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**Ophthalmic optics — Uncut finished  
spectacle lenses —**

**Part 3:  
Transmittance specifications and test  
methods**

*Optique ophtalmique — Verres de lunettes finis non détournés —*

*Partie 3: Spécifications relatives au facteur de transmission et  
méthodes d'essai*



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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

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# Contents

Page

<b>Foreword</b> .....	<b>iv</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 Symbols</b> .....	<b>4</b>
<b>5 Classification</b> .....	<b>4</b>
<b>6 Requirements</b> .....	<b>4</b>
6.1 General.....	4
6.2 General transmittance requirements.....	5
6.3 Spectral transmittance requirements of spectacle lenses intended for road use and driving.....	6
6.4 Additional transmittance requirements for special types of spectacle lenses.....	6
6.5 Resistance to radiation.....	7
<b>7 Test methods</b> .....	<b>8</b>
7.1 General.....	8
7.2 Spectral transmittance.....	8
7.3 Luminous transmittance and relative visual attenuation coefficient (quotient).....	8
7.4 Ultraviolet transmittance.....	8
7.5 Transmittance properties of photochromic spectacle lenses and photochromic specimens.....	9
7.6 Test methods for polarizing spectacle lenses.....	11
7.7 Determination of resistance to radiation.....	13
<b>8 Identification</b> .....	<b>14</b>
<b>Annex A (normative) Spectral data for calculating relative visual attenuation quotients for incandescent signal lights</b> .....	<b>15</b>
<b>Annex B (normative) Calculation of solar UV transmittance values</b> .....	<b>20</b>
<b>Annex C (normative) Cut-on filter for UV filtering</b> .....	<b>22</b>
<b>Annex D (informative) Spectral data for calculating relative visual attenuation quotients for LED signal lights</b> .....	<b>25</b>
<b>Annex E (informative) Spectral radiation risks</b> .....	<b>28</b>
<b>Annex F (informative) Example of the calculation of luminous transmittance, <math>\tau_v</math></b> .....	<b>29</b>
<b>Bibliography</b> .....	<b>31</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)

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

This third edition cancels and replaces the second edition (ISO 8980-3:2003), which has been technically revised. In particular, the requirement in [6.3.2](#) for lenses intended for road use and driving has been amended with an extension of three years for the continued manufacture of existing products.

ISO 8980 consists of the following parts, under the general title *Ophthalmic optics — Uncut finished spectacle lenses*:

- *Part 1: Specifications for single-vision and multifocal lenses*
- *Part 2: Specifications for progressive power lenses*
- *Part 3: Transmittance specifications and test methods*
- *Part 4: Specifications and test methods for anti-reflective coatings*
- *Part 5: Minimum requirements for spectacle lens surfaces claimed to be abrasion-resistant*

# Ophthalmic optics — Uncut finished spectacle lenses —

## Part 3:

## Transmittance specifications and test methods

### 1 Scope

This part of ISO 8980 specifies requirements for the transmittance properties of uncut finished spectacle lenses and mounted pairs, including attenuation of solar radiation.

This part of ISO 8980 is not applicable to

- spectacle lenses having particular transmittance or absorption characteristics prescribed for medical reasons;
- products where specific personal protective equipment transmittance standards apply;
- products intended for direct observation of the sun, such as for solar-eclipse viewing.

NOTE Optical and geometric requirements for uncut finished spectacle lenses are specified in ISO 8980-1 and ISO 8980-2, and for mounted lenses, in ISO 21987.

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

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

ISO 13666, *Ophthalmic optics — Spectacle lenses — Vocabulary*

ISO 14889, *Ophthalmic optics — Spectacle lenses — Fundamental requirements for uncut finished lenses*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13666 apply.

NOTE 1 For the convenience of the reader, the following definitions have been reproduced from ISO 13666.

NOTE 2 Absorptance, reflectance and transmittance are usually expressed as percentages. The equations in this clause are written in this form. Although the definitions use integrals, in practice summation, typically at 1 nm, 5 nm or 10 nm intervals, is performed to calculate the various transmittances.

#### 3.1

#### mean UV-A transmittance

$\tau_{\text{UVA}}$

mean transmittance between 315 nm and 380 nm

$$\tau_{\text{UVA}} = 100 \times \frac{1}{65 \text{ nm}} \int_{315 \text{ nm}}^{380 \text{ nm}} \tau(\lambda) \cdot d\lambda \%$$