BS ISO 14490-5:2017

BSI Standards Publication

Optics and optical instruments - Test methods for telescopic systems

Part 5: Test methods for transmittance

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National foreword

This British Standard is the UK implementation of ISO 14490-5:2017. It supersedes BS ISO 14490-5:2005+A1:2015, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CPW/172, Optics and Photonics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Part 5: Test methods for transmittance

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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 on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 4 *Telescopic systems*.

This second edition cancels and replaces the first edition (ISO 14490-5:2005), which has been technically revised. It also incorporates the ISO 14490-5:2005/Amd 1:2015.

The main changes are as follows:

— the normative references has been updated;

— In 5.8, the wording has been changed to "maximum diameter of the aperture stop";

— Formulae (3) and (4) have been corrected.

A list of all parts in the ISO 14490 series can be found on the ISO website.

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Optics and photonics — Test methods for telescopic systems —

Part 5:
Test methods for transmittance

1 Scope

This document specifies the test methods for the determination of the transmittance of telescopic systems and observational telescopic instruments.

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

ISO 14132-1, *Optics and photonics — Vocabulary for telescopic systems — Part 1: General terms and alphabetical indexes of terms in ISO 14132*

ISO 14490-1:2005, *Optics and optical instruments — Test methods for telescopic systems — Part 1: Test methods for basic characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14132-1 apply.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Principle

To determine the spectral transmittance $\tau(\lambda)$, the flux of radiation in a limited bundle of rays will be measured before entering $\Phi_0(\lambda)$ and after passing $\Phi_p(\lambda)$ through the optical system. The transmittance results from Formula (1):

$$\tau(\lambda)=\frac{\Phi_p(\lambda)}{\Phi_0(\lambda)} \tag{1}$$

During the spectral measurement, the emergent light of the radiation source will be limited to a small wavelength band by means of a monochromator or a set of filters.

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