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Fibre optic interconnecting devices and passive components – Part 03-02: Reliability – Report of high power transmission test of specified passive optical components

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IEC 62627-03-02, which is a technical report, has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

Enquiry draft	Report on voting
86B/3228/DTR	86B/3277/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- withdrawn,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.

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INTRODUCTION

Optical transmission power has increased in recent years due to the growing demands for ultra-long haul transmission systems and more applications of fibre optic amplifiers for cable television broadcasting systems. In view of these advances, concerns arise about optical fibres, fibre optic connectors and passive optical components installed in fibre optic communication systems due to the fact that these components may harm human beings due to a leakage of high-power light and the possibility of fire caused by melting and damage of these components. However, mechanisms, conditions, and factors that cause such accidents have not yet been clearly identified. Furthermore, industry standards on the reliability and long-term evaluation of optical components do not include testing with high optical power.

This technical report is based on the Optoelectronic Industry and Technology Development Association (OITDA) – Technical Paper (TP), TP04/SP_PD-2008, "Technical paper of investigation of high-power reliability for passive optical components for optical communication application".

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –

Part 03-02: Reliability – Report of high power transmission test of specified passive optical components

1 Scope

This part of IEC 62627 describes test data relating to high power damage of fixed optical attenuators, optical isolators and optical splitters (non-wavelength selective branching devices). It also describes the test of thermal simulation and failure mechanism analysis for the above passive optical components on high power transmission.