

## Lamp controlgear

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Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)

This is a preview of "BS EN 61347-2-7:2012...". [Click here to purchase the full version from the ANSI store.](#)

## National foreword

This British Standard is the UK implementation of EN 61347-2-7:2012+A1:2019. It is identical to IEC 61347-2-7:2011, incorporating IEC amendment 1:2017. It supersedes BS EN 61347-2-7:2012, which will be withdrawn on 1 May 2022.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment A1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee CPL/34/3, Auxiliaries for lamps.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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### Amendments/corrigenda issued since publication

Date	Text affected
31 July 2019	Implementation of IEC amendment 1:2017 with CENELEC endorsement A1:2019

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June 2019

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English Version

### Lamp controlgear – Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)

Appareillages de lampes – Partie 2-7: Règles  
particulières relatives aux appareillages  
électroniques alimentés par batterie pour  
l'éclairage de secours (autonome)

Geräte für Lampen – Teil 2-7: Besondere  
Anforderungen an batterieversorgte  
elektronische Betriebsgeräte für die  
Notbeleuchtung (mit Einzelbatterie)

This European Standard was approved by CENELEC on 2012-01-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## European foreword

The text of document 34C/995/FDIS, future edition 3 of IEC 61347-2-7, prepared by SC 34C, "Auxiliaries for lamps", of IEC/TC 34, "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61347-2-7:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by (dop) 2012-10-11 publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have (dow) 2015-01-11 to be withdrawn

This document supersedes EN 61347-2-7:2006.

EN 61347-2-7:2012 includes the following significant technical changes with respect to EN 61347-2-7:2006:

- modification of EN 61347-2-7 to become a standard exclusively for d.c. battery supplied electronic controlgear for emergency lighting (self-contained). EN 61347-2-3:2011, Annex J, is intended to cover centrally supplied emergency controlgear;
- update of Clause 22 – Recharging devices;
- modification of Clause 20 battery voltage characterisation to support EBLF measurement. This to simplify and increase reproducibility of testing;
- rationalisation of requirements between EN 61347-2-7 and EN 60598-2-22, requirements of EN 60598-2-22 being transferred to EN 61347-2-7.

This standard shall be used in conjunction with EN 61347-1:2008 + A1:2011 + A2:200X<sup>1</sup>.

This part 2 supplements or modifies the corresponding clauses in EN 61347-1.

NOTE In this standard, the following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

### Endorsement notice

The text of the International Standard IEC 61347-2-7:2011 was approved by CENELEC as a European Standard without any modification.

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<sup>1</sup> To be published.

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## Foreword to amendment A1

The text of document 34C/1354/FDIS future edition 1 of IEC 61347-2-7/A1, prepared by SC 34C "Auxiliaries for lamps" of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61347-2-7:2012/A1:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by (dop) 2020-02-01 publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have (dow) 2022-05-01 to be withdrawn

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s), see informative [Annex ZZ](#), which is an integral part of this document.

### Endorsement notice

The text of the International Standard IEC 61347-2-7:2011/A1:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61347-2-13	NOTE	Harmonized as EN 61347-2-13
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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60081	-	Double-capped fluorescent lamps -Performance specifications	EN 60081	1998
			EN 60081:1998/A1	2002
			EN 60081:1998/A2	2003
			EN 60081:1998/A3	2005
			EN 60081:1998/A4	2010
			EN 60081:1998/A5	2013
			EN 60081:1998/A6	2017
IEC 60598-2-22	-	Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting	+A11	2018
			EN 60598-2-22	2014
			+AC	2015
IEC 60901	-	Single-capped fluorescent lamps - Performance specifications	EN 60598-2-22/FprA1	2017
			EN 60901	1996
			EN 60901:1996/A1	1997
			EN 60901:1996/A2	2000
			EN 60901:1996/A3	2004
			EN 60901:1996/A4	2008
			EN 60901:1996/A5	2012
			EN 60901:1996/A6	2017

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IEC 60921		Ballasts for tubular fluorescent lamps - Performance requirements	EN 60921	2004
			EN 60921:2004/A1	2006
IEC 60929	-	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements	EN 60929	2011
			+AC	2011
			EN 60929:2011/A1	2016
IEC 61347-1	-	Lamp controlgear - Part 1: General and safety requirements	EN 61347-1	2015
IEC 61347-2-3	-	Lamp control gear - Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps	EN 61347-2-3	2011
			+AC	2011
			+A1	2017
IEC 61558-1	2005	Safety of power transformers, power supplies, reactors and similar products -- Part 1: General requirements and tests	EN 61558-1	2005
+A1	2009		+A1	2009
IEC 61558-2-1	2007	Safety of power transformers, power supplies, reactors and similar products - Part 2-1: Particular requirements and tests for separating transformers and power supplies incorporating separating transformers for general applications	EN 61558-2-1	2007
IEC 61558-2-6	2009	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	2009
IEC 61558-2-16	2009	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units	EN 61558-2-16	2009
IEC 62034		Automatic test systems for battery powered emergency escape lighting	EN 62034	2012

## Annex ZZ (informative)

### Relationship between this European Standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in [Table ZZ.1](#) confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

**Table ZZ.1 — Correspondence between this European Standard and [Annex I](#) of Directive 2014/35/EU [2014 OJ L96]**

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
(1)(a)	<a href="#">Clause 7</a>	None
(1)(b)	<a href="#">Clause 4</a>	None
(1)(c)	See items 2 and 3 of this table	None
(2)(a)	<a href="#">Clause 8, 9, 10, 11, 12, 16, 17, 18, 19, 22, 23, 28, 29, 30, 31, 32</a>	EMF is not covered in this standard.  EMF for lighting equipment is covered by EN 62493.
(2)(b)	<a href="#">Clause 9, 22, 23, 28, 31, 32</a>	None
(2)(c)	<a href="#">Clause 9, 22, 23, 28, 31, 32</a>	None
(2)(d)	<a href="#">Clause 8, 9, 10, 11, 12, 16, 17, 18, 19, 22, 23, 28, 31, 32</a>	None
(3)(a)	<a href="#">Clause 4</a>	None
(3)(b)	<a href="#">Clause 4</a>	None
(3)(c)	<a href="#">Clause 9, 14, 29, 30, 31, 32, 33</a>	None.

**WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.**

**WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.**



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## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and nongovernmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61347-2-7 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
34C/995/FDIS	34C/1002/RVD

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

This third edition cancels and replaces the second edition published in 2006. It constitutes a technical revision. Significant changes introduced into this third edition include:

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- modification of IEC 61347-2-7 to become a standard exclusively for d.c. battery supplied electronic controlgear for emergency lighting (self-contained). IEC 61347-2-3 Annex J is intended to cover centrally supplied emergency controlgear;
- update of [Clause 22](#) - Recharging devices;
- modification of [Clause 20](#) battery voltage characterisation to support EBLF measurement. This to simplify and increase reproducibility of testing;
- rationalisation of requirements between IEC 61347-2-7 and IEC 60598-2-22 requirements of IEC 60598-2-22 being transferred to IEC 61347-2-7.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard shall be used in conjunction with IEC 61347-1. This part 2 supplements or modifies the corresponding clauses in IEC 61347-1.

NOTE In this standard, the following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

A list of all parts of the IEC 61347 series, published under the general title *Lamp controlgear*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

The formatting into separately published parts provides for ease of future amendments and revisions. Additional requirements will be added as and when a need for them is recognized.

This standard, and the parts which make up IEC 61347-2, in referring to any of the clauses of IEC 61347-1, specify the extent to which such a clause is applicable and the order in which the tests are to be performed; they also include additional requirements, as necessary. All parts which make up IEC 61347-2 are self-contained and, therefore, do not include reference to each other.

Where the requirements of any of the clauses of IEC 61347-1 are referred to in this standard by the phrase "The requirements of Clause n of IEC 61347-1 apply", this phrase is interpreted as meaning that all requirements of the clause in question of Part 1 apply, except any which are clearly inapplicable to the specific type of lamp controlgear covered by this particular part of IEC 61347-2.

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## **A1** INTRODUCTION to Amendment 1

EBLF is the ratio of the light output of a light source in emergency mode to the rated light output under normal conditions. EBLF is controlled by the output characteristics (current, voltage, power) of the controlgear with which the light source is operated.

For conventional lamps like fluorescent lamps, the EBLF is defined by the light output ratio of the lamp operated at 100 % and in emergency mode.

$$\text{EBLF} = \phi_{\text{emergency}} / \phi_{100 \%}$$

For this measurement no special lamp is required, it is expected that all lamps of the same type show a very similar light output ratio independent of its manufacturer. The measurement is done at an ambient temperature of 25 °C. Due to the same dimensions and the identical cooling system (free air) the thermal conditions are identical for all lamps. The result is fully reproducible without any additional condition.

### **Special requirements for LED light sources**

The light output of LED light sources depends also on the temperature at which they are operated. Typically the temperature is controlled by a heat sink on which it is mounted (e.g. luminaire surface).

This amendment describes a test method to evaluate the EBLF via an output factor (EOF<sub>x</sub>) taking into account that the ratio of the forward current of the LED controlgear is directly proportional to the LED light output. Any non-linearity due to the increased efficacy at lower operation temperature leads to an increased tolerance of the light output in the emergency mode but always positive.

Controlgear, which operates the LED light source in normal operation as well as in emergency operation can be marked directly with the output factor. Controlgear, operating the LED module in emergency mode only needs to be marked with the output value, for example the forward current  $I_{\text{emergency}}$ . **A1**

# Lamp controlgear —

## Part 2-7:

# Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)

## 1 Scope

This part of IEC 61347 specifies particular safety requirements for battery supplied electronic controlgear for maintained and non-maintained emergency lighting purposes.

It includes specific requirements for electronic controlgear and control units for self-contained luminaires for emergency lighting as specified by IEC 60598-2-22.

It is intended for controlgear for fluorescent lamps, but it is also applicable to other lamp types e.g. incandescent, high pressure discharge lamps and LEDs.

This standard covers the emergency mode operation of a controlgear. For controlgear with a combination of normal and emergency lighting operation, the normal lighting operation aspects are covered by the appropriate part 2 of IEC 61347.

DC supplied electronic controlgear for emergency lighting may or may not include batteries.

**[A1]** This standard does not apply to d.c. supplied electronic controlgear for emergency lighting, which are intended for connection to a centralised emergency power supply system. A centralised emergency power system could be a central battery system. **[A1]**

NOTE Annex J of IEC 61347-2-3 applies to a.c., a.c./d.c. or d.c. supplied electronic controlgear for connection to centralised emergency power supply systems that are also intended for emergency lighting operations from a.c./d.c. supplies.

## 2 Normative references

For the purpose of this part of IEC 61347, the normative references given in Clause 2 of IEC 61347-1, which are mentioned in this standard, apply, together with the following normative references.

IEC 60081, *Double-capped fluorescent lamps — Performance specifications*

IEC 60598-2-22, *Luminaires — Part 2: Particular requirements — Luminaires for emergency lighting*

IEC 60901, *Single-capped fluorescent lamps — Performance specifications*

IEC 60921, *Ballasts for tubular fluorescent lamps — Performance requirements*

IEC 60929, *AC and/or DC-supplied electronic control gear for tubular fluorescent lamps — Performance requirements*

IEC 61347-1, *Lamp controlgear — Part 1: General and safety requirements*

IEC 61347-2-3, *Lamp control gear — Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps*

IEC 61558-1:2005, *Safety of power transformers, power supplies, reactors and similar products — Part 1: General requirements and tests* Amendment 1 (2009) <sup>1)</sup>

1) There exists a consolidated edition 2.1 (2009) comprising IEC 61558-1 (2005) and its Amendment 1 (2009).