



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30036-2013

Adaptive front-lighting system for motor vehicles

汽车用自适应前照明系统

(English Translation)

Issued on: November 27, 2013

Implemented on: July 1, 2014

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of PRC**

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1 Scope

This standard specifies the technical requirements, installation, test methods, inspection rules of adaptive front-lighting systems for motor vehicles (hereinafter referred to as "systems").

This standard applies to the adaptive front-lighting systems of categories M and N 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) is applicable to this standard.

GB 4599-2007 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 Filament lamps for road vehicles - Dimensional, electrical and luminous requirements

GB 21259-2007 Headlamps equipped with gas - discharge light sources for motor vehicle

GB 25991-2010 Automotive headlamps with LED light sources and/or LED modules

ECE R37 Uniform provisions concerning the approval of filament lamps for use in approved

lamp units on power-driven vehicles and of their trailers

ECE R99 Uniform provisions concerning the approval of gas-discharge light sources for use in approved gas-discharge lamp units of power-driven vehicles

3 Terms and definitions

The terms and definitions, as defined in GB 4599-2007, GB 4785-2007, GB 21259-2007 and GB 25991-2010, as well as the following terms and definitions, apply to this document.

3.1

Adaptive front-lighting system; AFS

A lighting device, which provides light beams with different characteristics; can automatically adapt to the needs of low beam and high beam (if used) under different conditions of use; realizes the basic functions described in 5.3.1.1. The system consists of "system controls" and one or more "input and operating devices" (if configured), as well as mounting units on the left and right sides of the vehicle.

3.2

Class of a passing beam

The low beam type, which is set to achieve different road lighting needs.

3.3

Mode

A front-lighting function provided by the system, which is a beam within the scope of 5.3.2 and 5.3.3, can EITHER be a low beam of a certain class OR be a high beam, according to the manufacturer's design requirements, to suit the specific lighting needs of different vehicles and different road conditions.

3.3.1

Bending mode

A front-lighting mode, which is designed for detours, continuous detours or intersections. It can meet specific photometric conditions; its illuminance can be shifted laterally or equivalently changed, to obtain the same lighting effect.

3.5

Installation unit

A non-removable housing (lamp body), which contains one or more lighting units.

3.6

Left side

The sum of the lighting units, which are installed on the left side of the vehicle's longitudinal symmetry plane, as relative to the vehicle's forward direction.

3.7

Right side

The sum of the lighting units, which are installed on the right side of the vehicle's longitudinal symmetry plane, as relative to the vehicle's forward direction.

4 Different types of systems

Adaptive front-lighting systems differ in the following ways.

5.1 General requirements

5.1.1

The system or its components can still meet the requirements of use AND meet the requirements of this standard, even if they are subjected to vibration, under normal conditions of use.

5.1.3

The system shall use light sources, which comply with GB 15766.1 and/or ECE

R37 and ECE R99, except for the use of LED modules. The light source used shall meet the following requirements.

5.1.4

The system shall comply with the provisions of A.2 and A.3.

5.1.5

If the optical lens of the system is made of plastic material, it shall also comply with the provisions of Appendix B.

5.1.6

For any mechanical, electro-mechanical or other device, which is combined with the lighting unit and used to control beam conversion, on a system or its components as designed to be switchable between high beam and low beam, its structure shall meet the following requirements.

5.1.7

The designed system can provide a failure signal, when a light source and/or an

LED module fails. The installation of the failure signal indicator shall comply with the requirements of E.2.7.5.2.

5.3.1 General provisions

5.3.3.

5.3.1.4

Photometric measurements shall be carried out, as described by the manufacturer, as follows.

5.3.2 Photometric requirements for low beam

5.3.2.1

Before the start of the test, set the system to a neutral state AND emit a class C (basic) low beam.

5.3.4 Other photometric requirements

5.3.4.1

For a system or its components, which are equipped with one or more adjustable lighting units, shall meet the requirements of 5.3.2 and 5.3.3, at each installation position (dimming range), as shown in

- a) and
- b) below.

5.3.4.2

For a system or its components, which are equipped with one or more adjustable lighting units, shall meet the following conditions.

6 Installation requirements

The installation of the system shall comply with the provisions of Appendix E.

7.1 General requirements for testing

7.1.1

The test darkroom, devices, equipment shall comply with the provisions of GB 4599-2007.

7.1.2

The voltage and test luminous flux, during the photometric test, shall meet the following requirements.