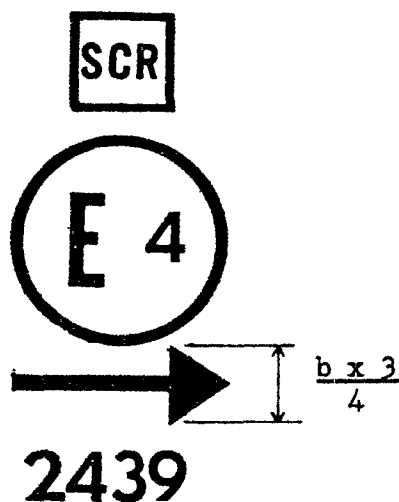


Fig. 2

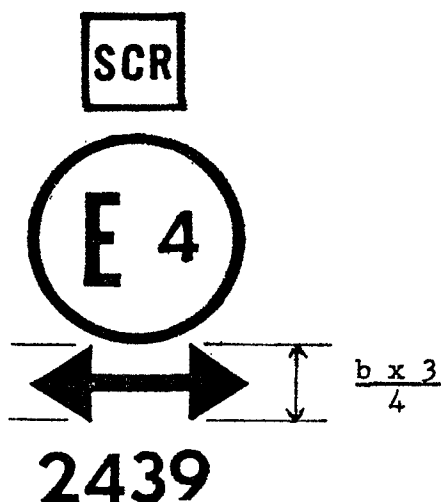


Fig. 3

The SB unit bearing the approval mark above is a unit meeting the requirements of this Regulation with respect to both the passing beam and the driving beam and designed

— for left-hand traffic only.

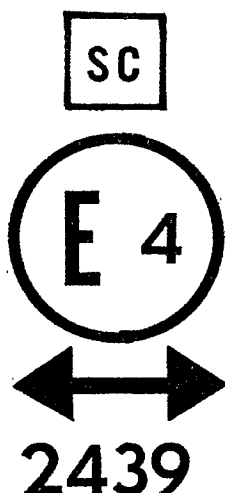
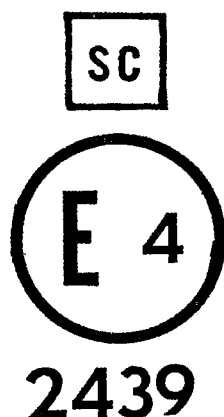
— for both traffic systems by means of an adjustment as required of the setting of the optical unit on the vehicle.

Le projecteur SB portant la marque d'homologation ci-dessus est un projecteur satisfaisant aux conditions du présent Règlement tant pour le faisceau-croisement que pour le faisceau-route et conçu :

— pour la circulation à gauche seulement.

— pour les deux sens de circulation, moyennant une modification appropriée du calage du projecteur sur le véhicule.

PLATE SB-1d — PLANCHE SB-1d

*Fig. 4**Fig. 5*

The SB unit bearing the approval mark above is a unit meeting the requirements of this Regulation with respect to the passing beam only and designed

— for both traffic systems.

— for right-hand traffic only.

Le projecteur SB portant la marque d'homologation ci-dessus est un projecteur satisfaisant aux conditions du présent Règlement pour le faisceau-croisement seulement et conçu pour :

— la circulation dans les deux sens.

— la circulation à droite seulement.

PLATE SB-1e — PLANCHE SB-1e

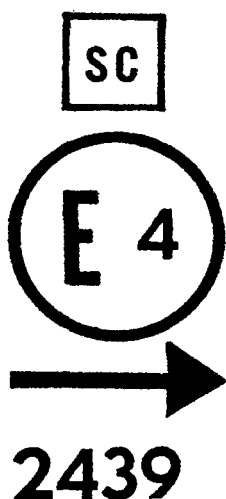


Fig. 6

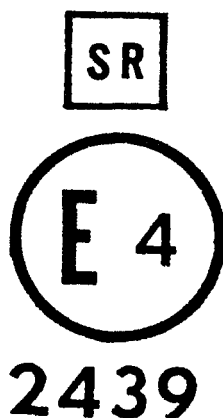


Fig. 7

The SB unit bearing the approval mark above is a unit meeting the requirements of this Regulation with respect to

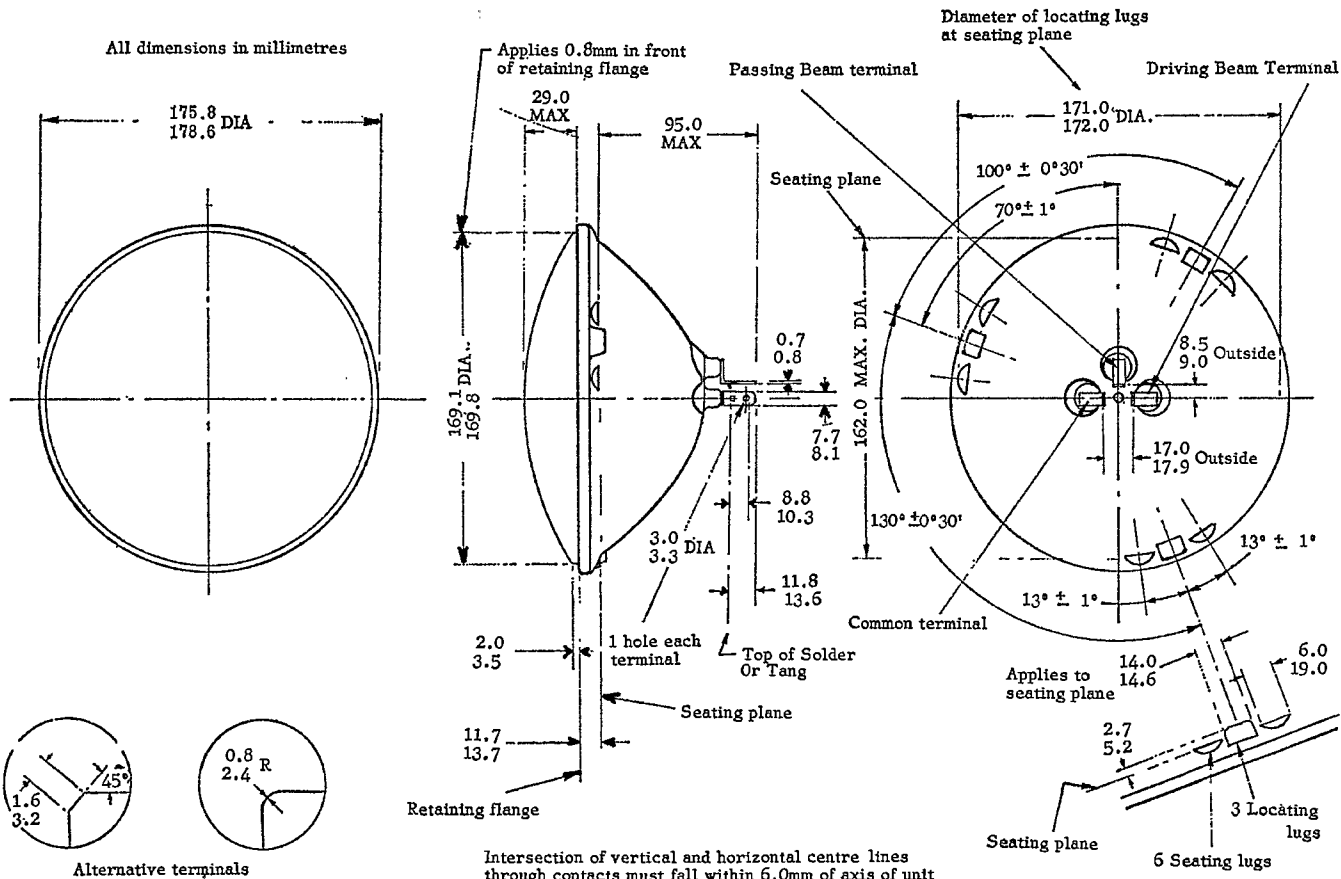
- the passing beam only and designed for left-hand traffic only. — the driving beam only.

Le projecteur SB portant la marque d'homologation ci-dessus est un projecteur satisfaisant aux conditions du présent Règlement pour :

- le faisceau-croisement seulement et conçu pour la circulation à gauche seulement. — le faisceau-route seulement.

PLATE SB2 - SEALED BEAM HEADLAMP UNIT, 180mm (7in) DIA. TYPE 2 DOUBLE BEAM (PASSING & DRIVING)

All dimensions in millimetres

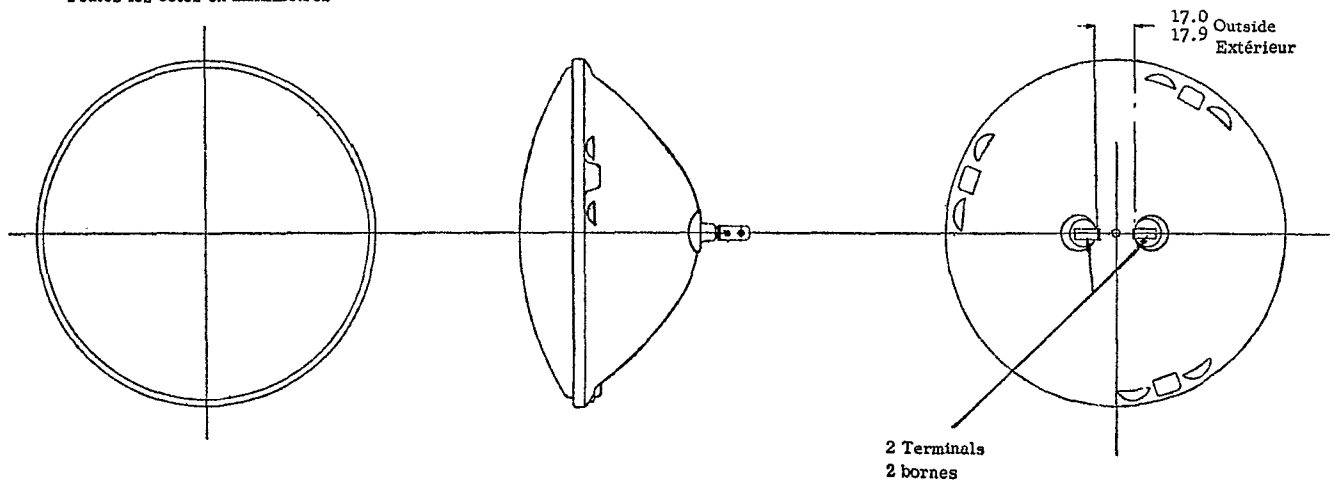


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PLATE SB-3 — PLANCHE SB-3

SEALED BEAM HEADLAMP UNIT, 180mm (7in) DIA. TYPE 1 SINGLE BEAM (DRIVING ONLY)
 PROJECTEUR SCELLÉ, 180 mm (7") DE DIAMÈTRE, TYPE 1, FAISCEAU UNIQUE (ROUTE SEULEMENT)

All dimensions in millimetres
 Toutes les cotes en millimètres



Note: Same as Plate SB2 Sealed Beam Headlamp Unit,
 180mm DIA, except as shown

Mêmes cotes et caractéristiques que la planche SB2 (projecteur scellé, 180 mm de diamètre),
 à l'exception des différences indiquées ci-dessus

PLATE SB5 - SEALED BEAM HEADLAMP UNIT, 145mm (5.75in) DIA. TYPE 1 SINGLE BEAM (DRIVING ONLY)

All dimensions in millimetres

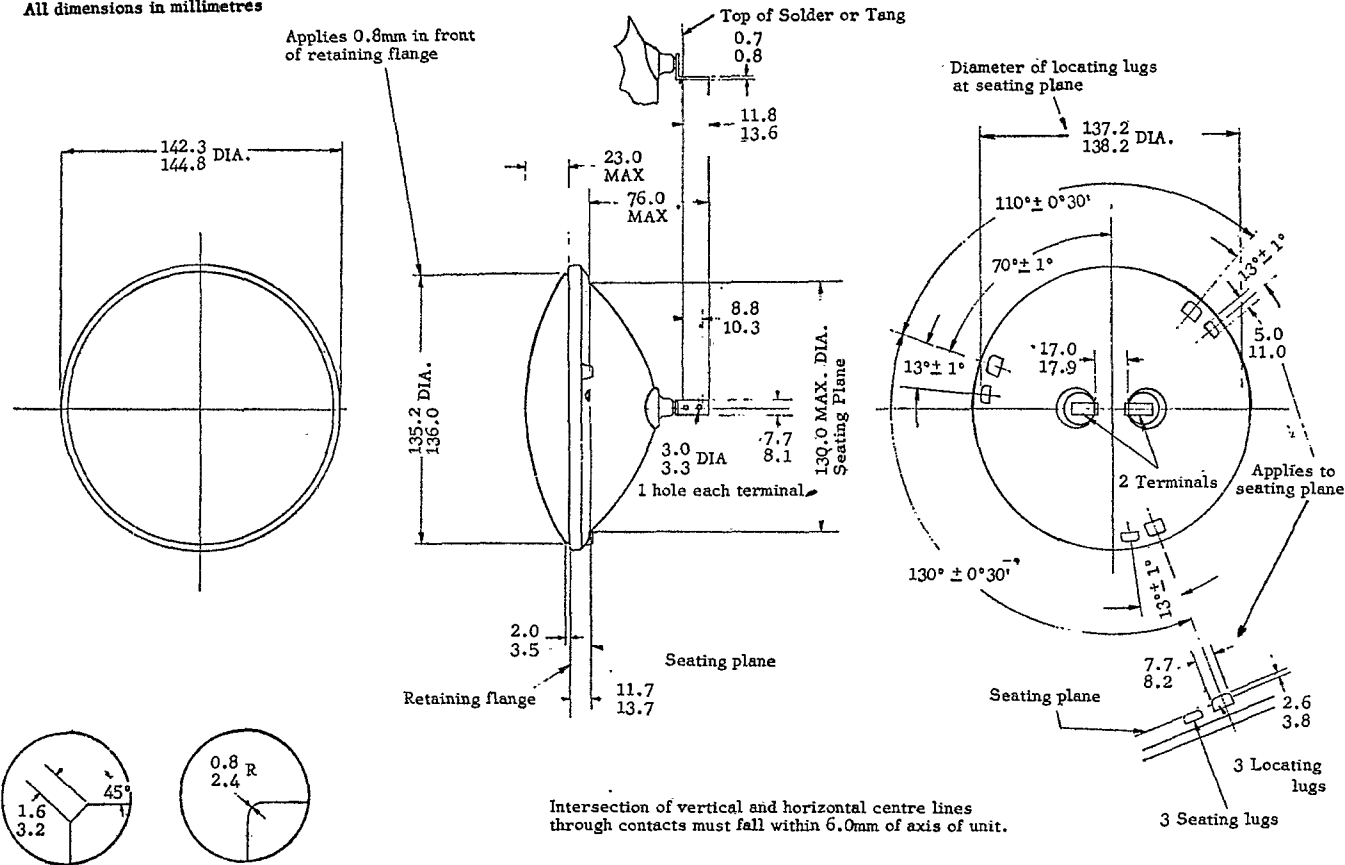
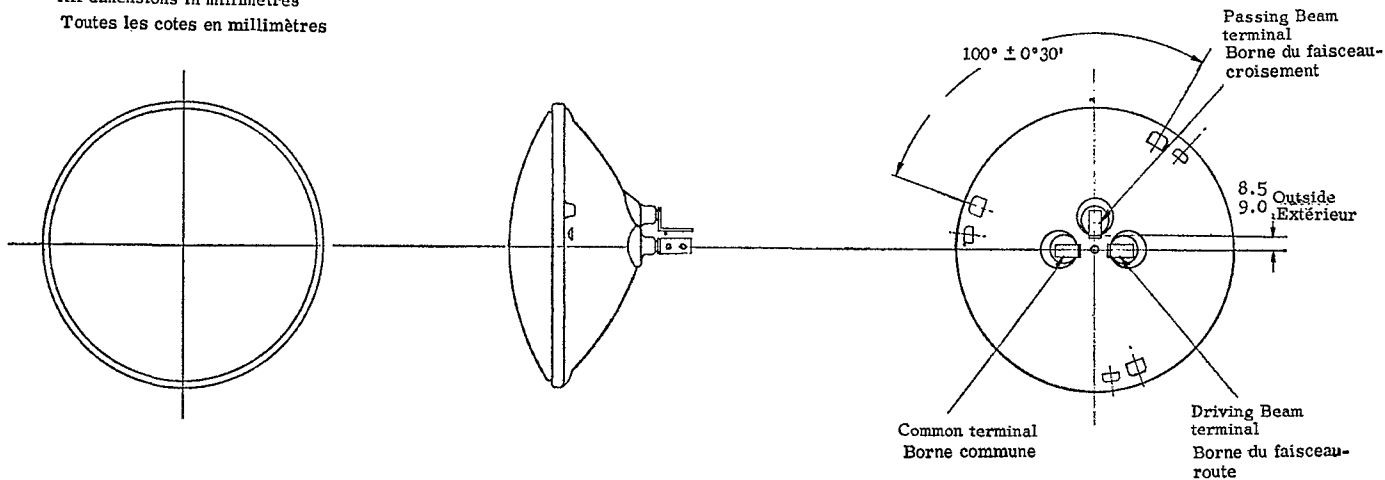


PLATE SB-6 — PLANCHE SB-6

SEALED BEAM HEADLAMP UNIT, 145mm (5.75in) DIA. TYPE 2 DOUBLE BEAM (PASSING & DRIVING)
 PROJECTEUR SCELLÉ, 145 mm (5.75") DE DIAMÈTRE, TYPE 2, DEUX FAISCEAUX (CROISEMENT ET ROUTE)

All dimensions in millimetres
 Toutes les cotes en millimètres



Note : Same as Plate SB5 Sealed Beam Headlamp Unit, 145mm DIA, except as shown
 Mêmes cotes et caractéristiques que pour la planche SB5 (projecteur scellé, 145mm de diamètre), à l'exception des différences indiquées ci-dessus

