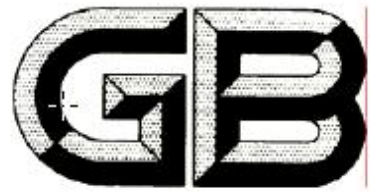


ICS 43.040.20

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# **National Standard of the People's Republic of China**

GB11554 - XXXX  
Replaces GB 11554-1998

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## **Photometric characteristics of rear fog lamp for power-driven vehicles and their trailers**

Draft for approval

Issue Date: 20XX – XX – XX

Implementation Date: 20XX – XX – XX

**Issued by General Administration of Quality Supervision, Inspection and  
Quarantine of the People's Republic of China and the**

**Standardisation Administration of the People's Republic of China (SAC)**

## Foreword

**All of the technical contents set out in this Standard are mandatory.**

This Standard corresponds to the Revision 2, Amendment 2 of ECE R.38, “Uniform provisions concerning the approval of rear fog lamps for power-driven vehicles”. The conformance degree between this Standard and ECE R38 is non-equivalent, and the main differences are:

- Clause 1 – Scope has been modified;
- Normative References have been added;
- the following sections and appendix which concerns administrative provisions in ECE R38 have been deleted:
  2. Application for approval;
  3. Approval markings;
  4. Approval;
  10. Conformity of production;
  11. Settlement of non-conformity of production;
  12. Official end of production;
  13. Names and addresses of the Technical Service Department responsible for conducting approval tests and of the Administrative Department;
- inspection rules have been added.

The main technical requirements of this Standard, such as requirements and test methods, conform to ECE R.38.

This Standard replaces GB11554 – 1998, “Photometric characteristics of rear fog lamp for motor vehicles and their trailers”. Compared to the previous version, the main changes to this Standard are:

- Clause 1 of previous version – Scope – has been modified;
- Clause 2 of previous version – Normative references;
- Clause 3 of previous version – the relevant provisions in Definitions – have been modified;
- Clause 4 of previous version – the relevant Articles in Technical requirements– have been modified;
- Clause 5 of previous version – Test methods – has been modified;
- Clause 6 of previous version – Inspection rules– has been modified;
- Articles relevant to rear fog lamps which use light source module have been added;
- Articles relevant to rear fog lamps with variable intensity have been added.

Transitional requirements for the implementation of this Standard: rear fog lamps for power-driven vehicles which have newly applied for type approval shall conform to this Standard. For rear fog lamps for power-driven vehicles which have passed type approval before the implementation date of this Standard: if there is any non-conformity with the corresponding provisions of this Standard, a transitional period of 24 months shall be granted.

This Standard is proposed by China National Development and Reform Commission.

This Standard is under the jurisdiction of the National Automobile Standardisation Technical Committee.

The organisation that participated in the drafting of this Standard:  
Shanghai Automotive Lamp Research Institute.

The main drafters of this standard: Zhou Tao, Wang Jinjun

This standard replaces the previously issued Standard:  
- GB11544-1998.

# **Photometric characteristics of rear fog lamp for power-driven vehicles and their trailers**

(Draft for approval)

## **1 Scope**

This Standard specifies the technical requirements, test methods and inspection rules for the rear fog lamps for power-driven vehicles.

This Standard applies to all types of rear fog lamps for the use of power-driven vehicles of categories L3, L4, L5, L7, M, N, and O.

The rear fog lamps for power-driven vehicles in this Standard are referred to as the rear fog lamps.

## **2 Normative References**

The provisions of the following documents become provisions of this Standard after being referenced. For dated reference documents, all later amendments (excluding corrigenda) and versions do not apply to this Standard; however, the parties to the agreement are encouraged to study whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB 4599 Motor vehicle headlamps equipped with filament lamps

GB 4785 Prescription for installation of the external lighting and light signalling devices for motor vehicles and their trailers

GB 15766.1 Filament lamps for road vehicles – Dimensional, electrical and luminous requirements

ECE R.37 Uniform provisions concerning the approval of filament lamps for use in approved lamp units of power-driven vehicles and of their trailers

## **3 Terms and definitions**

The terms and definitions specified in GB 4785 apply to this Standard.

## **4 Requirements**

### **4.1 General provisions**

4.1.1. The rear fog lamps shall be designed and constructed such that in normal use conditions, despite the vibrations to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Standard.

4.1.2 The light source module in the rear fog lamp, shall be designed such that the light source can be fitted in the correct position even in darkness; and shall be tamperproof.

4.1.3 When the adjustment device of the luminous intensity for the rear fog lamp with variable intensity has lost its efficiency, it shall be able to automatically meet the requirements of the photometric characteristics for the rear fog lamp with mixed intensity.

4.1.4 If filament lamps are employed, the filament lamps shall be in conformity with the provisions in GB15766.1 or ECE R37.

## 4.2 Photometric characteristic

4.2.1 Within the angle range specified below, the luminous intensity emitted by the rear fog lamp in all directions shall conform to the following provisions:

4.2.1.1 From the horizontal H-H line and vertical V-V line which go through the reference axis, within the range of between 10° to the left and 10° to the right, and between 5° up and 5° down of the reference axis (See to Diagram 1), the minimum value of the luminous intensity emitted by the rear fog lamp shall be 150cd;

4.2.1.2 In the diamond area of the photometric screen in Diagram 1, by visual inspection if any noticeable changes of the luminous intensity is discovered, then apart from checking whether the H-H line and V-V line have met the provisions mentioned above, shall also check the luminous intensity of the other parts within this area, the minimum value shall be 75cd;

4.2.1.3 In all light-visible directions, the maximum value of the luminous intensity emitted by the rear fog lamp with mixed intensity shall be 300cd; the maximum value of the luminous intensity emitted by the rear fog lamp with variable intensity shall be 840cd, but shall not exceed 300cd when operated at night;

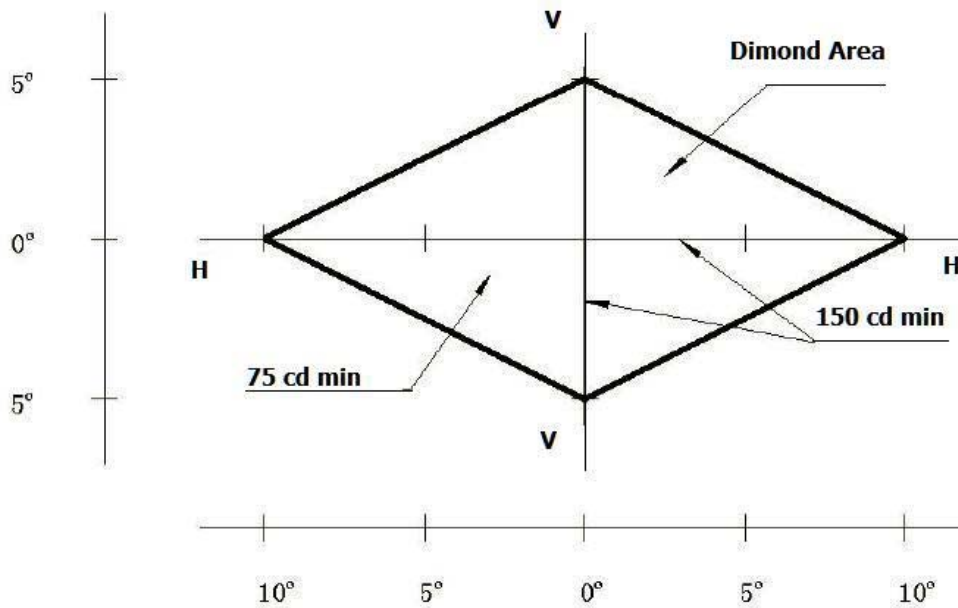
4.2.2 In the case of a single lamp containing more than one light source, the lamp shall comply with the minimum intensity required when any one of the light sources has failed. When all the light sources are illuminated, the maximum luminous intensity shall not be exceeded.

4.2.3 The apparent surface in the direction of the reference axis shall not exceed 140 cm<sup>2</sup>.

4.3 The light colour and its chromaticity characteristics of the rear fog lamp shall conform to the provisions in GB 4785.

## 4.4 Heat resistance

Under the ambient temperature of  $23\text{oC} \pm 5\text{oC}$ , the rear fog lamp must be subjected to a one-hour test of continuous operation following a warm-up period of 20 minutes under the conditions specified in 5.3. After the test, the lamp shall have no distortion, deformation, cracking or colour modification



## 5 Test methods

5.1 The test-darkroom, equipment and facilities shall be in conformity with the provisions in GB 4599.

### 5.2 Test condition for photometric characteristics

5.2.1 In the case of the rear fog lamps equipped with non-replaceable light sources (filament lamps or others), all the measurements shall be performed at the voltages of 6.75v, 13.5v or 28.0v respectively.

5.2.2 In the case of the rear fog lamps equipped with replaceable filament lamps, shall use standard filament lamp for the rear fog lamp when testing, and make it work in a state which produces reference luminous flux.

5.2.3 In the case of the rear fog lamps equipped with a dimmer device, under the circumstances of using the device correctly, the measurements shall be performed in accordance with the input voltage specified by the manufacturer.

5.2.4 In the case of any rear fog lamps except those equipped with filament lamps, the luminous intensities measured after one minute and after 30 minutes of operation, shall comply with the specified values in Article 4.2. The luminous intensity after one minute of operation can be calculated from the luminous intensity distribution after 30 minutes of operation applied at each test point, multiplied by the ratio of luminous intensity measured at HV after one minute and after 30 minutes of operation.

5.2.5 The measurement of equipment fitted with multiple light sources

5.2.5.1 When equipped with mass-produced replaceable filament lamps and operating at 6.75v, 13.5v or 28.0v, can use the mass-produced filament lamp to perform the measurements, the luminous intensity 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, 13.5v or 28.0v), the actual luminous flux 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.

5.2.5.2 In the case of rear fog lamps equipped with non-replaceable light source or other light source, measurement shall be performed in accordance with the voltage specified by the manufacturer, when it is necessary, the manufacturer shall provide a special power supply device.

### 5.3 Test condition for heat resistance

5.3.1 In the case of the rear fog lamps equipped with non-replaceable light sources (filament lamps or others), all the measurements shall be performed at the voltage of 6.75v, 13.5v or 28.0v respectively.

5.3.2 In the case of the rear fog lamps equipped with replaceable filament lamps, the test voltage shall enable the lamps operating in the average output power which is specified in GB 15766.1 or ECE R.37; if in GB 15766.1 or ECE R.37, only the maximum power is specified, the measurements shall be carried out by regulating the voltage to obtain a power equal to 90 per cent of the specified power.

5.3.3 For the rear fog lamps with variable intensity, shall enable the lamps to work at not less than 90% of the maximum luminous intensity.

5.4 Before the test of photometric characteristics, shall illuminate the lamp or the rear fog lamp equipped with non-replaceable light source with the test voltage, enabling its light characteristics to be stable.

5.5 The distance of measurement of the photometric characteristics, shall be such that the inverse-square law of photometry is applicable.

5.6 The angular aperture of the receiver viewed from the reference centre of the rear fog lamp is comprised between 10 angular minutes and one degree;

5.7 The angle deviation of each measuring direction shall not exceed 15'.

5.8 The estimate of the measuring angle shall use the reference axis and reference centre (indicated in the drawings by the manufacturer) as the datum.

5.9 The measurement of chromaticity shall use illumination A light source (colour temperature is 2,856k). The measurements of the rear fog lamps using non-replaceable light sources shall be performed in accordance with the test condition specified in Section 5.2.1; The measurements of the rear fog lamps equipped with dimmer devices shall be performed with the provisions in Section 5.2.3. Use visual observation to check the light colour which is outside of the diamond area of Diagram 1, there shall not be any noticeable changes.

## 6 Inspection rules

### 6.1 Rear fog lamps of different types for power-driven vehicles:

The lamps which differ in such essential respects as:

- a) The name and trademark of the goods;
- b) The characteristics of the optical system (such as the level of luminous intensity, light distribution angle, category of filament lamp, light source module, etc);
- c) The categories of the rear fog lamps (variable intensity, mixed intensity).

However, a change of the colour of the filament lamp or the colour of any light filter is regarded as the same type.

### 6.2 Type Approval

- a) 6.2.1 The types of different rear fog lamps are determined in accordance with the provisions mentioned in Article 6.1.

#### 6.2.2 The manufacturer shall provide:

- a) Drawings in triplicate in sufficient detail to permit identification of the type of the rear fog lamp, state the detailed characteristic structures of the photometric mirror, and a copy of brief technical description which concerns the optics unit data of the rear fog lamp, including the reference axis ( $H=0^{\circ}$ ,  $V=0^{\circ}$ ), reference centre and the geometric position for the installation of the rear fog lamp on the vehicle.
- b) Two sample lamps (the rear fog lamp equipped with replaceable filament lamp shall be provided with filament lamp, the rear fog lamp with variable intensity shall be provided with a dimmer).

6.2.3 each of the sample lamps shall be in conformity with the corresponding provisions specified in Article 4.1.

6.2.4 According to Clause 5 to carry out measurements, both sample lamps shall be in conformity with the corresponding provisions specified in Article 4.2, Article 4.3 and Article 4.4.

### 6.3 The checking of the conformity of production

6.3.1 With regard to the rear fog lamps that have been granted the Type Approval, use the sample lamps selected by random sampling from the mass-produced lamps to determine its conformity of production.

6.3.2 Both random sampled lamps shall be in conformity with the corresponding provisions in Article 4.1.

6.3.3 According to Clause 5 to carry out measurements, both the random sampled lamps shall be in conformity with the corresponding provisions in Article 4.2, Article 4.3 and Article 4.4, but among it the minimum luminous intensity shall be changed to 80% of the specified value in Section 4.2.1.2, the maximum luminous intensity shall be changed to 120% of the specified value in Section 4.2.1.3.