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**Photometric Characteristics
of Cornering Lamps for Motor Vehicle**

汽车用角灯配光性能

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Photometric Characteristics of Cornering Lamps for Motor Vehicle

1 Scope

This Standard specifies the technical requirements, test methods and inspection rules, etc. of photometric characteristics of cornering lamps for motor vehicle (hereinafter referred to as cornering lamp).

This Standard is applicable to various kinds of cornering lamps for Type-M and Type-N motor vehicles.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB 4599 Motor Vehicle Headlamps Equipped with Filament Lamps

GB 4785-2007 Prescription for Installation of the External Lighting and Light-Signaling Devices for Motor Vehicles and Their Trailers

GB 15766.1 Lamps for Road Vehicles. Dimensional Electrical and Luminous Requirements

ECE R37 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

For the purpose of this document, the terms and definitions given in GB 4785 and the following apply.

3.1 Cornering lamp

A lamp that provides auxiliary illumination at the corner of the road ahead where the vehicle is about to turn.

Separately measure the luminous intensity after lighting for 1min and 30min; the results shall conform to the provisions of 4.2; the luminous intensity of each point after lighting for 1min shall be obtained by MULTIPLYING the ratio of luminous intensities on HV point after lighting for 1min and 30 min BY measurement result of luminous intensity of each point after lighting for 30min.

5.2.4 Measurement of cornering lamp equipped with several light sources

5.2.4.1 Where mass-produced 6.75V, 13.5V or 28.0V replaceable filament bulbs are used, mass-produced bulbs shall be used for measurement; the resulting luminous intensity shall be corrected. The correction factor is the ratio of reference luminous flux and the average value of luminous flux at the test voltage (6.75V, 13.5V or 28.0V). The actual luminous flux of each used filament bulb shall deviate from its average value by no more than $\pm 5\%$; or in the position of each bulb, use the standard bulb working under the reference luminous flux to measure one by one; the individual measurement results at each position are summed.

5.2.4.2 Where non-replaceable light source or other light sources are used, measure at the voltage specified by the manufacturer; if necessary, the manufacturer shall provide the special power supply unit.

5.2.5 Conditions before the photometric characteristics test

Ignite the devices or bulbs equipped with non-replaceable light source at the voltage during the test; so that its optical performance becomes stable.

5.2.6 Distance of photometric characteristics test

It shall conform to the inverse square law of distance in optics.

5.2.7 Flare angle of the light receiver

Viewed from the reference center of the cornering lamp, the flare angle of the light receiver is in range of $10' \sim 1^\circ$.

5.2.8 Angle deviation

The angle deviation in each measurement direction shall be no greater than $15'$.

5.2.9 Measurement basis

The measurement of the measured angle shall be based on the reference axis and reference center (indicated by the manufacturer on the drawing).

5.3 Chromaticity measurement

Light Source A (color temperature is 2856K) shall be used. For the cornering lamp

using the non-replaceable light source, it shall be tested under the test conditions specified in 5.2.1.

6 Inspection Rules

6.1 Different types of cornering lamps

The different types of the cornering lamps refer to the cornering lamps that differ in the following main aspects:

- a) Trademark name or trademark;
- b) Characteristics of optical system (luminous intensity, geometric visibility, types of the used filament bulb or light source module, etc.);
- c) Category of the cornering lamp (the components that form the reflection, refraction or absorption to change the optical effect).

However, changes in the color of filament bulb or color of filter do not affect the variation of the types.

6.2 Type inspection

6.2.1 The judgment of different types of cornering lamps shall be as stipulated in 6.1.

6.2.2 The manufacturer shall provide:

- a) The drawing sufficient to identify the characteristics of the cornering lamp of such type in triplicate; including the detailed characteristic structure of the lens; and indicating the reference axis ($H=0^\circ$, $V=0^\circ$), reference center and geometric position mounted on the vehicle; and a brief technical specification for the material of the cornering lamp optical unit;
- b) 2 cornering lamps (device equipped with replaceable filament bulb, including the filament bulb).

6.2.3 Each cornering lamp shall conform to the provisions of 4.1.

6.2.4 Test as stipulate in Clause 5; each sample lamp shall conform to the corresponding provisions of 4.2 and 4.3.

6.3 Production consistency inspection

6.3.1 For the cornering lamp that passes through the type inspection, randomly take cornering lamp samples from the batch products to determine its consistency of production.

Appendix A

(Normative)

Installation Rules of Cornering Lamp for Motor Vehicle

A.1 Equipment

Optional for vehicle.

A.2 Quantity

It shall install 2 pieces.

A.3 Layout

No special requirements.

A.4 Installation position

A.4.1 Transverse: In the direction of the reference axis, the distance FROM the point on the viewing surface farthest from the longitudinal symmetry plane of the vehicle TO the end face of the outer edge of the vehicle shall not exceed 400mm.

A.4.2 Longitudinal: no more than 1000mm from the front.

A.4.3 Height:

Minimum value: the height from the ground is no less than 250mm;

Maximum value: the height from the ground is no greater than 900mm.

However, in the direction of the reference axis, the entire viewing surface shall be below the highest point on the viewing surface of dipped headlights.

A.5 Geometric visibility

See Figure 2, it shall be measured by α and β defined in 3.10 of GB 4785-2007.

--- Angle α : 10° up and down;

--- Angle β : 30°~60° outward.

A.6 Direction

It shall meet the requirements for geometric visibility.

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