



NSAI
Standards

Irish Standard
I.S. EN 62838:2016

LEDsi lamps for general lighting services with
supply voltages not exceeding 50 V a.c. r.m.s.
or 120 V ripple free d.c. - Safety specifications

I.S. EN 62838:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 62838:2016 is the adopted Irish version of the European Document EN 62838:2016, LEDsi lamps for general lighting services with supply voltages not exceeding 50 V a.c. r.m.s. or 120 V ripple free d.c. - Safety specifications

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

EN 62838

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2016

ICS 29.140

English Version

**LEDsi lamps for general lighting services with supply voltages
not exceeding 50 V a.c. r.m.s. or 120 V ripple free d.c. -
Safety specifications
(IEC 62838:2015)**

Lampes à LEDsi pour l'éclairage général fonctionnant à des
tensions d'alimentation ne dépassant pas 50 V en courant
alternatif efficace ou 120 V en courant continu lisse -
Spécifications de sécurité
(IEC 62838:2015)

LEDsi-Lampen (semi-integrated, mit eingebauter
Steuereinheit) für Allgemeinbeleuchtungszwecke mit
Versorgungsspannungen nicht über 50 V effektiver
Wechselspannung oder 120 V welligkeitsfreier
Gleichspannung - Sicherheitsanforderungen
(IEC 62838:2015)

This European Standard was approved by CENELEC on 2015-11-11. 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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

EN 62838:2016

European foreword

The text of document 34A/1852/FDIS, future edition 1 of IEC 62838, prepared by SC 34A "Lamps", of IEC/TC 34 "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62838:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at (dop) 2016-08-11
national level by publication of an identical national
standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2018-11-11
the document have to be withdrawn

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 62838:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60432-3	NOTE	Harmonized as EN 60432-3.
IEC 62471	NOTE	Harmonized as EN 62471.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60061-1	-	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps	EN 60061-1	-
IEC 60061-3	-	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 3: Gauges	EN 60061-3	-
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	2007
-	-		+ corrigendum Jul.	2007
IEC 60364-7-715 (mod)	2011	Low-voltage electrical installations - Part 7-715: Requirements for special installations or locations - Extra-low-voltage lighting installations	HD 60364-7-715	2012
IEC 60417	-	Graphical symbols for use on equipment	-	-
IEC 60598-1	-	Luminaires - Part 1: General requirements and tests	EN 60598-1	-
IEC 61347-1	2015	Lamp controlgear - Part 1: General and safety requirement	EN 61347-1	2015
IEC 62031	-	LED modules for general lighting - Safety specifications	EN 62031	-
IEC 62504	-	General lighting - Light emitting diode (LED) products and related equipment - Terms and definitions	EN 62504	-
IEC 62560	-	Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications	EN 62560	-
IEC/TR 62778	-	Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	-	-

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IEC 62838

Edition 1.0 2015-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**LEDsi lamps for general lighting services with supply voltages not exceeding
50 V a.c. r.m.s. or 120 V ripple free d.c. – Safety specifications**

**Lampes à LEDsi pour l'éclairage général fonctionnant à des tensions
d'alimentation ne dépassant pas 50 V en courant alternatif efficace ou 120 V en
courant continu lisse – Spécifications de sécurité**



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IEC 62838

Edition 1.0 2015-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE



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d'alimentation ne dépassant pas 50 V en courant alternatif efficace ou 120 V en
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INTERNATIONAL
ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LEDsi LAMPS FOR GENERAL LIGHTING
SERVICES WITH SUPPLY VOLTAGES NOT EXCEEDING
50 V A.C. R.M.S. OR 120 V RIPPLE FREE D.C. –
SAFETY SPECIFICATIONS**

FOREWORD

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International Standard IEC 62838 has been prepared by subcommittee 34A: 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
34A/1852/FDIS	34A/1869/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types are used:

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

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INTRODUCTION

This standard provides the requirements and conditions of compliance for the safety of semi-integrated LED lamps with supply voltages equal to or less than 50 V a.c. r.m.s. or equal to or less than 120 V ripple free d.c.

The establishing of this standard does not exclude a future relocation as a sub-part of IEC 60968, self-ballasted lamps, or a merging with the standard for self-ballasted LED lamps with supply voltages greater than 50 V.

**LEDsi LAMPS FOR GENERAL LIGHTING
SERVICES WITH SUPPLY VOLTAGES NOT EXCEEDING
50 V A.C. R.M.S. OR 120 V RIPPLE FREE D.C. –
SAFETY SPECIFICATIONS**

1 Scope

This International Standard specifies the safety and interchangeability requirements, together with the test methods and conditions, required to show compliance of LED lamps with integrated means for stable operation, intended for domestic and similar general lighting purposes, having:

- a rated power up to 60 W
- a rated voltage equal to or less than 50 V a.c. r.m.s. or equal or less 120 V ripple free d.c.,
- caps according to Table 1.

NOTE 1 The value of 60 W rated power is under consideration. Heat management may require lower power.

This standard shall be used for products in conjunction with ELV lighting installations.

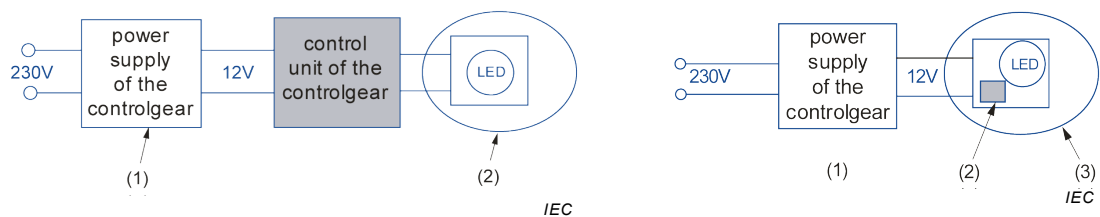
With reference to IEC 60364-7-715, in ELV lighting installations only SELV sources are applied. Where bare conductors are used, the maximum lamp voltage shall be 25 V a.c. or 60 V d.c.

The requirements of this standard relate only to type testing.

For lamps > 25 V a.c. or 60 V d.c., recommendations for whole production testing or batch testing are given in IEC 60598-1 Table Q.1, column class III luminaire, column 4 or 5.

NOTE 2 Where in this standard the term "lamp(s)" is used, it is understood to stand for semi-integrated LED lamp(s) with supply voltages as in the scope above, except where it is obviously assigned to other types of lamps.

An overview of systems composed of LED modules, lamps and controlgear is given in IEC 62504. Supply voltage does not mean necessarily mains voltage, e.g. 230 V / 50 Hz. A semi-integrated LED lamp can also be driven on a supply voltage with 12 V a.c. or d.c. The control unit in the controlgear in a semi-integrated LED lamp then provides the conversion of 12 V a.c. or d.c. to a special current and voltage to power the LED inside the semi-integrated LED lamp. Schematically, the types of LEDni and LEDsi lamps are shown in Figure 1.



a) Example of a non-integrated LED lamp with supply voltage $\leq 50V$

b) Example of a semi-integrated LED lamp with supply voltage $\leq 50V$, in the scope of this standard

Key

- 1 Converter not LED specific, but designed typically for incandescent or tungsten halogen lamps.
- 2 Non-integrated LED light source, typically a module. It may have an IEC 60061-1 conform cap which is LED specific and not retrofit.

Key

- 1 Converter not LED specific, but designed typically for incandescent or tungsten halogen lamps.
- 2 LED control unit.
- 3 Semi-integrated LED lamp as defined in 3.15.4 of IEC 62504.

NOTE Figure 1a) type is not covered by this standard.

Figure 1 – Types of LED lamps with supply voltage $\leq 50V$

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60061-1, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 1: Lamp caps*

IEC 60061-3, *Lamp caps and holders together with gauges for the control of interchangeability and safety – Part 3: Gauges*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-7-715:2011, *Electrical installations – Requirements for special installations or locations – Extra-low-voltage lighting installations*

IEC 60417, *Graphical symbols for use on equipment* (available from: <http://www.graphical-symbols.info/equipment>)

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

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

IEC 62031, *LED modules for general lighting – safety requirements*

IEC 62504, *General lighting – LEDs and LED modules – terms and definitions*

IEC 62560, *Self-ballasted LED lamps for general lighting services by voltage $> 50 V$ – Safety specifications*

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