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Fibre optic active components and devices -
Performance standards - Part 3: Modulator-integrated
laser diode transmitters for 40-Gbit/s fibre optic
transmission systems

EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN IEC 62149-3:2020 sisaldb Euroopa standardi EN IEC 62149-3:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62149-3:2020 consists of the English text of the European standard EN IEC 62149-3:2020.
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ICS 33.180.20

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 62149-3

September 2020

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Supersedes EN 62149-3:2014 and all of its amendments
and corrigenda (if any)

English Version

Fibre optic active components and devices - Performance
standards - Part 3: Modulator-integrated laser diode transmitters
for 40-Gbit/s fibre optic transmission systems
(IEC 62149-3:2020)

Composants et dispositifs actifs fibroniques - Normes de
performances - Partie 3: Émetteurs à diodes laser à
modulateur intégré pour systèmes de transmission
fibroniques 40 Gbit/s
(IEC 62149-3:2020)

Aktive Lichtwellenleiterbauelemente und -geräte -
Betriebsverhalten - Teil 3: Sender mit modulatorintegrierten
Laserdioden für 40 Gbit/s-Lichtwellenleiter-
Übertragungssysteme
(IEC 62149-3:2020)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 86C/1666/FDIS, future edition 3 of IEC 62149-3, 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 62149-3:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-05-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-08-11

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068 (series)	NOTE	Harmonized as EN 60068 (series)
IEC 60793 (series)	NOTE	Harmonized as EN IEC 60793 (series)
IEC 60825 (series)	NOTE	Harmonized as EN 60825 (series)
IEC 60874 (series)	NOTE	Harmonized as EN 60874 (series)
IEC 61280 (series)	NOTE	Harmonized as EN 61280 (series)
IEC 62007-2	NOTE	Harmonized as EN 62007-2

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60749-7	-	Semiconductor devices - Mechanical and climatic test methods - Part 7: Internal moisture content measurement and the analysis of other residual gases	EN 60749-7	-
IEC 60749-26	-	Semiconductor devices - Mechanical and climatic test methods - Part 26: Electrostatic discharge (ESD) sensitivity testing - Human body model (HBM)	EN IEC 60749-26	-
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 60950-1	-	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	-

IEC 62007-1	- Semiconductor optoelectronic devices for fibre optic system applications - Part 1: Specification template for essential ratings and characteristics	EN 62007-1	-
IEC 62572-3	- Fibre optic active components and devices - Reliability standards - Part 3: Laser modules used for telecommunication	EN 62572-3	-
ITU-T G.694-1	- Spectral grids for WDM applications: DWDM frequency grid	-	-
ITU-T G.957	- Optical interfaces for equipments and systems relating to the synchronous digital hierarchy	-	-
MIL-STD-883-1	- U.S. Department of Defense - Test method standard - Environmental test methods for microcircuits, Part 1: Test methods 1000-1999	-	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic active components and devices – Performance standards –
Part 3: Modulator-integrated laser diode transmitters for 40-Gbit/s fibre optic
transmission systems**

**Composants et dispositifs actifs fibroniques – Normes de performances –
Partie 3: Émetteurs à diodes laser à modulateur intégré pour systèmes de
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Edition 3.0 2020-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic active components and devices – Performance standards –
Part 3: Modulator-integrated laser diode transmitters for 40-Gbit/s fibre optic
transmission systems**

**Composants et dispositifs actifs fibroniques – Normes de performances –
Partie 3: Émetteurs à diodes laser à modulateur intégré pour systèmes de
transmission fibroniques 40 Gbit/s**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES –
PERFORMANCE STANDARDS –****Part 3: Modulator-integrated laser diode transmitters
for 40-Gbit/s fibre optic transmission systems****FOREWORD**

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International Standard IEC 62149-3 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2014 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: updates of the title, scope, normative references and performance test tables.

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

FDIS	Report on voting
86C/1666/FDIS	86C/1676/RVD

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 62149 series, published under the general title *Fibre optic active components and devices – Performance standards*, can be found on the IEC website.

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INTRODUCTION

Fibre optic transmitters are used to convert electrical signals into optical signals. This document covers the performance standard for optical modulators monolithically integrated with laser diodes for 40 Gbit/s optical telecommunication systems. This document is applicable for on-off keying format.