



ISO 11551

Optics and photonics — Lasers and laser-related equipment — Test method for absorptance of optical laser components

Optique et photonique — Lasers et équipements associés aux lasers — Méthode d'essai du facteur d'absorption des composants optiques pour lasers

Fourth edition
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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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This fourth edition cancels and replaces the third edition (ISO 11551:2019), which has been technically revised.

The main changes are as follows:

- harmonization of terms and environmental conditions to current laser measurement standards;
- minor adjustments of formulae and figures;
- modified text and additional figures in [A.1](#) and [A.3](#).

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To characterize an optical component, it is important to know its absorptance. When radiation impinges upon a component, a part of that radiation is absorbed, increasing the temperature of the component. In this document only the part of the absorbed radiant power/energy, that is converted into heat, is measured. If enough radiant energy is absorbed, the optical properties of the component can change, and the component can even be destroyed. Absorptance is the ratio of the radiant flux absorbed to the radiant flux of the incident radiation.

In the procedures described in this document, the absorptance is determined calorimetrically as the ratio of radiant power or radiant energy absorbed by the component to the total radiant power or radiant energy, respectively, impinging upon the component. The assumption is made that the absorptance of the test sample is constant within the temperature fluctuations experienced by the component during the measurement.