



IEC 60598-2-22

Edition 5.0 2021-12  
REDLINE VERSION

# INTERNATIONAL STANDARD



---

## Luminaires – Part 2-22: Particular requirements – Luminaires for emergency lighting

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 29.140.40

ISBN 978-2-8322-1059-9

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

|                                                                                                              |                   |
|--------------------------------------------------------------------------------------------------------------|-------------------|
| FOREWORD .....                                                                                               | 3                 |
| <del>INTRODUCTION to Amendment 1 .....</del>                                                                 | <del>3</del>      |
| 22.1 Scope .....                                                                                             | 7                 |
| 22.2 Normative references .....                                                                              | 7                 |
| 22.3 Terms and definitions .....                                                                             | 8                 |
| 22.4 General test requirements .....                                                                         | 12                |
| 22.5 Classification of luminaires .....                                                                      | 13                |
| 22.6 Marking .....                                                                                           | 13                |
| 22.7 Construction .....                                                                                      | 15                |
| 22.8 Creepage distances and clearances .....                                                                 | 18                |
| 22.9 Provision of earthing .....                                                                             | 18                |
| 22.10 Terminals .....                                                                                        | 19                |
| 22.11 External and internal wiring .....                                                                     | 19                |
| 22.12 Protection against electric shock .....                                                                | 19                |
| 22.13 Endurance test and thermal test .....                                                                  | 19                |
| 22.14 Resistance to dust and moisture .....                                                                  | 21                |
| 22.15 Insulation resistance and electric strength .....                                                      | 21                |
| 22.16 Resistance to heat, fire and tracking .....                                                            | 21                |
| 22.17 Photometric data .....                                                                                 | 22                |
| 22.18 Changeover operation .....                                                                             | 24                |
| 22.19 High temperature operation .....                                                                       | 24                |
| 22.20 Battery chargers for self-contained emergency luminaires .....                                         | 25                |
| 22.21 Test devices for emergency operation .....                                                             | 25                |
| Annex A (normative) <del>Batteries</del> ESSs for self-contained emergency luminaires .....                  | 26                |
| Annex B (normative) Luminaire classification .....                                                           | 31                |
| Annex C (normative) Luminance measurements .....                                                             | 33                |
| Annex D (informative) Rest mode and <del>inhibition</del> remote inhibiting mode facilities .....            | 34                |
| Annex E (normative) Requirements for self-contained portable emergency luminaires .....                      | 36                |
| Bibliography .....                                                                                           | 41                |
| <br>Figure C.1 – Typical example of measurement positions .....                                              | <br>33            |
| <br><del>Table 1 – Voltage limits for discharge durations up to the end of declared battery life .....</del> | <br><del>20</del> |
| Table 1 – Voltage per cell to which the battery is discharged .....                                          | 20                |
| Table D.1 – Time scale rest mode and inhibiting mode versus status of normal mains supply .....              | 35                |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

### LUMINAIRES –

#### **Part 2-22: Particular requirements – Luminaires for emergency lighting**

#### 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 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.

**This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60598-2-22:2014+AMD1:2017 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

IEC 60598-2-22 has been prepared by subcommittee 34D: Luminaires of IEC technical committee 34: Lighting. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2014 and Amendment 1:2017. This edition constitutes a technical revision.

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

- a) update of requirements for rest mode and inhibiting mode;
- b) clarification of high temperature operation tests;
- c) introduction of new requirements for lithium batteries;
- d) introduction of new requirements for electric double layer capacitors (EDLCs);
- e) clarification of resistance to heat, fire and tracking;
- f) clarification of test facilities for self-contained luminaires;
- g) clarification of the test method for contrast measurements of exit signs.

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

| Draft         | Report on voting |
|---------------|------------------|
| 34D/1635/FDIS | 34D/1642/RVD     |

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

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/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

This Part 2-22 is to be used in conjunction with the latest edition of IEC 60598-1 and its amendment(s). It was established on the basis of the ninth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this document, it refers to IEC 60598-1.

NOTE 2 In this document, the following print type is used:

- compliance statements: *in italic type*.

A list of all parts in the IEC 60598 series, published under the general title *Luminaires*, can be found on the IEC website.

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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION to Amendment 1

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

For this reason, the calculation of the ratio of the electrical parameter ( $EOF_x$ ) will be introduced in the LED controlgear standards IEC 61347-2-13 and IEC 61347-2-7, as the direct measurement of EBLF is not practicable.

In particular  $EOF_I$  is defined as the ratio of the current in emergency mode from constant current controlgear divided by the nominal current of LED ( $I_{\text{normal mode}}$ ):

$$EOF_I = I_{\text{emergency}} / I_{\text{normal mode}}$$

Knowing that the light output of an LED light source is nearly<sup>4</sup> directly proportional with the forward current flowing through it, it is possible to calculate the luminous flux of the luminaire in emergency mode by using the  $EOF_I$  or  $I_{\text{emergency}}$  from constant current controlgear.

This document contains a proposal for the modification of IEC 60598-2-22 to use the factor  $EOF_I$  or  $I_{\text{emergency}}$  in the luminaire.

---

<sup>4</sup> 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.

## LUMINAIRES –

### Part 2-22: Particular requirements – Luminaires for emergency lighting

#### 22.1 Scope

This part of IEC 60598 specifies requirements for emergency luminaires for use with electrical lamps on emergency power supplies not exceeding 1 000 V.

This document does not cover the effects of non-emergency voltage reductions on luminaires incorporating high pressure discharge lamps.

This document gives general requirements for emergency lighting equipment.

In this document, the term "lamp" which also includes "light source(s)" where appropriate, is used.

#### 22.2 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.

IEC 60073, *Basic and safety principles for man-machine interface, marking and identification – Coding principles for ~~indication devices~~ indicators and actuators*

IEC 60155, *Glow-starters for fluorescent lamps*

IEC 60598-1, *Luminaires – Part 1: General requirements and tests*

IEC 60896-21, *Stationary lead-acid batteries – Part 21: Valve regulated types – Methods of test*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61056-1, *General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test*

IEC TR 61341, *Method of measurement of centre beam intensity and beam angle(s) of reflector lamps*

IEC 61347-2-2, *Lamp controlgear – Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps*

IEC 61347-2-3:2011, *Lamp control gear – Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps*

IEC 61347-2-7:2011, *Lamp controlgear – Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)*

IEC 61347-2-7:2011/AMD1:2017

IEC 61347-2-7:2011/AMD2:2021

IEC 61347-2-12, *Lamp controlgear – Part 2-12: Particular requirements for d.c. or a.c. supplied electronic ballasts for discharge lamps (excluding fluorescent lamps)*

IEC 61347-2-13, *Lamp controlgear – Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules*

IEC 61951-1, *Secondary cells and batteries containing alkaline or other non-acid electrolytes-~~Portable sealed rechargeable single cells~~ – Secondary sealed cells and batteries for portable applications – Part 1: Nickel-Cadmium*

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

IEC 62034, *Automatic test systems for battery powered emergency escape lighting*

IEC 62133-2:2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems*

IEC 62391-1:2015, *Fixed electric double-layer capacitors for use in electric and electronic equipment – Part 1: Generic specification*

IEC 62391-2:2006, *Fixed electric double-layer capacitors for use in electronic equipment – Part 2: Sectional specification – Electric double-layer capacitors for power application*

IEC 62620:2014, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for use in industrial applications*

~~ISO 3864-1:2011, Graphical symbols — Safety colours and safety signs. Part 1: Design principles for safety signs and safety markings~~

ISO 3864-4:2011, *Graphical symbols – Safety colours and safety signs – Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 30061:2007, *Emergency lighting*

CIE 121 SP1, ~~The photometry of emergency luminaires~~ *The Photometry and Goniophotometry of Luminaires – Supplement 1: Luminaires for Emergency Lighting*

CIE S025, *Test Method for LED Lamps, LED Luminaires and LED Modules*

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

---

**Luminaires –**

**Part 2-22: Particular requirements – Luminaires for emergency lighting**

**Luminaires –**

**Partie 2-22: Exigences particulières – Luminaires pour éclairage de secours**

## CONTENTS

|                                                                                                 |    |
|-------------------------------------------------------------------------------------------------|----|
| FOREWORD .....                                                                                  | 3  |
| 22.1 Scope .....                                                                                | 5  |
| 22.2 Normative references .....                                                                 | 5  |
| 22.3 Terms and definitions .....                                                                | 6  |
| 22.4 General test requirements .....                                                            | 10 |
| 22.5 Classification of luminaires .....                                                         | 11 |
| 22.6 Marking .....                                                                              | 11 |
| 22.7 Construction .....                                                                         | 13 |
| 22.8 Creepage distances and clearances .....                                                    | 16 |
| 22.9 Provision of earthing .....                                                                | 16 |
| 22.10 Terminals .....                                                                           | 16 |
| 22.11 External and internal wiring .....                                                        | 16 |
| 22.12 Protection against electric shock .....                                                   | 17 |
| 22.13 Endurance test and thermal test .....                                                     | 17 |
| 22.14 Resistance to dust and moisture .....                                                     | 19 |
| 22.15 Insulation resistance and electric strength .....                                         | 19 |
| 22.16 Resistance to heat, fire and tracking .....                                               | 19 |
| 22.17 Photometric data .....                                                                    | 20 |
| 22.18 Changeover operation .....                                                                | 21 |
| 22.19 High temperature operation .....                                                          | 21 |
| 22.20 Battery chargers for self-contained emergency luminaires .....                            | 22 |
| 22.21 Test devices for emergency operation .....                                                | 22 |
| Annex A (normative) ESSs for self-contained emergency luminaires .....                          | 23 |
| Annex B (normative) Luminaire classification .....                                              | 28 |
| Annex C (normative) Luminance measurements .....                                                | 30 |
| Annex D (informative) Rest mode and remote inhibiting mode facilities .....                     | 31 |
| Annex E (normative) Requirements for self-contained portable emergency luminaires .....         | 33 |
| Bibliography .....                                                                              | 38 |
| Figure C.1 – Typical example of measurement positions .....                                     | 30 |
| Table 1 – Voltage per cell to which the battery is discharged .....                             | 18 |
| Table D.1 – Time scale rest mode and inhibiting mode versus status of normal mains supply ..... | 31 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

LUMINAIRES –**Part 2-22: Particular requirements –  
Luminaires for emergency lighting**

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 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.

IEC 60598-2-22 has been prepared by subcommittee 34D: Luminaires of IEC technical committee 34: Lighting. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2014 and Amendment 1:2017. This edition constitutes a technical revision.

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

- a) update of requirements for rest mode and inhibiting mode;
- b) clarification of high temperature operation tests;
- c) introduction of new requirements for lithium batteries;
- d) introduction of new requirements for electric double layer capacitors (EDLCs);

- e) clarification of resistance to heat, fire and tracking;
- f) clarification of test facilities for self-contained luminaires;
- g) clarification of the test method for contrast measurements of exit signs.

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

| Draft         | Report on voting |
|---------------|------------------|
| 34D/1635/FDIS | 34D/1642/RVD     |

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

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/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

This Part 2-22 is to be used in conjunction with the latest edition of IEC 60598-1 and its amendment(s). It was established on the basis of the ninth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this document, it refers to IEC 60598-1.

NOTE 2 In this document, the following print type is used:

- compliance statements: *in italic type*.

A list of all parts in the IEC 60598 series, published under the general title *Luminaires*, can be found on the IEC website.

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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

## LUMINAIRES –

### Part 2-22: Particular requirements – Luminaires for emergency lighting

#### 22.1 Scope

This part of IEC 60598 specifies requirements for emergency luminaires for use with electrical lamps on emergency power supplies not exceeding 1 000 V.

This document does not cover the effects of non-emergency voltage reductions on luminaires incorporating high pressure discharge lamps.

This document gives general requirements for emergency lighting equipment.

In this document, the term "lamp" which also includes "light source(s)" where appropriate, is used.

#### 22.2 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.

IEC 60073, *Basic and safety principles for man-machine interface, marking and identification – Coding principles for indicators and actuators*

IEC 60155, *Glow-starters for fluorescent lamps*

IEC 60598-1, *Luminaires – Part 1: General requirements and tests*

IEC 60896-21, *Stationary lead-acid batteries – Part 21: Valve regulated types – Methods of test*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61056-1, *General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test*

IEC TR 61341, *Method of measurement of centre beam intensity and beam angle(s) of reflector lamps*

IEC 61347-2-2, *Lamp controlgear – Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps*

IEC 61347-2-3:2011, *Lamp control gear – Part 2-3: Particular requirements for a.c. and/or d.c. supplied electronic control gear for fluorescent lamps*

IEC 61347-2-7:2011, *Lamp controlgear – Part 2-7: Particular requirements for battery supplied electronic controlgear for emergency lighting (self-contained)*

IEC 61347-2-7:2011/AMD1:2017

IEC 61347-2-7:2011/AMD2:2021

IEC 61347-2-12, *Lamp controlgear – Part 2-12: Particular requirements for d.c. or a.c. supplied electronic ballasts for discharge lamps (excluding fluorescent lamps)*

IEC 61347-2-13, *Lamp controlgear – Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules*

IEC 61951-1, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary sealed cells and batteries for portable applications – Part 1: Nickel-Cadmium*

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 62034, *Automatic test systems for battery powered emergency escape lighting*

IEC 62133-2:2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems*

IEC 62391-1:2015, *Fixed electric double-layer capacitors for use in electric and electronic equipment – Part 1: Generic specification*

IEC 62391-2:2006, *Fixed electric double-layer capacitors for use in electronic equipment – Part 2: Sectional specification – Electric double-layer capacitors for power application*

IEC 62620:2014, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for use in industrial applications*

ISO 3864-4:2011, *Graphical symbols – Safety colours and safety signs – Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 30061:2007, *Emergency lighting*

CIE 121 SP1, *The Photometry and Goniophotometry of Luminaires – Supplement 1: Luminaires for Emergency Lighting*

CIE S025, *Test Method for LED Lamps, LED Luminaires and LED Modules*

## SOMMAIRE

|                                                                                                                                                     |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| AVANT-PROPOS .....                                                                                                                                  | 41 |
| 22.1 Domaine d'application .....                                                                                                                    | 43 |
| 22.2 Références normatives.....                                                                                                                     | 43 |
| 22.3 Termes et définitions.....                                                                                                                     | 44 |
| 22.4 Exigences générales d'essai .....                                                                                                              | 49 |
| 22.5 Classification des luminaires .....                                                                                                            | 49 |
| 22.6 Marquage.....                                                                                                                                  | 49 |
| 22.7 Construction.....                                                                                                                              | 52 |
| 22.8 Lignes de fuite et distances d'isolement .....                                                                                                 | 55 |
| 22.9 Dispositions en vue de la mise à la terre .....                                                                                                | 55 |
| 22.10 Bornes .....                                                                                                                                  | 55 |
| 22.11 Câblage externe et interne .....                                                                                                              | 55 |
| 22.12 Protection contre les chocs électriques .....                                                                                                 | 56 |
| 22.13 Essais d'endurance et essais d'échauffement.....                                                                                              | 56 |
| 22.14 Résistance aux poussières et à l'humidité .....                                                                                               | 58 |
| 22.15 Résistance d'isolement et rigidité diélectrique .....                                                                                         | 58 |
| 22.16 Résistance à la chaleur, au feu et aux courants de cheminement.....                                                                           | 58 |
| 22.17 Données photométriques.....                                                                                                                   | 59 |
| 22.18 Opération de commutation .....                                                                                                                | 61 |
| 22.19 Fonctionnement à température élevée.....                                                                                                      | 61 |
| 22.20 Chargeurs de batteries pour les blocs autonomes d'éclairage de secours .....                                                                  | 61 |
| 22.21 Dispositifs d'essai pour le fonctionnement en secours .....                                                                                   | 62 |
| Annexe A (normative) ESSS pour blocs autonomes d'éclairage de secours .....                                                                         | 63 |
| Annexe B (normative) Classification des luminaires .....                                                                                            | 68 |
| Annexe C (normative) Mesures de luminances.....                                                                                                     | 70 |
| Annexe D (informative) Moyens de mise en état de repos et de neutralisation<br>à distance .....                                                     | 71 |
| Annexe E (normative) Exigences relatives aux blocs autonomes portatifs d'éclairage<br>de secours .....                                              | 73 |
| Bibliographie.....                                                                                                                                  | 78 |
| Figure C.1 – Exemple type d'emplacements de mesure .....                                                                                            | 70 |
| Tableau 1 – Tension par élément à laquelle la batterie est déchargée .....                                                                          | 57 |
| Tableau D.1 – Echelle temporelle de l'état de repos et de l'état de neutralisation en<br>fonction de l'état de l'alimentation secteur normale ..... | 72 |

## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

## LUMINAIRES –

**Partie 2-22: Exigences particulières –  
Luminaires pour éclairage de secours**

## AVANT-PROPOS

- 1) La Commission Electrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. A cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
- 2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
- 3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
- 4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
- 5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
- 6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
- 7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'attention est attirée sur le fait que certains des éléments de la présente Publication de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets.

L'IEC 60598-2-22 a été établie par le sous-comité 34D: Luminaires, du comité d'études 34 de l'IEC: Eclairage. Il s'agit d'une Norme internationale.

Cette cinquième édition annule et remplace la quatrième édition parue en 2014 et l'Amendement 1:2017. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) mise à jour des exigences relatives à l'état de repos et l'état de neutralisation;
- b) clarification des essais de fonctionnement à température élevée;
- c) introduction de nouvelles exigences pour les batteries au lithium;

- d) introduction de nouvelles exigences pour les condensateurs électriques à double couche (EDLC);
- e) clarification de la résistance à la chaleur, au feu et aux courants de cheminement;
- f) clarification des dispositifs d'essai pour les blocs autonomes;
- g) clarification de la méthode d'essai pour les mesures du contraste des signaux de sortie.

Le texte de cette Norme internationale est issu des documents suivants:

| Projet        | Rapport de vote |
|---------------|-----------------|
| 34D/1635/FDIS | 34D/1642/RVD    |

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Le présent document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). Les principaux types de documents développés par l'IEC sont décrits plus en détail sous [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

La présente Partie 2-22 doit être utilisée conjointement avec la dernière édition de l'IEC 60598-1 et son ou ses amendements. Elle a été établie sur la base de la neuvième édition (2020) de cette norme.

NOTE 1 L'expression "la Partie 1" utilisée dans le présent norme fait référence à l'IEC 60598-1.

NOTE 2 Dans le présent document, les caractères d'imprimerie suivants sont utilisés:

– déclarations de conformité: *caractères italiques*.

Une liste de toutes les parties de la série IEC 60598, publiées sous le titre général *Luminaires*, se trouve sur le site web de l'IEC.

Le comité a décidé que le contenu du présent document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous [webstore.iec.ch](http://webstore.iec.ch) dans les données relatives au document recherché. A cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

## LUMINAIRES –

### **Partie 2-22: Exigences particulières – Luminaires pour éclairage de secours**

#### **22.1 Domaine d'application**

La présente partie de l'IEC 60598 spécifie les exigences applicables aux luminaires d'éclairage de secours à utiliser avec des lampes électriques sur des alimentations de secours qui ne dépassent pas 1 000 V.

Le présent document ne traite pas des effets d'une chute de tension de l'alimentation normale sur les luminaires qui incorporent des lampes à décharge haute pression.

Le présent spécifie les exigences générales applicables aux équipements d'éclairage de secours.

Dans le présent document, le terme "lampe", qui inclut également les "sources lumineuses" le cas échéant, est utilisé.

#### **22.2 Références normatives**

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60073, *Principes fondamentaux et de sécurité pour l'interface homme-machine, le marquage et l'identification – Principes de codage pour les indicateurs et les organes de commande*

IEC 60155, *Interrupteurs d'amorçage à lueur pour lampes à fluorescence (starters)*

IEC 60598-1, *Luminaires – Partie 1: Exigences générales et essais*

IEC 60896-21, *Batteries stationnaires au plomb – Partie 21: Types étanches à soupapes – Méthodes d'essai*

IEC 61032:1997, *Protection des personnes et des matériels par les enveloppes – Calibres d'essai pour la vérification*

IEC 61056-1, *Batteries d'accumulateurs au plomb-acide pour usage général (types à soupapes) – Partie 1: Exigences générales et caractéristiques fonctionnelles – Méthodes d'essai*

IEC TR 61341, *Méthode de mesure de l'intensité dans l'axe du faisceau et de l'angle (ou des angles) d'ouverture des lampes à réflecteur*

IEC 61347-2-2, *Appareillages de lampes – Partie 2-2: Exigences particulières pour les convertisseurs abaisseurs électroniques alimentés en courant continu ou alternatif pour lampes à incandescence*

IEC 61347-2-3:2011, *Appareillages de lampes – Partie 2-3: Exigences particulières pour les appareillages électroniques alimentés en courant alternatif et/ou en courant continu pour lampes fluorescentes*

IEC 61347-2-7:2011, *Appareillages de lampes – Partie 2-7: Règles particulières relatives aux appareillages électroniques alimentés par batterie pour l'éclairage de secours (autonome)*  
IEC 61347-2-7:2011/AMD1:2017  
IEC 61347-2-7:2011/AMD2:2021

IEC 61347-2-12, *Appareillages de lampes – Partie 2-12: Exigences particulières pour les ballasts électroniques alimentés en courant continu ou alternatif pour lampes à décharge (à l'exclusion des lampes fluorescentes)*

IEC 61347-2-13, *Appareillages de lampes – Partie 2-13: Exigences particulières pour les appareillages électroniques alimentés en courant continu ou alternatif pour les modules de LED*

IEC 61951-1, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs étanches pour applications portables – Partie 1: Nickel-cadmium*

IEC 61951-2, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs étanches pour applications portables – Partie 2: Nickel-métal hydrure*

IEC 62034, *Systèmes automatiques d'essai pour éclairage de sécurité sur batteries*

IEC 62133-2:2017, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Exigences de sécurité pour les accumulateurs portables étanches, et pour les batteries qui en sont constituées, destinés à l'utilisation dans des applications portables – Partie 2: Systèmes au lithium*

IEC 62391-1:2015, *Condensateurs électriques fixes à double couche utilisés dans les équipements électriques et électroniques – Partie 1: Spécification générique*

IEC 62391-2:2006, *Condensateurs électriques fixes à double couche utilisés dans les équipements électroniques – Partie 2: Spécification intermédiaire – Condensateurs électriques à double couche pour application de puissance*

IEC 62620:2014, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Eléments et batteries d'accumulateurs au lithium pour utilisation dans les applications industrielles*

ISO 3864-4:2011, *Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Partie 4: Propriétés colorimétriques et photométriques des matériaux des signaux de sécurité*

ISO 30061:2007, *Eclairage de secours*

CIE 121 SP1, *The Photometry and Goniophotometry of Luminaires – Supplement 1: Luminaires for Emergency Lighting* (disponible en anglais seulement)

CIE S025, *Test Method for LED Lamps, LED Luminaires and LED Modules* (disponible en anglais seulement)