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Fibre optic active components and devices - Performance standards - Part 12: Distributed feedback laser diode device for analogue radio over fibre systems

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EN IEC 62149-12

NORME EUROPÉENNE

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March 2023

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**Fibre optic active components and devices - Performance standards - Part 12: Distributed feedback laser diode device for analogue radio over fibre systems
(IEC 62149-12:2023)**

Composants et dispositifs actifs fibroniques - Normes de performances - Partie 12: Dispositif à diode laser à rétroaction répartie pour systèmes radio analogiques sur fibre
(IEC 62149-12:2023)

Aktive Lichtwellenleiterbauelemente und -geräte - Betriebsverhaltensnormen - Teil 12: Laserdiodenbauelemente mit verteilter Rückkopplung für analoge Funksignalübertragung über LWL-Systeme
(IEC 62149-12:2023)

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European foreword

The text of document 86C/1808/CDV, future edition 1 of IEC 62149-12, prepared by SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62149-12:2023.

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IEC 62007-1	NOTE	Approved as EN 62007-1
IEC 62149-2	NOTE	Approved as EN 62149-2
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IEC 62149-12

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Part 12: Distributed feedback laser diode device for analogue radio over fibre
systems**

**Composants et dispositifs actifs fibroniques – Normes de performances –
Partie 12: Dispositif à diode laser à rétroaction répartie pour systèmes radio
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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions, symbols and abbreviated terms.....	7
3.1 Terms and definitions.....	7
3.2 Symbols.....	7
3.3 Abbreviated terms.....	8
4 Product parameters	8
4.1 Absolute limiting ratings	8
4.2 Operating environment.....	8
4.3 Functional specifications	8
5 Testing	9
5.1 General.....	9
5.2 Characterization testing	9
5.3 Performance testing.....	9
6 Environmental specifications	9
6.1 General safety	9
6.2 Laser safety	9
6.3 Electromagnetic compatibility (EMC) requirements.....	9
Annex A (normative) Specifications for DFB-LD devices for analogue RoF systems.....	10
A.1 Absolute limiting ratings	10
A.2 Operating environment.....	10
A.3 Functional specifications	10
A.4 Testing	11
A.4.1 Characterization testing.....	11
A.4.2 Performance testing.....	11
Bibliography.....	14
Table 1 – Operating case environment.....	8
Table A.1 – Absolute limiting ratings	10
Table A.2 – Operating conditions for functional specifications	10
Table A.3 – Functional specifications	11
Table A.4 – Performance test plan	12
Table A.5 – Recommended performance test failure criteria	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES –
PERFORMANCE STANDARDS –****Part 12: Distributed feedback laser diode device
for analogue radio over fibre systems**

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IEC 62149-12 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics. It is an International Standard.

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

Draft	Report on voting
86C/1808/CDV	86C/1840/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 of the IEC 62149 series, published under the general title *Fibre optic active components and devices – Performance standards*, 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 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.

INTRODUCTION

Distributed feedback laser diode (DFB-LD) devices for analogue radio over fibre (A-RoF) systems are used to convert electrical radio signals into optical signals. This document covers the performance specification for DFB-LD devices in A-RoF systems. The optical and electrical performance criteria are generally well specified for a number of internationally agreed upon application areas, such as ITU-T Recommendation G.9803 and IEC 62149-10. This document provides optical and electrical performance specifications for RoF transceivers. These transceivers are necessary for operation of A-RoF systems, because the RoF transmitter requires a light source such as a DFB-LD device. DFB-LD devices for RoF transceivers are supplied by different manufacturers. However, they do not guarantee the operation of DFB-LD devices in A-RoF systems. Manufacturers using this document are responsible for meeting the required performance and/or reliability and quality assurance under a recognized scheme.

FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES – PERFORMANCE STANDARDS –

Part 12: Distributed feedback laser diode device for analogue radio over fibre systems

1 Scope

This part of IEC 62149 defines performance specifications for distributed feedback laser diode (DFB-LD) devices used in analogue radio over fibre (RoF) systems. It defines product performance requirements together with a series of tests and measurements with clearly defined conditions, severities, and pass/fail criteria. The tests are intended to be run on a "once-off" basis to prove a product's ability to satisfy the performance requirements.

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 60749-6, *Semiconductor devices – Mechanical and climatic test methods – Part 6: Storage at high temperature*

IEC 60749-7, *Semiconductor devices – Mechanical and climatic test methods – Part 7: Internal moisture content measurement and the analysis of other residual gases*

IEC 60749-10, *Semiconductor devices – Mechanical and climatic test methods – Part 10: Mechanical shock – Device and subassembly*

IEC 60749-11, *Semiconductor devices – Mechanical and climatic test methods – Part 11: Rapid change of temperature – Two-fluid-bath method*

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IEC 60749-25, *Semiconductor devices – Mechanical and climatic test methods – Part 25: Temperature cycling*

IEC 60749-26, *Semiconductor devices – Mechanical and climatic test methods – Part 26: Electrostatic discharge (ESD) sensitivity testing – Human body model (HBM)*

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*

IEC 61300-2-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-4: Tests – Fibre or cable retention*

IEC 61300-2-19, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-19: Tests – Damp heat (steady state)*

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– 7 –

IEC 61300-2-48, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-48: Tests – Temperature-humidity cycling*

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