



**NSAI**  
Standards

Irish Standard  
I.S. EN 60793-1-60:2017

# Optical fibres - Part 1-60: Measurement methods and test procedures - Beat length

**I.S. EN 60793-1-60:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 60793-1-60:2017 is the adopted Irish version of the European Document EN 60793-1-60:2017, Optical fibres - Part 1-60: Measurement methods and test procedures - Beat length

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**EN 60793-1-60**

**NORME EUROPÉENNE**

**EUROPÄISCHE NORM**

May 2017

ICS 33.180.10

English Version

**Optical fibres - Part 1-60: Measurement methods and test  
procedures - Beat length  
(IEC 60793-1-60:2017)**

Fibres optiques - Partie 1-60: Méthodes de mesure et  
procédures d'essai - Longueur de battement  
(IEC 60793-1-60:2017)

Lichtwellenleiter - Teil 1-60: Messmethoden und  
Prüfverfahren - Schwebungslänge  
(IEC 60793-1-60:2017)

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **EN 60793-1-60:2017**

### **European foreword**

The text of document 86A/1737/CDV, future edition 1 of IEC 60793-1-60, prepared by SC 86A "Fibres and cables" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60793-1-60:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at (dop) 2017-12-14  
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In the official version, for Bibliography, the following note has to be added for the standard indicated :

IEC 60793-2	NOTE	Harmonized as EN 60793-2.
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## 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 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60793-1-1	-	Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance	EN 60793-1-1	-
IEC 60793-1-48	-	Optical fibres - Part 1-48: Measurement methods and test procedures - Polarization mode dispersion	EN 60793-1-48	-
IEC 60793-2-70	-	Optical fibres - Part 2-70: Product specifications - Sectional specification for polarization-maintaining fibres	EN 60793-2-70	-

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**IEC 60793-1-60**

Edition 1.0 2017-02

# **INTERNATIONAL STANDARD**



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**Optical fibres –  
Part 1-60: Measurement methods and test procedures – Beat length**



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**IEC 60793-1-60**

Edition 1.0 2017-02

# INTERNATIONAL STANDARD



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## **Optical fibres – Part 1-60: Measurement methods and test procedures – Beat length**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## OPTICAL FIBRES –

**Part 1-60: Measurement methods and test procedures –  
Beat length**

## FOREWORD

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International Standard IEC 60793-1-60 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

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

CDV	Report on voting
86A/1737/CDV	86A/1782/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 60793 series, published under the general title *Optical fibres*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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- replaced by a revised edition, or
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## OPTICAL FIBRES –

### Part 1-60: Measurement methods and test procedures – Beat length

#### 1 Scope

This part of IEC 60793 defines test methods for both the phase beat length, and the group beat length. These two parameters are defined differently, and will give different results depending on the type of polarization-maintaining (PM) fibre.

The phase beat length is the relevant parameter for the fibres ability to maintain a high extinction ratio. This is described in more details in Annexes A and B.

#### 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 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60793-1-1, *Optical fibres – Part 1-1: Measurement methods and test procedures – General and guidance*

IEC 60793-1-48, *Optical fibres – Part 1-48: Measurement methods and test procedures – Polarization mode dispersion*

IEC 60793-2-70<sup>1</sup>, *Optical fibres – Part 2-70: Product specifications – Sectional specifications for polarization-maintaining fibres*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60793-1-1 and the following 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>

##### 3.1

##### phase beat length

$L_{B(\text{phase})}$

distance over which two orthogonal polarization modes are delayed by one cycle ( $2\pi$ )

##### 3.2

##### group beat length

$L_{B(\text{group})}$

distance over which the group delay difference is one cycle ( $2\pi$ )

Note 1 to entry A group delay is based on group refractive index.

<sup>1</sup> Under preparation. Stage at the time of publication: IEC CCDV 60793-2-70:2017.

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