

DRAFT

AUTOMOTIVE INDUSTRY STANDARD

**Performance Requirements for
Parking Lamps for Motor Vehicles**

(Revision 2)

Date of hosting on Website: 18th November 2021
Last Date for comments: 17th December 2021

Status chart of the standard to be used by the purchaser for updating the record

Sr. No.	Corrigenda.	Amendment	Revision	Date	Remark	Misc.
General remarks :						

INTRODUCTION

0.1 The Government of India felt the need for a permanent agency to expedite the publication of standards and development of test facilities in parallel when the work on the preparation of the standards is going on, as the development of improved safety critical parts can be undertaken only after the publication of the standard and commissioning of test facilities. To this end, the erstwhile Ministry of Surface Transport (MOST) has constituted a permanent Automotive Industry Standards Committee (AISC) vide order No.RT-11028/11/97-MVL dated September 15, 1997. The standards prepared by AISC will be approved by the permanent CMVR Technical Standing Committee (CMVR-TSC). After approval, the Automotive Research Association of India, (ARAI), Pune, being the Secretariat of the AIS Committee, has published this standard. For better dissemination of this information ARAI may publish this document on their Web site.

0.2 Accordingly AIS-012 covering performance requirements of lighting and light-signalling devices for motor vehicles having more than three wheels, trailers and semi-trailers has been published in 2004 and implemented thereafter in 2005.

With technological advancement in lighting and light-signalling devices and updation in ECE regulations, AIS-012 was taken up for revision and now is prepared in ten parts. This part covers performance requirements for parking lamps for motor vehicles.

0.3 While preparing this standard considerable assistance has been derived from following ECE regulation.

UN R 77 Supplement 18 to the original version of the Regulation – Date of entry into force: 10 February 2018	Uniform provisions concerning the approval of parking lamps for power-driven vehicles
--	---

- 0.4 The following standards contain provisions, which through reference in this text constitute provisions of the standard.

IS 14272	Automotive Vehicles - Types - Terminology
AIS-008 (Rev.2): 2019	Installation Requirements of Lighting and Light-signalling Devices for Motor Vehicle having more than Three Wheels, Trailer and Semi -trailer excluding Agricultural Tractor and Special Purpose Vehicle
AIS-034 (Part 1) (Rev. 2)	Provisions concerning the Approval of Filament Lamps for use in Approved Lamp Units on Power Driven Vehicles and their Trailers
AIS-034 (Part 2) (Rev. 2)	Provisions concerning the Approval of Gas-discharge Light Sources for use in Approved Gas-discharge Lamp units of Power-driven Vehicles
AIS-010 (Part 5) (Rev. 2)	Requirements of Chromaticity Co-ordinates of Colour of Light Emitted from Lighting and Light-signalling Devices

AIS-037	Procedure for Type Approval and Establishing Conformity of Production for Safety Critical Components
AIS 130	Provisions concerning the approval of Light Emitting Diode (LED) light sources for use in approved lamp units on power-driven vehicles and their trailers
UN R 77	Uniform provisions concerning the approval of parking lamps for power-driven vehicles
IEC 60061	Lamp caps and holders together with gauges for the control of interchangeability and safety
IEC 60809	Lamps and light sources for road vehicles - Dimensional, electrical and luminous requirements

- 0.5 The AISC panel and Automotive Industry Standards Committee (AISC) responsible for preparation of this standard are given in Annex H and Annex J respectively.

Performance Requirements for Parking Lamps for Motor Vehicles

Para. No.	Contents	Page No.
1.	Scope	
2.	Definitions	
3.	Application for approval	
4.	Markings	
5.	Approval	
6.	General specifications	
7.	Photometric characteristics	
8.	Test procedure	
9.	Colour of light emitted	
10.	Reserved	
11.	Modifications of the type of parking lamp and extension of approval	
12.	Conformity of production	
13.	Penalties for non-conformity of production	
14.	Reserved.	
15.	Reserved	
16.	Transitional provisions	
17.	Establishing compliance of “E”/“e” approved parking lamp to this standard	
18.	Amendments to ECE regulations after the level described in 0.3 of introduction	
List of Annexes		
Annex A	Reserved.	
Annex B	Reserved.	
Annex C	Minimum angles required for the light distribution in space	
Annex D	Photometric measurements	
Annex E	Colour of light emitted	
Annex F	Minimum requirements for conformity of production control procedures	
Annex G	Minimum requirements for sampling by a testing agency	

Performance Requirements for Parking Lamps for Motor Vehicles

1.0 SCOPE

This standard applies to parking lamps for vehicles of categories L7, M, N and A^{1/}

Note: The permission to use parking lamps covered by this standard is governed by requirements specified by the standard for installation of requirements of that category of vehicles.

2.0 DEFINITIONS

For the purposes of this standard

2.1. The definitions given in AIS-008 (Rev.2) and its amendments in force at the time of application for type approval shall apply to this standard.

2.2. **"Parking lamp"** means the lamp used to draw attention to the presence of a stationary vehicle;

2.3. **"Parking lamps of different types"** means lamps which differ in such essential respects as:

- (a) the trade name or mark,
 - i. Lamps bearing the same trade name or mark but produced by different manufacturers shall be considered as being of different types;
 - ii. Lamps produced by the same manufacturer differing only by the trade name or mark shall be considered as being of the same type.
- (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 light source or the colour of any filter does not constitute a change of type.

2.4. References made in this standard for filament lamp(s) shall be referred to AIS-034(Part 1)(Rev. 2) and its amendments in force at the time of application for type approval.

“Reference made in this Standard to standard (étalon) LED light source(s) and to AIS 130 shall refer to AIS 130 as amended from time to time in force at the time of application for type approval.”

^{1/} As defined in IS 14272: Automotive Vehicles - Types - Terminology

3.0 APPLICATION FOR APPROVAL

- 3.1. The application for approval shall be submitted by the applicant as given below.

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.

- 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:

- (a) the category or categories of filament lamp(s) prescribed; this filament lamp category shall be one of those listed in AIS-034 (Parts 1 and 2)(Rev. 2) and its amendments in force at the time of application for type approval and/or
- (b) The category or categories of LED light source(s) prescribed; this LED light source category shall be one of those contained in AIS 130 and as amended from time to time at the time of application for type approval; and/or.
- (c) the light source module specific identification code.

- 3.2.2. drawings, in triplicate, in sufficient detail to permit identification of the type of the parking lamp and showing geometrically the position(s) in which the 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; the drawings shall indicate the space reserved for the approval mark as per AIS-037.

- 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.

- 3.2.4 In the case of a type of lamp differing only by the trade name or mark from a type that has already been approved it shall be sufficient to submit:

- 3.2.4.1 A declaration by the lamp manufacturer that the type submitted is identical (except in the trade name or mark) with and has been produced by the same manufacturer as, the type already approved, the latter being identified by its approval code;

- 3.2.4.2 Two samples bearing the new trade name or mark or equivalent documentation.

3.2.5 In the case of a non-replaceable filament lamp(s) or light source module(s) equipped with non-replaceable filament lamp(s), the documents according to paragraph 6.5. of this Standard.

4.0 MARKINGS

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

4.1.1. Parking lamp manufacturer's trade mark;

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

(a) the category or categories of light source prescribed; and/or

(b) the light source module specific identification code.

4.1.3. In the case of lamps with non-replaceable light sources or light source module(s), the marking of rated voltage or the range of voltages, and the rated wattage.

4.2. Reserved

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

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

4.3.2. Reserved

4.3.3. The marking of the rated voltage and **range of voltage**.

4.4. On the prototype for type approval, the markings may be provided by suitable temporary methods and need not necessary be obtained from the tools used for series production.

5.0 APPROVAL

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 standard, approval shall be granted.

5.2. Type approval number shall be assigned to each type approved.

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 Standard 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 Standard applying to them.

- 5.4 Reserved.
- 5.5. Every parking lamp conforming to a type approved under this Standard shall bear in the spaces referred to in paragraph 4.2. above, in addition to the marking prescribed in paragraph 4.1. above an approval mark consisting of:
- 5.5.1 Approval marking shall be as per AIS-037
- 5.5.2 the letter "R", a dash and the approval number
- 5.5.3 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. above, for a type of lighting and light-signaling device comprising a parking lamp, and other lamps, a single approval mark may be affixed, consisting of the additional symbols prescribed by the various Standards under which approval has been granted;
- 5.5.5 On devices with reduced light distribution in conformity to paragraph 2.3 of Annex D 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. above 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 UN R 77 gives an example of an arrangement of the approval mark.

6.0 GENERAL SPECIFICATIONS

The requirements contained in sections 5. "General specifications" and 6. "Individual specifications" and in the Annexes referenced in the said sections of Regulations Nos. 48 or 86, and their series of amendments in force at the time of application for the lamp type approval shall apply to this Regulation.

The requirements pertinent to each lamp and to the category/ies of vehicle on which the lamp is intended to be installed shall be applied, where its verification at the moment of lamp type approval is feasible.

- 6.1. Each sample shall conform to the specifications of paragraphs 7.0 and 9.0 of this standard.

- 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 standard.
- 6.3. In the case of light source modules, it shall be checked that:
- 6.3.1. The design of the light source module(s) shall be such as:
- (a) that each light source module can only be fitted in no other position than the designated and correct one and can only be removed with the use of tool(s);
- (b) If there are more than one light source module used in the housing for a device, light source modules having different characteristics cannot be interchanged within the same lamp housing.
- 6.3.2. The light source module(s) shall be tamperproof.
- 6.3.3. A light source module shall be so designed that regardless of the use of tool(s), it shall not be mechanically interchangeable with any replaceable approved light source.”
- 6.4. In the case of replaceable filament lamp(s):
- 6.4.1. Any category or categories of light source(s) approved according to AIS-034 (Part 1) (Rev. 2) and/or AIS 130 may be used, provided that no restriction on the use is made in AIS-034 (Part 1) (Rev. 2) and its series of amendments in force at the time of application for type approval or in AIs 130 and its series of amendments in force at the time of application for type approval.
- 6.4.2. The design of the device shall be such that the light source can be fixed in no other position but the correct one.
- 6.4.3. The filament lamp holder shall conform to the characteristics given in IEC Publication 60061. The holder data sheet relevant to the category of filament lamp used, applies.
- 6.5. In the case of non-replaceable filament lamp(s) or light source module(s) equipped with non-replaceable filament lamp(s), the applicant shall annex to the type approval documentation a report (by the light source manufacturer indicated in the type approval documentation), acceptable to the Test Agency that demonstrates compliance of these non-replaceable filament lamp(s) with the requirements as specified in paragraph 4.11. of IEC 60809, Edition 3.

7.0 PHOTOMETRIC CHARACTERISTICS

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 (cd)	Maximum (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.		
7.1.4	Failure of a single lamp containing more than one light source:		
7.1.4.1	In a single lamp containing more than one light source, a group of light sources, wired so that the failure of any one of them causes all of them to stop emitting light, shall be considered to be one light source.		
7.1.4.2	In case of failure of any one light source in a single lamp containing more than one light source, at least one of the following provisions shall apply: a. The light intensity complies with the minimum intensity required in the table of standard light distribution in space as shown in Annex D; or b. A signal for activation of a tell-tale indicating failure, as indicated in paragraph 6.12.8. of AIS 008 (Rev.2), is produced, provided that the luminous intensity in the axis of reference is at least 50 per cent of the minimum intensity required. In this case a note in the communication form states that the lamp is only for use on a vehicle fitted with a tell-tale indicating failure."		
7.2.	Outside the reference axis and within the angular fields defined in the diagrams in Annex C to this standard, 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 D to this standard 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. Any further verification is required to establish compliance throughout the fields defined in Annex C the intensity of the light emitted shall be not less than 0.05 cd,
- 7.2.4.2. the requirements of paragraph D2.2. of Annex D on local variations of intensity shall be observed.
- 7.3. Annex D of this standard to which reference is made in paragraph 7.2.1., gives particulars of the methods of measurement to be used.

8.0 TEST PROCEDURE

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, photometric and colorimetric shall be carried out with an uncoloured or coloured standard light source of the category prescribed for the device, supplied with the voltage;
 - (a) In the case of filament lamps, that is necessary to produce the reference luminous flux required for that category of filament lamp;
 - (b) In the case of LED light sources of 6.75 V, 13.5 V or 28 V; the luminous flux value produced shall be corrected. The correction factor is the ratio between the objective luminous flux and the mean value of the luminous flux found at the voltage applied;
 - (c) In the case of lamps with non-replaceable light sources: 6.75 V, 13.5 V or 28 V respectively;
 - (d) In the case of a system that uses an electronic light source control gear being part of the lamp³ 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;
 - (e) In the case of a system that uses an electronic light source control gear not being part of the lamp, the voltage declared by the manufacturer shall be applied to the input terminals of the lamp.
- 8.2 The test laboratory shall require from the manufacturer the light source control gear needed to supply the light source and the applicable functions.”
- 8.3 The voltage to be applied to the lamp shall be noted in the Test report.
- 8.4. The limits of the apparent surface in the direction of the reference axis of a light-signalling device shall be determined.

9.0 COLOUR OF LIGHT EMITTED

The colour of the light emitted inside the field of the light distribution grid defined at paragraph D2. of Annex D, 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 red, white or amber. For testing see Annex E to this standard. 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 standard.

10.0 Reserved

11.0 MODIFICATIONS OF THE TYPE OF PARKING LAMP AND EXTENSION OF APPROVAL

11.1 Every modification pertaining to the information, even if the changes are not technical in nature declared in accordance with paragraph 3 of this standard shall be intimated by the applicant to the testing agency.

If the changes are in parameters not related to the provisions, no further action need be taken.

If the changes are in parameters related to the provisions, the testing agency, which has issued the certificate of compliance, shall then consider, whether,

11.1.1 The device with the changed specifications still complies with provisions, or

11.1.2 Any further verification is required to establish compliance.

11.2 For considering whether testing is required or not, guidelines given in 11.5 (criteria for extension of approval) shall be used.

11.3 In case of 11.1.2, tests for only those parameters which are affected by the modifications need be carried out

11.4 In case of fulfillment of criterion of 11.1.1 or after results of further verification as per 11.1.2 are satisfactory, the approval of compliance shall be extended for the changes carried out.

11.5 Criteria for extension of approval

The criteria shall be as agreed between the testing agency and applicant.

12. CONFORMITY OF PRODUCTION

The conformity of production procedures shall comply with those set out in the AIS-037 with the following requirements:

- 12.1. Parking lamps shall be so manufactured as to conform to the type approved under this Standard.
The compliance with the requirements set forth in paragraphs 7. and 9. above shall be verified as follows:"
- 12.1.1 The minimum requirements for conformity of production control procedures set forth in Annex F to this Regulation shall be complied with.
- 12.1.2 The minimum requirements for sampling by an inspector set forth in Annex G to this Regulation shall be complied with.
- 12.2 The Test Agency, 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.
- 12.3 In the case of non-replaceable filament lamp(s) or light source module(s) equipped with non-replaceable filament lamps, a report (by the light source manufacturer indicated in the type approval documentation) shall demonstrate compliance of these non-replaceable filament lamp(s) with lifetime requirements and, in the case of colour coated filament lamps, also with colour endurance requirements, as specified in paragraph 4.11. of IEC 60809, Edition

13. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

Penalties for non-conformity of production shall be as prescribed in AIS-037.

14. Reserved

15. Reserved

16. TRANSITIONAL PROVISIONS

- 16.1 At the request of the applicant, type approvals for compliance to AIS-012 (Part 8) (Rev.2): 20XX shall be granted by testing agencies from (date of adoption of this standard in CMVR-TSC). Such type approvals shall be deemed compliant to AIS-012 (Part 8) (Rev.1):2011 as amended from time to time.
- 16.2 At the request of applicant, type approval to the compliance to AIS-012 (Part 8) (Rev.1): 2011 as amended from time to time shall be granted up to the notified date of implementation of AIS-012 (Part 8) (Rev.2):20XX
- 16.3 Type approvals issued for compliance to AIS-012 (Part 8) (Rev.1): 2011 as amended from time to time shall be extended to approval of AIS-012 (Part 8) (Rev.2): 20XX subject to satisfactory compliance to the requirements of this standard:

17.0 ESTABLISHING COMPLIANCE OF “E”/“e” APPROVED LIGHTING AND LIGHT SIGNALLING DEVICES TO THIS STANDARD

17.1 As an exception to 7.4 of AIS-037 (or related administrative decisions) for certifying compliance of “E”/“e” approved front position lamps, rear position lamps, stop lamps, direction indicators rear-registration-plate illuminating devices and Reversing Lamp to this standard, the following test shall be carried out by testing agency

17.1.1 Photometric requirements measured with a standard light source as referred to in 8 above shall be at least 80 per cent of the minimum values specified and shall not exceed 120 per cent of the maximum values specified in 7.0.

17.1.2 Colorimetric requirements shall be specified in 9.0 within the limits specified.

18 AMENDMENTS TO ECE REGULATIONS AFTER THE LEVEL DESCRIBED IN 0.3 OF INTRODUCTION

Acceptance of changes in UN regulations after the level described in 0.3 of introduction shall be as per AIS-000, as amended from time to time, as applicable, unless otherwise stated.

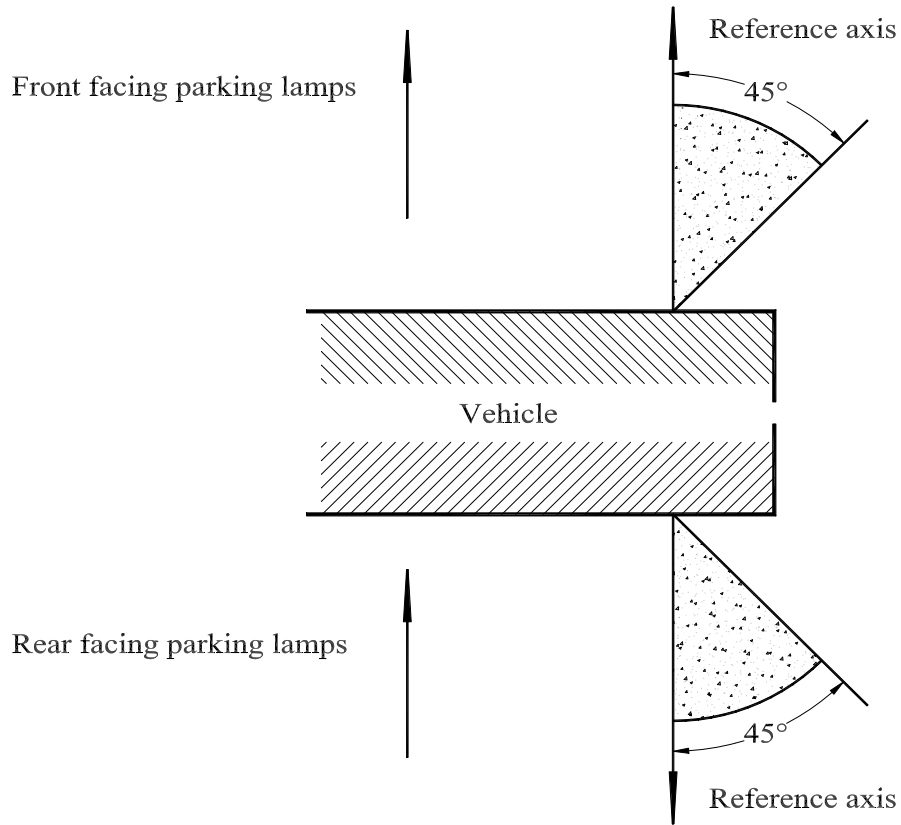
ANNEX A
(Reserved)

ANNEX B
(Reserved)

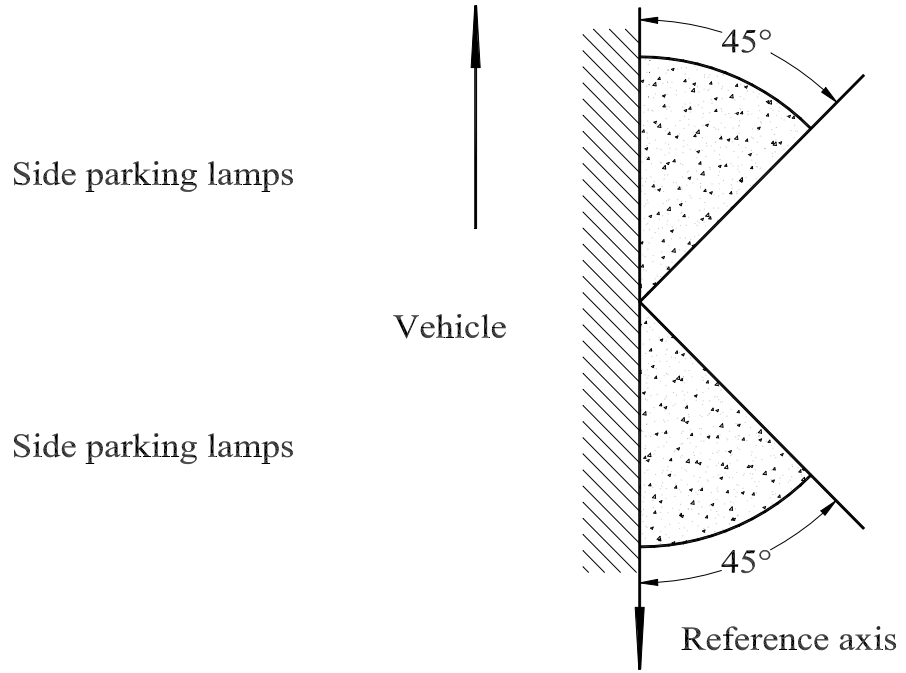
ANNEX C
(See 7.2)

**MINIMUM ANGLES REQUIRED FOR THE
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 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.



^{*/} 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 D

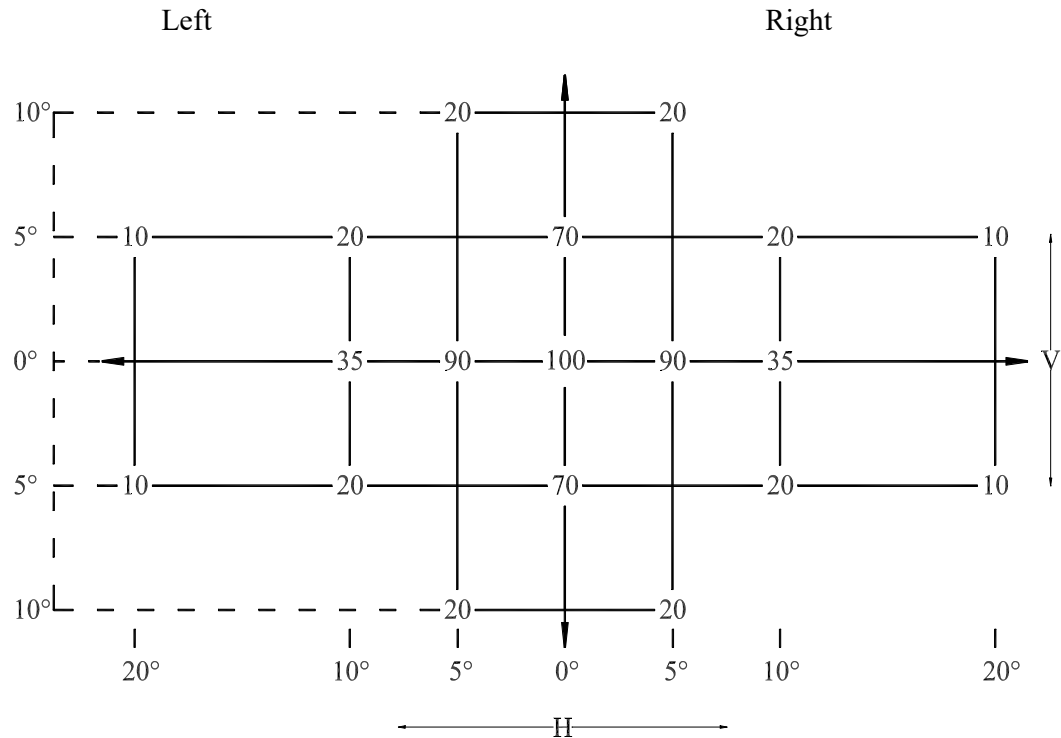
(See 7.2.1)

PHOTOMETRIC MEASUREMENTS

D1.0 MEASUREMENT METHODS

- D1.1. During photometric measurements, stray reflections shall be prevented by appropriate masking.
- D1.2. Should the results of measurements be challenged, measurements shall be carried out in such a way as to meet the following requirements:
 - D1.2.1. the distance of measurements shall be such that the law of the inverse of the square of the distance is applicable;
 - D1.2.2. 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°;
 - D1.2.3. 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.
- D1.3. 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.

D2.0 STANDARD LUMINOUS INTENSITY DISTRIBUTION TABLE



- D2.1 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 $V = 0^\circ$).
- D2.2. Within the field of light distribution of paragraph D2.0, 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.
- D2.3. 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.

D3.0 PHOTOMETRIC MEASUREMENT OF LAMPS

The photometric performance shall be checked:

- D3.1. 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 standard.
- D3.2. For replaceable light sources:
When equipped with light sources at 6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. For filament lamps 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)
For LED light sources the correction factor is the ratio between the objective 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 light source used shall not deviate more than ± 5 per cent from the mean value. Alternatively and in case of filament lamps only, 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.
- D3.3. 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 may 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 E

(See 9.0)

COLOUR OF LIGHT EMITTED

The chromaticity co-ordinates of the colour emitted shall be in accordance with AIS-010(Part 5)(Rev.2)

For checking the 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 standard.

ANNEX F

(See 12.0)

**MINIMUM REQUIREMENTS FOR CONFORMITY OF
PRODUCTION CONTROL PROCEDURES**

F1.0 GENERAL

F1.1. 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 standard.

F1.2. With respect to photometric performances, the conformity of mass-produced lamps shall not be contested if, when testing according to paragraph 8. of this Regulation, the photometric performances as set forth in paragraph 7. of this Regulation of any lamp chosen at random and equipped with a standard light source, 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:

F1.2.1. No measured value deviates unfavourably by more than 20 per cent from the values prescribed in this Standard.
For the minimum values required throughout the fields specified in Annex C the respective maximum deviations of the measured values shall correspond to the values shown in the table below:

Required minimum value	Equivalent 20 per cent	Equivalent 30 per cent
cd	cd	cd
0.05	0.02	0.03

F1.2.2. 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 light source.

F1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a Standard light source, 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.

F 1.4 In the case of non-replaceable filament lamp(s) or light source module(s) equipped with non-replaceable filament lamps, at any conformity of production check:

F 1.4.1 The holder of the approval mark shall demonstrate the use in normal production and show the identification of the non-replaceable filament lamp(s) as indicated in the type approval documentation;

F 1.4.2 In the case where doubt exists in respect to compliance of the non-replaceable filament lamp(s) with lifetime requirements and/or, in the case of colour coated filament lamps, with colour endurance requirements, as specified in paragraph 4.11. of IEC 60809, Edition 3, conformity shall be checked (by the light source manufacturer indicated in the type approval documentation) as specified in paragraph 4.11. of IEC 60809, Edition 3

F2.0 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 standard.

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.

F2.1. Nature of tests

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

F2.2. Methods used in tests

F2.2.1. Tests shall generally be carried out in accordance with the methods set out in this standard.

F2.2.2. In any test of conformity carried out by the manufacturer, equivalent methods may be used with the consent of the testing agency responsible for approval tests. The manufacturer is responsible for proving that the applied methods are equivalent to those laid down in this standard.

F2.2.3. The application of paragraphs F2.2.1. and F2.2.2. requires regular calibration of test apparatus and its correlation with measurements made by a testing agency.

F2.2.4. In all cases the reference methods shall be those of this standard, particularly for the purpose of administrative verification and sampling.

F2.3. 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.

F2.4. **Measured and recorded photometric characteristics**

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex D and the required chromaticity coordinates listed in Annex E, provided for in the standard.

F2.5. **Criteria governing acceptability**

The manufacturer is responsible for carrying out a statistical study of the test results and for defining, in agreement with the testing agency, 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 standard.

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

ANNEX G

(See F 2.5)

MINIMUM REQUIREMENTS FOR SAMPLING BY A TESTING AGENCY

G1.0 GENERAL

- G1.1. The conformity requirements shall be considered satisfied from a mechanical and a geometric standpoint, in accordance with the requirements of this Standard, if any, if the differences do not exceed inevitable manufacturing deviations.
- G1.2. With respect to photometric performances, the conformity of mass-produced parking lamps shall not be contested if, when testing according to paragraph 8. of this Standard, the photometric performances as set forth in paragraph 7. to this Standard of any lamp chosen at random and equipped with a standard light source, 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:
- G1.2.1. According to the requirements in paragraph 1.2.1. of Annex 5 to this Standard are met.
- G1.2.2. In the case of a lamp equipped with a replaceable light source, if results of the test described above do not meet the requirements, tests on lamps shall be repeated using another standard light source.
- G1.2.3. Lamps with apparent defects are disregarded.
- G1.3. The chromaticity coordinates shall be complied with when the lamp is equipped with a Standard light source, 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.

G2.0 FIRST SAMPLING

- In the first sampling four parking lamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.
- G2.1. The conformity of mass-produced parking lamps shall not be contested if the deviation of any specimen of samples A and B (all four lamps) is not more than 20 per cent.
In the case, that the deviation of both lamps of sample A is not more than 0 per cent, the measurement can be closed.
- G2.2. The conformity of mass-produced parking lamps shall be contested if the deviation of at least one specimen of sample A or B is more than 20 per cent.
The manufacturer shall be requested to bring his production in line with the requirements (alignment) and a repeated sampling according to paragraph 3. below shall be carried out within two months' time after the notification. The samples A and B shall be retained by the Test Agency until the entire Conformity of Production process is finished.

G3.0 FIRST REPEATED SAMPLING

A sample of four lamps is selected at random from stock manufactured after alignment.

The first sample of two is marked C, the second sample of two is marked D.

G3.1. The conformity of mass-produced parking lamps shall not be contested if the deviation of any specimen of samples C and D (all four lamps) is not more than 20 per cent.

In the case, that the deviation of both lamps of sample C is not more than 0 per cent the measurement can be close

G3.2. The conformity of mass-produced parking lamps shall be contested if the deviation of at least:

G3.2.1. One specimen of sample C or D is more than 20 per cent but the deviation of all specimen of these samples is not more than 30 per cent.

The manufacturer shall be requested again to bring his production in line with the requirements (alignment).

A second repeated sampling according to paragraph 4. below shall be carried out within two months' time after the notification. The samples C and D shall be retained by the Test Agency until the entire Conformity of Production process is finished.

G3.2.2. One specimen of sample C or D is more than 30 per cent.

In this case the approval shall be withdrawn and paragraph 5. below shall be applied.

G4.0. Second repeated sampling

A sample of four lamps is selected at random from stock manufactured after alignment.

The first sample of two is marked E, the second sample of two is marked F.

G4.1 The conformity of mass-produced parking lamps shall not be contested if the deviation of any specimen of samples E and F (all four lamps) is not more than 20 per cent.

In the case, that the deviation of both lamps of sample E is not more than 0 per cent, the measurement can be closed.

G4.2 The conformity of mass-produced parking lamps shall be contested if the deviation of at least one specimen of sample E or F is more than 20 per cent.

In this case the approval shall be withdrawn and paragraph 5. below shall be applied.

G5.0 Approval withdrawn

Approval shall be withdrawn according to paragraph 13. of this Standard."

ANNEX H
(See introduction)

**COMPOSITION OF AISC PANEL ON
LIGHTING AND LIGHT SIGNALLING DEVICES**

(To be included)

ANNEX J
(See introduction)

COMMITTEE COMPOSITION*
Automotive Industry Standards Committee

(To be included)