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Fifth edition  
2014-08-01

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## **Paper, board and pulps — Measurement of diffuse radiance factor (diffuse reflectance factor)**

*Papier, carton et pâtes — Mesurage du facteur de luminance  
énergétique diffuse (facteur de réflectance diffuse)*



Reference number  
ISO 2469:2014(E)

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## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>4</b>
<b>5 Apparatus</b> .....	<b>4</b>
<b>6 Photometric calibration of the instrument and its working standards</b> .....	<b>4</b>
6.1 Calibration of the instrument.....	4
6.2 Calibration of the working standards for its intended use.....	5
6.3 Use of working standards.....	5
6.4 Cleaning the working standards.....	5
<b>7 Sampling</b> .....	<b>6</b>
<b>8 Preparation of the test pieces</b> .....	<b>6</b>
<b>9 Procedure</b> .....	<b>6</b>
9.1 Verification of calibration.....	6
9.2 Measurement.....	6
<b>10 Calculation and expression of results</b> .....	<b>7</b>
<b>11 Precision</b> .....	<b>7</b>
<b>12 Test report</b> .....	<b>7</b>
<b>Annex A (normative) Instruments for the measurement of radiance factor</b> .....	<b>8</b>
<b>Annex B (normative) Calibration service — Photometric calibration</b> .....	<b>11</b>
<b>Annex C (normative) Calibration service — UV-adjustment</b> .....	<b>13</b>
<b>Annex D (informative) Measurement uncertainty</b> .....	<b>15</b>
<b>Annex E (informative) Radiance and reflectance</b> .....	<b>18</b>
<b>Bibliography</b> .....	<b>19</b>

## 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. [www.iso.org/directives](http://www.iso.org/directives)

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 6, *Paper, board and pulps*.

This fifth edition cancels and replaces the fourth edition (ISO 2469:2007), which has been technically revised.

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## Introduction

The radiance factor depends on the conditions of measurement, particularly the spectral and geometric characteristics of the instrument used. The diffuse radiance factor as defined by this International Standard is determined using instruments having the characteristics given in [Annex A](#) and calibrated according to the procedure specified in [Annex B](#).

The diffuse radiance factor is the sum of the reflected radiance factor and the luminescent radiance factor, and the luminescent radiance factor of a luminescent (fluorescent) object is dependent on the spectral power distribution of the illumination. If adequately accurate measurements are to be carried out on fluorescent objects, the UV-content of the instrument illumination must therefore be adjusted to produce the same amount of fluorescence for a fluorescent reference standard as the selected CIE illuminant. The preparation of fluorescent reference standards to enable this adjustment to be made is described in [Annex C](#). The use of these fluorescent reference standards is described in detail in the International Standards describing the measurement of the properties of the materials containing fluorescent whitening agents.

The spectral diffuse radiance factor or the weighted diffuse radiance factor applicable to one or several specified wavelength bands is often used to characterize the properties of pulp, paper and board. Examples of diffuse radiance factors associated with specified wavelength bands are the ISO brightness (diffuse blue radiance factor) and the luminance factor.

The diffuse radiance factor or diffuse reflectance factor is also used as the basis for calculating optical properties, such as opacity, colour, whiteness and the Kubelka-Munk scattering and absorption coefficients. These various properties are described in detail in specific International Standards, and for all of these, ISO 2469 is the primary normative reference.