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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic active components and devices – Package and interface standards – Part 11: 14-pin active device modules

Composants et dispositifs actifs en fibres optiques – Normes de boîtier et d'interface – Partie 11: Modules de dispositifs actifs de 14 broches

IEC 62148-11:2009

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FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES – PACKAGE AND INTERFACE STANDARDS –

Part 11: 14-pin active device modules

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International Standard IEC 62148-11 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This standard is to be read in conjunction with IEC 62148-1.

This second edition cancels and replaces the first edition, published in 2003, and constitutes a technical revision.

The first edition was limited to 14-pin modulator-integrated laser diode transmitters. The second edition has been expanded to include 14-pin pump lasers and the title changed to reflect the new scope.

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

FDIS	Report on voting
86C/882/FDIS	86C/898/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62148 series, published under the general title *Fibre optic active components and devices – Package and interface standards,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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INTRODUCTION

Modulator integrated laser diode transmitters are used to convert electrical signals into optical signals. Pump diode lasers are used to supply optical pump power in the rare earth doped optical fibre amplifiers. This standard covers the physical interface for modulator integrated laser diode transmitters and pump diode lasers. These transmitters and lasers are designed as a pigtailed 14-pin butterfly package with thermo-electric cooler.

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FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES – PACKAGE AND INTERFACE STANDARDS –

Part 11: 14-pin active device modules

1 Scope and object

This part of IEC 62148 covers physical interface specification for modulator integrated laser diode transmitters.

The object of this standard is to adequately specify the physical requirements of an optical transmitter that will enable mechanical interchangeability of transmitters complying with this standard both at the printed circuit board and for any panel mounting requirement.

2 Normative references

The following referenced documents are indispensable for the application 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 60793-2-50: *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60874 (all parts), *Connectors for optical fibres and cables*

IEC 62148-1: *Fibre optic active components and devices – Package and interface standards – Part 1: General and guidance*

3 Abbreviations

For the purposes of this document, the following abbreviations apply.

PD Monitor PD

TEC Thermo-electric cooler

4 Classification

The modulator integrated laser diode transmitter described in this part of IEC 62148 is classified as Type 3 according to the definitions of IEC 62148-1.

5 Specification of fibre optic transmitter module

5.1 Pigtail interface

All optical fibres which are defined in IEC 60793-2-50 are applicable.

All optical connectors which are defined in IEC 60874 series are applicable if a pigtail is to be terminated with an optical connector.

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5.2 Electrical interface

5.2.1 General

The electrical interface in this standard defines only the basic functionality of each pin.

5.2.2 Numbering of electrical terminals

Pin numbering assignments are shown in Figure 1 (electrical terminals viewed from the top of the module).

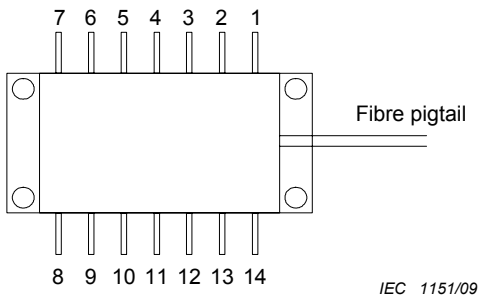

Figure 1 – Electrical terminal numbering assignments (viewed from the top of the module)

5.2.3 Pin function definition

The basic functionalities of each pin for modulator integrated laser diode transmitters and pump lasers are defined in Tables 1 and 2, respectively.

Table 1 – Pin-function definitions for modulator integrated laser diode device

Pin number	Symbol	Functional description
1 [a]		Thermistor-1
2 [a]		Thermistor-2
3	LD_A	Laser diode anode
4	PD_A	Monitor PD anode
5	PD_K	Monitor PD cathode
6	TEC_A	Thermo-electric cooler anode
7	TEC_K	Thermo-electric cooler cathode
8		Case ground
9		Case ground
10		NC or case ground
11		Laser/modulator ground
12		Modulator anode RF data input
13		Laser/modulator ground
14		NC or case ground
[a] Resistance between these two terminals indicates the case temperature.		

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