



BSI Standards Publication

Fibre optic active components and devices — Test and measurement procedures

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

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National foreword

This British Standard is the UK implementation of EN 62150-3:2012. It is identical to IEC 62150-3:2012.

BSI, as a member of CEN, is obliged to publish EN 62150-3:2012 as a British Standard. However, it should be noted that the UK committee voted negatively against this standard during its development. There are a number of choices presented within the standard for carrying out Tests A and B and the committee felt that there is insufficient evidence that results obtained in different configurations would correlate or give consistent results, and that this should be considered when applying the principles of this standard.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/3, Fibre optic systems and active devices.

A list of organizations represented on this committee can be obtained on request to its secretary.

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EUROPEAN STANDARD
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English version

**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
(IEC 62150-3:2012)**

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
(CEI 62150-3:2012)

Aktive Lichtwellenleiter-Bauteile und -
Bauelemente -
Grundlegende Prüf- und Messverfahren -
Teil 3: Optische Leistungsabweichungen
bedingt durch mechanische Störungen in
optischen Kupplungen und Transceiver-
Schnittstellen
(IEC 62150-3:2012)

This European Standard was approved by CENELEC on 2012-08-13. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 86C/1061/FDIS, future edition 1 of IEC 62150-3, prepared by SC 86C, "Fibre optic systems and active devices", of IEC TC 86, "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62150-3:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-05-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-08-13

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Endorsement notice

The text of the International Standard IEC 62150-3:2012 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61300 (series) NOTE Harmonized in EN 61300 series (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61753	Series	Fibre optic interconnecting devices and passive components performance standard	EN 61753	Series
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	EN 61753-021-6	-
IEC 61754	Series	Fibre optic connector interfaces	EN 61754	Series

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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.