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

GB/T 31887.2-2019

**Cycles-Lighting and retro-reflective devices-Part 2:
Retro-Reflective devices**

自行车 照明和回复反射装置 第2部分：回复反射装置

(English Translation)

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020

"Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents".

This document is Part 2 of GB/T 31887 "Cycles -- Lighting and retro-reflective devices".

The following parts of GB/T 31887 have already been issued.

- Part 1.Lighting and light signaling devices;
- Part 2.Retro-reflective devices;
- Part 3.Installation and use of lighting and retro-reflective devices;
- Part 4.Lighting systems powered by the cycle's movement;
- Part 5.Lighting systems not powered by the cycle's movement.

This document replaces GB/T 31887.2-2019 "Cycles -- Lighting and retro-reflective devices -- Part 2.Retro-reflective devices". Compared with GB/T 31887.2-2019, apart

from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The content applicable to lighting devices for electric cycles under GB17761 has been deleted from the scope (see Chapter 1 of this Edition; Chapter 1 of Edition 2019);
- b) The term and definition "pedal reflector" have been added (see 3.5 of this Edition);
- c) The meanings and units for symbols "A", " ϕ_R ", " ϕ_S ", "E" and "CIL" have been deleted (see Table 1 of this Edition; Table 1 of Edition 2019);
- d) The test sequence for reflective tyres has been added (see Table 3 of this Edition);
- e) The moisture resistance test for reflectors has been modified (see 7.1.2.4 of this Edition; 7.1.2.4 of Edition 2019);
- f) The orientation of the reflector has been changed (see 8.2.4 of this Edition; 8.2.4 of Edition 2019).

This document is modified by adopting ISO 6742-2:2023 "Cycles -- Lighting and retro-reflective devices -- Part 2. Retro-reflective devices".

This document has undergone the following structural adjustments compared to ISO 6742-2:2023.

- Chapter 5 corresponds to Chapter 5 of ISO 6742-2:2023, where 5.1 and 5.2 Cycles -- Lighting and retro-reflective devices -- Part 2. Retro-reflective devices

1 Scope

This document specifies the optical, chromatic, physical, and marking requirements for cycle retro-reflective devices. The corresponding test methods are described.

This document applies to cycles used on public roads, particularly retro-reflective devices for two-wheeled cycles conforming to GB 3565.2 and GB 14746.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references,

the latest edition of the referenced document (including any amendments) applies.

CIE 15, Colorimetry

CIE 1931, Color Space

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 retro-reflective device

reflector

A readily available component consisting of one or more reflective optical units.

3.2 wide angle reflector

A device that can reflect back light rays with a horizontal incident angle of not less than 50° from both sides of the reference axis.

3.3 conventional reflector

A device that can reflect back light rays with a horizontal incident angle of not less than 20° from both sides of the reference axis.

3.4 retro-reflective tyre

Available tyres with molded annular retro-reflective strips on both sidewalls.

3.5 pedal reflector

Reflector mounted on the pedals.

4.1 Symbols and units used

The symbols are shown in Figure 1. Their meanings and units are shown in Table 1.

5.1 Reflectors

When testing according to the method described in Chapter 8, the coefficient of intensity for light (CIL) of the reflector shall not be less than the value specified in Table 4, Table 5 or Table 6.

Tables 4 and 5 apply to front, side, and rear reflectors.

6 Chromatic requirements

When testing according to the method described in Chapter 9, the color of the reflected light shall be within the range defined by the CIE chromaticity coordinates given in Table 8.

NOTE: For ease of reference, these areas have been marked in Figure 2.

7.1.1 Structure

The reflector and/or reflector bracket shall have a clearly defined recommended assembly method to ensure that the reflector is positioned and installed on the cycle in accordance with its design requirements.

7.1.2.1 General

The reflector shall meet the optical and chromatic requirements of 5.1 and 6. After any or all of the tests described in 7.1.2.2 to 7.1.2.6, the brackets that may affect the reflector's performance shall be secure and the frame shall be free from deformation.

7.1.2.2 Temperature resistance test

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