
**Optics and photonics — Specification of
reference dictionary —**

**Part 2:
Classes' and properties' definitions**

*Optique et photonique — Spécification d'un dictionnaire de référence —
Partie 2: Définitions des classes et des propriétés*

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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 23584-2 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*

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Optics and photonics — Specification of reference dictionary —

Part 2: Classes' and properties' definitions

1 Scope

This part of ISO 23584, on the basis of the rules set forth in ISO 13584-42, ISO/IEC Guide 77-2 and IEC 61360-1, specifies a reference dictionary of standardized product properties for the area of optics and photonics.

The properties are determined on the basis of standardized attributes. To ensure optimum unambiguity, the standardized properties are classified into definition classes forming a so-called standardized "reference hierarchy".

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.

ISO 13584-42, *Industrial automation systems and integration — Parts library — Part 42: Description methodology: Methodology for structuring parts families*

ISO/IEC Guide 77-2, *Guide for specification of product properties and classes — Part 2: Technical principles and guidance*

IEC 61360-1, *Standard data elements types with associated classification scheme for electric items — Part 1: Definitions — Principles and methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13584-42, ISO/IEC Guide 77-2 and IEC 61360-1 apply.

NOTE Some basic definitions and principles of key importance for the understanding of this part of ISO 23584 are provided in ISO 23584-1:2009, Annex A for information.

4 Explanatory notes

Each property is defined in a particular definition class, which defines the domain of all properties specified therein. Once defined (in their definition class) the properties can be referenced, i.e. used, in other classes, e. g. in (standardized) application classes or immediately in a user's system. The entirety of definition classes makes up the ISO/TC 172 reference hierarchy.

The following definition classes form part of the reference dictionary for optics and photonics:

- +--- 01 generalities, terminology, standardization, documentation
- +--- quantities
- +--- quantities of light and related electromagnetic radiations
- +--- 07 mathematics, natural sciences
- +--- 11 health care technology

- +--- 13 environment, health protection, safety
- +--- 17 metrology and measurement
- +--- 21 mechanical systems and components for general use
- +--- 31 electronics
- +--- 37 image technology
- +--- functional coating
- +--- optical element
- +--- optical material
- +--- optical glass
- +--- optical system
- +--- optically used surface
- +--- diffractive surface
- +--- dioptric surface

The attribute information for these definition classes is given in Clause 5. The attribute information for their associated properties is specified in Clause 6. Both can be viewed immediately in the ISO/TC 172 database.

NOTE 1 The above structure of reference hierarchy provides the starting point included in this part of ISO 23584. It is not yet complete and will be expanded in the electronic version as more properties and their respective definition classes are defined.

In addition, a number of root application classes, one for ISO/TC 172 and one for each of the subcommittees of ISO/TC 172, have been included in order to provide the workspace for the committees to create their application classes, as required. These root application classes are given in Clause 7. They can also be viewed immediately in the ISO/TC 172 database.

NOTE 2 The reader should carefully study ISO 23584-1 regarding definition classes, which is a subset of the specification of ISO 13584-42.

5 Definition classes

5.1 ISOTC172-AAA005-001: 01 generalities, terminology, standardization, documentation

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA005-001.023 |
| Preferred name* | 01 generalities, terminology, standardization, documentation |
| Short name | terminology |
| Synonymous name | |
| Definition* | ICS class of generalities, terminology, standardization and documentation |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002. |
| List of defined properties | ISOTC172-AAA052-001 |
| Figure | |
| Classification to ICS* | 01.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | ISOTC172-AAA052-001 |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.2 ISOTC172-AAA018-001: quantities

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|--------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA018-001.015 |
| Preferred name* | quantities |
| Short name | quantities |
| Synonymous name | |
| Definition* | classification and description of quantities |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | ISOTC172-AAA052-001 |
| Figure | |
| Classification to ICS* | 01.060 |
| Its superclass | ISOTC172-AAA005-001 |
| Preferred name of superclass | 01 generalities, terminology, standardization, documentation |
| Keyword | dimension\quantity |
| Applicable properties | ISOTC172-AAA052-001 |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.3 ISOTC172-AAA008-001: quantities of light and related electromagnetic radiations

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA008-001.021 |
| Preferred name* | quantities of light and related electromagnetic radiations |
| Short name | |
| Synonymous name | |
| Definition* | quantities based on phenomena of light and related electromagnetic radiations |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | ISOTC172-AAA052-001 |
| Figure | |
| Classification to ICS* | 01.060 |
| Its superclass | ISOTC172-AAA018-001 |
| Preferred name of superclass | quantities |
| Keyword | |
| Applicable properties | ISOTC172-AAA052-001 |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.4 ISOTC172-AAA012-001: 07 mathematics, natural sciences

| Hierarchy | Definition classes |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*-Version*-Revision*] | ISOTC172-AAA012-001.019 |
| Preferred name* | 07 mathematics, natural sciences |
| Short name | natural sciences |
| Synonymous name | |
| Definition* | ICS class of the sciences that research the nature |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002. |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 07.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.5 ISOTC172-AAA019-001: 11 health care technology

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA019-001.014 |
| Preferred name* | 11 health care technology |
| Short name | |
| Synonymous name | |
| Definition* | ICS class of health care technology |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002 |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 11.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.6 ISOTC172-AAA001-001: 13 environment, health protection, safety

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA001-001.026 |
| Preferred name* | 13 environment, health protection, safety |
| Short name | environment and safety |
| Synonymous name | |
| Definition* | ICS class comprising all instruments, devices, equipments and methods for the protection and safety of health and the environment |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002 |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 13.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.7 ISOTC172-AAA009-001: 17 metrology and measurement

| Hierarchy | Definition classes |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*-Version*-Revision*] | ISOTC172-AAA009-001.012 |
| Preferred name* | 17 metrology and measurement |
| Short name | metrology |
| Synonymous name | |
| Definition* | ICS class of the science of metrology and measurement, the key areas of which are units and reference masters, measurement methods and procedures, measurement equipment and any impact on the measurement result of an individual carrying out the measurement |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002. |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 17.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.8 ISOTC172-AAA015-001: 21 mechanical systems and components for general use

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA015-001.014 |
| Preferred name* | 21 mechanical systems and components for general use |
| Short name | mechanical systems and components |
| Synonymous name | |
| Definition* | ICS class of mechanical parts and components, and of mechanical form features, which have been developed for a general function |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002 |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 21.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.9 ISOTC172-AAA028-001: 31 electronics

| Hierarchy | Definition classes |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Identifier [[Information supplier*-Code*-Version*-Revision*]] | ISOTC172-AAA028-001.012 |
| Preferred name* | 31 electronics |
| Short name | electronics |
| Synonymous name | |
| Definition* | ICS class of electronic components including optoelectronics and laser equipment |
| Source document of definition | |
| Note | |
| Remark | The class and its definition are based on the classification of ICS 5:2002. |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 31.000 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.10 ISOTC172-AAA003-001: 37 image technology

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA003-001.015 |
| Preferred name* | 37 image technology |
| Short name | |
| Synonymous name | |
| Definition* | ICS class of image technology, including optics (science and industry based on the science of light) and optical equipment |
| Source document of definition | |
| Note | Formerly optics was understood to be based on the science of visible light; nowadays optics is generally understood to be based on the science of electromagnetic radiation ranging from infrared through ultraviolet portions of the spectrum. |
| Remark | The class and its definition are based on the classification of ICS 5.2002. |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.000\37.020 |
| Its superclass | ISOTC172-AAA004-001 |
| Preferred name of superclass | Definition classes |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.11 ISOTC172-AAA013-001: functional coating

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA013-001.016 |
| Preferred name* | functional coating |
| Short name | |
| Synonymous name | |
| Definition* | thin film of materials deposited onto the surface of an optical element which provides specific optical or non-optical modifications of surface properties |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA003-001 |
| Preferred name of superclass | 37 image technology |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.12 ISOTC172-AAA011-001: optical element

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|----------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA011-001.014 |
| Preferred name* | optical element |
| Short name | |
| Synonymous name | |
| Definition* | part providing a function in optical imaging |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA003-001 |
| Preferred name of superclass | 37 image technology |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.13 ISOTC172-AAA002-001: optical material

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|--------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA002-001.013 |
| Preferred name* | optical material |
| Short name | |
| Synonymous name | |
| Definition* | material that has main properties usable for optical imaging |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA003-001 |
| Preferred name of superclass | 37 image technology |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.14 ISOTC172-AAA010-001: optical glass

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA010-001.017 |
| Preferred name* | optical glass |
| Short name | |
| Synonymous name | |
| Definition* | inorganic product produced by melting, which in principle solidifies without crystallization, intended for use in optical systems specified by its index of refraction, transmission of light, optical and material properties |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA002-001 |
| Preferred name of superclass | optical material |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.15 ISOTC172-AAA014-001: optical system

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA014-001.019 |
| Preferred name* | optical system |
| Short name | |
| Synonymous name | |
| Definition* | optical functional elements that follow one another, which describe optical imaging in its entirety |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA003-001 |
| Preferred name of superclass | 37 image technology |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.16 ISOTC172-AAA007-001: optically used surface

| Hierarchy | Definition classes |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier*-Code*- Version*-Revision*] | ISOTC172-AAA007-001.017 |
| Preferred name* | optically used surface |
| Short name | |
| Synonymous name | |
| Definition* | surface which separates two optically used media from each other |
| Source document of definition | |
| Note | |
| Remark | form element of an optical element which influences the optical reproduction by reflection and diffraction |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA003-001 |
| Preferred name of superclass | 37 image technology |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.17 ISOTC172-AAA017-001: diffractive surface

| Hierarchy | Definition classes |
|-----------------------------------------------------------------------|----------------------------------------------------------|
| Identifier [Information supplier*-Code*-Version*-Revision*] | ISOTC172-AAA017-001.023 |
| Preferred name* | diffractive surface |
| Short name | |
| Synonymous name | |
| Definition* | structured surface with diffractive power |
| Source document of definition | |
| Note | |
| Remark | ISO 25297-1:2012, NODIF: diffractive_surface_description |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA007-001 |
| Preferred name of superclass | optically used surface |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

5.18 ISOTC172-AAA006-001: dioptric surface

| Hierarchy | Definition classes |
|-----------------------------------------------------------------------|-----------------------------------------------------|
| Identifier [Information supplier*-Code*-Version*-Revision*] | ISOTC172-AAA006-001.016 |
| Preferred name* | dioptric surface |
| Short name | |
| Synonymous name | |
| Definition* | optical surface with refractive or reflective power |
| Source document of definition | |
| Note | |
| Remark | |
| List of defined properties | |
| Figure | |
| Classification to ICS* | 37.020 |
| Its superclass | ISOTC172-AAA007-001 |
| Preferred name of superclass | optically used surface |
| Keyword | |
| Applicable properties | |
| Applicable types | |
| Subclass selectors | |
| Class selector values | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

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6 Properties

6.1 ISOTC172-AAA036-001: Abbe number referred to d-line

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA036-001.027 |
| Preferred name* | Abbe number referred to d-line |
| Short name | v _d |
| Synonymous name | |
| Preferred symbol | v _d |
| Synonymous symbol | |
| Definition* | mathematical expression for determining the correction for chromatic aberration of an optical material or component referred to d-line, given as $v_d = (n_d - 1) / (n_F - n_C)$ |
| Source document of definition | adapted from ISO 9802:1996 |
| Note | Ratio of the refractive index at the d-line subtracted by 1 to the principal dispersion between F- and C-line $v_d = (n_d - 1) / (n_F - n_C)$ |
| Remark | ISO 25297-1:2012, NODIF: Abbe number |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.2 ISOTC172-AAA055-001: Abbe number referred to e-line

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA055-001.024 |
| Preferred name* | Abbe number referred to e-line |
| Short name | ve |
| Synonymous name | |
| Preferred symbol | ve |
| Synonymous symbol | |
| Definition* | mathematical expression for determining the correction for chromatic aberration of an optical material or component referred to e-line, given as $ve = (ne-1) / (nF'-nC')$ |
| Source document of definition | adapted from ISO 9802:1996 |
| Note | ratio of the refractive index at the e-line subtracted by 1 to the principal dispersion between F'- and C'-line $ve = (ne-1) / (nF'-nC')$ |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.3 ISOTC172-AAA075-001: acid resistance

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA075-001.027 |
| Preferred name* | acid resistance |
| Short name | SR |
| Synonymous name | |
| Preferred symbol | SR |
| Synonymous symbol | |
| Definition* | information about the behaviour of the surface of optical glasses that come into contact with large quantities of acidic solutions (from a practical standpoint, for example perspiration, laminating substances, carbonated water) |
| Source document of definition | ISO 8424: 1996 |
| Note | Acid Resistance is classified by the Acid Resistance Class number and the Identification of Visible Surface Changes number separated by "." If no Identification of Visible Surface Changes has been done, only the Acid Resistance Class number is given. |
| Remark | example 53.2 |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA069-001 ISOTC172-AAA072-001 |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.4 ISOTC172-AAA069-001: acid resistance class

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA069-001.058 |
| Preferred name* | acid resistance class |
| Short name | SR |
| Synonymous name | |
| Preferred symbol | SR |
| Synonymous symbol | |
| Definition* | of optical glasses is determined on the basis of the time required to remove a layer thickness of glass of 0,1 µm in an acidic solution of a given pH value at a temperature of 25 °C |
| Source document of definition | adapted from ISO 8424:1996 |
| Note | Two aggressive solutions are used in determining the resistance to acids: A strong acid (nitric acid, c = 0,5 mol/l, pH = 0,3) at 25 °C is used for the more resistant glass types. For glasses with less acid resistance, a weakly acidic solution with a pH value of 4,6 (standard acetate) is used, also at 25 °C. |
| Remark | The acid resistance class 5 forms the transition point between the two groups. Included in it are glasses, for which the time for removal of a layer thickness of 0,1 µm at a pH value of 0,3 is less than 0,1 h and at a pH value of 4,6 is greater than 10 h. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A52 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Integer |
| Value specification | EXPLICIT |
| List of values | 1 2 3 4 5 51 52 53 |
| List of value names | SR 1 SR 2 SR 3 SR 4 SR 5 SR 51 SR 52 SR 53 |

| Hierarchy | Properties |
|----------------------------------------------------------------------|-------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA069-001.058 |
| Preferred name* | acid resistance class |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.5 ISOTC172-AAA074-001: alkali resistance

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA074-001.027 |
| Preferred name* | alkali resistance |
| Short name | AR |
| Synonymous name | |
| Preferred symbol | AR |
| Synonymous symbol | |
| Definition* | information about the behaviour of the surface of optical glasses that come in contact with warm, alkaline liquids, such as cooling liquids in grinding and polishing processes |
| Source document of definition | ISO 10629:1996 |
| Note | Alkali Resistance is classified by the Alkali Resistance Class number and the Identification of Visible Surface Changes number separated by "." If no Identification of Visible Surface Changes has been done, only the Alkali Resistance Class number is given. |
| Remark | example 2.1 |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA070-001 ISOTC172-AAA072-001 |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.6 ISOTC172-AAA070-001: alkali resistance class

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA070-001.038 |
| Preferred name* | alkali resistance class |
| Short name | AR |
| Synonymous name | |
| Preferred symbol | AR |
| Synonymous symbol | |
| Definition* | of optical glasses is determined on the basis of the time required to remove a layer thickness of glass of 0,1 µm in an aqueous alkaline solution (sodium hydroxide, c = 0,01 mol/l, pH = 12) at a temperature of 50 °C |
| Source document of definition | ISO 10629:1996 |
| Note | The removed layer thickness is calculated from the weight loss per surface area and the density of the glass. |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A52 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Integer |
| Value specification | EXPLICIT |
| List of values | 1 2 3 4 |
| List of value names | AR 1 AR 2 AR 3 AR 4 |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |

| Hierarchy | Properties |
|---------------------------------------------------------------|-------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA070-001.038 |
| Preferred name* | alkali resistance class |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.7 ISOTC172-AAA057-001: categories of optics

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA057-001.029 |
| Preferred name* | categories of optics |
| Short name | category |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | subdivision of the area of optics into various sub-areas |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A91 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | A B C F M S |
| List of value names | cemented assembly functional coating optical element optically used surface optical material optical system |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA003-001 |
| Preferred name of definition class | 37 image technology |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |

| Hierarchy | Properties |
|---------------------------------------------------------------|-------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA057-001.029 |
| Preferred name* | categories of optics |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

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6.8 ISOTC172-AAA053-001: coefficient B1 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA053-001.020 |
| Preferred name* | coefficient B1 of Sellmeier-equation |
| Short name | B1 |
| Synonymous name | |
| Preferred symbol | B1 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.9 ISOTC172-AAA054-001: coefficient B2 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA054-001.019 |
| Preferred name* | coefficient B2 of Sellmeier-equation |
| Short name | B2 |
| Synonymous name | |
| Preferred symbol | B2 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.10 ISOTC172-AAA035-001: coefficient B3 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA035-001.019 |
| Preferred name* | coefficient B3 of Sellmeier-equation |
| Short name | B3 |
| Synonymous name | |
| Preferred symbol | B3 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.11 ISOTC172-AAA056-001: coefficient C1 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA056-001.020 |
| Preferred name* | coefficient C1 of Sellmeier-equation |
| Short name | C1 |
| Synonymous name | |
| Preferred symbol | C1 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | In data sheets the coefficients of the Sellmeier-equation are usually given dimensionless; therefore, for correct calculation using this equation, the wavelength shall be in micrometres. |
| Remark | |
| Formula | |
| Unit of measure* | μm^2 |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.12 ISOTC172-AAA038-001: coefficient C2 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA038-001.020 |
| Preferred name* | coefficient C2 of Sellmeier-equation |
| Short name | C2 |
| Synonymous name | |
| Preferred symbol | C2 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | In data sheets the coefficients of the Sellmeier-equation are usually given dimensionless; therefore, for correct calculation using this equation, the wavelength shall be in micrometres. |
| Remark | |
| Formula | |
| Unit of measure* | μm^2 |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.13 ISOTC172-AAA059-001: coefficient C3 of Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA059-001.020 |
| Preferred name* | coefficient C3 of Sellmeier-equation |
| Short name | C3 |
| Synonymous name | |
| Preferred symbol | C3 |
| Synonymous symbol | |
| Definition* | one out of a total of six coefficients that, for a specific glass type, are determined on the basis of precision measurements by fitting of the Sellmeier-equation to the measured values |
| Source document of definition | |
| Note | In data sheets the coefficients of the Sellmeier-equation are usually given dimensionless; therefore, for correct calculation using this equation, the wavelength shall be in micrometres. |
| Remark | |
| Formula | |
| Unit of measure* | μm^2 |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.14 ISOTC172-AAA085-001: coefficient of mean linear thermal expansion α ($-30^{\circ}\text{C};+70^{\circ}\text{C}$)

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA085-001.029 |
| Preferred name* | coefficient of mean linear thermal expansion α ($-30^{\circ}\text{C};+70^{\circ}\text{C}$) |
| Short name | α ($-30^{\circ}\text{C};+70^{\circ}\text{C}$) |
| Synonymous name | |
| Preferred symbol | α |
| Synonymous symbol | |
| Definition* | is the ratio of the relative change in length of a glass sample when heated from -30°C to $+70^{\circ}\text{C}$ to the corresponding temperature difference of 100 K |
| Source document of definition | |
| Note | |
| Remark | α ($-30^{\circ}\text{C};+70^{\circ}\text{C}$) is important information for the typical behaviour of thermal expansion at room temperature. |
| Formula | |
| Unit of measure* | 10^{-6}K^{-1} |
| UN ECE code for unit | M20 |
| Alternative unit | |
| IEC classification | H03 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | thermal expansion\linear expansion |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.15 ISOTC172-AAA077-001: colour code

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA077-001.018 |
| Preferred name* | colour code |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | position and slope of the transmittance cut-off edge in the short wavelength range, given by the wavelengths at 80 % and 5 % transmittance including reflection losses |
| Source document of definition | ISO 12123:2010 |
| Note | The colour code lists the wavelengths λ_{80} and λ_5 , at which the transmittance (including reflection losses) is 0,80 and 0,05 at 10 mm thickness. The values are rounded to 10 nm and are written by eliminating the last digit. For example, colour code 33/30 indicates $\lambda_{80} = 330$ nm and $\lambda_5 = 300$ nm. |
| Remark | The limit of the transmittance ranges of optical glasses towards the UV area is of special interest in high index glasses as it shifts closer to the visible spectral range with increasing refractive index. A simple description of the position and slope of the UV absorption curve is described by the colour code. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to JCS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.16 ISOTC172-AAA033-001: direction of curvature of an optical surface

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA033-001.023 |
| Preferred name* | direction of curvature of an optical surface |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | characteristic of the curvature of an optical surface |
| Source document of definition | adapted from ISO 10110-1:2006 |
| Note | For drawings the plane surfaces are indicated by the symbol R _∞ |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A58 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | CC CX ∞ |
| List of value names | concave convex planar |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA007-001 |
| Preferred name of definition class | optically used surface |
| Keyword | convex\concave\planar |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.17 ISOTC172-AAA072-001: identification of visible surface changes

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA072-001.031 |
| Preferred name* | identification of visible surface changes |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | representation of visible surface changes in the form of digits that follows the class number for alkali, acid and phosphate resistance |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Integer |
| Value specification | EXPLICIT |
| List of values | 0 1 2 3 4 |
| List of value names | no visible changes clear, but irregular surface interference colours (light, selective leaching) firmly adhered thin white layer (stronger, selective leaching, cloudy surface) loosely adhering, thicker layers, for example insoluble reaction products on the surface |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |

| Hierarchy | Properties |
|----------------------------------------------------------------------|--------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA072-001.031 |
| Preferred name* | identification of visible surface changes |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.18 ISOTC172-AAA076-001: internal transmittance

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA076-001.026 |
| Preferred name* | internal transmittance |
| Short name | τ_i |
| Synonymous name | |
| Preferred symbol | τ_i |
| Synonymous symbol | |
| Definition* | ratio of the radiant flux reaching the exit internal surface of the optical glass to the flux that enters into the glass after crossing the entry surface |
| Source document of definition | |
| Note | Thus internal transmittance is independent of reflection losses at the boundary surfaces air-glass and glass-air. Internal transmittance is closely related to the optical position of the glass type according to general dispersion theory. The information in the data section comprises median values from several melts of a glass type. |
| Remark | Upon special request optimized values for internal transmittance can be maintained. Prior clarification of the delivery situation is required. ISO 25297-1:2012, NODIF: transmittance |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L40 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA047-001 ISOTC172-AAA086-001 |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.19 ISOTC172-AAA078-001: Knoop hardness per ISO 9385:1990

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA078-001.023 |
| Preferred name* | Knoop hardness per ISO 9385:1990 |
| Short name | HK 0,1/20 |
| Synonymous name | |
| Preferred symbol | HK 0,1/20 |
| Synonymous symbol | |
| Definition* | measure for remaining surface changes after applying pressure with a test diamond |
| Source document of definition | ISO 9385:1990 |
| Note | The test is performed on polished glass surfaces at temperature from 18 °C to 28 °C. The values for Knoop hardness HK are listed in the data sheets for a test force of 0,9807 N and an effective test period of 20 s. The data for hardness values are rounded to 10 HK 0,1/20. |
| Remark | The microhardness is a function of the magnitude of the test force and decreases with increasing test force. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Integer |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.20 ISOTC172-AAA046-001: manipulation of light

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA046-001.026 |
| Preferred name* | manipulation of light |
| Short name | manipulation |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | kind of manipulation of light spread at optical surfaces |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A56 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | CODED |
| List of values | 10 20 |
| List of value names | dioptric diffractive |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA007-001 |
| Preferred name of definition class | optically used surface |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

6.21 ISOTC172-AAA029-001: manufacturer of optical glass

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA029-001.039 |
| Preferred name* | manufacturer of optical glass |
| Short name | manufacturer |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | company name of the manufacturer of optical glass |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A21 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA010-001 |
| Preferred name of definition class | optical glass |
| Keyword | manufacturer\company\supplier |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.22 ISOTC172-AAA088-001: material imperfection

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA088-001.017 |
| Preferred name* | material imperfection |
| Short name | 2/ |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | indication in drawings of material imperfections in complete form started with the string 2/ |
| Source document of definition | adapted from ISO 10110-4 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA042-001 ISOTC172-AAA067-001 |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.23 ISOTC172-AAA037-001: material imperfection in terms of bubbles and inclusions

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA037-001.022 |
| Preferred name* | material imperfection in terms of bubbles and inclusions |
| Short name | 1/ |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | specification for bubbles and other inclusions which are permissible in the element given in the form $N \times A$, where N is the number of bubbles and inclusions of maximal permitted size allowed, and the grade number A is the measure of their size and is equal to the square root of the projected area of the largest permissible bubble and/or inclusion, expressed in millimetres |
| Source document of definition | ISO 10110-3:1996 |
| Note | This property refers to optical elements. |
| Remark | ISO 25297-1:2012, NODIF: bubbles_and_inclusions |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | bubble\inclusion\material imperfection |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.24 ISOTC172-AAA060-001: material imperfection in terms of stress birefringence

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA060-001.022 |
| Preferred name* | material imperfection in terms of stress birefringence |
| Short name | 0/ |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | result of residual stresses within a glass blank following differential cooling during the forming and/or annealing process, or of certain fabrication processes carried out on the optical element |
| Source document of definition | ISO 10110-2:1996 |
| Note | The residual stress-induced birefringence is specified in terms of optical path differences per unit path length, in nanometres per centimetre. The indication is given in the form 0/A, where A is the maximum permissible stress birefringence in nanometres per centimetre of optical path length. This property refers to optical elements. |
| Remark | ISO 25297-1:2012, NODIF: stress_birefringence |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | material homogeneity\birefringence\polarization\anisotropy\material isotropy |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.25 ISOTC172-AAA042-001: material imperfections in terms of striae

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA042-001.023 |
| Preferred name* | material imperfections in terms of striae |
| Short name | 2/, B |
| Synonymous name | |
| Preferred symbol | B |
| Synonymous symbol | |
| Definition* | class of striae according to ISO 10110-4 |
| Source document of definition | ISO 10110-4:1997 |
| Note | The striae classes describe the density of striae causing an optical path difference of at least 30 nm. This property refers to optical elements. |
| Remark | ISO 25297-1:2012, NODIF: inhomogeneity_and_striae |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | 1 2 3 4 5 |
| List of value names | no specification required ≤ 10 % ≤ 5 % ≤ 2 % ≤ 1 % extremely free of striae |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | material imperfection\striae |
| Status | 60.60 released |

| Hierarchy | Properties |
|---------------------------------------------------------------|-------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA042-001.023 |
| Preferred name* | material imperfections in terms of striae |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.26 ISOTC172-AAA067-001: material imperfections of refractive index

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA067-001.029 |
| Preferred name* | material imperfections of refractive index |
| Short name | 2/ A |
| Synonymous name | |
| Preferred symbol | A |
| Synonymous symbol | |
| Definition* | inhomogeneity class number according ISO 10110-4 describing the maximum permissible variation of the refractive index within an optical element |
| Source document of definition | |
| Note | This property refers to optical elements. |
| Remark | Inhomogeneity as defined by ISO 10110-4:1997 is: gradual variation of the refractive index within an optical element, defined as the difference between maximum and minimum values of the refractive index within the element. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | - 0 1 2 3 4 5 |
| List of value names | no specification required +- 50 E-6 +- 20 E-6 +- 5 E-6 +- 2 E-6 +- 1 E-6 +- 0,5 E-6 |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |

| Hierarchy | Properties |
|----------------------------------------------------------------------|---------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA067-001.029 |
| Preferred name* | material imperfections of refractive index |
| Keyword | homogeneity\inhomogeneity\material imperfection |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.27 ISOTC172-AAA050-001: mathematical description of surface

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA050-001.035 |
| Preferred name* | mathematical description of surface |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | designation in an analytic definition of the surface or the wavefront |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A58 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | CODED |
| List of values | 10 20 |
| List of value names | analytical not analytical |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA006-001 |
| Preferred name of definition class | dioptric surface |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.28 ISOTC172-AAA058-001: $n(\lambda)$ as per Sellmeier-equation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA058-001.019 |
| Preferred name* | $n(\lambda)$ as per Sellmeier-equation |
| Short name | $n(\lambda)$ Sellm |
| Synonymous name | |
| Preferred symbol | $n(\lambda)$ |
| Synonymous symbol | |
| Definition* | refractive index as per the Sellmeier-equation $n^2(\lambda) = 1 + B1 \lambda^2 / (\lambda^2 - C1) + B2 \lambda^2 / (\lambda^2 - C2) + B3 \lambda^2 / (\lambda^2 - C3)$ using the coefficients B1 to B3 and C1 to C3 of the Sellmeier-equation |
| Source document of definition | |
| Note | In data sheets the coefficients of the Sellmeier-equation are usually given dimensionless; therefore, for correct calculation using this equation, the wavelength shall be in micrometres. |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA056-001 ISOTC172-AAA035-001 ISOTC172-AAA054-001 ISOTC172-AAA053-001 ISOTC172-AAA038-001 ISOTC172-AAA059-001 ISOTC172-AAA047-001 |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | dispersion equation\dispersion\refractive index |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |

| Hierarchy | Properties |
|----------------------------------------------------------------------|----------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA058-001.019 |
| Preferred name* | $n(\lambda)$ as per Sellmeier-equation |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.29 ISOTC172-AAA048-001: name of an optical coating

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA048-001.019 |
| Preferred name* | name of an optical coating |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | distinguishing mark of a coating which is usually formed of a standard number and the standard designation or the name of the company and a common description of the coating |
| Source document of definition | |
| Note | |
| Remark | This could be a proprietary designation e.g. a brand name such as T*. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA013-001 |
| Preferred name of definition class | functional coating |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.30 ISOTC172-AAA066-001: glass type

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA066-001.023 |
| Preferred name* | glass type |
| Short name | glass type |
| Synonymous name | glass type |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | usually a letter/number designation used in the manufacturer's catalogue to designate or characterize the glasses offered |
| Source document of definition | ISO 12123:2010 |
| Note | The letter/number designation is at the manufacturer's discretion and is usually a proprietary trade name and therefore indeterminate. For example, borosilicate crown glass is designated N-BK7, S-BSL7, BSC7, J-BK7, H-K9 and so on by individual glass manufacturers. |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA010-001 |
| Preferred name of definition class | optical glass |
| Keyword | material\glass |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC3 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.31 ISOTC172-AAA043-001: optically effective diameter

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA043-001.019 |
| Preferred name* | optically effective diameter |
| Short name | |
| Synonymous name | |
| Preferred symbol | Øe |
| Synonymous symbol | |
| Definition* | optically usable diameter of a surface |
| Source document of definition | |
| Note | Optically effective diameter defines the region of the component surface which has optical significance. |
| Remark | ISO 25297-1:2012, NODIF: effective_diameter |
| Formula | |
| Unit of measure* | mm |
| UN ECE code for unit | MMT |
| Alternative unit | |
| IEC classification | T03 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.32 ISOTC172-AAA040-001: partial dispersion

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA040-001.018 |
| Preferred name* | partial dispersion |
| Short name | n(1)-n(2) |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | difference between the refractive indices of wavelength combinations other than those for the principal dispersions |
| Source document of definition | ISO 9802:1996 |
| Note | |
| Remark | According to ISO 9802:1996, nF'-nC' and nF-nC are designated as principal dispersion. |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | principal dispersion\partial dispersion |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.33 ISOTC172-AAA039-001: principal dispersion ($n_{F'} - n_{C'}$)

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA039-001.027 |
| Preferred name* | principal dispersion ($n_{F'} - n_{C'}$) |
| Short name | $n_{F'} - n_{C'}$ |
| Synonymous name | principal dispersion $F' - C'$ |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | difference between refractive indices represented by ($n_{F'} - n_{C'}$), where $n_{F'}$ is the refractive index at the blue cadmium F' -line (479,99 nm wavelength), and $n_{C'}$ is the refractive index at the red cadmium C' -line (643,85 nm wavelength) |
| Source document of definition | ISO 9802:1996 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | partial dispersion\principal dispersion\refractive index |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.34 ISOTC172-AAA062-001: principal dispersion (nF - nC)

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA062-001.027 |
| Preferred name* | principal dispersion (nF - nC) |
| Short name | nF-nC |
| Synonymous name | principal dispersion F-C |
| Preferred symbol | nF-nC |
| Synonymous symbol | |
| Definition* | difference between refractive indices represented by (nF-nC), where nF is the refractive index at the blue hydrogen F-line (486,13 nm wavelength), and nC is the refractive index at the red hydrogen C-line (656,27 nm wavelength) |
| Source document of definition | ISO 9802:1996 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | partial dispersion\principal dispersion\refractive index |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.35 ISOTC172-AAA073-001: phosphate resistance

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA073-001.023 |
| Preferred name* | phosphate resistance |
| Short name | PR |
| Synonymous name | |
| Preferred symbol | PR |
| Synonymous symbol | |
| Definition* | information about the behaviour of the surface of optical glasses during cleaning with phosphate containing washing solutions (detergents) |
| Source document of definition | ISO 9689:1990 |
| Note | Phosphate Resistance is classified by the Phosphate Resistance Class number and the Identification of Visible Surface Changes number separated by "." If no Identification of Visible Surface Changes has been done, only the Phosphate Resistance Class number is given. |
| Remark | Example 2.1 |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A57 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA071-001 ISOTC172-AAA072-001 |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.36 ISOTC172-AAA071-001: phosphate resistance class

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA071-001.040 |
| Preferred name* | phosphate resistance class |
| Short name | PR |
| Synonymous name | |
| Preferred symbol | PR |
| Synonymous symbol | |
| Definition* | of optical glasses is determined on the basis of the time required to remove a layer thickness of glass of 0,1 µm in an alkaline phosphate containing solution (pentasodium triphosphate Na ₅ P ₃ O ₁₀ , c = 0,01 mol/l, pH = 10) at a temperature of 50 °C |
| Source document of definition | ISO 9689:1990 |
| Note | The layer thickness is calculated from the mass loss per surface area and the density of the glass. |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A52 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | Integer |
| Value specification | EXPLICIT |
| List of values | 1 2 3 4 |
| List of value names | PR 1 PR 2 PR 3 PR 4 |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |

| Hierarchy | Properties |
|---------------------------------------------------------------|----------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA071-001.040 |
| Preferred name* | phosphate resistance class |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.37 ISOTC172-AAA030-001: primary function of the coating

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA030-001.045 |
| Preferred name* | primary function of the coating |
| Short name | function |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | the nature of the principal modification to the surface properties that they bring about |
| Source document of definition | ISO 9211-1:2010 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A56 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | AB BS FI PC PO AT RE AR SC SU |
| List of value names | absorbing beam splitting filtering phase changing polarizing attenuating reflecting antireflecting selecting or combining supplementary |
| Value format | |

| Hierarchy | Properties |
|----------------------------------------------------------------------|----------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA030-001.045 |
| Preferred name* | primary function of the coating |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA013-001 |
| Preferred name of definition class | functional coating |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

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6.38 ISOTC172-AAA061-001: refractive index

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA061-001.014 |
| Preferred name* | refractive index |
| Short name | |
| Synonymous name | |
| Preferred symbol | n |
| Synonymous symbol | |
| Definition* | ratio of the velocity of the electromagnetic waves in a vacuum to the phase velocity of the waves of the monochromatic radiation in the medium |
| Source document of definition | IEC 60050(845-04-101):1987 |
| Note | depends on the wavelength |
| Remark | |
| Formula | |
| Unit of measure* | 1 |
| UN ECE code for unit | C62 |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 01.060\17.180\37.020 |
| Definition class* | ISOTC172-AAA008-001 |
| Preferred name of definition class | quantities of light and related electromagnetic radiations |
| Keyword | refractive index |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

6.39 ISOTC172-AAA068-001: refractive index at spectral wavelength

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA068-001.020 |
| Preferred name* | refractive index at spectral wavelength |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | refractive index at special wavelength of spectral lines |
| Source document of definition | |
| Note | |
| Remark | ISO 25297-1:2012, NODIF: refractive_index |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | L44 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA031-001 |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

6.40 ISOTC172-AAA052-001: scope according to ICS

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA052-001.041 |
| Preferred name* | scope according to ICS |
| Short name | scope |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | designation in accordance with ICS 5 which is used as general indication of the scope into which an entity falls |
| Source document of definition | |
| Note | |
| Remark | For the time being, only an extract from the overall ICS 5 has been included in the value list. The remainder of ICS classes may be added at a later stage. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A91 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | 01 07 11 13 17 21 31 37 |
| List of value names | 01 generalities, terminology, standardization, documentation 07 mathematics, natural sciences 11 health care technology 13 environment, health protection, safety 17 metrology and measurement 21 mechanical systems and components for general use 31 electronics 37 image technology |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 00.000 |

| Hierarchy | Properties |
|----------------------------------------------------------------------|-------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA052-001.041 |
| Preferred name* | scope according to ICS |
| Definition class* | ISOTC172-AAA004-001 |
| Preferred name of definition class | Definition classes |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172 |
| liaisonTCSC | |
| ebXML URI | |

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6.41 ISOTC172-AAA049-001: surface adding characteristic

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA049-001.021 |
| Preferred name* | surface adding characteristic |
| Short name | surface adding |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | mark of an optical surface which will be added to another optical surface |
| Source document of definition | |
| Note | |
| Remark | Typically used for surfaces to be cemented or optically contacted. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | ce pa |
| List of value names | cemented surface optically contacted surface |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | cemented surface\optically contacted surface |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.42 ISOTC172-AAA044-001: surface form deviation - irregularity

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA044-001.020 |
| Preferred name* | surface form deviation - irregularity |
| Short name | 3/ (B,) |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | peak-to-valley difference between the irregularity function and the plane which best approximates it |
| Source document of definition | ISO 10110-5:2007 |
| Note | B is either the maximum permissible value of irregularity, expressed in fringe spacings, or a dash (—) indicating that no explicit irregularity tolerance is given. The wavelength shall be that of the green mercury e-line 546,07 nm in accordance with ISO 7944. |
| Remark | ISO 25297-1:2012, NODIF: irregularity |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.43 ISOTC172-AAA063-001: surface form deviation - rotationally invariant irregularity

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA063-001.021 |
| Preferred name* | surface form deviation - rotationally invariant irregularity |
| Short name | 3/ (/ C) |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | peak-to-valley difference between the approximating spherical surface and the plane which best approximates it |
| Source document of definition | ISO 10110-5:2007 |
| Note | C is the permissible rotationally invariant irregularity expressed in fringe spacings. If no tolerance is given, the slash (/) is replaced by the final parenthesis, i.e. 3/A(B). The wavelength shall be that of the green mercury e-line 546,07nm in accordance with ISO 7944. |
| Remark | If no tolerance is given for C, the slash / and value of C are omitted, and the indication in the drawings just ends with the final parenthesis). ISO 25297-1:2012, NODIF: rotationally_symmetric_irregularity |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.44 ISOTC172-AAA065-001: surface form deviation - sagitta deviation

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA065-001.019 |
| Preferred name* | surface form deviation - sagitta deviation |
| Short name | 3/ A |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | peak-to-valley difference between the approximating spherical surface and a plane |
| Source document of definition | ISO 10110-5:2007 |
| Note | A is either the maximum permissible sagitta error, expressed in fringe spacings, ($\lambda/2$) or a dash (—) indicating that the total radius of curvature tolerance is given in the radius of curvature dimension (not applicable for planar surfaces). The wavelength shall be that of the green mercury e-line 546,07 nm in accordance with ISO 7944. |
| Remark | ISO 25297-1:2012, NODIF: sagitta_deviation |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | N |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.45 ISOTC172-AAA087-001: surface imperfections

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA087-001.018 |
| Preferred name* | surface imperfections |
| Short name | 5/ |
| Synonymous name | |
| Preferred symbol | 5/ |
| Synonymous symbol | |
| Definition* | indication in drawings of surface imperfections in complete form started with the string 5/ |
| Source document of definition | adapted from ISO 10110-7 |
| Note | |
| Remark | ISO 25297-1:2012, NODIF: surface_imperfection_tolerance |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA064-001 ISOTC172-AAA041-001 ISOTC172-AAA051-001 ISOTC172-AAA034-001 |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.46 ISOTC172-AAA041-001: surface imperfections - coating blemishes

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA041-001.021 |
| Preferred name* | surface imperfections - coating blemishes |
| Short name | 5/ ;C N'xA' |
| Synonymous name | |
| Preferred symbol | C |
| Synonymous symbol | |
| Definition* | indication of coating blemishes which are permissible within the effective aperture of a surface, where C is the designation for coating blemishes, N' is the number of allowed blemishes of maximal permitted size and A' the grade number |
| Source document of definition | ISO 10110-7:2008 |
| Note | |
| Remark | If no separate indication for coating blemishes is given, it shall be included in the allowable general surface imperfection indication 5/ NxA. |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | surface imperfection |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.47 ISOTC172-AAA034-001: surface imperfections - edge chips

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA034-001.022 |
| Preferred name* | surface imperfections - edge chips |
| Short name | 5/ ;;;EA'' |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | indication for permissible edge chips, where E is the designation for edge chips and the grade number A'' specifies the maximum permissible extent of a chip from the physical edge of the surface, or cell in the case of an optical assembly, measured parallel to the surface, in millimetres |
| Source document of definition | ISO 10110-7:2008 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | surface imperfection\edge chip\chip |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.48 ISOTC172-AAA051-001: surface imperfections - long scratches

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA051-001.023 |
| Preferred name* | surface imperfections - long scratches |
| Short name | 5/ ; ; LN"xA" |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | indication for long scratches (longer than 2 mm) which are permissible within the effective aperture of a surface, where L is the indication for long scratches, N" is the number of allowed long scratches and the grade number, A" specifies the maximum allowed width of the scratches, expressed in millimetres |
| Source document of definition | ISO 10110-7:2008 |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | surface imperfection\scratch |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.49 ISOTC172-AAA064-001: surface imperfections-general surface imperfection

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [[Information supplier-Code*-Version*-Revision*]] | ISOTC172-AAA064-001.021 |
| Preferred name* | surface imperfections-general surface imperfection |
| Short name | 5/ NxA |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | drawing indication for number and size of general surface imperfections, which are permissible within the effective aperture of a surface |
| Source document of definition | ISO 10110-7:2008 |
| Note | The indication in the form NxA specifies the number, N, of allowed imperfections of maximal permitted size, and the grade number, A, which is equal to the square root of the surface area of the maximum allowed imperfection, expressed in millimetres. |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | A59 |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA011-001 |
| Preferred name of definition class | optical element |
| Keyword | surface imperfection |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC01 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.50 ISOTC172-AAA084-001: temperature coefficient $\Delta n_{\text{abs}}/\Delta T$ of refractive index

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA084-001.024 |
| Preferred name* | temperature coefficient $\Delta n_{\text{abs}}/\Delta T$ of refractive index |
| Short name | $\Delta n_{\text{abs}}/\Delta T$ |
| Synonymous name | |
| Preferred symbol | $\Delta n_{\text{abs}}/\Delta T$ |
| Synonymous symbol | |
| Definition* | ratio of refractive index change in vacuum to temperature change at a selected wavelength |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 10^{-6} K^{-1} |
| UN ECE code for unit | M20 |
| Alternative unit | |
| IEC classification | |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA082-001 ISOTC172-AAA031-001 |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.51 ISOTC172-AAA083-001: temperature coefficient $\Delta n_{rel}/\Delta T$ of refractive index

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA083-001.023 |
| Preferred name* | temperature coefficient $\Delta n_{rel}/\Delta T$ of refractive index |
| Short name | $\Delta n_{rel}/\Delta T$ |
| Synonymous name | |
| Preferred symbol | $\Delta n_{rel}/\Delta T$ |
| Synonymous symbol | |
| Definition* | ratio of refractive index change at an air pressure of $0,10133 \cdot 10^6$ Pa, to temperature change at a selected wavelength |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | 10^{-6} K^{-1} |
| UN ECE code for unit | M20 |
| Alternative unit | |
| IEC classification | |
| Type of property D = dependent; N = non-dependent; C = condition | D |
| Depends on | ISOTC172-AAA082-001 ISOTC172-AAA031-001 |
| Domain*: | |
| Property type classification | Real |
| Value specification | |
| List of values | |
| List of value names | |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |
| Date of current revision* | 2012-08-15 |
| ownerTCSC* | TC172SC03 |
| liaisonTCSC | TC172 |
| ebXML URI | |

6.52 ISOTC172-AAA082-001: temperature interval

| Hierarchy | Properties |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Identifier [Information supplier-Code*-Version*-Revision*] | ISOTC172-AAA082-001.024 |
| Preferred name* | temperature interval |
| Short name | |
| Synonymous name | |
| Preferred symbol | |
| Synonymous symbol | |
| Definition* | description of temperature intervals for temperature coefficients of light refraction |
| Source document of definition | |
| Note | |
| Remark | |
| Formula | |
| Unit of measure* | |
| UN ECE code for unit | |
| Alternative unit | |
| IEC classification | |
| Type of property D = dependent; N = non-dependent; C = condition | C |
| Depends on | |
| Domain*: | |
| Property type classification | String |
| Value specification | CODED |
| List of values | 10 20 30 40 50 60 |
| List of value names | -40 °C up to -20 °C -20 °C up to 0 °C 0 °C up to +20 °C +20 °C up to +40 °C +40 °C up to +60 °C +60 °C up to +80 °C |
| Value format | |
| Identification class instance types | |
| Figure | |
| Classification to ICS* | 37.020 |
| Definition class* | ISOTC172-AAA002-001 |
| Preferred name of definition class | optical material |
| Keyword | |
| Status | 60.60 released |
| Date of original definition* | 2012-08-15 |
| Date of current version* | 2012-08-15 |