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Fibre optic active components and devices – Test and measurement procedures –

Part 3: Optical power variation induced by mechanical disturbance in optical receptacles and transceiver interfaces

Composants et dispositifs actifs à fibres optiques – Procédures d'essais et de mesures –

Partie 3: Variation de puissance optique induite par des perturbations mécaniques dans les interfaces d'embases optiques et d'émetteurs-récepteurs



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES –
TEST AND MEASUREMENT PROCEDURES –**
**Part 3: Optical power variation induced by mechanical disturbance
in optical receptacles and transceiver interfaces**

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The text of this standard is based on the following documents:

FDIS	Report on voting
86C/1061/FDIS	86C/1072/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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FIBRE OPTIC ACTIVE COMPONENTS AND DEVICES – TEST AND MEASUREMENT PROCEDURES –

Part 3: Optical power variation induced by mechanical disturbance in optical receptacles and transceiver interfaces

1 Scope

The purpose of this part of IEC 62150 is to specify the test requirements and procedures for qualifying optical devices for sensitivity to coupled power variations induced by mechanical disturbance at the optical ports of the device. It applies to active devices with optical receptacle interfaces. In this edition, transceivers using small-form-factor connector cables (1,25 mm ferrule) for single mode fibre are specified.

It has been found that some optical transceivers and receptacles are susceptible to fibre optic cable induced stress when side forces are applied to the mated cable-connector assembly, resulting in variations in the transmitted optical power. This part of IEC 62150 defines physical stress tests to ensure that such optical connections (cable and receptacle) can continue to function within specifications.

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 61753 (all parts), *Fibre optic interconnecting devices and passive components performance standard*

IEC 61753-021-6, *Fibre optic interconnecting devices and passive components performance standard – Part 021-6: Grade B/2 single-mode fibre optic connectors for category O – Uncontrolled environment*

IEC 61754 (all parts), *Fibre optic connector interfaces*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1 wiggle

mechanical disturbances that induce coupled optical power variation to the optical receptacle and transceiver interface

3.1.2 wiggle loss

variation in coupled output power (with respect to a no-load, non-rotated measurement) induced in an optical module or receptacle when the mated connector is laterally stressed.