

TECHNICAL REPORT



AMENDMENT 1

Electronic displays –

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

(standards.iteh.ai)

IEC TR 62977-1-31:2021/AMD1:2022

<https://standards.iteh.ai/catalog/standards/sist/691c3e5f-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2022 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

[IEC TR 62977-1-31:2021/AMD1:2022](https://standards.iteh.ai/catalog/standards/sist/691c3e5f-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022)

<https://standards.iteh.ai/catalog/standards/sist/691c3e5f-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022>

TECHNICAL REPORT



AMENDMENT 1

iTeh STANDARD

Electronic displays –
Part 1-31: Generic – Practical information on the use of light measuring devices
(standards.iteh.ai)

IEC TR 62977-1-31:2021/AMD1:2022

<https://standards.iteh.ai/catalog/standards/sist/691c3e5f-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.120; 31.260

ISBN 978-2-8322-1087-8

Warning! Make sure that you obtained this publication from an authorized distributor.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRONIC DISPLAYS –

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

AMENDMENT 1

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to IEC 62977-1-31:2021 has been prepared IEC technical committee 110: Electronic displays.

The text of this Amendment is based on the following documents:

Draft	Report on voting
110/1380/DTR	110/1404A/DVDTR

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 Amendment 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/.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

iTeh STANDARD
PREVIEW
(standards.iteh.ai)
INTRODUCTION to Amendment 1

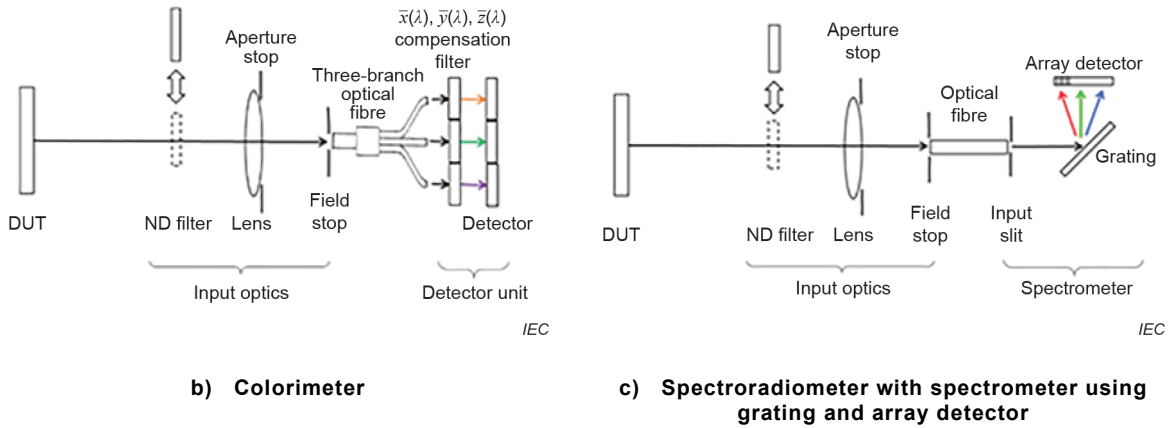
This document provides additional information to IEC TR 62977-1-31:2021 regarding the influence of spectral stray light and spectral bandwidth of a spectroradiometer on chromaticity measurements. It is described in Annex E.

This document also provides the corrections of editorial errors of IEC TR 62977-1-31:2021. The corrections are:

- Typos are fixed:
 - “fiber” and “ $x(\lambda)$, $y(\lambda)$, $z(\lambda)$ ” is replaced with “fibre” and “ $\bar{x}(\lambda)$, $\bar{y}(\lambda)$, $\bar{z}(\lambda)$ ”, respectively in Figure 2,
 - “(%)” in the label of vertical axis is removed in Figure 9, Figure 10, and Figure 12,
 - “0” label of the tick mark of vertical axis is replaced with “1” in Figure C.4.
- The lists for Formula (A.1) and Formula (B.1) are aligned.

Figure 2 – Example of configurations for the input optics and detector

Replace, in Figure 2, Figure 2b) and Figure 2c) with the following new Figure 2b) and Figure 2c):



5.5.2.1 General

Replace, in NOTE 2, the fourth sentence with the following new sentence:

Experimental data demonstrating the influence of spectral stray light in a specific application are shown in Annex E [12].

Add, after NOTE 2, the following new NOTE 3.

NOTE 3 The influence of spectral bandwidth on chromaticity measurements of narrow spectral linewidth light is shown in Annex E.

<https://standards.iteh.ai/catalog/standards/sist/691c3e5f-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022>

Figure 9 – Calculated chromaticity differences as a function of wavelength error

Replace Figure 9 with the following new figure:

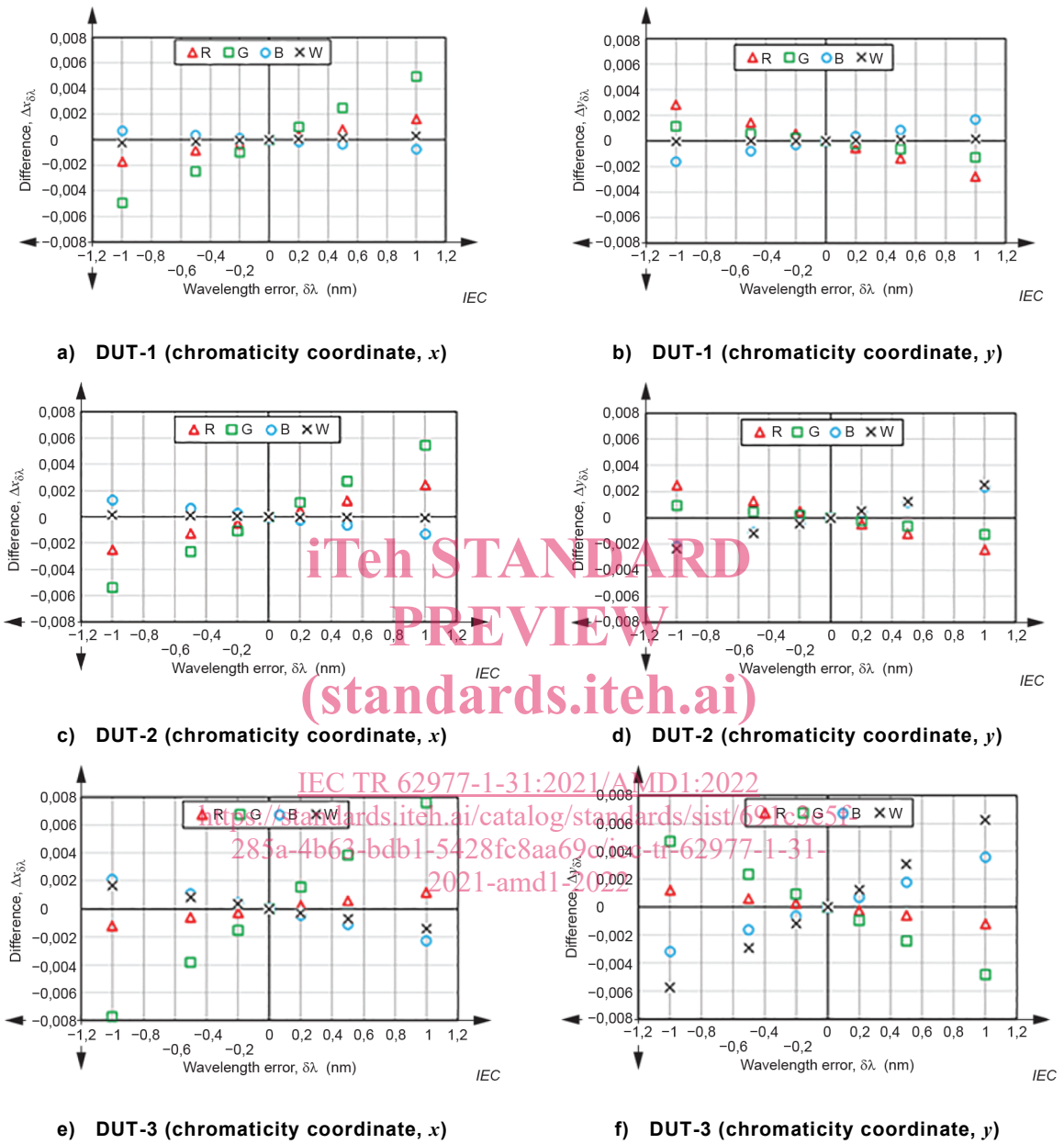
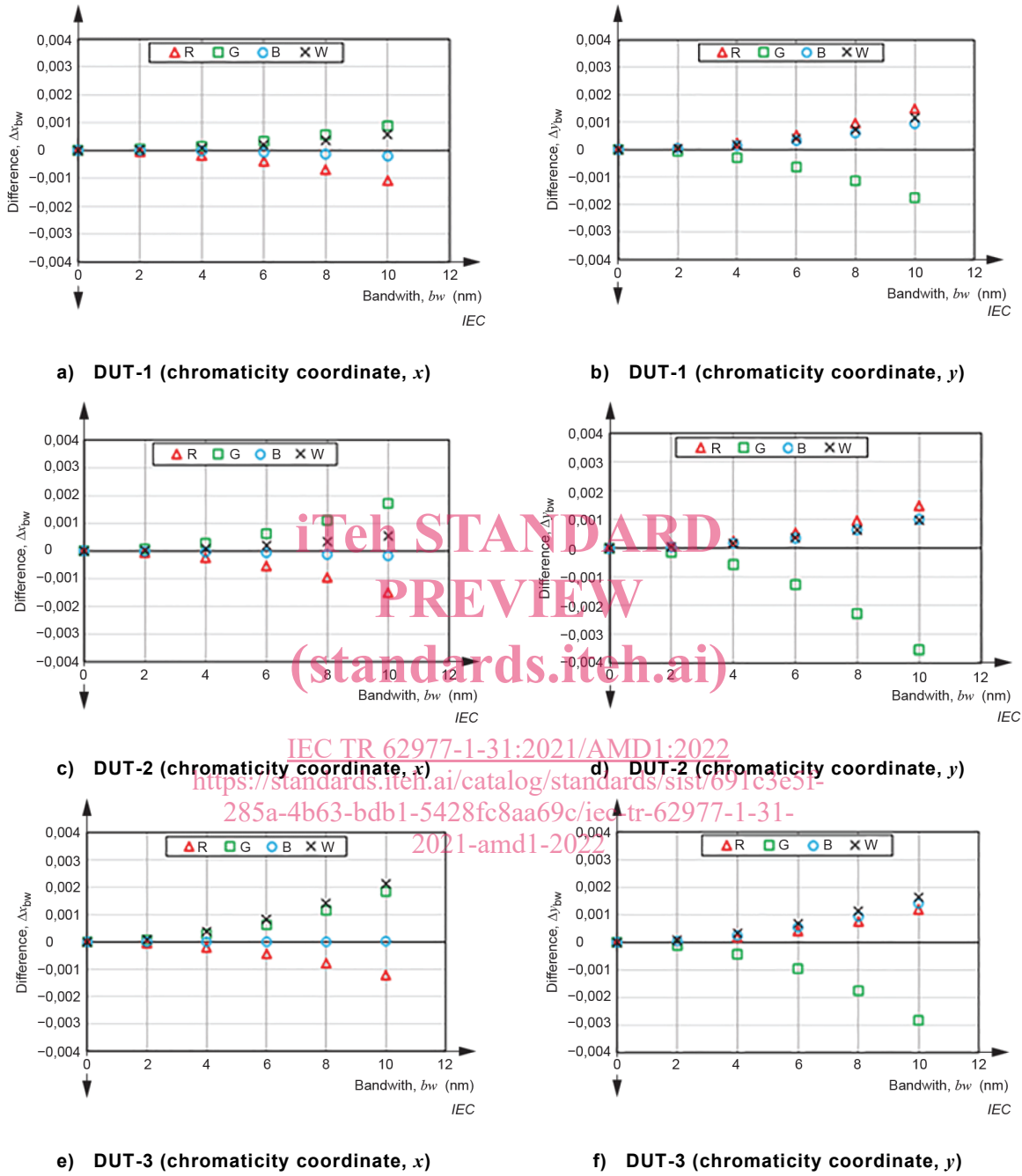


Figure 10 – Calculated chromaticity differences as a function of spectral bandwidth

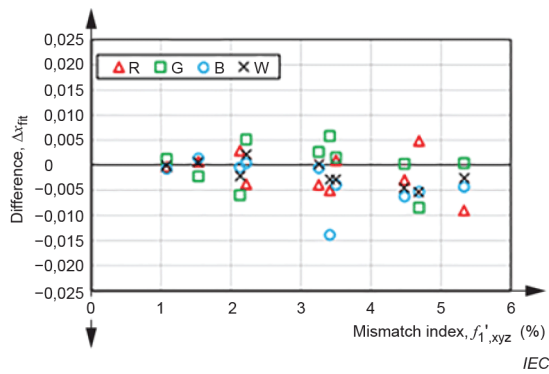
Replace Figure 10 with the following new figure:



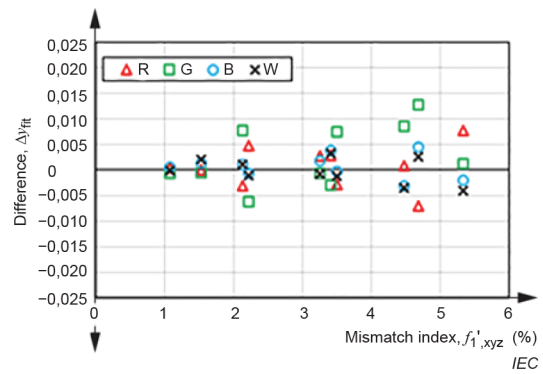
IEC TR 62977-1-31:2021/AMD1:2022
<https://standards.iteh.ai/catalog/standards/sist/691c3e51-285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022>

Figure 12 – Calculated chromaticity differences as a function of $f_1',_{xyz}$

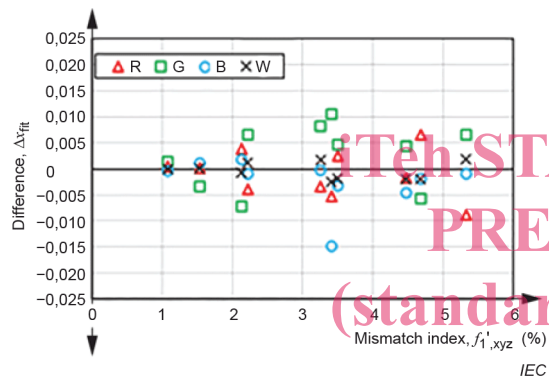
Replace Figure 12 with the following new figure:



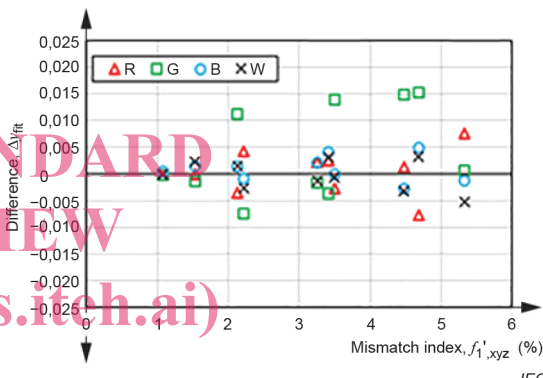
a) DUT-1 (chromaticity coordinate, x)



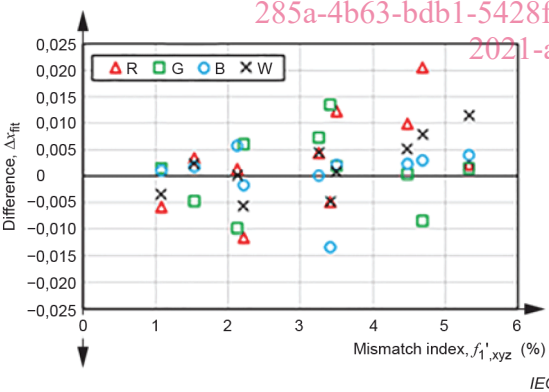
b) DUT-1 (chromaticity coordinate, y)



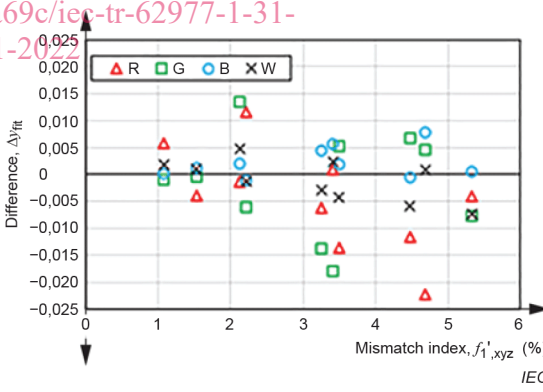
c) DUT-2 (chromaticity coordinate, x)



d) DUT-2 (chromaticity coordinate, y)



e) DUT-3 (chromaticity coordinate, x)



f) DUT-3 (chromaticity coordinate, y)

IEC TR 62977-1-31:2021/AMD1:2022
<https://standards.iteh.ai/catalog/standards/iec/62977-1-31-2021-amd1-2022>
 285a-4b63-bdb1-5428fc8aa69c/iec-tr-62977-1-31-2021-amd1-2022

Annex A – Photometry and colorimetry

A.2 Photometry

Replace the list for Formula (A.1) with the following new list and text:

- L_v is the luminance ($\text{cd}\cdot\text{m}^{-2}$),
- $L_e(\lambda)$ is the spectral radiance at wavelength λ ($\text{W}\cdot\text{sr}^{-1}\cdot\text{m}^{-2}\cdot\text{nm}^{-1}$),
- K_m is the maximum luminous efficacy ≈ 683 ($\text{lm}\cdot\text{W}^{-1}$).

Integration is carried out over a wavelength range from 360 nm to 830 nm [4].

Annex B – Method for reducing the measurement difference of colorimeters

B.2.1 Matrix calibration process 1: RGB calibration

Replace the list for Formula (B.1) with the following new list:

- $L_{e,Q}(\lambda)$, $L_{e,R}(\lambda)$, $L_{e,G}(\lambda)$, and $L_{e,B}(\lambda)$ are the spectral radiances of colours Q, R, G, and B, respectively,
- k_R , k_G , and k_B are the independent coefficients of colours R, G, and B, respectively.

Annex C – Input data in Clause 5 and Clause 6, and calculation methods in 5.8 and 6.5

Replace Figure C.4 with the following new figure:

