

<b>STN</b>	<b>Optovláknové spájacie prvky a pasívne súčiastky. Norma na prevádzkové vlastnosti. Časť 031-6: Bezkonektorové jednovidové 1xN a 2xN odbočnice nezávislé od vlnovej dĺžky pre kategóriu O - nekontrolované prostredie.</b>	<b>STN EN 61753-031-6</b>  35 9254
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Fibre optic interconnecting devices and passive components - Performance standard - Part 031-6: Non-connectorized single-mode 1xN and 2xN non-wavelengthselective branching devices for Category O - Uncontrolled environment

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/15

Obsahuje: EN 61753-031-6:2014, IEC 61753-031-6:2014

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Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

**EN 61753-031-6**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2014

ICS 33.180.10

English Version

**Fibre optic interconnecting devices and passive components -  
Performance standard - Part 031-6: Non-connectorized single-  
mode 1xN and 2xN non-wavelengthselective branching devices  
for Category O - Uncontrolled environment  
(IEC 61753-031-6:2014)**

Dispositifs d'interconnexion et composants passifs à fibres  
optiques - Norme de performance -  
Partie 031-6 : Dispositifs de couplage indépendants de la  
longueur d'onde 1xN et 2xN en unimodal non-  
connectorisés pour la catégorie O - Environnement non  
contrôlé  
(CEI 61753-031-6:2014)

Lichtwellenleiter - Verbindungselemente und passive  
Bauteile - Betriebsverhalten -  
Teil 031-6: Nicht steckbare wellenlängenunabhängige  
Einmoden-1xN- und -2xN-Verzweiger für die Kategorie O -  
Unkontrollierte Umgebung  
(IEC 61753-031-6:2014)

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## Foreword

The text of document 86B/3763/FDIS, future edition 2 of IEC 61753-031-6, prepared by SC 86B "Fibre optic interconnecting devices and passive components" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61753-031-6:2014.

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) 2015-07-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-10-08

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The text of the International Standard IEC 61753-031-6:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60875-1	NOTE	Harmonized as EN 60875-1.
IEC 61753-1	NOTE	Harmonized as EN 61753-1.

## 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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793-2-50	2012	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single- mode fibres	EN 60793-2-50	2013
IEC 61300-2-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-1: Tests - Vibration (sinusoidal)	EN 61300-2-1	-
IEC 61300-2-4	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-4: Tests - Fibre/cable retention	EN 61300-2-4	-
IEC 61300-2-5	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-5: Tests - Torsion	EN 61300-2-5	-
IEC 61300-2-9	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-9: Tests - Shock	EN 61300-2-9	-
IEC 61300-2-14	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-14: Tests - High optical power	EN 61300-2-14	-
IEC 61300-2-19	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-19: Tests - Damp heat (steady state)	EN 61300-2-19	-
IEC 61300-2-22	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-22: Tests - Change of temperature	EN 61300-2-22	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-2-42	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-42: Tests - Static side load for strain relief	EN 61300-2-42	-
IEC 61300-2-44	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-44: Tests - Flexing of the strain relief of fibre optic devices	EN 61300-2-44	-
IEC 61300-2-48	2009	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-48: Tests - Temperature-humidity cycling	EN 61300-2-48	2009
IEC 61300-3-2	2009	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-2: Examinations and measurements - Polarization dependent loss in a single-mode fibre optic device	EN 61300-3-2	2009
IEC 61300-3-3	2009	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-3: Examinations and measurements - Active monitoring of changes in attenuation and return loss	EN 61300-3-3	2009
IEC 61300-3-6	2008	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-6: Examinations and measurements - Return loss	EN 61300-3-6	2009
IEC 61300-3-7 (mod)	2009	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-7: Examinations and measurements - Wavelength dependence of attenuation and return loss of single mode components	EN 61300-3-7	2012
IEC 61300-3-20	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-20: Examinations and measurements - Directivity of fibre optic branching devices	EN 61300-3-20	-
IEC 61300-3-28	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-28: Examinations and measurements - Transient loss	EN 61300-3-28	-



# INTERNATIONAL STANDARD

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**Fibre optic interconnecting devices and passive components – Performance standard –  
Part 031-6: Non-connectorized single-mode 1xN and 2xN non-wavelength-selective branching devices for Category O – Uncontrolled environment**





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Edition 2.0 2014-09

# INTERNATIONAL STANDARD

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**Fibre optic interconnecting devices and passive components – Performance standard –  
Part 031-6: Non-connectorized single-mode 1xN and 2xN non-wavelength-selective branching devices for Category O – Uncontrolled environment**

INTERNATIONAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**FIBRE OPTIC INTERCONNECTING  
DEVICES AND PASSIVE COMPONENTS –  
PERFORMANCE STANDARD –****Part 031-6: Non-connectorized single-mode 1×N and 2×N  
non-wavelength-selective branching devices for Category O –  
Uncontrolled environment**

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International Standard IEC 61753-031-6 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition of IEC 61753-031-6 cancels and replaces the first edition published in 2008 and constitutes a technical revision.

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

- a) deletion of the Introduction;

- b) an updated and extended scope to reflect an introduction of two attenuation and uniformity performance classes for balanced NWBD instead of branching device technologies on the market;
- c) an updated list of normative references;
- d) a more simplified introduction to the two types of spectral bands;
- e) Clause 5, Performance requirements, has been updated and extended to reflect the introduction of two attenuation and uniformity performance classes for balanced NWBD;
- f) simplified test items to exclude tests for damp heat (steady state) and impact for performance requirements;
- g) Annex A has been changed to introduce the calculated and minimum requirements for attenuation and uniformity.

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

FDIS	Report on voting
86B/3763/FDIS	86B/3825/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 61753 consists of the following parts, under the general title *Fibre optic interconnecting devices and passive components – Performance standard*:

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# FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

## Part 031-6: Non-connectorized single-mode 1×N and 2×N non-wavelength-selective branching devices for Category O – Uncontrolled environment

### 1 Scope

This part of IEC 61753 contains the minimum initial tests and measurement requirements and severities which a non-wavelength selective branching device (NWBD) should satisfy in order to be categorized as meeting the requirements of this standard.

The requirements cover balanced bidirectional non-connectorized single-mode 1×N and 2×N non-wavelength-selective branching devices for use in an IEC category O environment (N is the number of branching ports), especially but not exclusively used for PON application. For balanced NWBD, two attenuation and uniformity performance classes are considered: class A (premium class) which meets more restrictive requirements (i.e. for extended reach PON application) and class B (standard class) for standard application (i.e. normal reach PON application).

The requirements also cover unbalanced bidirectional non-connectorized single-mode non-wavelength-selective branching devices, however the specifications of unbalanced branching devices are limited to 1 × 2 and 2 × 2 devices because they are the most commonly used.

### 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 60793-2-50:2012, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 61300-2-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal)*

IEC 61300-2-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-4: Tests – Fibre/cable retention*

IEC 61300-2-5, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-5: Tests – Torsion*

IEC 61300-2-9, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-9: Tests – Shock*

IEC 61300-2-14, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-14: Tests – High optical power*

IEC 61300-2-19, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-19: Tests – Damp heat (steady state)*

IEC 61300-2-22, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-22: Tests – Change of temperature*

IEC 61300-2-42, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-42: Tests – Static side load for connectors*

IEC 61300-2-44, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-44: Tests – Flexing of the strain relief of fibre optic devices*

IEC 61300-2-48:2009, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-48: Tests – Temperature-humidity cycling*

IEC 61300-3-2:2009, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-2: Examination and measurements – Polarization dependent loss in a single-mode fibre optic device*

IEC 61300-3-3:2009, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss*

IEC 61300-3-6:2008, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss*

IEC 61300-3-7:2009, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-7: Examinations and measurements – Wavelength dependence of attenuation and return loss of single mode components*

IEC 61300-3-20, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-20: Examinations and measurements – Directivity of fibre optic branching devices*

IEC 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-28: Examinations and measurements – Transient loss*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**