



Lamp controlgear

Part 2.7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained) (IEC 61347-2-7:2017 (ED. 3.1) MOD)



This Australian Standard® was prepared by Committee EL-041, Lamps and Related Equipment. It was approved on behalf of the Council of Standards Australia on 28 May 2019. This Standard was published on 18 June 2019.

The following are represented on Committee EL-041:

- Australian Industry Group
 - Consumers' Federation of Australia
 - Department of the Environment and Energy (Australian Government)
 - Electrical Compliance Testing Association of Australia
 - Electrical Regulatory Authorities Council
 - IES: The Lighting Society
 - Joint Accreditation System of Australia and New Zealand
 - Lighting Council Australia
 - Master Electricians Australia
 - NSW Fair Trading
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

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PREFACE

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee EL-041, Lamps and Related Equipment.

The objective of this Standard is to specify minimum safety requirements for battery supplied electronic controlgear for emergency lighting (self-contained), designed to be used with or incorporating electrical light sources on supply voltages not exceeding 250 V.

This Standard is an adoption with national modifications and has been reproduced from IEC 61347-2-7:2017 (ED. 3.1), *Lamp controlgear — Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)* and its Amendment 1 (2017). The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to IEC 61347-2-7 (ED. 3.1) for the application of this Standard in Australia.

This Standard is to be read in conjunction with AS/NZS 61347.1. This Part 2 supplements or modifies the corresponding clauses in AS/NZS 61347.1.

The essential safety requirements of AS/NZS 3820, *Essential safety requirements for electrical equipment*, which could be applicable to lighting products within the scope of AS 61347.2.7, are covered by AS 61347.2.7.

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

- (a) 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.
- (b) Update of Clause 22 — Recharging devices.
- (c) Modification of Clause 20 battery voltage characterisation to support EBLF measurement.
NOTE: This to simplify and increase reproducibility of testing.
- (d) 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 Standard is structured as follows:

- (i) Preface.
- (ii) IEC 61347-2-7:2017 (ED. 3.1) unedited from the first clause to Bibliography.
- (iii) Appendix ZZ — Australian variations to the source document.

The variations listed in Appendix ZZ address issues including the following:

- (A) Modification of the requirements to include lithium battery technologies
- (B) Align requirements with AS/NZS 2293.3 and emergency lighting practices used in Australia and New Zealand.

As this Standard is reproduced from an International Standard, the following applies:

- (1) In the source text “this part of IEC 61347” should read “this Australian Standard”.
- (2) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the annex or appendix to which they apply. A “normative” annex or appendix is an integral part of a Standard, whereas an “informative” annex or appendix is only for information and guidance.

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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 non-governmental 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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This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.

This Consolidated version of IEC 61347-2-7 bears the edition number 3.1. It consists of the third edition (2011-12) [documents 34C/995/FDIS and 34C/1002/RVD] and its amendment 1 (2017-10) [documents 34C/1354/FDIS and 34C/1359/RVD]. The technical content is identical to the base edition and its amendment.

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

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

This third edition constitutes a technical revision.

Significant changes introduced into this third edition include:

- 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 the base publication and its amendment 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.

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_X) 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 $I_{\text{emergency}}$.

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