IEC TR 62285

Edition 3.0 2023-10

TECHNICAL REPORT

colour inside

Application guidelines for nonlinear coefficient measuring methods

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.180.10

ISBN 978-2-8322-7739-3

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

APPLICATION GUIDELINES FOR NONLINEAR COEFFICIENT MEASURING METHODS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. 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 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC TR 62285 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is a Technical Report.

This third edition cancels and replaces the second edition published in 2005. It constitutes a technical revision.

This edition includes the following signification technical changes with respect to the previous revision:

a) change fibre type of pigtail to B-652.D fibre or fibre of same type with the fibre under test;
b) modifications on Figure A.1 and Formulas (A.3), (A.4);
c) add example values and recommended method A test conditions for B-G.654.E fibre, update Table C.1.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
86A/2190/DTR	86A/2325/RVDTR

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 Technical Report 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.

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.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

APPLICATION GUIDELINES FOR NONLINEAR COEFFICIENT MEASURING METHODS

1 Scope

This document provides guidelines for uniform measurements of the nonlinear coefficient of class B single-mode fibres (see IEC 60793-2-50) in the 1 550 nm region.

Measurements of the nonlinear coefficient are used to characterise specific single-mode fibre designs for the purpose of system design relative to power levels and distortion or noise effects derived from the nonlinear optical behaviour.

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 60793-1 (all parts), *Optical fibres – Part 1: Measurement methods and test procedures*

IEC 60793-2, *Optical fibres – Part 2: Product specifications – General*