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**Optics and optical instruments — Lasers  
and laser-related equipment — Fibre optic  
connectors for non-telecommunication  
laser applications**

*Optique et instruments d'optique — Lasers et équipements associés aux  
lasers — Connecteurs pour fibres optiques pour les applications laser  
autres que télécommunication*  
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ISO 11149:1997

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11149 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 9, *Electro-optical systems*.

Annex A of this International Standard is for information only.

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# Optics and optical instruments – Lasers and laser-related equipment – Fibre optic connectors for non-telecommunication laser applications

## 1 Scope

This International Standard specifies the information to be provided by a supplier of connectors between laser devices and optical fibre and optical cable assemblies. It also specifies requirements for

- a) minimum documentation to be supplied by suppliers of fibre optic connectors and assemblies to ensure a correct coupling, and
- b) minimum documentation to be supplied by laser device suppliers when the output of the laser device is through a fibre connector.

This International Standard does not apply to connectors used for telecommunications.

## 2 Normative references

The following standards contain provisions which, through reference in the text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 11145:1994, *Optics and optical instruments — Lasers and laser-related equipment — Vocabulary and symbols*.

ISO 11252:1993, *Lasers and laser-related equipment — Laser device — Minimum requirements for documentation*.

IEC 874-1:1993, *Connectors for optical fibres and cables — Part 1: Generic specification*.

## 3 Definitions

For the purposes of this International Standard, the definitions given in IEC 874-1 and ISO 11145 apply.

## 4 Requirements

### 4.1 Documentation from connector supplier

The documentation listed in table 1 shall be provided by the suppliers of the fibre optic connectors and of the fibre optic assemblies, respectively.

Table 1 — Required documentation

Details of	For the connector alone	For the connector including cable
Spectral range (10 % transmission loss)	X	X
Maximum acceptable peak power, pulse energy, average power	X	X
Fibre/cable diameter	X	X
Numerical aperture (acceptance angle) and/or mode field diameter		X
Transmission loss		X
Assembly instructions	X	
Dimensions	X	X
Pull-out force	X	X
Intended use	X	X
Environmental conditions	X	X
Safety information (labelling, etc.)	X	X
Geometrical position of the fibre end with respect to a mechanical reference plane on the connector	X	X

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#### 4.2 Documentation from the laser device supplier

In addition to the documentation on the laser device itself, as required by ISO 11252, the laser device supplier shall specify the diameter and relative position of the beam waist with respect to the laser device, when the laser device includes one or more fibre optic connectors.

**Annex A**  
**(informative)**  
**Bibliography**

[1] IEC 825-1:1993, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide.*

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**Descriptors:** optics, optical equipment, laser, optical fibres, connectors, fibre optic connectors, technical data sheets, instructions.

Price based on 3 pages

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