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BSI Standards Publication

Electronic displays

Part 1-31: Generic — Practical information on the use of light measuring devices

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National foreword

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TECHNICAL REPORT

colour inside

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Electronic displays –
Part 1-31: Generic – Practical information on the use of light measuring devices

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ELECTRONIC DISPLAYS –

Part 1-31: Generic – Practical information on the use of light measuring devices

FOREWORD

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110/1258/DTR	110/1281A/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62977 series, published under the general title *Electronic displays*, can be found on the IEC website.

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- replaced by a revised edition, or
- amended.

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INTRODUCTION

Measurements of the optical characteristics of electronic displays are primarily affected by three factors: measuring procedures, displays (devices under test: DUTs), and light measuring devices (LMDs), for which there are many international standards supporting consistent and comparable measurements. Most of them, however, provide only limited information on LMDs, making it difficult to appropriately select and use the LMD for the measurement objective. The purpose of this document is to provide best practices and suggestions which are missing in the standards.

This document addresses how the major properties of a typical LMD affect the measurement results. It is often impractical and unnecessary to consider the influences of all properties of LMDs and all characteristics of DUTs as well as their interactions and influences on the measurement results. Therefore, the multiple interaction effects that exist are beyond the scope of this document. Due to the rapid innovation and abundance of LMDs, covering all types of LMDs is also outside the objectives of this document.

ELECTRONIC DISPLAYS –

Part 1-31: Generic – Practical information on the use of light measuring devices

1 Scope

This part of IEC 62977 provides practical information on light measuring devices (luminance meters, colorimeters, and spectroradiometers) with luminance measuring optics for the characterization of electronic displays.

2 Normative references

There are no normative references in this document.

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

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:

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

NOTE CIE Electronic international lighting vocabulary (e-ILV) is also available at http://cie.co.at/e-ilv.

3.1.1
repeatability
<of an LMD> closeness of agreement between indications or measured quantity values obtained by replicated measurements over a short period of time using a specific LMD under conditions specified by the LMD manufacturer

Note 1 to entry: Repeatability of an LMD is usually expressed numerically by statistical quantities, such as standard deviation, variance, or coefficient of variation (relative standard deviation) under the specified conditions of measurement.

Note 2 to entry: The influence on measurement repeatability caused by fluctuations of the measured light source and by the measurement procedure is assumed to be negligible when the manufacturer specifies the repeatability of an LMD. Manufacturers often specify the type of light source and measurement conditions used for determining the repeatability of an LMD.

Note 3 to entry: Measurement precision is the closeness of agreement between indications or measured quantity values obtained by replicate measurements on the same or similar objects under specified conditions. Measurement repeatability is measurement precision under a set of repeatability conditions of measurement that includes the same measurement procedures, same operators, same measuring system, same operating conditions, same location, and replicate measurements on the same or similar objects over a short period of time. Measurement reproducibility is measurement precision under a set of reproducibility conditions of measurement that includes different locations, operators, measuring systems, and replicate measurements on the same or similar objects [1], [2][1].

[1] Numbers in square brackets refer to the Bibliography.