

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Optical circuit boards –

Part 4-214: Interface standards – Terminated waveguide OCB assembly using a single-row thirty-two-channel symmetric PMT connector

Cartes à circuits optiques –

Partie 4-214: Normes d'interface – Terminaison d'un ensemble de cartes à circuits optiques à guides d'ondes utilisant un connecteur PMT symétrique de trente-deux canaux sur une seule rangée



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2020 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.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
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 It also gives information on projects, replaced and withdrawn publications.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 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.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Optical circuit boards –

Part 4-214: Interface standards – Terminated waveguide OCB assembly using a single-row thirty-two-channel symmetric PMT connector

Cartes à circuits optiques –

Partie 4-214: Normes d'interface – Terminaison d'un ensemble de cartes à circuits optiques à guides d'ondes utilisant un connecteur PMT symétrique de trente-deux canaux sur une seule rangée

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.180.01

ISBN 978-2-8322-9167-2

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	5
3 Terms and definitions	5
4 Description	5
5 Interface dimensions of thirty-two-channel for the assembly, guide pins and clamp spring.....	6
Annex A (informative) Dimensions of an example of components for the assembly	10
A.1 Symmetric PMT connector	10
A.2 Waveguide OCB	11
Annex B (informative) Dimensions of an example of a single-row thirty-two-channel MT ferrule.....	13
Bibliography.....	16
Figure 1 – Interconnection between the assembly and the MT connector.....	6
Figure 2 – Interface dimensions of thirty-two-channel for the assembly.....	6
Figure 3 – Interface views of thirty-two-channel for the assembly.....	7
Figure 4 – Interface views of the guide pin.....	8
Figure 5 – Interface views of the clamp spring	8
Figure A.1 – An example of components of the symmetric PMT connector.....	10
Figure A.2 – Expanded view of end-face for an example of the single-row thirty-two-channel PMT body.....	11
Figure A.3 – Positions of the example of thirty-two channel ports of OCB	12
Figure B.1 – Interface dimensions of an example of single-row thirty-two-channel MT ferrule.....	13
Figure B.2 – Interface views of an example of single-row thirty-two-channel MT ferrule	14
Table 1 – Interface dimensions of thirty-two-channel for the assembly.....	7
Table 2 – Positions of cores of thirty-two-channel for the assembly.....	7
Table 3 – Interface dimensions of the guide pin	8
Table 4 – Interface dimensions of the clamp spring.....	9
Table A.1 – Interface dimensions of an example of the single-row thirty-two-channel for PMT body.....	11
Table A.2 – Positions of cores for an example of the thirty-two-channel ports of OCB.....	12
Table B.1 – Interface dimensions of an example of single-row thirty-two-channel MT ferrule.....	14
Table B.2 – Fibre hole positions of an example of single-row thirty-two-channel MT ferrule.....	15

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL CIRCUIT BOARDS –

Part 4-214: Interface standards – Terminated waveguide OCB assembly using a single-row thirty-two-channel symmetric PMT connector

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 Publications”). 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 interpretation of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62496-4-214 has been prepared by IEC technical committee 86: Fibre optics.

The text of this International Standard is based on the following documents:

CDV	Report on voting
86/563/CDV	86/564/RVC

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 62496 series, published under the general title *Optical circuit boards*, 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.

Currently in preview, click buy full version

OPTICAL CIRCUIT BOARDS –

Part 4-214: Interface standards – Terminated waveguide OCB assembly using a single-row thirty-two-channel symmetric PMT connector

1 Scope

This part of IEC 62496 defines the standard interface dimensions for a terminated waveguide optical circuit board (OCB) assembly (referred to simply as "assembly") using single-row thirty-two-channel connectors for polymer waveguides connected with a symmetric PMT connector.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62496-1, *Optical circuit boards – Part 1: General*

IEC 62496-4, *Optical circuit boards – Part 4: Interface standards – General and guidance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62496-1 and IEC 62496-4 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>

4 Description

The assembly is an assembly comprised of a symmetric PMT connector and a thirty-two-channel waveguide OCB. The symmetric PMT connector is a rectangular connector having the same outer dimensions as the type MT connector specified in IEC 61754-5. The symmetric PMT connector is aligned using alignment pins and is normally secured by the use of a latching spring and mates with the type MT connector as shown in Figure 1. Dimensions of components for the assembly are shown in Annex A. The waveguide OCB comprises a planar light-guide consisting of a core and cladding material appropriate to transmit light as the operational wavelengths require, the light-guide being supported on a substrate. Preferably, the substrate will be flexible in order to accommodate compliance to the MT connector. The cores of the waveguide OCB are aligned with the optical fibres of the MT connector after mating using two guide pins and a clamp spring. Dimensions of a single-row thirty-two-channel MT ferrule are shown in Annex B. This symmetric PMT connector is not intermateable with the standard 16 channel MT ferrules.