IEC 62496-4-214

Edition 1.0 2020-05

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

IEC 62496-4-214:2020-05(en-fr)

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OPTICAL CIRCUIT BOARDS –

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

FOREWORD

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- withdrawn,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.

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.

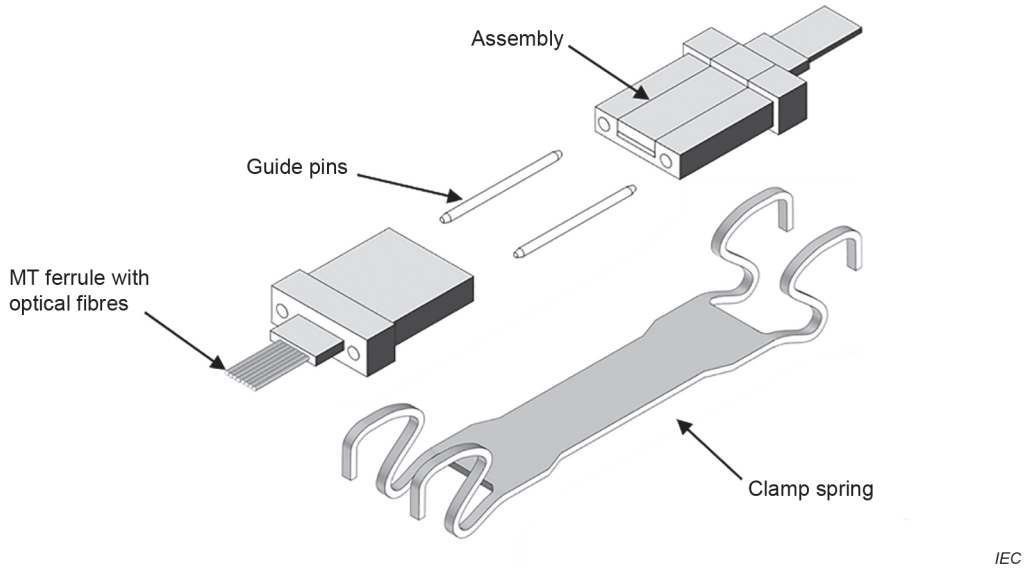


Figure 1 – Interconnection between the assembly and the MT connector

5 Interface dimensions of thirty-two-channel for the assembly, guide pins and clamp spring

Figure 2 and Figure 3 and Table 1 show interface dimensions for the assembly. Table 2 shows positions of the cores for the assembly. The origin point of the assembly is the midpoint of the centres of two guide-holes. Figure 4 and Table 3 show the interface dimensions for a guide pin. Figure 5 and Table 4 show the interface dimensions for a clamp spring.

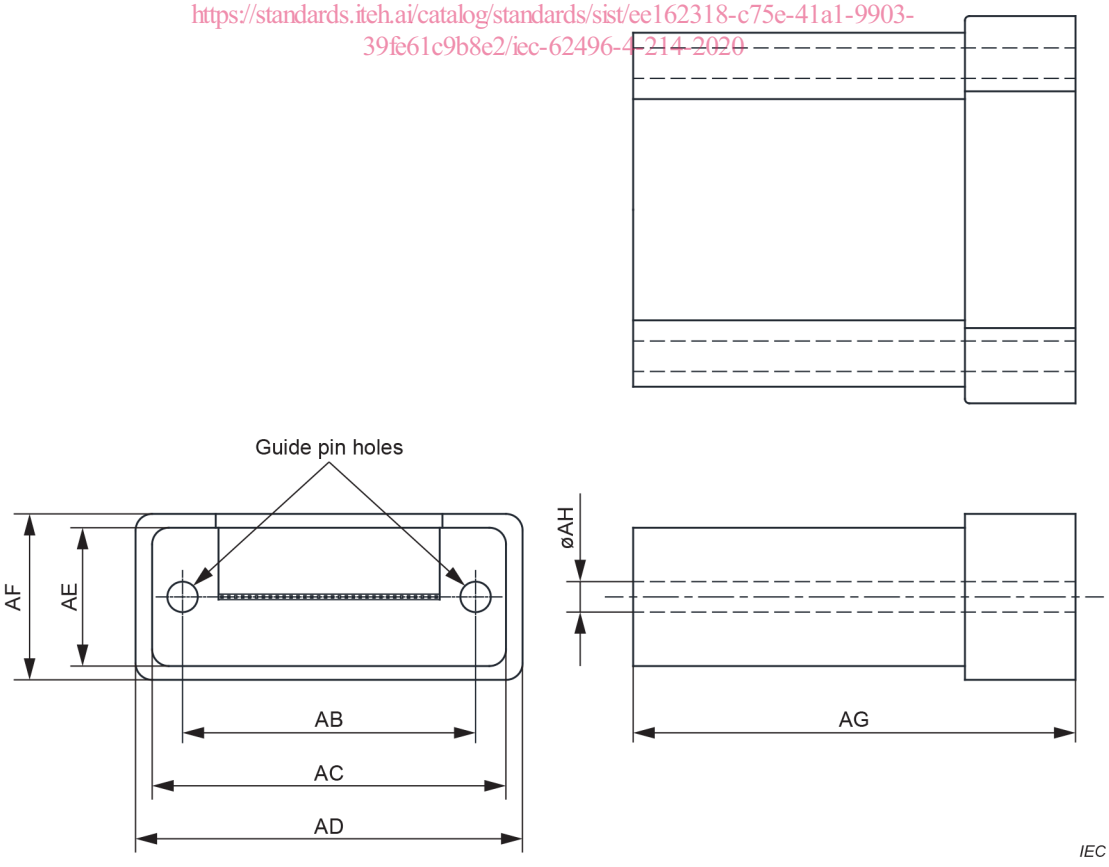
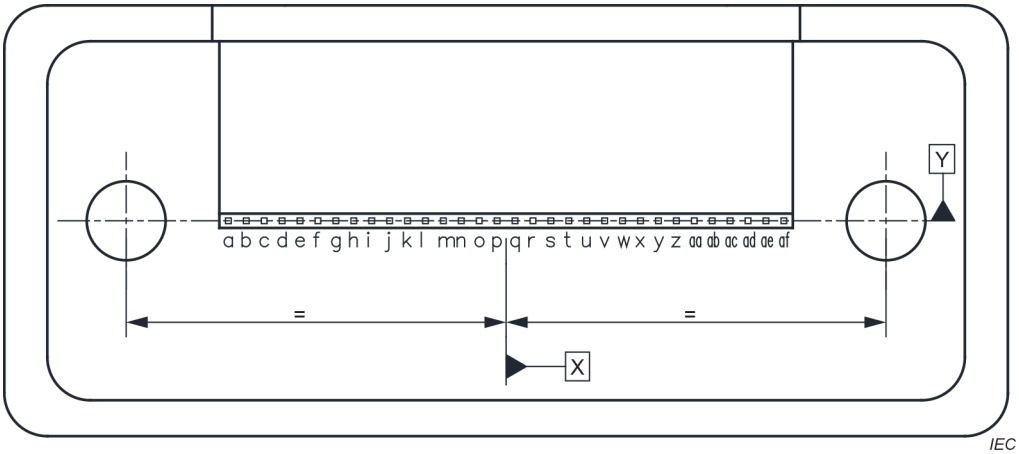


Figure 2 – Interface dimensions of thirty-two-channel for the assembly



NOTE The X-axis is defined as the line connecting the two centres of two guide pin holes. The Y axis is defined as the line orthogonal to the X axis intersecting the midpoint of the centres of the two guide pin holes. X shows the zero point of the X-axis and Y shows the zero point of the Y-axis.

Figure 3 – Interface views of thirty-two-channel for the assembly

Table 1 – Interface dimensions of thirty-two-channel for the assembly

Reference	Dimensions mm	
	Minimum	Maximum
AB	5,297	5,303
AC	6,300	6,500
AD	6,900	7,100
AE	2,400	2,500
AF	2,900	3,100
AG	7,900	8,100
AH	0,549	0,551

Table 2 – Positions of cores of thirty-two-channel for the assembly

Reference	X mm	Y mm	Reference	X mm	Y mm
a	−1,937 5	0,000	q	0,062 5	0,000
b	−1,812 5	0,000	r	0,187 5	0,000
c	−1,687 5	0,000	s	0,312 5	0,000
d	−1,562 5	0,000	t	0,437 5	0,000
e	−1,437 5	0,000	u	0,562 5	0,000
f	−1,312 5	0,000	v	0,687 5	0,000
g	−1,187 5	0,000	w	0,812 5	0,000
h	−1,062 5	0,000	x	0.937 5	0,000
i	−0,937 5	0,000	y	1,062 5	0,000
j	−0,812 5	0,000	z	1,187 5	0,000
k	−0,687 5	0,000	aa	1,312 5	0,000
l	−0,562 5	0,000	ab	1,437 5	0,000
m	−0,437 5	0,000	ac	1,562 5	0,000
n	−0,312 5	0,000	ad	1,687 5	0,000
o	−0,187 5	0,000	ae	1,812 5	0,000
P	−0,062 5	0,000	af	1,937 5	0,000

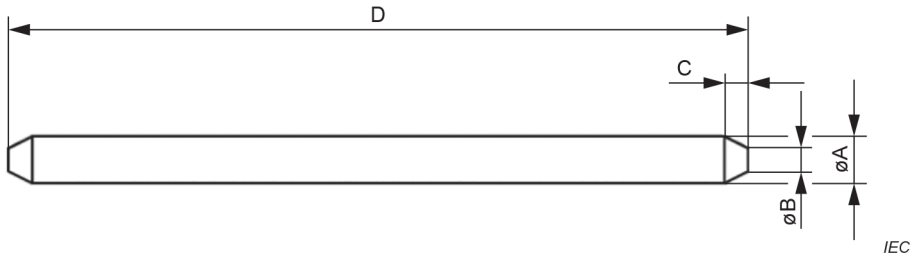


Figure 4 – Interface views of the guide pin

Table 3 – Interface dimensions of the guide pin

References	Dimensions mm	
	Minimum	Maximum
A	0,547	0,549
B	0,1	0,2
C	0,15	0,35
D	10,8	11,2

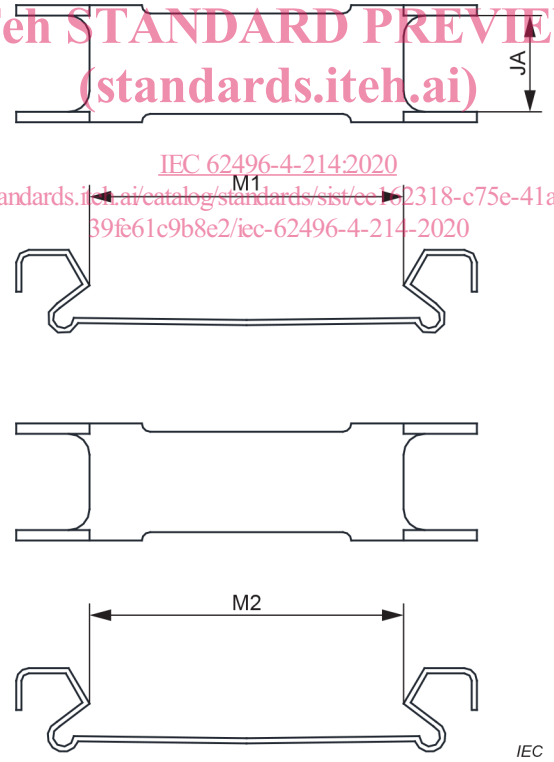


Figure 5 – Interface views of the clamp spring

Table 4 – Interface dimensions of the clamp spring

References	Dimensions mm	
	Minimum	Maximum
M1[a]	14,8	15,2
M2[b]	15,8	16,2
JA	4,55	4,65

[a] Length in free condition.

[b] Compression force for clamping condition shall be 6,8 N to 12,8 N when dimension M2 is between 15,8 mm and 16,2 mm.

Annex A
(informative)

Dimensions of an example of components for the assembly

A.1 Symmetric PMT connector

The example of a symmetric PMT connector is composed of a PMT body, a PMT cover and a PMT boot, as shown in Figure A.1. The waveguide OCB is embedded and terminated between the PMT body and the PMT cover.

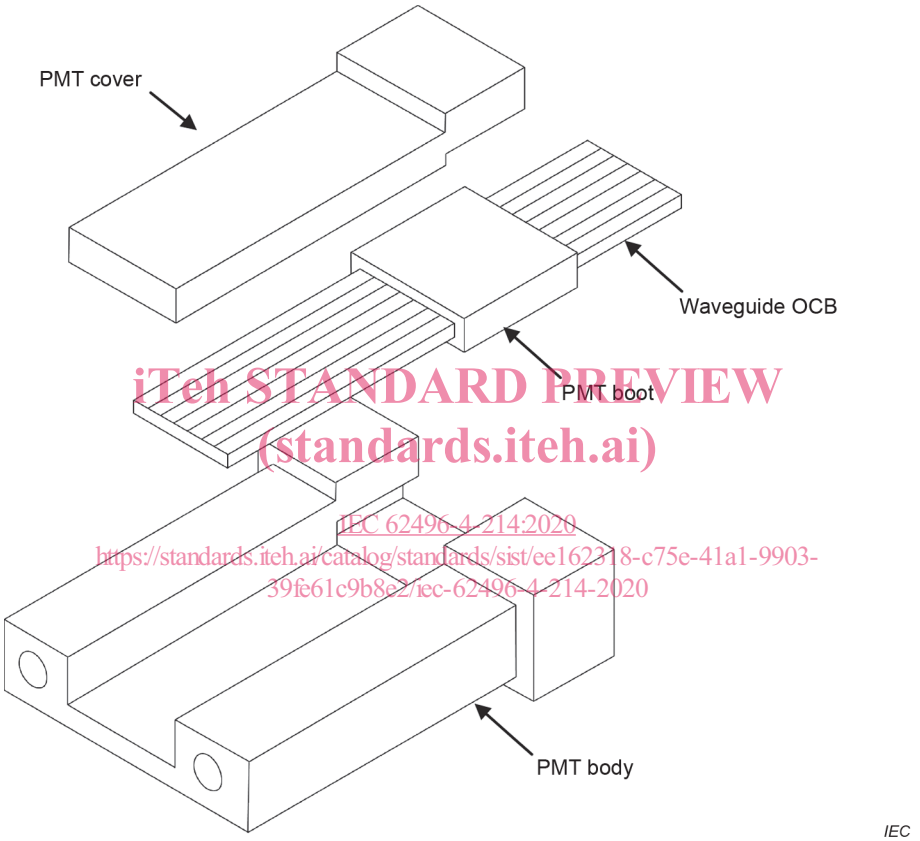


Figure A.1 – An example of components of the symmetric PMT connector

Figure A.2 and Table A.1 show the dimensions of an example of the thirty-two-channel PMT body.