TECHNICAL REPORT

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Fibre optic communication system design guides –

Part 9: Guidance on polarization mode dispersion measurements and theory

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FOREWORD

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IEC 61282-9, which is a technical report, has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
86C/696/DTR	86C/703/RVC

Full information on the voting for the approval of this technical report 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 IEC 61282 series, published under the general title *Fibre optic communication system design guides,* 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

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- withdrawn,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

A bilingual version of this publication may be issued at a later date.

FIBRE OPTIC COMMUNICATION SYSTEM DESIGN GUIDES –

Part 9: Guidance on polarization mode dispersion measurements and theory

1 Scope

This technical report applies to all commercially available fibre optic products sensitive to polarization mode dispersion (PMD).

This report presents general information about PMD, the mathematical formulation related to the application of the generally accepted methods to test PMD, and some considerations related to the sampling theory regarding the use of different light sources and detection systems.

This report is complementary to the International Standards describing the PMD procedures (IEC 60793-1-48, IEC 61280-4-4, IEC 61290-11-1, IEC 61290-11-2 and IEC 61300-3-32) and other design guides on PMD (IEC 61282-3 and IEC 61292-5).

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 60793-1-48: *Optical fibres – Part 1-48: Measurement methods and test procedures – Polarization mode dispersion*

IEC 61280-4-4: *Fibre optic communication subsystem test procedures – Part 4-4: Cable plants and links – Polarization mode dispersion measurement for installed links*

IEC 61290-11-1: *Optical fibre amplifier test methods – Part 11-1: Polarization mode dispersion – Jones matrix eigenanalysis method (JME)*

IEC 61290-11-2: *Optical amplifiers – Test methods – Part 11-2: Polarization mode dispersion parameter – Poincaré sphere analysis method*

IEC 61300-3-2: *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-2: Examinations and measurements – Polarization dependence of attenuation in a single-mode fibre optic device*

IEC 61300-3-32: *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-32: Examinations and measurements – Polarization mode dispersion for passive optical components* [1]

IEC/TR 61282-3: *Fibre optic communication system design guides – Part 3: Calculation of polarization mode dispersion*

IEC/TR 61292-5: *Optical amplifiers – Part 5: Polarization mode dispersion parameter – General information*

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1 To be published