

INTERNATIONAL
STANDARD

ISO
5763

Second edition
1989-10-01

**Photography — Electronic flash equipment —
Automatic control of exposure**

*Photographie — Équipement électronique à éclairs — Contrôle automatique de
l'exposition*

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Reference number
ISO 5763 : 1989 (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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 5763 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 5763 : 1982), of which it constitutes a minor revision.

Annex A of this International Standard is for information only.

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Introduction

This International Standard gives conditions and measuring values for the calibration of electronic flash equipment with automatic control of exposure.

The calibration values are principally related to the exposure of film in the focal plane. They are equivalent to the exposure in the focal plane of a camera with an automatic exposure control mechanism (see ISO 2721) and are related to an object exposure which is equivalent to that produced when the light output is controlled by the guide number (see ISO 1230).

To establish this correlation it is assumed that most pictures are taken under rather similar conditions.

Deviations from these "average" conditions by special scenes or by special constructions of flash equipment may, however, require the consideration of calibration values other than those given in this International Standard.

Certain electronic flash equipment with automatic control of exposure, designed exclusively for a particular camera, may not comply with some of the requirements specified in this International Standard, which are prepared for "general purpose" automatic flash equipment. This is because, in designing "special" flash equipment, all parameters of the particular camera are taken into consideration, i.e. camera lens transmittance, vignetting, the relationship between the field of taking lens and the angle of coverage and the acceptance angle of the sensor of the automatic flash equipment, etc., and these parameters will sometimes be different from those of the "average" camera. Tolerances may also be different for the special automatic flash equipment. For example, equipment for instant picture cameras will require a tolerance of $\pm 1/3 E_v$ whereas equipment for the cameras using 110 size colour negative films, according to ISO 5800, the tolerance $+ 3 E_v$ or $- 1 E_v$ is acceptable.

Furthermore, even for general purpose automatic flash equipment, deviation from the "average" conditions by special scenes or by special constructions of flash equipment may require the consideration of calibration values other than those given in this International Standard.

Therefore, when testing electronic flash equipment with automatic control of exposure according to the methods specified in this International Standard, the above-mentioned special cases must be taken into consideration. A photographic check of the correct exposure is recommended.

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Photography — Electronic flash equipment — Automatic control of exposure

1 Scope

This International Standard applies exclusively to the automatic exposure control built into or coupled with electronic flash equipment.

It specifies the methods for measuring the characteristics peculiar to the control such as its accuracy and repeatability. It also lays down the numerical values of the integral of time of the object luminance and of the exposure given to an object by flash equipment with automatic exposure control, as well as the maximum deviation from these nominal values. Furthermore, the measuring conditions are stated under which the adjustment of the automatic exposure control is to be tested.

Definitions and measuring methods concerning electronic flash equipment without automatic control of exposure are specified in ISO 2827.

It is assumed that when testing the automatic exposure control, the optical axis of the sensor of the control and of the lamp head of the electronic flash equipment are, when fitted to a camera, substantially coincident with that of the taking lens of the camera.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 517 : 1973, *Photography — Still cameras — Lens aperture markings*.

ISO 1230 : 1973, *Photography — Determination of flash guide numbers*.

ISO 2240 : 1982, *Photography — Colour reversal camera films — Determination of ISO speed*.

ISO 2721 : 1982, *Photography — Cameras — Automatic controls of exposure*.

ISO 2827 : 1988, *Photography — Electronic flash equipment — Determination of light output and performance*.

ISO 5800 : 1987, *Photography — Colour negative films for still photography — Determination of ISO speed*.

ISO 6728 : 1983, *Photography — Camera lenses — Determination of colour contribution index*.

CIE Publication No. 38 (TC-2.3.) : 1977, *Radiometric and photometric characteristics of materials and their measurement*.

3 Definitions

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

3.1 automatic exposure control: Exposure control by a photoelectric measuring device which measures the luminance of the object, integrates the light with respect to time, and terminates the exposure when the integral reaches a predetermined value.

3.2 automatic distance range: The range of distance between the object and the flash equipment in which the automatic exposure control can be used in accordance with the indications of the manufacturer. This range depends among others on the guide number of the flash equipment, on the adjustment of the automatic exposure control, and on the luminance coefficient of the object.

3.3 angle of response of sensor for automatic operation: The angle of response is the half angle from axis of the reflector of the flash equipment within which the response does not change more than 10 % under the conditions specified in 4.2.2. There are four half angles of response, i.e. on the right, on the left, at the top, and at the bottom of the axis of the reflector.