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**Plastics — Determination of total  
luminous transmittance and  
reflectance**

*Plastiques — Détermination de la transmission lumineuse totale et de  
la réflectance*



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document specifies not only the total luminous transmittance of colourless and transparent plastics that have been covered by ISO 13468-1, but also specifies the transmittance of translucent materials such as opal sheets and the reflectance of materials such as translucent and/or opaque sheets or films.



# Plastics — Determination of total luminous transmittance and reflectance

## 1 Scope

This document specifies the determination of total luminous transmittance and total luminous reflectance on clear, translucent or opaque plastics. Specimen shapes include moulded plaque or discs, films and sheets.

Fluorescent plastics and chromatic colour plastics are not covered by this document.

**NOTE** The scope of ISO 13468-1 shows that ISO 13468-1 covers planar transparent and substantially colourless plastics. The method in this document provide the way to trap diffused light and covers to measure translucent and opaque plastics.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO/CIE 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

ISO 11664-2, *Colorimetry — Part 2: CIE standard illuminants*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1 total luminous transmittance

$\tau_t$   
ratio of the transmitted luminous flux to the incident luminous flux when a collimated beam of light passes through a specimen

### 3.2 total luminous reflectance

$\rho_t$   
ratio of the reflected luminous flux to the incident luminous flux when a collimated beam of light reflected on a specimen

## 4 Principle

When evaluating the total luminous transmittance of light diffusing material, the scattered light will go toward the edge of the specimen by its light diffusing property. This method intends to collect scattered