

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Performance standard –**

**Part 071-2: Non-connectorized single-mode fibre optic 1 × 2 and 2 × 2 spatial switches for category C – Controlled environments**

**Dispositifs d'interconnexion et composants passifs à fibres optiques – Norme de performance –**

**Partie 071-2: Commutateurs spatiaux optiques unimodaux 1 × 2 et 2 × 2 non connectés pour la catégorie C – Environnements contrôlés**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

ICS 33.180.20

ISBN 978-2-8322-1579-1

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 071-2: Non-connectorized single-mode fibre optic  
1 × 2 and 2 × 2 spatial switches for category C –  
Controlled environments**

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International Standard IEC 61753-071-2 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86B/3748/FDIS	86B/3777/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.

A list of all parts of IEC 61753 series, under the general title *Fibre optic interconnecting devices and passive components – Performance standard*, can be found on the IEC website.

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

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

## Part 071-2: Non-connectorized single-mode fibre optic 1 × 2 and 2 × 2 spatial switches for category C – Controlled environments

### 1 Scope

This part of IEC 61753 contains the minimum initial test and measurement requirements and severities which non-connectorized single-mode fibre optic 1 × 2 and 2 × 2 spatial switches need to satisfy in order to be categorized as meeting the requirements of category C – Controlled environments, as defined in Annex A of IEC 61753-1:2007.

### 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 60876-1, *Fibre optic interconnecting devices and passive components – Fibre optic spatial switches – Part 1: Generic specification*

IEC 61300 (all parts), *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

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 61300-2-9, *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 61300-2-17, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-17: Tests – Cold*

IEC 61300-2-18, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-18: Tests – Dry heat – High temperature endurance*

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 2-42: Tests – Flexing of the strain relief of fibre optic devices*

IEC 61300-3-2, *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 61300-3-7, *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 61300-3-21, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-21: Examinations and measurements – Switching time and bounce time*

IEC 61300-3-50, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-50: Examinations and measurements – Crosstalk for optical spatial switches*

IEC 61753-1:2007, *Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards*

IEC/TR 62343-6-5, *Dynamic modules – Part 6-5: Investigation of operating mechanical shock and vibration tests for dynamic modules*

ITU-T G-series Recommendations: *Transmission systems and media, digital systems and networks – Supplement 39, Optical system design and engineering considerations*

### 3 Terms and definitions

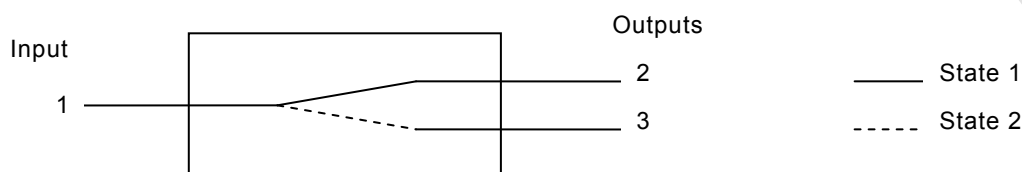
For the purposes of this document, the following terms and definitions, as well as those given in IEC 60876-1, apply.

#### 3.1

##### 1 × 2 spatial switch

single-mode fibre-pigtailed 1 × 2 spatial switch as shown in Figure 1

Note 1 to entry: There is one input port and two output ports.



IEC 1577/14

#### Key

1, 2, and 3 show a port number.

**Figure 1 – Configuration of 1 × 2 spatial switch**