

Fibre optic interconnecting devices and passive components - Performance standard - Part 091-02: Non-connectorized 3-port incompletely circulated single-mode fibre optic circulators for category C - Controlled environments

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 61753-091-02:2022 sisaldab Euroopa standardi EN IEC 61753-091-02:2022 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 61753-091-02:2022 consists of the English text of the European standard EN IEC 61753-091-02:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.04.2022.	Date of Availability of the European standard is 01.04.2022.
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English Version

Fibre optic interconnecting devices and passive components -  
Performance standard - Part 091-02: Non-connectorized 3-port  
incompletely circulated single-mode fibre optic circulators for  
category C - Controlled environments  
(IEC 61753-091-02:2022)

Dispositifs d'interconnexion et composants passifs  
fibroniques - Norme de performance - Partie 091-02:  
Circulateurs fibroniques à circulation partielle à 3 ports, non  
connectorisés et équipés de fibres optiques unimodales,  
pour la catégorie C - Environnements contrôlés  
(IEC 61753-091-02:2022)

Lichtwellenleiter - Verbindungselemente und passive  
Bauteile - Betriebsverhalten - Teil 091-02: Nicht mit  
Steckverbindern versehene unvollständig umlaufende  
Einmoden-Lichtwellenleiter-Zirkulatoren mit 3 Anschlüssen  
für die Kategorie C - Kontrollierte Umgebung  
(IEC 61753-091-02:2022)

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## European foreword

The text of document 86B/4555/FDIS, future edition 1 of IEC 61753-091-02, 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 IEC 61753-091-02:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2022-12-23 level by publication of an identical national standard or by endorsement
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61300 (series) NOTE Harmonized as EN 61300 (series)

IEC 61753-091-2:2012 NOTE Harmonized as EN 61753-091-2:2013 (not modified)

IEC 61977 NOTE Harmonized as EN IEC 61977

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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

**Part 091-02: Non-connectorized 3-port incompletely circulated single-mode fibre optic circulators for category C – Controlled environments**

**Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance –**

**Partie 091-02: Circulateurs fibroniques à circulation partielle à 3 ports, non connectorisés et équipés de fibres optiques unimodales, pour la catégorie C – Environnements contrôlés**



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IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Part 091-02: Non-connectorized 3-port incompletely circulated single-mode fibre optic circulators for category C – Controlled environments**

**Dispositifs d'interconnexion et composants passifs fibroniques – Norme de performance –**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES AND  
PASSIVE COMPONENTS – PERFORMANCE STANDARD –****Part 091-02: Non-connectorized 3-port incompletely circulated  
single-mode fibre optic circulators for category C –  
Controlled environments**

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IEC 61753-091-02 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This first edition cancels and replaces IEC 61753-091-2 published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61753-091-2:

- a) change of title adding the 3-port incompletely circulated type;
- b) harmonization of terms and definitions with those in IEC 61977 and IEC TS 62627-09;
- c) harmonization of test items and their conditions with IEC 61753-1:2018 and IEC 61753-1:2018/AMD1:2020.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86B/4555/FDIS	86B/4578/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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

## Part 091-02: Non-connectorized 3-port incompletely circulated single-mode fibre optic circulators for category C – Controlled environments

### 1 Scope

This part of IEC 61753 contains the minimum test and measurement requirements and severities which a fibre optic circulator as specified by IEC 62077 is expected to satisfy in order to be categorized as meeting the requirements of circulators used in controlled environments as specified in IEC 61753-1:2018 and IEC 61753-1:2018/AMD1:2020. The requirements cover non-connectorized single-mode fibre 3-port incompletely circulated type optical circulators for category C used in controlled environments.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 60794-2-50, *Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

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 or 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 61300-2-17, *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*

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 strain relief*

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 61300-3-2, *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*

IEC 61300-3-3, *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 61300-3-7, *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 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-28: Examinations and measurements – Transient loss*

IEC 61300-3-32, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-32: Examinations and measurements – Polarization mode dispersion measurement for passive optical components*

IEC 61753-1:2018, *Fibre optic interconnecting devices and passive components – Performance standard – Part 1: General and guidance*  
IEC 61753-1:2018/AMD1:2020

IEC 62077, *Fibre optic interconnecting devices and passive components – Fibre optic circulators – Generic specification*

IEC TS 62627-09, *Fibre optic interconnecting devices and passive components – Vocabulary for passive optical devices*

### **3 Terms and definitions**

For the purposes of this document, the terms and definitions given in IEC 62077 and IEC TS 62627-09 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>