

INTERNATIONAL STANDARD



Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –

Part 3-53: Examinations and measurements – Encircled angular flux (EAF) measurement method based on two-dimensional far field data from step index multimode waveguide (including fibre)



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Part 3-53: Examinations and measurements – Encircled angular flux (EAF) measurement method based on two-dimensional far field data from step index multimode waveguide (including fibre)**

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AND PASSIVE COMPONENTS –
BASIC TEST AND MEASUREMENT PROCEDURES –****Part 3-53: Examinations and measurements –
Encircled angular flux (EAF) measurement method based
on two-dimensional far field data from step index multimode
waveguide (including fibre)**

FOREWORD

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International Standard IEC 61300-3-53 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86B/3850/FDIS	86B/3875/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 in the IEC 61300 series, published under the general title, *Fibre optic interconnecting and passive components – Basic test and measurement procedures*, 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 website 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- withdrawn,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
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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 3-53: Examinations and measurements – Encircled angular flux (EAF) measurement method based on two-dimensional far field data from step index multimode waveguide (including fibre)

1 Scope

This part of IEC 61300 is intended to characterize the encircled angular flux of measurement step index multimode waveguide light sources, in which most of the transverse modes are excited. The term waveguide is understood to include both channel waveguides and optical fibres but not slab waveguides in this standard.

Encircled angular flux (EAF) is the fraction of the total optical power radiating from a step index multimode waveguide's core within a certain solid angle. The EAF is measured as a function of the numerical aperture full angle. The basic approach is to collect, for every measurement, two dimensional far field data using a calibrated camera and to convert them mathematically into encircled angular flux.

2 Normative references

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.

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

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

encircled angular flux

EAF

fraction of the total optical power radiating from a step index multimode waveguide's core within a certain solid angle

3.2

$f\theta$ lens

lens converting the angle of incidence of the input beam, θ , into the output beam height, h

Note 1 to entry: The relationship between them is $h = f\theta$, where f is the focal length of the lens.