GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 43.040.20
T 38

GB 17509-2008

Replacing GB 17509-1998

Photometric Characteristics of Direction Indicators for Motor Vehicles and Their Trailers

Issued on: December 31, 2008 **Implemented on: January 1, 2008**

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

Standardization Administration of the People's Republic of China.

Table of Contents

Foreword

All the technical content of this Standard is mandatory.

This Standard corresponds to United Nations Economic Commission for Europe ECE R6 Rev.3 Amend.5 “Uniform Provisions Concerning the Approval of Direction Indicators for Power-driven Vehicles and Their Trailers”. This Standard is not equivalent to ECE R6 Rev.3 Amend.5, with the main differences as follows:

-- it deletes the administrative articles;

-- it deletes the Annex “Minimum requirements for conformity of production control procedures”;

-- it deletes the Annex “minimum requirements for sampling by an inspector”; and

-- it adds the inspection rules.

The main technical specifications are the same as ECE R6 Rev.3 Amend.5, such as general specifications, photometric performance, light colour, test procedures.

This Standard replaces GB 17509-1998 “Uniform Provisions Concerning the Approval of Direction Indicators for Power-driven Vehicles and Their Trailers”. Compared with the previous edition, the main changes are as follows:

-- it modifies Chapter 2 “Normative References” of the previous edition;

-- it modifies Chapter 3 “Terms and Classification” of the previous edition, which is changed into Chapter 3 “Terms and Definitions” and Chapter 4 “Classification”;

-- it modifies Chapter 4 “Photometric Characteristics” of the previous edition, which is changed into Chapter 6 “Specifications” of this edition;

-- it deletes Chapter 5 “Provisions on Lamps” of the previous edition and the relevant content added is included in Chapter 6 “Specifications” of this edition;

-- it modifies Chapter 6 “Photometric Measurement Method” of the previous edition, which is changed into Chapter 7 “Test Procedure” of this edition;

-- it deletes Chapter 7 “Chromatic Measurement Method” of the previous edition and the relevant content added is included in Chapter 6 “Specifications” and Chapter 7 “Test Procedure” of this edition;

-- it modifies Chapter 8 “Inspection Provisions” of the previous edition, which is changed into Chapter 8 “Inspection Rules” of this edition;

-- it adds the content related to light source module(s);

-- it adds the test requirements of flash lighting;

Photometric Characteristics of Direction Indicators for Motor Vehicles and Their Trailers

1 Scope

This Standard specifies the technical specifications, test methods and inspection rules of photometric performance of direction indicators for motor vehicles and their trailers.

This Standard applies to all types of direction indicators for vehicles of categories M, N and O.

In this Standard, the above-mentioned direction indicators are also called devices.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

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 Lamps for Road Vehicles - Dimensional Electrical and Luminous Specifications (GB 15766.1-2000 idt IEC 60809:1995)

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 Standard, the terms and definitions given in GB 4785 apply.

4 Classification

4.1 Categories of direction indicators

Front fog lamps which differ in such essential respects as:

a) the trade name or mark;

b) the characteristics of the optical system (levels of illuminous intensity, light distribution angles, category of filament lamps and light source modules, etc.);

c) the category of devices.

However, a change of the colour of the filament lamps or the colour of any filter does not constitute a change of type.

6 Specifications

6.1 The devices shall be so designed and constructed that under normal conditions of use and notwithstanding the vibrations to which they may be subjected in such use, their satisfactory operation remains assured and they retain the characteristics prescribed by this Standard.

6.2 The colour of the light emitted inside the field of the light distribution grid defined in Figure 2 shall be amber and its colorimetric characteristics shall meet the requirements of GB 4785. Outside this field, no sharp variation of colour shall be observed.

6.3 The devices equipped with replaceable light sources shall be equipped with filament lamps meeting the specifications of GB 15766.1 or ECE R37.

6.4 The light source modules used shall be so designed that even if in the dark, they can be installed at the correct positions; and that they can prevent maloperation.

6.5 Photometric performance

6.5.1 See Figure 2 for the requirements for light distribution. The numbers at the intersections of grid lines in Figure 2 indicate the minimum values of luminous intensity in the direction and the reference axis direction [categories 1, 1a, 1b, 2a, 2b, 3 and 4 (forward)] or the ratios of the minimum values of luminous intensity of direction A (category 6), direction A meaning the direction H = 5° and V = 0°.

6.5.2 The luminous intensity of all categories of devices in the reference axis direction or A direction shall meet the specifications of Table 1.

7.2 The limits of the apparent surface in the direction of the reference axis of a direction indicator shall be determined.

7.3 Photometric test voltage

7.3.1 In the case of replaceable filament lamps, the filament lamps of corresponding categories shall be operated for photometric performance measurement at reference luminous flux during on time.

7.3.2 In the case of non-replaceable light sources all measurements shall be made at 6.75 V, 13.5 V or 28.0 V.

7.3.3 For the devices requiring a special power supply, the manufacturer shall provide the special power supply for such light source. And they shall be measured under the voltage specified by the manufacturer.

7.3.4 For devices of category 2b which obtains luminous intensity by night with an additional device, the voltage applied to the additional device for the measurement of luminous intensity by night shall be equal to the voltage applied to the lamp for the measurement of luminous intensity by day.

7.4 Before photometric performance measurement, the light source shall be lit at the voltage of measurement, to make its photometric performance become stable.

7.5 However, depending on the construction of the device, for example, the use of light-emitting diodes (LED), or the need to take precautions to avoid overheating, it is allowed to measure the lamps in flashing mode:

7.5.1 This shall be achieved by switching with a frequency of f = 1.5 ± 0.5 Hz with the pulse width greater than 0.3 s, measured at 95 per cent peak light intensity.

7.5.2 In the case of replaceable filament lamps, the filament lamps shall be operated at reference luminous flux during on time. In all other cases the voltage as required in 6.3 below shall be switched with a rise time and fall time shorter than 0.01 s.

7.5.3 In the case of measurements taken in flashing mode the reported luminous intensity shall be represented by the maximum intensity.

7.6 Photometric performance measurement of all categories of devices:

7.6.1 For lamps equipped with non-replaceable light sources, the photometric characteristics should be verified with the light sources present in the lamp.

7.6.2 When several filament lamps are used, it is allowed to use filament lamps mass-produced to conduct measurement at the voltages 6.75 V, 13.5 V or 28.0 V, and the luminous intensity values produced shall be corrected. For filament lamps, the correction factor is the ratio between the reference luminous flux as specified in 6.3 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 light source used shall not deviate more than

8.3.1 The manufacturer shall provide:

a) Drawings, in triplicate, sufficiently detailed to permit identification of reference axis (H = 0°, V = 0°), reference centre and geometrical positions of installation on the vehicle;

b) A brief technical description stating in particular the category or categories of filament lamp(s) prescribed, with the exception of lamps with non-replaceable light sources;

c) Two samples lamps (for devices equipped with replaceable light sources, including filament lamps). For a direction indicator of category 2b, the additional device to obtain two luminous intensity levels shall be provided if necessary.

8.4 Conformity of production procedures

8.4.1 For the devices qualified by type approval test, use the sample lamps taken at random from the products mass-produced to determine their conformity of production.

8.4.2 The sample lamps taken at random shall meet the specifications of 6.1, 6.3 or 6.4 and 6.6.

8.4.3 The sample lamps taken at random shall meet the specifications of 6.2 when they are tested according to the specifications of Chapter 7.

8.4.4 The sample lamps taken at random shall meet the specifications of 6.5 when they are tested according to the specifications of Chapter 7. And it is allowed:

a) that the minimum luminous intensity is not less than 80% of the values specified in 6.5; and

b) that the maximum luminous intensity is not more than 120% of the values specified in 6.5.

_____ END _____

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------