
**Optična vlakna – 1-42. del: Metode merjenja in preskusni postopki -
Kromatična disperzija (IEC 60793-1-42:2001)***

Optical fibres - Part 1-42: Measurement methods and test procedures - Chromatic dispersion (IEC 60793-1-42:2001)

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EUROPEAN STANDARD

EN 60793-1-42

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2002

ICS 33.180.10

Partly supersedes EN 188000:1992

English version

Optical fibres
Part 1-42: Measurement methods and test procedures -
Chromatic dispersion
(IEC 60793-1-42:2001)

Fibres optiques
Partie 1-42: Méthodes de mesure
et procédures d'essai -
Dispersion chromatique
(CEI 60793-1-42:2001)

Lichtwellenleiter
Teil 1-42: Messmethoden
und Prüfverfahren -
Chromatische Dispersion
(IEC 60793-1-42:2001)

This European Standard was approved by CENELEC on 2001-10-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 86A/671/FDIS, future edition 1 of IEC 60793-1-42, prepared by SC 86A, Fibres and cables, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60793-1-42 on 2001-10-01.

This European Standard supersedes subclause 4.15 (test method 308) and subclause 4.16 (test method 309) of EN 188000:1992.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-10-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annexes A, B, C, D and ZA are normative.

Annex ZA has been added by CENELEC.

Compared to IEC 60793-1:1989 and IEC 60793-2:1992, IEC/SC 86A has adopted a revised structure of the new IEC 60793 series: The individual measurement methods and test procedures for optical fibres are published as "Part 1-XX"; the product standards are published as "Part 2-XX".

The general relationship between the new series of EN 60793 and the superseded European Standards of the EN 188000 series is as follows:

| EN | Title | supersedes |
|---------------|--|--|
| EN 60793-1-XX | Optical fibres -- Part 1-XX: Measurement methods and test procedures | Individual subclauses of EN 188000:1992 |
| EN 60793-2-XX | Optical fibres -- Part 2-XX: Product specifications | EN 188100:1995 EN 188101:1995 EN 188102:1995 EN 188200:1995 EN 188201:1995 EN 188202:1995 |

EN 60793-1-4X consists of the following parts, under the general title: Optical fibres:

- Part 1-40: Measurement methods and test procedures – Attenuation
- Part 1-41: Measurement methods and test procedures – Bandwidth
- Part 1-42: Measurement methods and test procedures – Chromatic dispersion
- Part 1-43: Measurement methods and test procedures – Numerical aperture
- Part 1-44: Measurement methods and test procedures – Cut-off wavelength
- Part 1-45: Measurement methods and test procedures – Mode field diameter
- Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance
- Part 1-47: Measurement methods and test procedures – Macrobending loss
- Part 1-48: Measurement methods and test procedures – Under consideration
- Part 1-49: Measurement methods and test procedures – Under consideration

Endorsement notice

The text of the International Standard IEC 60793-1-42:2001 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60793-1-31 | - ¹⁾ | Optical fibres Part 1-31: Measurement methods and test procedures - Tensile strength | EN 60793-1-31 | 2002 ²⁾ |

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¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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NORME
INTERNATIONALE
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STANDARD

CEI
IEC

60793-1-42

Première édition
First edition
2001-07

Fibres optiques –

**Partie 1-42:
Méthodes de mesure et procédures d'essai –
Dispersion chromatique**

Optical fibres –

**Part 1-42:
Measurement methods and test procedures –
Chromatic dispersion**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

Part 1-42: Measurement methods and test procedures –
Chromatic dispersion

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60793-1-42 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This standard, together with the other standards in the IEC 60793-1-4X series, replaces the second edition of IEC 60793-1-4, of which it constitutes a technical revision.

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

| FDIS | Report on voting |
|--------------|------------------|
| 86A/671/FDIS | 86A/695/RVD |

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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table. [SIST EN 60793-1-42:2004](#)

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This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A, B, C and D form an integral part of this standard.

IEC 60793-1-1 and IEC 60793-1-2 cover generic specifications.

IEC 60793-1-4X consists of the following parts, under the general title: Optical fibres:

- Part 1-40: Measurement methods and test procedures – Attenuation
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- Part 1-42: Measurement methods and test procedures – Chromatic dispersion
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- Part 1-48: Measurement methods and test procedures – Under consideration
- Part 1-49: Measurement methods and test procedures – Under consideration

The committee has decided that the contents of this publication will remain unchanged until 2003. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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INTRODUCTION

Publications in the IEC 60793-1 series concern measurement methods and test procedures as they apply to optical fibres.

Within the same series several different areas are grouped, as follows:

- parts 1-10 to 1-19: General
- parts 1-20 to 1-29: Measurement methods and test procedures for dimensions
- parts 1-30 to 1-39: Measurement methods and test procedures for mechanical characteristics
- parts 1-40 to 1-49: Measurement methods and test procedures for transmission and optical characteristics
- parts 1-50 to 1-59: Measurement methods and test procedures for environmental characteristics.

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