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Guidance for the interpretation of OTDR backscattering traces for single-mode fibres

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IEC TR 62316 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics. It is a Technical Report.

This fourth edition cancels and replaces the third edition published in 2017. This edition constitutes a technical revision.

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

a) update of the fibre types;
b) addition of information as regards attenuation uniformity.

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

Draft	Report on voting
86A/2621/DTR	86A/2643/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– withdrawn, or
– revised.

INTRODUCTION

This document is a guide for the interpretation of OTDR backscattering traces for single mode fibres. It does not provide any normative reference, but adequate measurement and test procedures for attenuation (see IEC 60793-1-40 [1][1] and IEC 61280-4-2 [2]), connector inspection (see IEC 61300-3-35 [3]), as well as for calibration of single mode fibre OTDRs (see IEC 61746-1 [4]) that are applied to ensure the validity of such measurements.

[1] Numbers in square brackets refer to the Bibliography

1 Scope

This document provides guidance on the interpretation of backscattering traces, as obtained by traditional optical time domain reflectometers (OTDRs) for single-mode fibres.

This document does not cover Polarization OTDRs.

Also, backscattered power effects are discussed in case of unidirectional trace.

Full description of the test measurement procedure can be found in Annex C of IEC 60793-1-40:2024 [1].

2 Normative references

There are no normative references in this document.