IEC 62148-12

Edition 1.1 2022-09
CONSOLIDATED VERSION

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Fibre optic active components and devices – Package and interface standards – Part 12: Laser transmitters with a coaxial RF connector

Composants et dispositifs actifs en fibres optiques – Normes de boîtier et d'interface – Partie 12: Émetteurs à laser avec connecteur RF coaxial

IEC 62148-12:2022-09 CSV(en-fr)

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IEC 62148-12:2022-09 RLV(en-fr)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 12: Laser transmitters with a coaxial RF connector

FOREWORD

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IEC 62148-12 edition 1.1 contains the first edition (2004-02) [documents 86C/581/FDIS and 86C/599/RVD] and its amendment 1 (2022-09) [documents 86C/1786/CDV and 86C/1812/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 62148-12 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

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

This standard constitutes Part 12 of the IEC 62148 series, published under the general title *Fibre optic active components and devices – Package and interface standards.* This series consists of Part 1, devoted to general requirements, and various parts specific to individual module families.

~~Part 1: General and guidance~~

~~Part 2: SFF MT-RJ 10-pin transceivers~~

~~Part 3: SFF MT-RJ 20-pin transceivers~~

~~Part 4: PN 1x9 plastic optical fibres transceivers~~

~~Part 5: SC 1x9 fibre optic modules~~

~~Part 6: ATM-PON transceivers~~

~~Part 7: SFF LC 10-pin transceivers~~

~~Part 8: SFF LC 20-pin transceivers~~

~~Part 9: SFF MU duplex 10-pin transceivers~~

~~Part 10: SFF MU duplex 20-pin transceivers~~

~~Part 11: 14-pin modulator-integrated laser diode transmitter~~

~~Part 12: Laser transmitters with a coaxial RF connector~~

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

Laser diode devices are used to convert electrical signals into optical signals. This standard covers the physical interface for the laser diode devices that are suitable for high bit rate optical transmission systems. These devices are designed as pigtailed packages with a 7-pin electrical connector and a coaxial RF connector and have a thermo-electric cooler.

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

Part 12: Laser transmitter with a coaxial RF connector

1 Scope

This part of IEC 62148 covers physical interface specifications of laser diode devices for optical fibre communication.

The intent of this part of IEC 62148 is to adequately specify the physical requirements of an optical transmitter that will enable mechanical interchangeability of transmitters to 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 60169-15, *Radio-frequency connectors – Part 15: R.F. coaxial connectors with inner diameter of outer conductor 4,13 mm (0,163 in) with screw coupling – Characteristic impedance 50 ohms (type SMA)*~~

~~IEC 60169-16, *Radio-frequency connectors – Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristic impedance 50 ohms (75 ohms) (type N)*~~

IEC 60191 (all parts), *Mechanical standardization of semiconductor devices*

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 61169-15, *Radio-frequency connectors – Part 15: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 4,13 mm (0,163 in) with threaded coupling – Characteristic impedance 50 Ω (type SMA)*

IEC 61169-16, *Radio-frequency connectors – Part 16: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristics impedance 50 Ω (75 Ω) (type N)*

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

ITU-T Recommendation G.652: *Characteristics of a single-mode optical fibre and cable*

ITU-T Recommendation G.653: *Characteristics of a dispersion-shifted single-mode optical fibre cable*