IEC 62868-2-1

Edition 1.1 2025-05
CONSOLIDATED VERSION

INTERNATIONAL STANDARD

Organic light emitting diode (OLED) light sources for general lighting – Safety – Part 2-1: Particular requirements – Semi-integrated OLED modules

ICS 29.140.99

ISBN 978-2-8327-0439-4

IEC 62868-2-1:2020-08+AMD1:2025-05 CSV(en)

CONTENTS

FOREWORD 3
1 Scope 5
2 Normative references 5
3 Terms and definitions 5
4 General 6
4.1 General requirements 6
4.2 General test requirements 6
5 Marking 6
5.1 Contents and location 6
5.2 Durability and legibility of marking 7
6 Construction 7
7 Mechanical hazard 7
8 Fault conditions 7
9 Insulation resistance and electric strength after humidity treatment 7
9.1 General requirements 7
9.2 Insulation resistance 7
9.3 Electric strength 8
18 Thermal stress 8
10 Creepage distances and clearances 8
11 Resistance to heat and fire 8
11.1 Resistance to heat 8
11.2 Resistance to flame and ignition 8
12 Photobiological safety 8
13 Terminals 8
14 Protection against accidental contact with live parts 9
15 Screws, current-carrying parts and connections 9
16 Resistance to corrosion 9
17 Information for luminaire design 9
19 Provisions for protective earthing 9
Annex A (informative) Classification of OLED modules 10
A.1 Power supply classification 10
A.2 Installation method classification 10
Bibliography 11

Table 1 – Contents and location of marking 7

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

ORGANIC LIGHT EMITTING DIODE (OLED) LIGHT SOURCES FOR GENERAL LIGHTING – SAFETY –

Part 2-1: Particular requirements – Semi-integrated OLED modules

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC 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, IEC 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 https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 62868-2-1 edition 1.1 contains the first edition (2020-08) [documents 34A/2192/FDIS and 34A/2199/RVD] and its amendment 1 (2025-05) [documents 34A/2422/FDIS and 34A/2449/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 62868-2-1 has been prepared by subcommittee 34A: Electric light sources, of IEC technical committee 34: Lighting.

IEC 62868-2-1 has been prepared in parallel with IEC 62868-2-2.

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

FDIS	Report on voting
34A/2192/FDIS	34A/2199/RVD

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

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

A list of all parts in the IEC 62868 series, published under the general title *Organic light emitting diode (OLED) light sources for general lighting – Safety*, can be found on the IEC website.

In this document, the following print type is used:

– *compliance statements: in italic type.*

The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

ORGANIC LIGHT EMITTING DIODE (OLED) LIGHT SOURCES FOR GENERAL LIGHTING – SAFETY –

Part 2-1: Particular requirements – Semi-integrated OLED modules

1 Scope

This part of IEC 62868 specifies safety requirements for semi-integrated organic light emitting (OLED) diode modules operating with an external controlgear connected to the mains voltage, and which, in addition, have a control means inside ("semi-integrated") for operation under constant voltage, constant current or constant power and have a rated voltage up to 120 V ripple free DC or 50 V AC RMS at 50 Hz or 60 Hz.

NOTE 1 The classification of OLED modules is given in Annex A.

NOTE 2 The classification of OLED modules according to the power supply method is illustrated IEC 62868-1:2020/AMD1:2024.

NOTE 3 The flexible OLED tiles or panels, or the OLED tiles or panels complying with this document are deemed to comply with the requirements of IEC 62868-2-3 or IEC 62868-2-4, unless otherwise specified in this document.

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 60598-1:2014, *Luminaires – Part 1: General requirements and tests*~~
~~IEC 60598-1:2014/AMD1:2017~~

~~IEC 60838-2-2, *Miscellaneous lampholders – Part 2-2: Particular requirements – Connectors for LED modules*~~

IEC 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*
IEC 61347-1:2015/AMD1:2017

IEC 62504, *General lighting − Light emitting diode (LED) products and related equipment −Terms and definitions*

IEC 62868-1:2020, *Organic light emitting diode (OLED) light sources for general lighting – Safety – Part 1: General requirements and tests*
IEC 62868-1:2020/AMD1:2024

IEC TS 62972, *General lighting − Organic light emitting diode (OLED) products and related equipment − Terms and definitions*

CONTENTS

FOREWORD 3
1 Scope 5
2 Normative references 5
3 Terms and definitions 5
4 General 6
4.1 General requirements 6
4.2 General test requirements 6
5 Marking 6
5.1 Contents and location 6
5.2 Durability and legibility of marking 7
6 Construction 7
7 Mechanical hazard 7
8 Fault conditions 7
9 Insulation resistance and electric strength after humidity treatment 7
9.1 General requirements 7
9.2 Insulation resistance 7
9.3 Electric strength 7
18 Thermal stress 8
10 Creepage distances and clearances 8
11 Resistance to heat and fire 8
11.1 Resistance to heat 8
11.2 Resistance to flame and ignition 8
12 Photobiological safety 8
13 Terminals 8
14 Protection against accidental contact with live parts 8
15 Screws, current-carrying parts and connections 8
16 Resistance to corrosion 8
17 Information for luminaire design 8
19 Provisions for protective earthing 8
Annex A (informative) Classification of OLED modules 9
A.1 Power supply classification 9
A.2 Installation method classification 9
Bibliography 10

Table 1 – Contents and location of marking 6

© IEC 2025

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

ORGANIC LIGHT EMITTING DIODE (OLED) LIGHT SOURCES FOR GENERAL LIGHTING – SAFETY –

Part 2-1: Particular requirements – Semi-integrated OLED modules

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC 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, IEC 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 https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 62868-2-1 edition 1.1 contains the first edition (2020-08) [documents 34A/2192/FDIS and 34A/2199/RVD] and its amendment 1 (2025-05) [documents 34A/2422/FDIS and 34A/2449/RVD].

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 62868-2-1 has been prepared by subcommittee 34A: Electric light sources, of IEC technical committee 34: Lighting.

IEC 62868-2-1 has been prepared in parallel with IEC 62868-2-2.

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

FDIS	Report on voting
34A/2192/FDIS	34A/2199/RVD

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

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

A list of all parts in the IEC 62868 series, published under the general title *Organic light emitting diode (OLED) light sources for general lighting – Safety*, can be found on the IEC website.

In this document, the following print type is used:

– *compliance statements: in italic type.*

The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

ORGANIC LIGHT EMITTING DIODE (OLED) LIGHT SOURCES FOR GENERAL LIGHTING – SAFETY –

Part 2-1: Particular requirements – Semi-integrated OLED modules

1 Scope

This part of IEC 62868 specifies safety requirements for semi-integrated organic light emitting (OLED) diode modules operating with an external controlgear connected to the mains voltage, and which, in addition, have a control means inside ("semi-integrated") for operation under constant voltage, constant current or constant power and have a rated voltage up to 120 V ripple free DC or 50 V AC RMS at 50 Hz or 60 Hz.

NOTE 1 The classification of OLED modules is given in Annex A.

NOTE 2 The classification of OLED modules according to the power supply method is illustrated IEC 62868-1:2020/AMD1:2024.

NOTE 3 The flexible OLED tiles or panels, or the OLED tiles or panels complying with this document are deemed to comply with the requirements of IEC 62868-2-3 or IEC 62868-2-4, unless otherwise specified in this document.

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 61347-1:2015, *Lamp controlgear – Part 1: General and safety requirements*
IEC 61347-1:2015/AMD1:2017

IEC 62504, *General lighting − Light emitting diode (LED) products and related equipment −Terms and definitions*

IEC 62868-1:2020, *Organic light emitting diode (OLED) light sources for general lighting – Safety – Part 1: General requirements and tests*
IEC 62868-1:2020/AMD1:2024

IEC TS 62972, *General lighting − Organic light emitting diode (OLED) products and related equipment − Terms and definitions*