
**Photography — Illuminants for
sensitometry — Specifications for daylight,
incandescent tungsten and printer**

*Photographie — Illuminants sensitométriques — Spécifications pour la
lumière du jour, la lumière artificielle et la tireuse*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 7589 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 7589:1984), which has been technically revised and enlarged to include a standard sensitometric illuminant for black-and-white papers.

Annexes A to D of this International Standard are for information only.

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Introduction

Colour and black-and-white camera films are most commonly designed for use with three light sources, these being daylight, studio tungsten (type B) and photoflood (type A), while black-and-white papers are most commonly used with enlargers employing incandescent tungsten sources. This International Standard specifies three corresponding illuminants for film sensitometry and one for black-and-white paper sensitometry, since most meaningful results are obtained when exposing conditions match those of actual film or paper use. Two other important photographic light sources for film, the electronic flashtube and blue photoflash lamps, give light of a colour that approximates daylight so that the sensitometric daylight illuminant also serves for films used with them.

This International Standard constitutes a revision of the first edition, ISO 7589:1984. It differs from the first edition in that it includes a standard sensitometric illuminant for black-and-white papers (the first edition dealt with camera film illuminants only). No standard exists for the determination of the speeds of colour papers.

The illuminants described in this International Standard are used in ISO 3028, ISO 6728 and other International Standards which describe methods for determining the speed of various types of sensitized products.

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Photography — Illuminants for sensitometry — Specifications for daylight, incandescent tungsten and printer

1 Scope

This International Standard specifies the spectral characteristics of illuminants for sensitometry appropriate for evaluating camera films used for pictorial photography in natural daylight, studio tungsten and photoflood, including colour and black-and-white films, both reversal and negative types, and for evaluating black-and-white papers used with incandescent tungsten printers. It also describes methods for evaluating the acceptability of illuminants for sensitometry and specifies tolerances.

It does not include illuminants for use with colour papers, since this would need to take account of the coloured mask of the negative material, for which no standard information is at present available.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3028:1984, *Photography — Camera flash illuminants — Determination of ISO spectral distribution index (ISO/SDI)*

ISO 6728:1983, *Photography — Camera lenses — Determination of ISO colour contribution index (ISO/CCI)*

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1

source

physical emitter of energy

3.2

illuminant

light impinging on a sensitized material and having a specific spectral power distribution not necessarily provided directly by a source and not necessarily realizable by a source

3.3

relative spectral power distribution

description of the spectral character of radiation by the relative spectral distribution of some radiometric quantity (radiant flux, radiant intensity)