

# TECHNICAL REPORT

# IEC TR 60825-13

First edition  
2006-08

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**Safety of laser products –**

**Part 13:  
Measurements for classification  
of laser products**

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## Safety of laser products – Part 13: Measurements for classification of laser products

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## SAFETY OF LASER PRODUCTS –

## Part 13: Measurements for classification of laser products

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IEC 60825-13, which is a technical report, has been prepared by IEC technical committee 76: Optical radiation safety and laser equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
76/332/DTR	76/345/RVC

Full information on the voting for the approval of this technical report 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.

This technical report is to be used in conjunction with IEC 60825-1:1993 and its Amendment 1 (1997) and Amendment 2 (2001), referred to in this report as “the standard”.

A list of all parts of the IEC 60825 series, published under the general title *Safety of laser products*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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- withdrawn;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.

A bilingual version of this publication may be issued at a later date.

Withdrawn

## SAFETY OF LASER PRODUCTS –

### Part 13: Measurements for classification of laser products

#### 1 Scope

This part of IEC 60825 provides manufacturers, test houses, safety personnel, and others with practical guidance on methods to perform radiometric measurements or analyses to establish the emission level of laser energy in accordance with IEC 60825-1 (herein referred to as “the standard”). The measurement procedures described in this technical report are intended as guidance for classification of laser products in accordance with that standard. Other procedures are acceptable if they are better or more appropriate.

Information is provided for calculating accessible emission limits (AELs) and maximum permissible exposures (MPEs), since some parameters used in calculating the limits are dependent upon other measured quantities.

This document is intended to apply to lasers, including extended sources and laser arrays. Users of this document should be aware that the procedures described herein for extended source viewing conditions may yield more conservative results than when using more rigorous methods.

NOTE Work continues on more complex source evaluations and will be provided as international agreement on the methods is reached.

#### 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 60825-1:1993, *Safety of laser products – Part 1: Equipment classification, requirements and user's guide*<sup>1)</sup>  
Amendment 1 (1997)  
Amendment 2 (2001)

IEC 61040, *Power and energy measuring detectors, instruments and equipment for laser radiation*

ISO 11554, *Optics and optical instruments – Lasers and laser-related equipment – Test methods for laser beam power, energy and temporal characteristics*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions contained in IEC 60825-1 as well as the following apply.

##### 3.1

##### **angular velocity**

speed of a scanning beam in radians per second

<sup>1)</sup> There exists a consolidated edition (1.2) of IEC 60825-1 (1993), including its Amendment 1 (1997) and Amendment 2 (2001).