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**Aktivne komponente in naprave optičnih vlaken – Izvedbeni standardi – 4. del:  
1300 nm oddajnikov in sprejemnikov optičnih vlaken za Gigabit Ethernet  
uporabo (IEC 62149-4:2003 + popravek 2003)\***

Fibre optic active components and devices - Performance standards - Part 4: 1300  
nm fibre optic transceivers for Gigabit Ethernet application (IEC 62149-4:2003 +  
corrigendum 2003)

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English version

**Fibre optic active components and devices –  
Performance standards  
Part 4: 1 300 nm fibre optic transceivers  
for Gigabit Ethernet application  
(IEC 62149-4:2003 + corrigendum 2003)**

Composants et dispositifs actifs  
à fibres optiques –  
Normes de fonctionnement  
Partie 4: Emetteurs-récepteurs  
à fibres optiques de 1 300 nm  
pour application Gigabit Ethernet  
(CEI 62149-4:2003 + corrigendum 2003)

Aktive Lichtwellenleiterbauelemente -  
Betriebsverhalten  
Teil 4: 1 300-nm-Lichtwellenleiter-Sende-  
und Empfangsmodule für Gigabit-  
Ethernet- Anwendungen  
(IEC 62149-4:2003 + Corrigendum 2003)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 86C/477/FDIS, future edition 1 of IEC 62149-4, 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 was approved by CENELEC as EN 62149-4 on 2003-03-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-03-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes A and ZA are normative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 62149-4:2003 and its corrigendum April 2003 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-20	- <sup>1)</sup>	Basic environmental testing procedures Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988 <sup>2)</sup>
IEC 60825-1	- <sup>1)</sup>	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1	1994 <sup>2)</sup>
IEC 60938-1	- <sup>1)</sup>	Fixed inductors for electromagnetic interference suppression Part 1: Generic specification	EN 60938-1	1999 <sup>2)</sup>
IEC 60950-1 (mod)	2001	Information technology equipment - Safety Part 1: General requirements	EN 60950-1	2001
ISO/IEC 8802-3	2001	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	-	-
MIL-STD-883D	1991	Test Method Standard - Microcircuits	-	-

1) Undated reference.

2) Valid edition at date of issue.

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IEC

62149-4

Première édition  
First edition  
2003-01

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**Composants et dispositifs actifs à fibres optiques –  
Normes de fonctionnement –**

**Partie 4:  
Emetteurs-récepteurs à fibres optiques  
de 1 300 nm pour applications Gigabit Ethernet**

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**Fibre optic active components and devices –  
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**Part 4:  
1 300 nm fibre optic transceivers  
for Gigabit Ethernet application**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES –  
PERFORMANCE STANDARDS –**
**Part 4: 1 300 nm fibre optic transceivers  
for Gigabit Ethernet application**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62149-4 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86C/477/FDIS	86C/497/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.

This standard constitutes part 4 of the IEC 62149 series, published under the general title *Fibre optic active components and devices – Performance standards*. This series consists of Part 1, devoted to general requirements, and various additional parts, specific to individual module families.

Part 1: General and guidance

Part 2: Discrete vertical cavity surface emitting laser devices

Part 3: 2,5 Gbit/s modulator-integrated laser diode transmitters

Part 4: 1300-nm transceivers for Gigabit Ethernet application

Part 5: ATM-PON transceivers with LD driver circuits and CDR ICs

Part 6: 650-nm 250-Mbit/s plastic optical fibre transceivers

The committee has decided that the contents of this publication will remain unchanged until 2009. At this date, the publication will be

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

The contents of the corrigendum of April 2003 have been included in this copy.

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## INTRODUCTION

Fibre optic transceivers are used to convert electrical signals into optical signals and vice versa. This specification covers the performance standard for 1 300 nm fibre optic transceivers for Gigabit Ethernet application. The ISO/IEC 8802-3 Gigabit Ethernet standard is used as the basis for determining the optical characteristics of the transceiver, which operates with a line rate of 1,25 Gbit/s.

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