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Ophthalmic optics — Spectacle lenses — Short wavelength visible solar radiation and the eye

*Optique ophtalmique — Verre de lunettes — L'œil et les radiations
solaires visibles de courtes longueurs d'onde*



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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).

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This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

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.

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Introduction

Ongoing concern about unverifiable spectacle lens and sunglass marketing claims for blocking of wavelengths near to and greater than 380 nm (such as UV400 claims) was the main motivation for creating the present Technical Report.

The intention is to explain the specifications related to the filtering effects of lenses and filters that are given in the available International Standards — for the purposes of standardization in the fields of spectacle lenses and sunglasses, 380 nm is generally chosen as both the upper limit of the solar UV range and the lower limit of the visible range — and to provide information about the supporting science as it is best understood today.

The effects of UV radiation on the eye are well known, and have been considered in the technical requirements of the standards relating to tinted spectacle lenses (ISO 8980-3) and sunglasses (ISO 12312-1).

The commitment to create this document came from a resolution of the plenary meeting of ISO/TC 172/SC 7, *Ophthalmic optics and instruments* (responsible for spectacle lens standards) in 2009, and was jointly supported by ISO/TC 94/SC 6, *Eye and face protection* (responsible for sunglass standards). The related standards activity in these two committees is summarized in [Clause 4](#), with more detail on the background and technical context leading up to the decision to create this document.