PD IEC TR 62595-1-3:2019

BSI Standards Publication

Display lighting unit

Part 1-3: Lighting units with arbitrary shapes

bsi.

National foreword

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The UK participation in its preparation was entrusted to Technical Committee EPL/47, Semiconductors.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Display lighting unit –
Part 1-3: Lighting units with arbitrary shapes

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC TR 62595-1-3, which is a technical report, has been prepared by IEC technical committee 110: Electronic displays.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
110/1018/DTR	110/1064/RVDTR

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 62595 series, published under the general title *Display lighting unit*, 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 "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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

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

Recent developments in materials for flexible lighting sources (FLSs) with arbitrary shapes such as organic light emitting devices (OLEDs) have boosted their fabrication process as well as expanding their applications in various fields, for example electronic displays and wearable display devices. Since FLSs can emit light in a curved and deformed shape even under external stress, which is different from that of the devices with rigid substrates, these characteristics and performances require new evaluation and measurement methods. This document focuses on common issues of light emission from FLSs such as spatial uniformity of luminance and colour, and angular distribution of luminance and colour. This document delivers an archetype of a curved FLS's light emission and its measurement. The intent of this document is to provide guidance for the development of future measurement standards.

DISPLAY LIGHTING UNIT –

Part 1-3: Lighting units with arbitrary shapes

1 Scope

This part of IEC 62595 focuses on common issues of light emission such as spatial uniformity of luminance and colour, and angular distribution of luminance and colour, from lighting units with arbitrary shapes like flexible lighting sources (FLSs). This document provides a model of light emission from a curved FLS and of light measurement on a curved FLS. Because the development of flexible liquid crystal panels is in progress (see the notes), the intent of this document is to provide guidance for the development of future measurement standards. This document is applicable to FLSs either as light sources, products or elements with arbitrary shapes of geometrical curvature having different spectral and spatial characteristics of light emission.

NOTE 1 Almost 20 years ago plastic LCDs were developed and used in a few applications.

NOTE 2 Flexible BLUs have been used for bendable LC panels in recent years.

NOTE 3 Recent transmissive and transflective flexible LCs require flexible BLUs.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Terms and definitions

3.1.1
plane FLS
light emission from a flat surface

3.1.2
convex FLS
light emission from a convex curved surface

3.1.3
concave FLS
light emission from a concave curved surface

3.1.4
transparent FLS
FLS with transparent substrate that emits light from both front and back surfaces, or otherwise from the inner or outer surfaces