IEC TS 62565-4-4

Edition 1.0 2025-04

TECHNICAL SPECIFICATION

Nanomanufacturing – Product specification – Part 4-4: Nanophotonic products – Blank detail specification: Quantum dot enabled light conversion films

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC TS 62565-4-4:2025
https://standards.iteh.ai/catalog/standards/iec/b4ab3cfd-ff7d-434b-9749-4cd97a41d271/iec-ts-62565-4-4-2025

IEC TS 62565-4-4:2025-04(en)

THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2025 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 Varembé
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 It also gives information on projects, replaced and withdrawn publications.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 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.

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 Products & Services Portal - products.iec.ch
Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC TS 62565-4-4:2025
https://standards.iteh.ai/catalog/standards/iec/b4ab3cfd-ff7d-434b-9749-4cd97a41d271/iec-ts-62565-4-4-2025

IEC TS 62565-4-4

Edition 1.0 2025-04

TECHNICAL SPECIFICATION

Nanomanufacturing – Product specification –
Part 4-4: Nanophotonic products – Blank detail specification: Quantum dot enabled light conversion films

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC TS 62565-4-4:2025
https://standards.iteh.ai/catalog/standards/iec/b4ab3cfd-ff7d-434b-9749-4cd97a41d271/iec-ts-62565-4-4-2025

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 07.120

ISBN 978-2-8327-0226-0

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

® Registered trademark of the International Electrotechnical Commission

CONTENTS

FOREWORD 5

INTRODUCTION 7

1 Scope 8

2 Normative references 8

3 Terms and definitions 9

- 3.1 General terms 9
- 3.2 General product description and procurement information 10
- 3.3 Physical key control characteristics 11
- 3.4 Mechanical key control characteristics 11
- 3.5 Optical key control characteristics 12
- 3.6 Reliability control characteristics 13
- 3.7 Measurement methods 13

4 General introduction regarding measurement methods 13

5 Specification format 14

- 5.1 General product description and procurement information 14
- 5.2 General material information of QDs and Q-LCF 15
- 5.3 Physical key control characteristics 16
- 5.4 Mechanical key control characteristics 16
- 5.5 Optical key control characteristics 16
- 5.6 Reliability key control characteristics 17

6 Overview of test methods 17

Annex A (normative) Supporting information for standardized KCC measurement procedures 21

- A.1 General 21
- A.2 Thickness: Mechanical scanning 21
  - A.2.1 General 21
  - A.2.2 Measurement standard 21
- A.3 Surface resistivity: DC method 21
  - A.3.1 General 21
  - A.3.2 Measurement standard 21
- A.4 Coefficient of linear thermal expansion: Thermomechanical analysis 22
  - A.4.1 General 22
  - A.4.2 Measurement standard 22
- A.5 Haze: Hazemeter or spectrophotometer 22
  - A.5.1 General 22
  - A.5.2 Measurement standard 22
- A.6 Total luminous transmittance: Hazemeter or spectrophotometer 22
  - A.6.1 General 22
  - A.6.2 Measurement standard 22
- A.7 Tensile strength: Tensile testing machine 22
  - A.7.1 General 22
  - A.7.2 Measurement standard 22
- A.8 Elongation at break: Tensile testing machine 23
  - A.8.1 General 23
  - A.8.2 Measurement standard 23
- A.9 180° peel strength: Peel test 23

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC TS 62565-4-4:2025
https://standards.iteh.ai/catalog/standards/iec/b4ab3cfd-ff7d-434b-9749-4cd97a41d271/iec-ts-62565-4-4-2025

A.9.1 General 23
A.9.2 Measurement standard 23
A.10 Pencil hardness: Pencil test 23
A.10.1 General 23
A.10.2 Measurement standard 23
A.11 Thermoshrinking percentage: Oven heating method 23
A.11.1 General 23
A.11.2 Measurement standard 23
A.12 Peak wavelength: BLU with spectroradiometer 23
A.12.1 General 23
A.12.2 Measurement standard 24
A.12.3 Adaptations and modifications required 24
A.13 FWHM: BLU with spectroradiometer 24
A.13.1 General 24
A.13.2 Measurement standard 24
A.13.3 Adaptations and modifications required 24
A.14 Chromaticity coordinate: BLU with spectroradiometer 24
A.14.1 General 24
A.14.2 Measurement standard 24
A.14.3 Adaptations and modifications required 24
A.15 Chromaticity coordinate non-uniformity: BLU with spectroradiometer 25
A.15.1 General 25
A.15.2 Measurement standard 25
A.15.3 Adaptations and modifications required 25
A.16 Luminance: BLU with spectroradiometer 26
A.16.1 General 26
A.16.2 Measurement standard 26
A.16.3 Adaptations and modifications required 26
A.17 Luminance uniformity: BLU with spectroradiometer 26
A.17.1 General 26
A.17.2 Measurement standard 26
A.17.3 Adaptations and modifications required 26
Annex B (informative) Guidance for KCC measurement procedures if no standard is available 27
B.1 General 27
B.2 Light conversion efficiency: BLU with spectroradiometer 27
B.2.1 General 27
B.2.2 Measurement standard 27
B.3 Photon absorptance: BLU with spectroradiometer 29
B.3.1 General 29
B.3.2 Measurement standard 29
Bibliography 30

Figure A.1 –Schematic structure of Q-LCF 21
Figure A.2 –Measuring arrangement for Q-LCF 25
Figure B.1 – Standard measurement system 28

Table 1 – General product description and procurement information 14

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC TS 62565-4-4:2025
https://standards.iteh.ai/catalog/standards/iec/84ab5efd-1f7d-434b-9749-4cd97a41d271/iec-ts-62565-4-4-2025