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Infrared free air applications

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

Commission Electrotechnique Internationale
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INFRARED FREE AIR APPLICATIONS

FOREWORD

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International Standard IEC 61920, has been prepared by technical area 3, Infrared systems and applications, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

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

FDIS	Report on voting
100/717/FDIS	100/749/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.

The committee has decided that the contents of this publication will remain unchanged until 2006. 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- withdrawn;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.

INFRARED FREE AIR APPLICATIONS

1 Scope and object

This International Standard describes the classification of IR devices into groups and classes in order to identify and clarify problems caused by mutual interference. Mutual interference is caused by the increasing parallel application of different infrared (IR) systems.

Due to its physical characteristics, the possibility of local limitation is a special feature of IR radiation.

In this standard, the wavelength range from 700 nm to 1 600 nm is considered. All systems based on free air application which intentionally or unintentionally use IR radiation in this range, are included. Products which unintentionally emit IR radiation, such as illumination equipment are not deemed to be IR application systems. They are, however, integrated into this standard in order to enable facility planners to take into consideration and to foresee provisions against disturbance of IR application systems by such unintentionally emitted radiation.

The object of this standard is to prevent or at least to minimize mutual interference and to allow the coexistence of different IR products. It is intended to identify each IR product by its characteristics, according to the classification criteria.

It is not the object of this standard to describe the consequences of interference between IR systems or safety aspects of optical radiation.

All applications of fibre-optic technology are excluded.

In this context “free air” means freely radiated IR in indoor or outdoor applications.

If the IR systems are used for information transmission, this standard is only relevant in connection with the physical layer of the open systems interconnection (OSI) reference model (ISO 7498-1).

NOTE The reader should be aware that a risk of interference between different infrared systems as assessed by this standard is based on general parameters and therefore cannot take all the parameters involved into account. In many cases the practical results may differ from those expected, for example the positioning of sender and receiver and the choice of advanced coding and decoding schemes. All these factors beyond the physical layer may have an effect on the final result.

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 60050-713:1998, *International Electrotechnical Vocabulary (IEV) – Part 713: Radio-communications: transmitters, receivers, networks and operation*

IEC 60050-845:1987, *International Electrotechnical Vocabulary (IEV) – Chapter 845: Lighting*

IEC 60417-DB:2002[1], *Graphical symbols for use on equipment*

IEC 60747-5-1:1997, *Discrete semiconductor devices and integrated circuits – Part 5-1: Optoelectronic devices – General*

ISO/IEC 7498-1:1994, *Information technology – Open systems interconnection – Basic reference model: The basic model*

[1] 'DB' refers to the IEC on-line database.