

# ISO Standards Pertaining to Optical and Infrared Materials

This list represents material related standards in ISO Technical Committee 172 - *Optics and photonics*.

For more information, type the document number into the search field at [iso.org](http://iso.org).

Further questions may be submitted to the OEOSC through Contact Us at [oeosc.org](http://oeosc.org).

---

## Background Documents

ISO 9802	Raw optical glass — Vocabulary
ISO 7944	Reference wavelengths
ISO 20473	Spectral bands
ISO 23584-1	Specification of reference dictionary — General overview on organization and structure
ISO 23584-2	Specification of reference dictionary — Classes' and properties' definitions
ISO 25297-2	Electronic exchange of optical data — Mapping to the classes and properties defined in ISO 23584

## Specifications and minimum requirements

ISO 12123	Specification of raw optical glass
ISO 11382	Characterization of optical materials used in the infrared spectral range from 0.78 to 25 microns
ISO 22576	Specification of calcium fluoride used in the infrared spectrum
ISO 8237	Specification of chalcogenide glass used in the infrared spectrum
ISO 23364	Bulk absorption optical filters

## Preparation of drawings (i.e., drawing notation)

ISO 10110-1	General (including refractive index and Abbe number)
ISO 10110-7	Surface imperfections
ISO 10110-8	Surface texture
ISO 10110-9	Surface treatment and coating
ISO 10110-11	Non-toleranced data
ISO 10110-17	Laser irradiation damage threshold
ISO 10110-18	Stress birefringence, bubbles and inclusions, homogeneity, and striae

## Test methods for material properties

ISO 21395-1	Test method for refractive index of optical glass — Minimum deviation method
ISO 21395-2	Test method for refractive index of optical glass — V-block refractometer method
ISO 6760-1	Test method for temperature coefficient of refractive index of optical glasses — Minimum deviation method
ISO 6760-2	Test method for temperature coefficient of refractive index of optical glasses — Interferometric method
ISO 17328	Test method for refractive index of infrared materials
ISO 19740	Test method for homogeneity of infrared optical materials
ISO 15368	Measurement of reflectance of plane surfaces and transmittance of plane parallel elements*
ISO 17411	Test method for homogeneity of optical glasses by laser interferometry
ISO 19741	Test method for striae in infrared optical materials
ISO 19742	Test method for bubbles and inclusions in infrared optical materials
ISO 9385	Glass and glass-ceramics — Knoop hardness test
ISO 12844	Raw optical glass — Grindability with diamond pellets
ISO 13697	Test methods for specular reflectance and regular transmittance of optical laser components
ISO 13142	Cavity ring-down method for high-reflectance and high-transmittance measurements
ISO 22588	Measurement and evaluation of absorption-induced effects in laser optical components
ISO 23701	Photothermal technique for absorption measurement and mapping of optical laser components
ISO 11551	Test method for absorptance of optical laser components
ISO 11455	Determination of birefringence

\*This document includes internal transmittance. Also see ISO 15368-2.

### Test methods for surface imperfections and scattering

- ISO 13696 Test method for total scattering by optical components
- ISO 14997 Test methods for surface imperfections of optical elements
- ISO 14997-2 Test methods for surface imperfections of optical elements — Machine vision
- ISO 19962 Spectroscopic measurement methods for intergrated scattering by plane parallel optical elements
- ISO 21477 Technical Report: Surface imperfection specification and measurement systems

### Environmental testing

- ISO 21575 The powder test method for the water resistance of optical glass
- ISO 22531 Test method for climate resistance of optical glass
- ISO 8424 Resistance to attack by aqueous acidic solutions — Test method and classification
- ISO 10629 Resistance to attack by aqueous alkaline solutions — Test method and classification
- ISO 9689 Resistance to attack by aqueous alkaline phosphate-containing detergent solutions at 50 °C — Testing and classification
- ISO 9022 *This is a series of documents containing test methods for a variety of environmental conditions*