INTERNATIONAL STANDARD

ISO 6742-5

Second edition
2023-08

Cycles — Lighting and retro-reflective devices —

Part 5: Lighting systems not powered by the cycle's movement

Cycles — Éclairage et dispositifs rétroréfléchissants —

Partie 5: Systèmes d'éclairage non alimentés par dynamo

Reference number
ISO 6742-5:2023(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 1, *Cycles and major sub-assemblies*.

This second edition cancels and replaces the first edition (ISO 6742-5:2015), which has been technically revised.

The main changes are as follows:

— terms and definitions integrated with ISO 6742-4;

— overall structure changes to clarify requirements and test methods;

— improvement of 4.4;

— improvement of 4.5;

— improvement of Clause 8.

A list of all parts in the ISO 6742 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Cycles — Lighting and retro-reflective devices —

Part 5:
Lighting systems not powered by the cycle's movement

1 Scope

This document is applicable to lighting systems used on cycles intended to be used on public roads and, especially, bicycles complying with ISO 4210[1] and ISO 8098[2].

This document specifies requirements and test methods for the performance of lighting systems not powered by the cycle's movement. It applies to lighting and light signalling devices complying with ISO 6742-1. Lighting systems include lighting and light signalling devices and power not supplied by cycle's movement such as battery.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 6742-1:2023, *Cycles — Lighting and retro-reflective devices — Part 1: Lighting and light signalling devices*

ISO 6742-3:2023, *Cycles — Lighting and retro-reflective devices — Part 3: Installation and use of lighting and retro-reflective devices*

ISO 6742-4, *Cycles — Lighting and retro-reflective devices — Part 4: Lighting systems powered by the cycle's movement*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

IEC 60086, *— Primary batteries*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 61951-2, *Secondary cells and batteries containing alkaline or other non acid electrolytes — Secondary sealed cells and batteries for portable applications — Part 2: Nickel-metal hydride*

IEC 61959, *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Mechanical tests for sealed portable secondary cells and batteries*

IEC 61960, *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Secondary lithium cells and batteries for portable applications*

IEC 62133, *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6742-1 and ISO 6742-4 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Requirements for lighting systems not powered by the cycle's movement

4.1 General

There are two types of lighting systems not powered by the cycle's movement: open systems and closed systems, and they shall meet the respective requirements shown in Table 1.

Table 1 — Lighting systems not powered by the cycle's movement

Light system	Requirement	Test method
Both system	4.2	7.1
	4.3	7.2
	4.4	—
	4.5	—
Open system	5.2	7.3
Closed system	6.2	7.4

4.2 Corrosion resistance

All functions of the lighting system shall work after testing in accordance with the test method described in 7.1.

4.3 Water resistance

All functions of the lighting system shall work after testing in accordance with the test method described in 7.2.

4.4 Low battery indicator

The lighting system shall include a low battery indicator or state of charge indicator. This indicator shall be located on the lamp, on the battery case or on display, clearly and easily visible.

When using batteries specified by the manufacturer, the indicator shall be activated at the latest when the photometrical requirements of ISO 6742-1 are not fulfilled anymore. The lamp shall emit light for at least 30 min after activation of the indicator.

4.5 Power source

Battery or any kind of power source shall comply with the requirement of IEC 60086, IEC 61951-2, IEC 61959, IEC 61960, and IEC 62133 if applicable or shall have performance equivalent to these standards.

5 Requirements for open system

5.1 General

The complete system shall be designed as open system which requires compatibility between lamps and power source.

5.2 Requirement

When tested by the method described in 7.3, lamps for open system shall correspond to the requirements of ISO 6742-1:2023, Clause 4.

6 Requirements for closed system

6.1 General

The complete system shall be designed as closed system which does not have compatibility between lamps and power source.

6.2 Requirements

When tested by the method described in 7.4, lamps for closed system shall correspond to the requirements of ISO 6742-1:2023, Clause 4.

7 Test methods

7.1 Corrosion testing for both system

The entire lighting system (front lights, rear lights in functional assembly conditions) shall undergo corrosion testing in accordance with ISO 9227. A total of 96 h shall be run with a salt concentration of 5 %.

7.2 Water resistance for both system

Battery front lights and rear lights in functional assembly conditions shall be tested in accordance with IPX4 in IEC 60529.

At the end of the test, the unit may be drained for 1 h.

7.3 Test methods for open system

7.3.1 Lamps emitting light to the front

Front lights for open system (lamps emitting light to the front) shall be tested corresponding with the test methods of ISO 6742-1:2023, 4.2, 4.5, 4.6, 4.7 and 4.9. The test voltage shall be the rated voltage of power source.

7.3.2 Lamps emitting light to the rear

Rear lights for open system (lamps emitting light to the rear) shall be tested corresponding with the test methods of ISO 6742-1:2023, 4.3, 4.4, 4.7 and 4.8. The test voltage shall be the rated voltage of power source.

7.4 Test methods for closed system

7.4.1 Lamps emitting light to the front

Front lights for closed system (lamps emitting light to the front) shall be tested corresponding with the test methods of ISO 6742-1:2023, 4.2, 4.5, 4.6, 4.7 and 4.9. The test voltage shall be the rated voltage of power source or dedicated power source.

7.4.2 Lamps emitting light to the rear

Rear lights for closed system (lamps emitting light to the rear) shall be tested corresponding with the test methods of ISO 6742-1:2023, 4.3, 4.4, 4.7 and 4.8. The test voltage shall be the rated voltage of power source or dedicated power source.

8 Instructions

Instructions shall comply with the requirements of ISO 6742-3:2023, Clause 7.

Additional information may be provided at the discretion of the manufacturer.

In addition, the following information shall be included.

a) type of lamp;

b) for closed system, the incompatibility of lamps and power sources;

c) for open system, the kind of batteries that should be chosen, and the function of the low battery indicator;

d) for closed system, the function of the low battery indicator;

e) for closed system, manufacturer's recommendation about charging (e.g., temperature range, indoor or outdoor charging).

9 Marking

9.1 Requirement

The lamp and/or power source shall be durably marked with:

a) the manufacturer's name, abbreviation or trade-mark;

b) the model name, production number, symbol or other identification;

c) the rated input, output power, battery type, or anything to describe compatibility for open system.

Marking a) shall appear on the surfaces which is visible after assembled on the cycle, in characters not less than 1 mm in height.

9.2 Durability test

9.2.1 Requirement

When tested by the method described in 9.2.2, the marking shall remain easily legible. It shall not be easily possible to remove any label nor shall any label show any sign of curling.

9.2.2 Test method

Rub the marking by hand for 15 s with a piece of cloth soaked in water and again for 15 s with a piece of cloth soaked in petroleum spirit.