
**Cycles — Lighting and retro-reflective
devices —**

Part 4:
**Lighting systems powered by the
cycle's movement**

*Cycles — Éclairage et dispositifs rétro réfléchissants —
Partie 4: Systèmes d'éclairage alimentés par dynamo*

This document is a preview generated by ELS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements for lighting systems powered by the cycle's movement	2
4.1 General.....	2
4.2 Corrosion resistance.....	2
4.3 Water resistance.....	2
5 Requirements for open system	2
5.1 General.....	2
5.2 Front lights for open system.....	2
5.3 Rear lights for open system.....	3
5.4 Generators for open system.....	4
5.4.1 General characteristics of generators.....	4
5.4.2 Frictional drive generator.....	4
5.4.3 Positive drive generator.....	4
6 Requirements for closed system	5
6.1 General.....	5
6.2 Photometrical performance requirement between 5 km/h and 15 km/h.....	5
6.3 Photometrical performance requirement 15 km/h or higher.....	5
6.4 High speed endurance requirement.....	5
7 Test methods	5
7.1 Corrosion testing for both system.....	5
7.2 Water resistance for both system.....	5
7.3 Front lights for open system.....	5
7.4 Rear lights for open system.....	5
7.5 Generators for open system.....	6
7.5.1 General characteristics of generators.....	6
7.5.2 Frictional drive generators.....	6
7.5.3 Positive drive generators.....	8
7.6 Test methods for closed system.....	9
7.6.1 Power measurement.....	9
7.6.2 High speed endurance test.....	9
8 Instructions	9
9 Marking	9
9.1 Requirement.....	9
9.2 Durability test.....	10
9.2.1 Requirement.....	10
9.2.2 Test method.....	10
Annex A (normative) Electronic load for power-measurement of LED generators	11
Annex B (informative) Efficiency calculation	13
Annex C (informative) Verification of the electronic load	14
Bibliography	16

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 6742-4:2015), which has been technically revised.

The main changes are as follows:

- terms and definitions: “open system” and “closed system” were added;
- overall structure changes to clarify requirements and test methods;
- addition of “6 V/3 W with electric load” positive drive generators;
- changes in generator characteristic requirements;
- clarify test methods and improvement of requirements for open systems;
- changes in closed system requirements and test methods;
- improvement of [Clause 8](#);
- improvement of [Clause 9](#);
- improvement of [Annex A](#);
- improvement of [Annex B](#);
- improvement of [Annex C](#).

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.

This document is a preview generated by EVS

Cycles — Lighting and retro-reflective devices —

Part 4:

Lighting systems 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 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 supplied by cycle's movement such as generator.

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6742-1 and the following 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/>

3.1

frictional drive generator

generator for which the rotor or stator is linked to a pulley which press against the driving wheel over a swivel bearing through force

3.2

positive drive generator

generator which is not concerned by the definition of *frictional drive generator* (3.1)