

INTERNATIONAL STANDARD

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Optical circuit boards -

Part 4-3: Interface standards - Terminated waveguide OCB assembly using a single-row thirty-two-channel PMT connector intermateable with a 250- μ m pitch MPO 16

Cartes à circuits optiques -

Partie 4-3: Normes d'interface - Terminaison d'un ensemble de cartes à circuits optiques à guide d'ondes qui utilise un connecteur PMT de trente-deux canaux sur une seule rangée accouplable avec un MPO 16 à pas de 250 μ m



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Optical circuit boards -
Part 4-3: Interface standards - Terminated waveguide
OCB assembly using a single-row thirty-two-channel PMT
connector intermateable with a 250 µm pitch MPO 16**

FOREWORD

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

Draft	Report on voting
86/641/CDV	86/649/RVC

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 International Standard 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/publications.

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.

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INTRODUCTION

This document relates to the field of communications technologies and, in particular, to a high-density optical connector.

With the rapid development of the communications industry, the system capacity increasingly grows, resulting in a dramatic increase of the number of links between the backplane and the daughter cards. Therefore, the number of links for the next generation cards are greater than the current cards. One of the best ways to cut cost is to make the current cards work well in the next generation system, which means the connector of the next generation backplane should be intermateable with the connector of the current cards.

This document defines the standard interface dimensions for a terminated waveguide optical circuit board (OCB) assembly (referred to simply as "assembly") with a single-row thirty-two-channel polymer MT (PMT) connector, such a PMT connector being intermateable with the rectangular ferrule of a single-row type MPO 16 connector. The interconnection of the backplane is one of the potential applications of this PMT connector. The small pitch waveguides will enable new applications.

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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") with a single-row thirty-two-channel polymer MT (PMT) connector, such a PMT being intermateable with the rectangular ferrule of a single-row type MPO 16 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 61754-5, *Fibre optic connector interfaces - Part 5: Type MT connector family*

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.

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4 Description

The assembly comprises a thirty-two-channel PMT connector and a waveguide OCB. The PMT connector shall have the same outer dimensions as the MT connector specified in IEC 61754-5. The PMT connector is aligned using guide pins and is normally secured by using a clamp spring and mates with the ferrule of a type MPO 16 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 front of the OCB is supported on a substrate. Preferably, the substrate should be rigid to comply with the PMT connector. The cores of the waveguide in the PMT connector are aligned with the optical fibres of the MT connector by two guide pins and a clamp spring. Dimensions of a single-row thirty-two-channel MT ferrule (125 µm pitch) are shown in Annex B.

This PMT connector is intermateable with the 250 µm pitch ferrule of a single-row type MPO 16 connector. Channel positions of a waveguide OCB intermateable with a 250 µm pitch MPO 16 single-row ferrule are shown in Annex C.

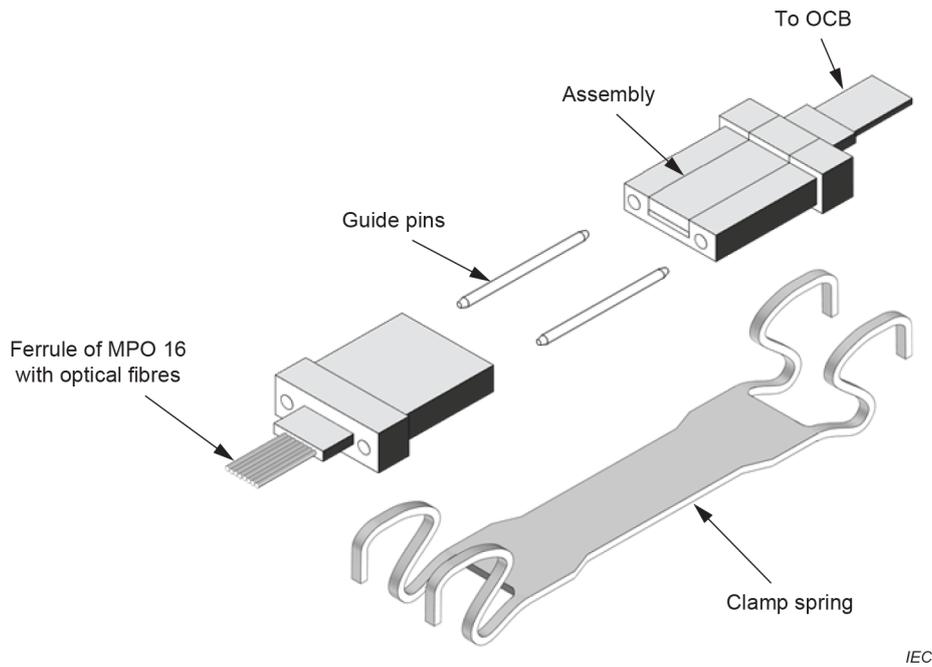


Figure 1 – Interconnection between the PMT connector and the ferrule of the MPO 16 connector

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

Figure 2, 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 pin 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.

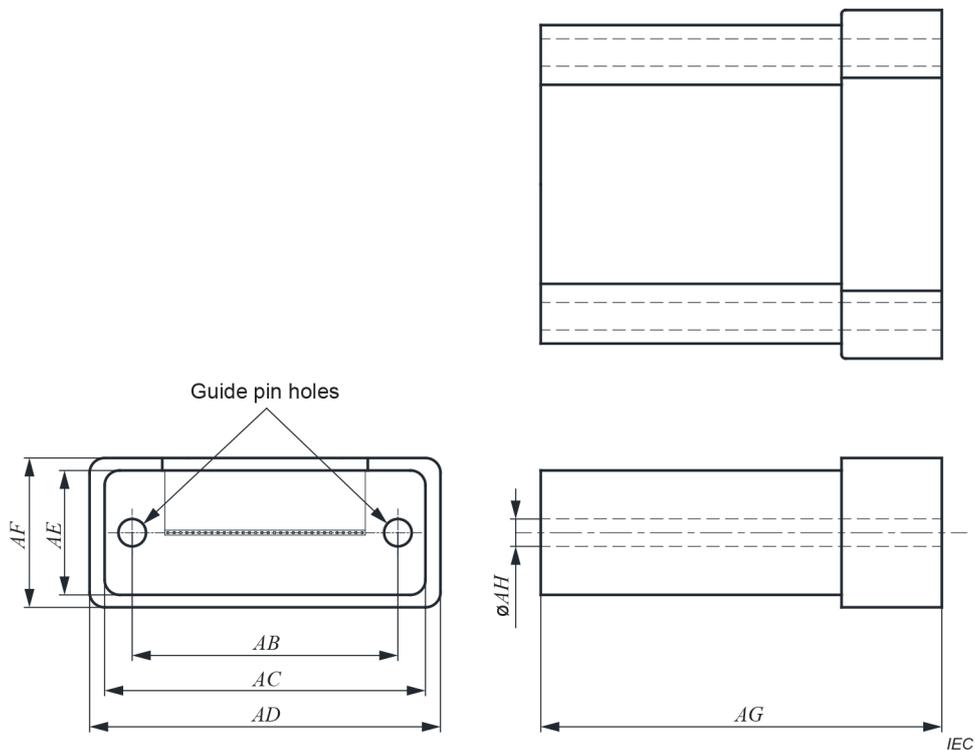
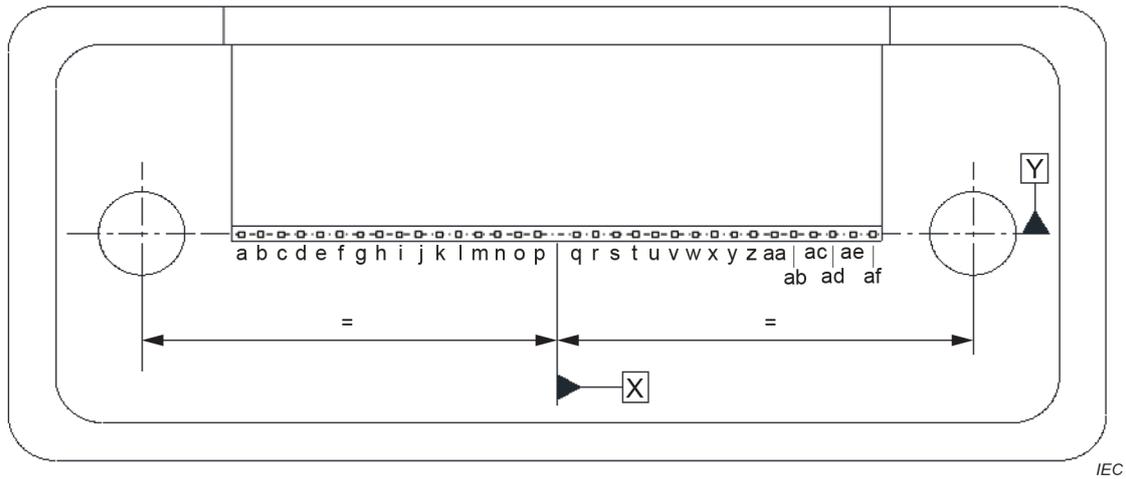


Figure 2 – Interface dimensions of a thirty-two-channel PMT connector for the assembly



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. \boxed{X} shows the zero point of the X axis and \boxed{Y} shows the zero point of the Y axis.

Figure 3 – Interface view of a thirty-two-channel PMT connector for the assembly

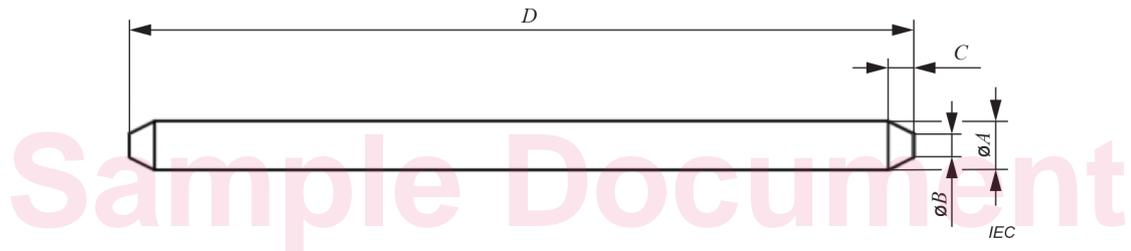


Figure 4 – Interface view of a guide pin