

**Sisseehitatud liiteseadisega üldtarbelambid.  
Ohutusnõuded (IEC 60968:2012)**

**Self-ballasted lamps for general lighting services -  
Safety requirements (IEC 60968:2012)**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 60968:2013 sisaldab Euroopa standardi EN 60968:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 60968:2013 consists of the English text of the European standard EN 60968:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.01.2013.	Date of Availability of the European standard is 11.01.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 29.140.30

### Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

### The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:  
Aru 10, 10317 Tallinn, Estonia; [www.evs.ee](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

**Self-ballasted lamps for general lighting services -  
Safety requirements  
(IEC 60968:2012)**

Lampes à ballast intégré pour l'éclairage  
général -  
Exigences de sécurité  
(CEI 60968:2012)

Lampen mit eingebautem Vorschaltgerät  
für Allgemeinbeleuchtung -  
Sicherheitsanforderungen  
(IEC 60968:2012)

This European Standard was approved by CENELEC on 2012-10-31. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 34A/1540/CDV, future edition 2 of IEC 60968, prepared by SC 34A "Lamps" of IEC/TC 34A "Lamps and related equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60968:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-07-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-10-31

This document supersedes EN 60968:1990 + A1:1993 + A2:1999.

EN 60968:2013 includes the following significant technical changes with respect to EN 60968:1990 + A1:1993 + A2:1999:

- for reasons of photobiological safety, the scope has been extended;
- a new definition and clause on UV radiation have been introduced;
- clauses on normative references and an annex on literature were added;
- the latest IEC template has been adapted.

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 60968:2012 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 62471:2006      NOTE      Harmonised as EN 62471:2008 (modified).

## 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60061	-	Lamp caps and holders together with gauges for the control of interchangeability and safety	-	-
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 60238	-	Edison screw lampholders	EN 60238	-
IEC 60360	-	Standard method of measurement of lamp cap temperature rise	EN 60360	-
IEC 60695-2-10	2000	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001
IEC 60695-2-11 + corr. January	2000 2001	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 60695-2-12	2010	Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials	EN 60695-2-12	2010
IEC 60695-2-13 + corr. February	2010 2012	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials	EN 60695-2-13	2010
IEC 60901	-	Single-capped fluorescent lamps - Performance specifications	EN 60901	-

# CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 General requirement and general test requirements .....	8
5 Marking .....	8
6 Interchangeability .....	9
7 Protection against electric shock .....	10
8 Insulation resistance and electric strength after humidity treatment .....	10
8.1 General .....	10
8.2 Insulation resistance .....	10
8.3 Electric strength .....	10
9 Mechanical strength .....	11
10 Cap temperature rise.....	11
11 Resistance to heat.....	12
12 Resistance to flame and ignition .....	12
13 Fault conditions .....	13
14 UV radiation .....	17
Bibliography.....	18
Figure 1 – Dimming not allowed.....	9
Figure 2 – Standard test finger.....	14
Figure 3 – Holder for torsion test on lamps with screw caps .....	15
Figure 4 – Holder for torque test on lamps with bayonet caps .....	16
Figure 5 – Ball-pressure apparatus .....	17
Table 1 – Interchangeability gauges and lamp cap dimensions .....	9

## INTRODUCTION

With IEC 62471 and IEC/TR 62471-2, there are horizontal requirements available that need to be introduced into product standards, e.g. to IEC 60968. The horizontal requirement is transformed into a requirement for self-ballasted lamps.

The lamps within the scope of this standard are general lighting service (GLS) lamps according to the definition 3.11 in IEC 62471:2006. "...lamps intended for lighting spaces that are typically occupied or viewed by people...".

According to Clause 6 of IEC 62471:2006, radiation of GLS lamps is measured at a distance equivalent to 500 lx.

Measured at the 500 lx distance, GLS lamps will not exceed risk group 1 for blue light hazard and risk group 0 for IR radiation. This combination of risk group and hazard does not require marking (Table 1 of IEC/TR 62471-2:2009).

Hazards from UV radiation of GLS lamps will be covered by Clause 14 of IEC 60968.

Hence, IEC 62471 does not require any additional marking for GLS lamps.

# SELF-BALLASTED LAMPS FOR GENERAL LIGHTING SERVICES –

## Safety requirements

### 1 Scope

This International Standard specifies the safety and interchangeability requirements, together with the test methods and conditions, required to show compliance of tubular fluorescent and other gas-discharge lamps with integrated means for controlling starting and stable operation (self-ballasted lamps), intended for domestic and similar general lighting purposes, having:

- a rated wattage up to 60 W;
- a rated voltage of 100 V to 250 V;
- Edison screw or bayonet caps.

The requirements of this standard relate only to type testing.

Recommendations for whole product testing or batch testing are under consideration.

This part of the standard covers photobiological safety according to IEC 62471 and IEC/TR 62471-2.

Blue light and infrared hazards are below the level which requires marking.

### 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, *Lamp caps and holders together with gauges for the control of interchangeability and safety*

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 60238, *Edison screw lampholders*

IEC 60360, *Standard method of measurement of lamp cap temperature rise*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products*

IEC 60695-2-12:2010, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability test method for materials*

IEC 60695-2-13:2010, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glow-wire ignitability test method for materials*

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

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

#### 3.1

##### **self-ballasted lamp**

unit which cannot be dismantled without being permanently damaged, provided with a lamp cap and incorporating a light source and any additional elements necessary for starting and stable operation of the light source

#### 3.2

##### **type**

lamps that, independent of the type of cap, are identical in photometric and electrical rating

#### 3.3

##### **rated voltage**

voltage or voltage range marked on the lamp

#### 3.4

##### **rated wattage**

wattage marked on the lamp

#### 3.5

##### **rated frequency**

frequency marked on the lamp

#### 3.6

##### **cap temperature rise**

$\Delta t_s$

surface temperature rise (above ambient) of a standard test lampholder fitted to the lamp, when measured in accordance with the standard method described in IEC 60360

#### 3.7

##### **live part**

conductive part which may cause an electric shock in normal use

#### 3.8

##### **type test**

test or series of tests made on a type test sample for the purpose of checking compliance of the design of a given product with the requirements of the relevant standard

#### 3.9

##### **type test sample**

sample consisting of one or more similar units submitted by the manufacturer or responsible vendor for the purpose of the type test

#### 3.10

##### **specific effective radiant UV power**

effective power of the UV radiation of a lamp related to its luminous flux