
Irish Standard
I.S. EN 61314-1:2012

# Fibre optic interconnecting devices and passive components - Fibre optic fan-outs -- Part 1: Generic specification (IEC 61314-1:2011 (EQV))

# I.S. EN 61314-1:2012

*Incorporating amendments/corrigenda issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.


| *This document replaces:* | *This document is based on:* | *Published:* |
|---|---|---|
| EN 61314-1:2009 | EN 61314-1:2012<br>EN 61314-1:2009 | 23 March, 2012<br>23 April, 2009 |

This document was published
under the authority of the NSAI and comes into effect on:

17 April, 2012

ICS number:
33.180.20



NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie

W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie


Údarás um Chaighdeáin Náisiúnta na hÉireann

**I.S. EN 61314-1:2012**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 61314-1

March 2012

ICS 33.180.20

Supersedes EN 61314-1:2009

English version

# Fibre optic interconnecting devices and passive components - Fibre optic fan-outs - Part 1: Generic specification

(IEC 61314-1:2011)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Systèmes d'éclatement pour fibres optiques - Partie 1: Spécification générique (CEI 61314-1:2011)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Lichtwellenleiteraufteiler - Teil 1: Fachgrundspezifikation (IEC 61314-1:2011)

This European Standard was approved by CENELEC on 2011-12-29. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

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



Ref. No. EN 61314-1:2012 E

## Foreword

The text of document 86B/3270/FDIS, future edition 4 of IEC 61314-1, 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 61314-1:2012.

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) | 2012-09-29 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2012-12-29 |

This document supersedes EN 61314-1:2009.

The specific technical changes from EN 61314-1:2009 are to reconsider a drawing showing the relationship between EN 60874, EN 61753, EN 61754 series of standards, and updating the normative references.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 61314-1:2011 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 60793-1 series | NOTE | Harmonized in EN 60793-1 series. |
| IEC 60869-1 | NOTE | Harmonized as EN 60869-1. |

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

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60027 | Series | Letter symbols to be used in electrical technology | - | - |
| IEC 60050-731 | - | International Electrotechnical Vocabulary (IEV) - Chapter 731: Optical fibre communication | - | - |
| IEC 60617 | Data-base | Graphical symbols for diagrams | - | - |
| IEC 60695-11-5 | - | Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance | EN 60695-11-5 | - |
| IEC 60793-1-1 | - | Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance | EN 60793-1-1 | - |
| IEC 60794-1-1 | - | Optical fibre cables - Part 1-1: Generic specification - General | EN 60794-1-1 | - |
| IEC 60825-1 | - | Safety of laser products - Part 1: Equipment classification and requirements | EN 60825-1 | - |
| IEC 60869-1 | - | Fibre optic attenuators - Part 1: Generic specification | EN 60869-1 | - |
| IEC 60874-1 | - | Fibre optic interconnecting devices and passive components - Connectors for optical fibres and cables - Part 1: Generic specification | EN 60874-1 | - |
| IEC 61073-1 | - | Fibre optic interconnecting devices and passive components - Mechanical splices and fusion splice protectors for optical fibres and cables - Part 1: Generic specification | EN 61073-1 | - |
| IEC 61300 | Series | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures | EN 61300 | Series |
| IEC 61753 | Series | Fibre optic interconnecting devices and passive components performance standard | EN 61753 | Series |
| IEC/TR 61930 | - | Fibre optic graphical symbology | - | - |
| IEC/TR 61931 | - | Fibre optic - Terminology | - | - |

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC Guide 102 | - | Electronic components - Specification structures for quality assessment (Qualification approval and capability approval) | - | - |
| IECQ QC 001002-3 | - | IEC Quality Assessment System for Electronic Components (IECQ) - Rules of Procedure - Part 3: Approval procedures | - | - |
| ISO 129 | - | Technical drawings - Dimensioning - General principles, definitions, methods of execution and special indications | - | - |
| ISO 286-1 | - | ISO system of limits and fits - Part 1: Bases of tolerances, deviations and fits | EN ISO 286-1 | - |
| ISO 1101 | - | Geometrical Product Specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out | EN ISO 1101 | - |
| ISO 8601 | - | Data elements and interchange formats - Information interchange - Representation of dates and times | - | - |

# CONTENTS

FOREWORD ..... 3
1 Scope ..... 5
2 Normative references ..... 5
3 Terms and definitions ..... 6
4 Requirements ..... 6
4.1 General ..... 6
4.2 Classification ..... 6
4.2.1 General ..... 6
4.2.2 Style ..... 7
4.2.3 Arrangement ..... 7
4.2.4 Variant ..... 8
4.2.5 Normative reference extensions ..... 8
4.3 Documentation ..... 9
4.3.1 Symbols ..... 9
4.3.2 Specification system ..... 9
4.3.3 Drawings ..... 10
4.3.4 Tests and measurements ..... 11
4.3.5 Test reports ..... 11
4.3.6 Instructions for use ..... 11
4.4 Standardisation system ..... 11
4.4.1 Interface standards ..... 11
4.4.2 Performance standards ..... 12
4.4.3 Optical interface standards ..... 12
4.4.4 Reliability documentation ..... 13
4.4.5 Interlinking ..... 13
4.5 Design and construction ..... 15
4.5.1 Materials ..... 15
4.5.2 Workmanship ..... 15
4.6 Quality ..... 15
4.7 Performance ..... 15
4.8 Identification and marking ..... 15
4.8.1 Variant identification number ..... 15
4.8.2 Component marking ..... 16
4.8.3 Package marking ..... 16
4.9 Packaging ..... 16
4.10 Storage conditions ..... 16
4.11 Safety ..... 17
Bibliography ..... 18

Figure 1 – Pigtail/patchcord fan-out ..... 7
Figure 2 – Semi-compact fan-out ..... 7
Figure 3 – Compact fan-out ..... 7
Figure 4 – Standards ..... 14
Figure 5 – Standards interlink matrix ..... 15

Table 1 – Three-level IEC specification structure ..... 9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC FAN-OUTS –

## Part 1: Generic specification

## FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61314-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This fourth edition cancels and replaces the third edition published in 2009 and constitutes a technical revision.

The specific technical changes from the previous edition are to reconsider a drawing showing the relationship between IEC 60874, IEC 61753, IEC 61754 series of standards, and updating the normative references.

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

| FDIS | Report on voting |
|---|---|
| 86B/3270/FDIS | 86B/3300/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 61314 series, under the general title *Fibre optic interconnecting devices and passive components – Fibre optic fan-outs* can be found on the IEC website.

Future standards in this series will carry the general new title as cited above. Titles of existing standards in this series will be updated at the time of the new edition.

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

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

# FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC FAN-OUTS –

## Part 1: Generic specification

## 1 Scope

This part of IEC 61314 specifies requirements for fan-outs used in the fibre optics field to provide a safe transition from multifibre cable units to individual fibres or cables.

This standard corresponds to QC880000 of IEC Quality Assessment System.

This standard does not cover test and measurement procedures, which are described in IEC 61300 series.

## 2 Normative references

The following referenced documents are indispensable for the application 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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050-731, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication*

IEC 60617, *Graphical symbols for diagrams*

IEC 60695-11-5, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

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

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – General*

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 60869-1, *Fibre optic attenuators – Part 1: Generic specification*

IEC 60874-1, *Connectors for optical fibres and cables – Part 1: Generic specificat*ion

IEC 61073-1, *Fibre optic interconnecting devices and passive components – Mechanical splices and fusion splice protectors for optical fibres and cables – Part 1: Generic specification*

IEC 61300 (all parts), *Fibre optic interconnecting devices and passive components*

IEC 61753 (all parts), *Fibre optic interconnecting devices and passive components performance standard*