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Fibre optic communication system design guides – Part 11: Multimode launch conditions

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC COMMUNICATION SYSTEM DESIGN GUIDES –

Part 11: Multimode launch conditions

FOREWORD

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IEC 61282-11, which is a technical report, has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This publication contains an attached file titled, “Supplemental Data for Section 8”, in the form of an Excel Spreadsheet. This file is intended to be used as a complement and does not form an integral part of the standard.

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

Enquiry draft	Report on voting
86C/1004/DTR	86C/1038/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.

The committee has decided that the contents of this publication will remain unchanged until the stability 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- withdrawn,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.

INTRODUCTION

At the meeting of IEC TC86 and its subcommittees and working groups at Cape Town in 2005, there were numerous discussions regarding the accuracy of attenuation measurements on multimode fibres, cables, passive components and installed cabling. Liaisons had also been received from ISO/IEC JTC SC25 WG3 that reported on the development of ISO/IEC14763-3 for testing fibre optic cabling in premises cabling. This standard used a mode power distribution template in an attempt to control the launch conditions to improve measurement accuracy and reduce uncertainty when testing the attenuation of multimode fibre optic cabling.

It was decided to set up a “Multimode Launch Co-ordinating Group” referred to as MMLCG. This would be set up directly reporting to TC86 and include representatives from interested persons in Subcommittees 86A, 86B and 86C as well as ISO/IEC JTC1 SC25 WG3. The scope of this group was defined as:

“To coordinate the harmonization of the variety of multimode modal launch conditions that exist within the documents being prepared and published by the subcommittees of TC86 for the purpose of attenuation and return loss measurements.”

The intent of this technical report is to keep available the key technical aspects issued by the MMLCG.

FIBRE OPTIC COMMUNICATION SYSTEM DESIGN GUIDES –

Part 11: Multimode launch conditions

1 Scope

This technical report is intended to show the background of encircled flux for the characterisation of multimode launch conditions. This includes the selection of the encircled flux and the definition of the encircled flux requirements in conjunction with the implied variation in attenuation measurements.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61280-1-4:2009, *Fibre optic communication subsystem test procedures – Part 1-4: General communication subsystems – Light source encircled flux measurement method*

IEC 61280-4-1:2009, *Fibre optic communication subsystem test procedures – Part 4-1: Installed cable plant – Multimode attenuation measurement*

IEC 62614:2010, *Fibre optics – Launch condition requirements for measuring multimode attenuation*

IEC 61745, *End-face image analysis procedure for the calibration of optical fibre geometry test sets*