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**Automotive headlamps with LED light sources and/or LED  
modules**

汽车用LED前照灯

**(English Translation)**

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### Foreword

Chapter 5 (except for 5.10) and Chapter 6 (except for 6.8) of this standard are mandatory, AND the rest of this standard is recommended.

The Appendix A, Appendix B, Appendix C of this standard are normative.

This standard was proposed by the National Development and Reform Commission of the People's Republic of China.

This standard shall be under the jurisdiction of the National Automotive Standardization Technical Committee (SAC/TC 114).

The drafting organizations of this standard. China Automotive Technology Research Center, Shanghai Automotive Lighting Research Institute, Tianjin Automotive Light Factory, Philips (China) Investment Co., Ltd., Changchun Hella Lights Co., Ltd., Osram (China) Lighting Co., Tianjin Polytechnic University Haiyu Semiconductor Lighting Co., Ltd., Shanghai Xiaosi Automotive Light Co., Ltd., Changzhou Xingyu Automotive Light Co., Ltd.

### 1 Scope

This standard specifies the test methods and inspection rules for the light distribution performance, light color, temperature cycle of the automotive

headlamps with LED light source or LED light source/module.

This standard applies to the LED headlamps used for category M and N automotive, OR the LED headlamps mainly using the LED light source or LED module to generate a high beam or low beam.

## 2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) 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 4599-2007 Motor vehicle headlamps equipped with filament lamps

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

GB/T 7922 Method of measuring the color of light sources

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

## 3 Terms and definitions

The terms and definitions as established in GB 4599-2007 and GB 4785 as well as the following terms and definitions apply to this standard.

### 3.1

Objective luminous flux

The design value of the luminous flux of the replaceable light source OR light source module.

### 3.2

Failure of light source

The phenomenon of loss of lighting function, darkening, chroma exceeding criteria, or flashing of one or more LED during the normal use of LED or

LED module.

### 3.3

LED module

Light source module containing LED only.

## 4 Different types of headlamps

Headlamps that differ in the following main areas.

- Product name or trademark;
- Optical system characteristics;
- Components to change the optical effect by reflection, refraction, absorption and/or deformation at work;
- Light beam types provided (low beam, high beam, or high and low beam);
- Lens and its coating material.
- LED light source/module type and parameters (voltage, power, luminous flux, chroma, and color rendering performance).

### 5.1.1 LED headlamp shall be so designed and manufactured that under

normal conditions of use, even if subjected to vibration, it can still comply with the requirements and comply with the provisions of this standard.

### 5.1.2 LED headlamps shall have good heat dissipation, to prevent heat

accumulation of LED light source. LED headlamp can work normally even in low temperature freezing environment.

### 5.1.4 When the headlamp is equipped with LED light source or LED module,

its performance shall comply with the requirements of this standard; when the LED headlamp is equipped with filament lamps or HID light source to achieve high beam or low beam function, its light distribution performance and testing shall comply with the requirements of their respective standards.

**5.1.5 The headlamps shall have beam adjustment device. When the low beam and high beam form a combination AND each has an LED light source/module, filament lamp (or combination lamp), the adjustment device shall be able to adjust them individually, BUT these requirements do not apply to the headlamp for which the high beam and low beam cannot be adjusted separately.**

**5.1.6 LED headlamps shall include the following markings.**

- LED headlamp
- Voltage;
- Reference center.

**5.2 General requirements of LED module and electronic light source controller**

**5.2.1 LED module shall use the LED light source which emits visible light, AND it is not allowed to use other forms of light.**

**5.2.2 LED module under normal conditions of use, shall be maintained at a good working condition without design and manufacturing defects, AND the entire module shall be deemed as failure when there is a LED light source damage.**

**5.2.3 LED on the LED module shall be mounted on a suitable fixed substrate, AND the fixed substrate shall have good strength and stability to protect the LED and LED module.**

**5.2.4 LED module (in the lamp) shall be positioned accurately and fixed well, to prevent the movement.**

**5.2.5 For the replaceable LED module, in case of replacement, it shall use the LED module complying with the design requirements; AND the LED modules of different specifications in the same lamp shall not be interchangeable.**