

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fibre optic interconnecting devices and passive components – Connectors
for optical fibres and cables –
Part 1: Generic specification**

**Dispositifs d'interconnexion et composants passifs à fibres optiques –
Connecteurs pour fibres et câbles optiques –
Partie 1: Spécification générique**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – CONNECTORS FOR OPTICAL FIBRES AND CABLES –

Part 1: Generic specification

FOREWORD

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International Standard IEC 60874-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This sixth edition cancels and replaces the fifth edition published in 2006, and constitutes a technical revision. The specific technical changes from the previous edition include removal of quality assessment procedure, to add the definition of plug-socket configuration, 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/3272/FDIS	86B/3304/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 the IEC 60874 series, under the general title *Fibre optic interconnecting devices and passive components – Connectors for optical fibres and cables* 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

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- withdrawn,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

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – CONNECTORS FOR OPTICAL FIBRES AND CABLES –

Part 1: Generic specification

1 Scope

This part of IEC 60874 applies to fibre optic connector sets and individual components (i.e. adaptors, plugs, sockets) for all types, sizes and structures of fibres and cables. It includes:

- connector set requirements;

This part of IEC 60874 is divided into four clauses:

- Clauses 1 (Scope), 2 (Normative references) and 3 (Terms and definitions) contain general information pertaining to this generic specification;
- Clause 4 (Requirements) contains all the requirements to be met by connectors covered by this specification. This includes requirements for classification, the IEC specification system, documentation, materials, workmanship, quality, performance, identification, and packaging.

NOTE 1 Clauses 1 to 4 are applicable generally and refer to all connector standards

NOTE 2 This part of IEC 60874 applies also to the connectors covered by the IEC 61753, IEC 61754, and IEC 61755 series.

This standard does not cover test and measurement procedures, which are described in the 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 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

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

IEC 61753 (all parts), *Performance standards*

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

IEC 61754 (all parts), *Fibre optic connector interfaces*

IEC 61755 (all parts), *Fibre optic connector optical interfaces*

IEC/TR 61930, *Fibre optic graphical symbology*

IEC/TR 61931, *Fibre optic terminology*

ISO 129, *Technical drawings – Indication of dimensions and tolerances – Part 1: General principles*

ISO 286-1, *Geometrical product specifications (GPS) – ISO code system for tolerances on linear sizes – Part 1: Bases of tolerances, deviations and fits*

ISO 1101, *Geometrical product specifications (GPS) – Geometrical tolerancing – Tolerances of form, orientation, location and run-out*

ISO 8601, *Data elements and interchange formats – Information interchange – Representation of dates and times*

3 Terms and definitions

For the purposes of this part of IEC 60874, the definitions contained in IEC 60050-731 and IEC 61931, as well as the following definitions, apply.

3.1

adaptor

a component in which two or more ferrules are aligned

3.2

alignment pins

cylindrical rods used for alignment in some types of connectors

NOTE Typically these are used in pairs and inserted into specific guide holes in the two plugs (usually for multifibre connectors) to provide the alignment.

3.3

APC connector

connector with angled convex end-face ferrule capable of making an angled physical contact between the fibres

3.4

butting optical coupling

coupling in which the optical ports are in contact with each other

3.5

expanded beam optical coupling

coupling in which the optical ports use lens technology

3.6

ferrule

fibre holding component part of the plug, usually aligned in the sleeve of an adaptor. It confines the end(s) of a single or of multiple optical fibres