
**Light measuring system for smoke
emission testing**

Système de mesure de la lumière pour les essais d'émission de fumée

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Published in Switzerland

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Foreword

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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).

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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.

This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 1, *Fire initiation and growth*.

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.

Light measuring system for smoke emission testing

1 Scope

This document specifies a measuring system that enables the determination of the transmittance and the optical density of smoke emission tests under laboratory conditions. This document also provides the calibration method for the system.

This document is an English-language version of DIN 50055, with minor editorial modifications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 13943, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13943 and the following apply.

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

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

3.1

smoke emission test

test for determining smoke emission levels of substances subject to thermal decomposition

Note 1 to entry: This test requires a decomposition system, a measuring room or duct, and a light measuring system.

3.2

light-measuring system

system for the measurement of light, implemented using a device that measures the attenuation of light caused by smoke and comprising a light source, light receiver, power supply and voltage or current-measuring device

3.3

transmittance

τ

quotient of transmitted radiant flux, Φ_t , and incident radiant flux, Φ_m

Note 1 to entry: Transmittance is calculated using [Formula \(1\)](#):

$$\tau = \frac{\Phi_t}{\Phi_m} \quad (1)$$