

Optics and photonics — Specification of reference dictionary

Part 1: General overview on organization and structure

ICS 37.020

National foreword

This British Standard is the UK implementation of ISO 23584-1:2009.

The UK participation in its preparation was entrusted to Technical Committee CPW/172/1, Fundamental standards.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Part 1: General overview on organization and structure

*Optique et photonique — Spécification d'un dictionnaire de référence —
Partie 1: Aperçu général sur l'organisation et la structure*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 23584-1 was prepared by Technical Committee ISO/TC 172, *Optics and photonics*.

ISO 23584 consists of the following parts, under the general title *Optics and photonics — Specification of reference dictionary*:

- *Part 1: General overview on organization and structure*
- *Part 2: Classes' and properties' definitions*

Introduction

Modern business operations — known collectively as e-Business and including e-Marketplaces, e-Product catalogues and Lifecycle Management — are characterized by:

1) **Complex structures of the product lifecycle**

In each step of the product lifecycle (ranging from the first idea through development, manufacture, distribution, use and disposal of the product) information from another step or other steps is required, moreover, new additional information is generated. Numerous parties and/or processes are involved in or form part of the product lifecycle. Hence information needs to be transferred to and/or exchanged between those parties and processes, across company internal interfaces and across interfaces to external business partners (such as other manufacturers, suppliers and customers).

To ensure successful handling of these business operations it is essential that the communication between parties and processes involved be independent from individual agreements on data and that the data, once created, be readily usable by other parties and in other processes without a need for conversion mechanisms.

2) **Availability of new electronic media**

Suppliers make efforts to provide such media and (potential) buyers are bombarded with this information, whilst missing transparency.

To take advantage of the economic potential of these new media, product information provided by various suppliers must be clear and unambiguous (inter-comparable) for a potential buyer.

The requirement arising from both of these aspects is that the description of products and processes be:

- uniformly consistent and unambiguous;
- neutral (neither company-specific nor software-specific nor product-specific);
- available in electronic form for ready use without conversion.

This is generally true for any business area.

For the business area of optics and photonics, as regards optical data, the situation that led to the decision to prepare ISO 23584 was:

- a) available ISO Standards such as the ISO 10110 series, describe the preparation of drawings and provide verbal definition of properties, but do not provide sufficient detail of information required for an unambiguous data exchange;
- b) programs (i.e. software, either commercially available or custom-made) used in different areas of a single company or amongst business partners (e.g. Code V, Zemax, AutoCAD, HiCAD, MS Excel, SAP, etc.) use different interfaces and different internal data representation; any attempt to exchange data between them requires multi-directional conversion mechanisms or is associated with a risk of introducing errors or simply is impossible;
- c) a consistent standardized terminology over the entire optics area does not exist.

On the basis of standardized and electronically available properties, data exchange between, and immediate use of transmitted data in, the programs (software) used in various departments or branches of one company

or at various business partners can be implemented. Use of standardized properties increases process comprehensiveness at companies and permits closer IT-based links between customers and suppliers in the areas of development and supply. This in turn leads to cost savings by way of cuts in the number of required parts and shorter product-development time frames.

Though limited to the field of optics and photonics, the reference dictionary must include all relevant properties required for the full description of optical products and processes. Therefore, in addition to the properties that are peculiar to the field of optics and photonics, the reference dictionary also includes, be it by specification or be it by reference from other dictionaries, properties being of universal nature rather than specific to “optics and photonics”, e.g. quantities and units or fundamental physical entities, and the required properties from other technical fields, e.g. mechanical components such as mountings for optical elements, if they are not defined elsewhere (i.e. in another PLIB standard) and so cannot be referenced.

In the interests of utmost effectiveness the reference dictionary and its entire content is made available in electronic form, ready for import into and use in a user's application system.

NOTE Ideally, the reference dictionary and its content will be available in the form of an online database. It is acknowledged, however, that the provision of ISO properties in an online database is a new approach in ISO and that no suitable ISO database is currently available to provide the content and to allow export and subsequent import into the application system of the user. Therefore, this part of ISO 23584 is made available in the conventional form, but is supplemented by the relevant data in processable form on CD-Rom or as a download.