

# **Luminaires —**

## **Part 2-10: Particular requirements — Portable luminaires for children**

The European Standard EN 60598-2-10:2003 has the status of a  
British Standard

ICS 29.140.40; 97.200.50

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The UK participation in its preparation was entrusted to Technical Committee CPL/34/4, Luminaires, which has the responsibility to:

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**Luminaire**  
**Part 2-10: Particular requirements -**  
**Portable luminaires for children**  
(IEC 60598-2-10:2003)

**Luminaire**  
**Partie 2-10: Règles particulières -**  
**Luminaire portatifs pour enfants**  
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**Teil 2-10: Besondere Anforderungen -**  
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(IEC 60598-2-10:2003)

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### **Foreword**

The text of document 34D/776/FDIS, future edition 2 of IEC 60598-2-10, prepared by SC 34D, Luminaires, of IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60598-2-10 on 2003-07-01.

This European Standard supersedes EN 60598-2-10: 1989 + A1:1991 + A2:1995.

This standard is intended to be read in conjunction with EN 60598-1:2000.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-07-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annex ZA is normative.

Annex ZA has been added by CENELEC.

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### **Endorsement notice**

The text of the International Standard IEC 60598-2-10:2003 was approved by CENELEC as a European Standard without any modification.

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## CONTENTS

10.1	General .....	4
10.2	General test requirements .....	5
10.3	Definitions .....	5
10.4	Classification .....	5
10.5	Marking .....	5
10.6	Construction .....	6
10.7	Creepage distances and clearances .....	7
10.8	Provision for earthing .....	7
10.9	Terminals .....	7
10.10	External and internal wiring .....	7
10.11	Protection against electric shock .....	7
10.12	Endurance tests and thermal tests .....	7
10.13	Resistance to dust, solid objects and moisture .....	8
10.14	Insulation resistance and electric strength .....	8
10.15	Resistance to heat, fire and tracking .....	8
Annex ZA (normative) Normative references to international publications with their corresponding European publications .....		9

## LUMINAIRES –

### Part 2-10 : Particular requirements – Portable luminaires for children

#### 10.1 General

##### 10.1.1 Scope

This part of IEC 60598 specifies requirements for portable luminaires for children and for use with tungsten filament lamps or single capped fluorescent lamps on a supply voltage not exceeding 250 V. It is to be read in conjunction with those sections of Part 1 to which reference is made.

This part is not applicable to the following:

- portable luminaires typically placed as an extra ornamental element in temporary decorative configurations due to festivities or celebrations;
- low illuminance background luminaires integral with a plug, i.e. forming part of a plug-in device;
- battery driven luminaires or luminaires not for direct connection to the main supply;
- toys;
- luminaires designed or clearly intended for adult use;
- luminaires with two-dimensional graphic reproductions of persons or animals (real or imaginary) on removable shades.

##### 10.1.2 Normative references

The following referenced documents are indispensable for the application 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 60598-2-4, *Luminaires - Part 2: Particular requirements - Section 4: Portable general purpose luminaires*

IEC 61558-2-6, *Safety of power transformers, power supply units and similar – Part 2-6: Particular requirements for safety isolating transformers for general use*

IEC 61558-2-7, *Safety of power transformers, power supply units and similar – Part 2: Particular requirements for transformers for toys*

IEC 61347-2-2:2000, *Lamp controlgear – Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps*

ISO 6941:1984, *Textile fabrics – Burning behaviour – Measurement of flame spread properties of vertically oriented specimens*

ISO 8124-1:2000, *Safety of toys – Part 1: Safety aspects related to mechanical and physical properties* (available in English only)

ISO 8124-2:1994, *Safety of toys – Part 2: Flammability*

ISO 8124-3:1997, *Safety of toys – Part 3: Migration of certain elements*

## 10.2 General test requirements

The provisions of Section 0 of IEC 60598-1 apply. The tests described in each appropriate section of IEC 60598-1 shall be carried out in the order listed in this part of IEC 60598.

## 10.3 Definitions

For the purpose of this part of IEC 60598, the definitions given in Section 1 of IEC 60598-1 apply together with the following definitions.

### 10.3.1

#### **portable luminaire for children**

luminaire that in normal use can be moved from one place to another while connected to the supply and which is designed to provide a level of safety in excess of that provided by a portable general purpose luminaire conforming with IEC 60598-2-4

NOTE A portable luminaire for children is intended for use by children who may not be under the supervision of more competent persons at the time of use.

### 10.3.2

#### **children**

persons less than 14 years of age

### 10.3.3

#### **removable component**

component which is intended to be removed from the luminaire without the use of a tool

## 10.4 Classification

Portable luminaires for children shall be classified in accordance with the provisions of Section 2 of IEC 60598-1 together with the requirements of 10.4.1.

**10.4.1** According to the type of protection against electric shock, portable luminaires for children shall be classified class II or class III and shall in addition be classified as suitable for direct mounting or standing on normally flammable surfaces.

For Class III luminaires, the rated voltage shall not exceed 24 V (SELV).

Class II luminaires intended for use with tungsten filament lamps shall operate from a transformer/converter giving a voltage not exceeding 24 V SELV, permanently connected to the luminaire with Class III insulated parts.

Class II luminaires intended for use with single capped fluorescent lamps shall be suitable only for such use.

## 10.5 Marking

The provisions of Section 3 of IEC 60598-1 apply together with the requirements of 10.5.1 to 10.5.3.

**10.5.1** All class III luminaires for children and intended for use with tungsten filament lamps shall be marked:

“For operation only with a short-circuit-proof safety isolating transformer according to IEC 61558-2-6 or a toys transformer according to IEC 61558-2-7” or, as applicable, “For operation only with an a.c. supplied electronic step-down converter for filament lamps according to IEC 61347-2-2, Annex I”.

The maximum output of the transformer or converter (in volt-amperes) shall be given on the luminaire or in an instruction leaflet supplied with the luminaire.

**10.5.2** The symbol denoting suitability for mounting on normally flammable surfaces is not required.

**10.5.3** For luminaires containing parts that would otherwise fail the requirements of 10.6.4 but are not intended for children under 36 months, the warning '**Not suitable for children under 36 months due to small removable parts**' shall be applied to the packing and any instructions.

## **10.6 Construction**

The provisions of Section 4 of IEC 60598-1 apply together with the requirements of 10.6.1 to 10.6.8.

**10.6.1** Portable luminaires for children intended for use with tungsten filament lamps shall be delivered with the transformer/converter giving SELV.

**10.6.2** Portable luminaires for children shall have adequate stability.

Compliance shall be checked by placing the luminaire in the most unfavourable position of normal use, on a plane inclined at an angle of 15° to the horizontal, the surface of the plane being such that the luminaire does not slide. The luminaire shall not overturn.

**10.6.3** Portable luminaires for children shall have adequate mechanical strength and be so constructed as to withstand rough handling.

Compliance shall be checked by the tests of 10.6.3.1 and 10.6.3.2 after which the luminaire shall fulfil the requirements of 10.6.7.

**10.6.3.1** Covers or similar parts forming part of the protection against overheating or protection against touching heated parts of the luminaire and any glass used in the construction of the luminaire (excluding the lamp or lamps) shall be tested with an impact energy of 0,7 Nm during the tests of 4.13 of Section 4 of IEC 60598-1.

**10.6.3.2** A portable luminaire for children, excluding any transformer/converter, is allowed to fall, in the most unfavourable position, once from a height of 850 mm ± 50 mm on to a steel plate with a 2 mm coating of rubber of Shore A hardness 75 ± 5.

**10.6.4** Unless marked as 10.5.3, Portable luminaires for children shall not incorporate small removable parts/components which would fit wholly within the cylinder shown in Figure 13 of ISO 8124-1:2000.

Attempt to place the part or component, without compressing and in any orientation, in the cylinder.

Compliance is checked by determining if the part or component does not fit entirely within the cylinder.

**10.6.5** The total length of non-detachable flexible cable or cord shall be restricted to 2 m.

Compliance is checked by measurement.

**10.6.6** Portable luminaires for children shall not incorporate switched lampholders. Where a switch is incorporated, it shall be either of the in-line cord type or incorporated within the body of the luminaire easily accessible and operated by a child.

Compliance is checked by inspection.

**10.6.7** Portable luminaires for children shall incorporate means preventing direct contact with hot parts.

Compliance is checked by measurement, inspection and by application of the small test finger of Figure 13 of IEC 61032 to determine accessibility of hot parts.

**10.6.8** Toy components incorporated in the construction of the luminaire shall conform completely with the applicable requirements of ISO 8124.

### **10.7 Creepage distances and clearances**

The provisions of Section 11 of IEC 60598-1 apply.

### **10.8 Provision for earthing**

Portable luminaires for children shall not be provided with means for protective or functional earthing.

### **10.9 Terminals**

The provisions of Sections 14 and 15 of IEC 60598-1 apply.

### **10.10 External and internal wiring**

The provisions of Section 5 of IEC 60598-1 apply.

### **10.11 Protection against electric shock**

The provisions of Section 8 of IEC 60598-1 apply.

### **10.12 Endurance tests and thermal tests**

The provisions of Section 12 of IEC 60598-1 apply together with the requirements of 10.12.1.

Luminaires with an IP classification greater than IP20 shall be subjected to the relevant tests of 12.4 and 12.6 of Section 12 of IEC 60598-1 and of 10.12.1 of this part of IEC 60598 after the test(s) of 9.2 but before the test(s) of 9.3 of Section 9 of IEC 60598-1 specified in 10.13.

The maximum temperature of accessible parts, including the lamp if accessible, shall not exceed 60 °C for metal parts and 75 °C for other parts, measured during normal operation.

**10.12.1** The test of 12.5 of IEC 60598-1 shall be made with the luminaire lying on a dull, black painted, 15 mm to 20 mm thick laminated wooden board. During the tests, the luminaire is covered completely or partly (whichever is more onerous), with one layer each of cotton sheet and blanket together, the blanket being uppermost. The blanket used for the tests shall be  $(25 \pm 5)$  mm thick and have a weight of  $(4 \pm 0,4)$  kg/m<sup>2</sup> and the cotton shall weigh between 140 g/m<sup>2</sup> and 175 g/m<sup>2</sup> dry. After the test, the luminaire shall comply with the requirements of 12.5 of IEC 60598-1 and additionally there shall be no deformation of the luminaire and no scorching or ignition of the cotton sheet.

### **10.13 Resistance to dust, solid objects and moisture**

The provisions of Section 9 of IEC 60598-1 apply. For portable luminaires for children having an IP classification greater than IP20, the order of the tests specified in Section 9 of IEC 60598-1 shall be replaced by the order of tests specified in 10.12.

### **10.14 Insulation resistance and electric strength**

The provisions of Section 10 of IEC 60598-1 apply.

### **10.15 Resistance to heat, fire and tracking**

The provisions of Section 13 of IEC 60598-1 apply together with the requirements of 10.15.1 and 10.15.2.

**10.15.1** Materials likely to produce a flash effect on the approach of a flame shall not be used.

**10.15.2** Where the luminaire incorporates parts having a pile surface (e.g. velvet, plush, imitation fur) or other textile surface, a sample of the surface is tested in accordance with 10.15.2.1. The rate of spread of flame on the surface shall not be more than 30 mm/s.

**10.15.2.1** The parts to be tested are subjected to the burning behaviour test of ISO 6941, the test flame being applied at an angle of 45° for 3 s so that the distance between the edge of the burner tube and the sample is approximately 5 mm and the flame makes contact at least 20 mm above the lower edge of the sample. After removal of the flame, the time taken for any flame to reach the upper edge of the sample from point of application is measured in order to determine the spread. Where the flame does not reach the edge, because it has self-extinguished, the part is considered as being in compliance with the requirement.

**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60598-2-4	- <sup>1)</sup>	Luminaires Part 2: Particular requirements Section 4: Portable general purpose luminaires	EN 60598-2-4	1997 <sup>2)</sup>
IEC 61558-2-6	- <sup>1)</sup>	Safety of power transformers, power supply units and similar Part 2-6: Particular requirements for safety isolating transformers for general use	EN 61558-2-6	1997 <sup>2)</sup>
IEC 61558-2-7 (mod)	- <sup>1)</sup>	Part 2-7: Particular requirements for transformers for toys	EN 61558-2-7 + A11	1997 <sup>2)</sup> 2002
IEC 61347-2-2	2000	Lamp controlgear Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps	EN 61347-2-2 + corr. July	2001 2003
ISO 6941	1984	Textile fabrics - Burning behaviour - Measurement of flame spread properties of vertically oriented specimens	EN ISO 6941 <sup>3)</sup>	1995
ISO 8124-1	2000	Safety of toys Part 1: Safety aspects related to mechanical and physical properties	-	-
ISO 8124-2	1994	Safety of toys Part 2: Flammability	-	-
ISO 8124-3	1997	Safety of toys Part 3: Migration of certain elements	-	-

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

<sup>3)</sup> EN ISO 6941 includes A1:1992 to ISO 6941.

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