

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Controlgear for electric light sources – Safety –  
Part 2-13: Particular requirements – Electronic controlgear for LED light sources**

**Appareillages de commande pour les sources de lumière électriques – Sécurité –  
Partie 2-13: Exigences particulières – Appareillages électroniques pour les  
sources de lumière à LED**

IEC 61347-2-13:2024

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONTROLGEAR FOR ELECTRIC LIGHT SOURCES –  
SAFETY –****Part 2-13: Particular requirements –  
Electronic controlgear for LED light sources**

## FOREWORD

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IEC 61347-2-13 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lighting. It is an International Standard.

This third edition cancels and replaces the second edition published in 2014 and Amendment 1:2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with respect to the fourth edition of IEC 61347-1:
  - introduction of dated references to the fourth edition of IEC 61347-1 as appropriate;
  - deletion of the clauses and subclauses which are either no longer relevant or now covered in IEC 61347-1;
- b) update of normative references, introducing dated references where appropriate;
- c) scope extension to 1 500 V for direct current;
- d) scope clarification;
- e) deletion of unused definitions;
- f) revision of information and marking requirements;
- g) new marking requirement "electronic controlgear for LED light sources";
- h) new requirements for electronic controlgear for LED light sources with constant light output function or programmable current (additions to Clause 3, Clause 6, Clause 16 and Clause 18);
- i) modification of requirements for the determination of the output working voltage (new Clause 17);
- j) new requirements for the determination of the rated output characteristics (Clause 18).

The text of this International Standard is based on the following documents:

Draft	Report on voting
34C/1599/FDIS	34C/1603/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

[IEC 61347-2-13:2024](https://www.iec.ch/standards/iec-61347-2-13-2024)

<https://www.iec.ch/standards/iec-61347-2-13-2024> The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

This document is intended to be used in conjunction with IEC 61347-1:2024. Where the requirements of any of the clauses of IEC 61347-1:2024 are referred to in this document by the phrase "IEC 61347-1:2024, Clause n applies", this phrase is interpreted as meaning that all the requirements of the clause in question of IEC 61347-1:2024 apply, except any which are clearly inapplicable to the specific type of controlgear covered by this document.

NOTE In this document, the following print type is used:

- *compliance statements: in italic type.*

A list of all parts in the IEC 61347 series, published under the general title *Controlgear for electric light sources – Safety* can be found on the IEC website.

Future documents in this series will carry the new general title as cited above. Titles of existing documents in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](https://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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## INTRODUCTION

This document specifies safety requirements for electronic controlgear for LED light sources. All general requirements, which apply to controlgear for electric light sources in general, regardless of the specific type of light source in question, are contained in IEC 61347-1. The corresponding general requirements apply to electronic controlgear for LED light sources by clause-wise reference in this document to any of the clauses of IEC 61347-1, thereby specifying the extent to which such a clause is applicable and the order in which the tests are performed.

In the same way, further documents exist specifying individual safety requirements for different types of controlgear related to different types of electric light sources which, together with this document, constitute the IEC 61347-2 series.

Any such parts of the IEC 61347-2 series are the leading documents for the safety assessment of the corresponding types of controlgear; it is not IEC 61347-1.

Also, all parts of the IEC 61347-2 series are self-contained and therefore typically do not include references to each other.

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# CONTROLGEAR FOR ELECTRIC LIGHT SOURCES – SAFETY –

## Part 2-13: Particular requirements – Electronic controlgear for LED light sources

### 1 Scope

This part of IEC 61347 specifies safety requirements for electronic controlgear for LED light sources for use on DC supplies up to 1 500 V or on AC supplies up to 1 000 V at 50 Hz or 60 Hz.

This document is applicable for electronic controlgear for LED light sources with an output voltage (RMS) not higher than 1 000 V.

NOTE 1 Control units, such as devices connected between the power supply unit and LED light sources that control or adjust the operation of LED light sources, are covered by this document.

NOTE 2 Performance requirements are covered by IEC 62384.

NOTE 3 Such controlgear can also be used for electric sources producing optical radiation with the same technology used for purposes different than illumination and producing radiation other than visible spectrum.

### 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.

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IEC 61347-1:2024, *Controlgear for electric light sources – Safety – Part 1: General requirements*

IEC 61547, *Equipment for general lighting purposes – EMC immunity requirements*

IEC 62384:2020, *DC or AC supplied electronic controlgear for LED modules – Performance requirements*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61347-1 and the following apply:

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

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 3.1

#### **LED light source**

electric light source based on LED technology

Note 1 to entry: An LED light source can take the form of an LED module or an LED lamp.

[SOURCE: IEC 60050-845:2020, 845-27-053]

### 3.2

#### **emergency lighting**

lighting provided for use when the power supply to the normal electric lighting fails

[SOURCE: IEC 60050-845:2020, 845-29-010]

### 3.3

#### **rated emergency supply voltage**

value of the supply voltage under which the controlgear is intended to be operated in emergency mode

### 3.4

#### **rated emergency supply voltage range**

value range of the rated emergency supply voltage

### 3.5

#### **emergency output factor**

$EOF_x$

ratio of the electrical output parameter when the controlgear is operated in emergency mode to the electrical output parameter when the controlgear is operated in normal lighting conditions

Note 1 to entry: The electrical output parameter can be current ( $EOF_I$ ), voltage ( $EOF_U$ ) or power ( $EOF_P$ ) at the output(s) of the controlgear (it can be constant current, constant voltage or constant power).

Note 2 to entry: The emergency output factor is the minimum of the values measured at the appropriate time after failure of the normal supply and continuously.

### 3.6

#### **rated emergency supply current**

rated supply current of the controlgear when operating in emergency mode

### 3.7

#### **constant light output function**

function whereby the output of the controlgear is gradually adjusted to compensate for the gradual decrease in luminous flux of LED light sources over their lifetime

Note 1 to entry: Constant light output functions can be controlled by a programmed software algorithm based on the expected gradual decrease in luminous flux or on feedback from a connected sensor such as a photocell.

## 4 General requirements

IEC 61347-1:2024, Clause 4 applies.

For centrally supplied controlgear for emergency lighting, additionally Annex A applies.

NOTE 1 This includes AC, AC/DC and DC supplied types.

EXAMPLE Centrally supplied systems are central battery systems and generator-based systems.

NOTE 2 Electronic controlgear used in self-contained emergency lighting luminaires is in the scope of IEC 61347-2-7.

## 5 General notes on tests

IEC 61347-1:2024, Clause 5 applies.

For information on requalification of products compliant with the previous edition of this document, i.e. IEC 61347-2-13:2014 and IEC 61347-2-13:2014/AMD1:2016, refer to Annex B.

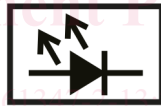
## 6 Information and marking

### 6.1 Information and marking items

#### 6.1.1 Mandatory markings

Controlgear, other than controlgear covered by 6.3, shall be marked with the following, as applicable:

- items a1), a2), b1), c2), d1), e1), e2), f1), f3), f4), g2), g3), j2), j4), k1), l1) and n1) of IEC 61347-1:2024, 6.2; symbols according to item o) of IEC 61347-1:2024, 6.2 shall be used as applicable;
- for constant voltage types: rated output power (range) and rated output voltage (range);
- for constant current types: rated output power (range) and rated output current (range);
- rated emergency supply voltage or rated emergency supply voltage range;
- an indication that the controlgear is suitable for operation with LED light sources by using the symbol as in Figure 1 or by an equivalent sentence (e.g. "For LED" or "For LED light sources").



[SOURCE: IEC 60417-6451(2022-03)]

**Figure 1 – Symbol for electronic controlgear for LED light sources**

#### 6.1.2 Information to be provided

The following information, if applicable, shall be given either on the controlgear, or be made available in the manufacturer's catalogue or similar:

- items b2), b3), c1), c3), c4), c5), c6), c7), d2), d3), e3), f2), g1), h), i), j1), j3), j5), k2), l2), m) and n3) of IEC 61347-1:2024, 6.2;
- if the controlgear incorporates a constant light output function,
  - an indication that this is the case;
  - details of the rated output voltage or rated output range or of the rated output current or output current range that may occur with respect to this function.

### 6.2 Durability and legibility of marking

IEC 61347-1:2024, 6.3 applies.

### 6.3 Built-in controlgear without an enclosure and integral controlgear

IEC 61347-1:2024, 6.4 applies.