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## Photography — Colour negative films for still photography — Determination of ISO speed

*Photographie — Films négatifs couleur pour prise de vue — Détermination de la sensibilité*  
ISO

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Reference number  
ISO 5800:1987 (E)

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 5800 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 5800 : 1979), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Photography — Colour negative films for still photography — Determination of ISO speed

## 0 Introduction

Satisfactory prints can generally be obtained from colour negative films over a significant range of exposure provided that suitable adjustments are made in the printing operation. The underexposure latitude is approximately one camera exposure value unit (camera stop or  $E_v$ ) when film speed is determined using this International Standard. Overexposure latitude of a colour negative film can be as large as  $3 E_v$ . In other words, if a colour negative film has a speed of ISO 100, it may give satisfactory results if it is exposed anywhere from ISO 12 to ISO 200.

Photographers, on the average, tend to underexpose film, particularly in simple cameras,<sup>1)</sup> as a result of their desire to record events under cloudy conditions or in the shade. Some camera-cartridge systems are designed to take advantage of the overexposure latitude of colour negative films to improve results when pictures are taken under these circumstances. This is accomplished by overexposing the film under sunlight conditions to increase the underexposure latitude of the system. For example, a 126-size cartridge containing film with an ISO speed of 100 may be coded for ISO 64 speed.

This International Standard is a revision of ISO 5800 : 1979 to update the format of presentation and to reference new ISO standards which more precisely describe illuminants and densitometry specified for use. No differences in speed values should result from the changes made to the International Standard.

## 1 Scope and field of application

This International Standard specifies the method for determining the ISO speed of colour negative camera films for pictorial still photography. It is assumed that the colour negatives obtained with these films will be used to make reflection-type colour prints primarily but may also be used to make colour transparencies. The speeds obtained by application of this International Standard are intended for practical use with exposure meters, exposure calculators, and exposure tables.

This International Standard does not apply to colour negative films for motion-picture and aerial photography or for making intermediate negatives.

## 2 References

ISO 5, *Photography — Density measurements —*

*Part 1: Terms, symbols and notations.*

*Part 2: Geometric conditions for transmission density.*

*Part 3: Spectral conditions.*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications.*

ISO 2720, *Photography — General purpose photographic exposure meters (photoelectric type) — Guide to product specification.*

ISO 2721, *Photography — Cameras — Automatic controls of exposure.*

ISO 7589, *Photography — Illuminants for sensitometry — Specifications for daylight and incandescent tungsten.*

## 3 Definitions

For the purpose of this International Standard, the following definitions apply.

**3.1 speed:** A quantitative measure of the response of the photographic material to luminous energy for the specified conditions of exposure, processing, density measurement, and analysis.

**3.2 exposure ( $H$ ):** The time integral of illuminance on the film, measured in lux seconds, and designated by the symbol  $H$ .

Exposure is often expressed in  $\log_{10} H$  units.

**3.3 exposure value unit:** A unit used for an exposure change by a factor of 2 or change of  $0,30 \log_{10} H$  units. To be in compliance with ISO 2720, this will be denoted as  $1 E_v$ .

Changing exposure may be accomplished by changing exposure time, illumination level, or filters over the lens.

1) Such as those with one shutter speed and two aperture stops.