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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Photography — Electronic flash equipment — Determination of light output and performance

Photographie — Flash électronique — Détermination de l'émission lumineuse et des performances

Reference number
ISO 2827 : 1988 (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 2827 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 2827 : 1973), 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 — Electronic flash equipment — Determination of light output and performance

1 Scope and field of application

This International Standard specifies methods of measurement and sets standards of performance for light output, angle of coverage, ready indication, recycle time and number of flashes for electronic flash equipment of the single flash type, which is primarily intended to provide illumination for photography with cameras in which the contacts that control the flash are closed when the shutter of the camera is fully or nearly fully open.

2 References

ISO 1229, *Photography — Expendable photoflash lamps — Determination of the light output.*

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

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

ISO 5763, *Photography — Electronic flash equipment — Automatic control of exposure.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 1230 and the following definitions apply.

3.1 flash : Pulse radiation of intense light having inconstant flux, used for photographic purpose.

3.2 electronic flash tube : A light-transmitting envelope having electrodes and containing a gas through which the energy from a storage capacitor is discharged, thereby producing a flash of light.

The spectral energy distribution of this light depends on the type of gas and other design factors.

3.3 electronic flash equipment : An electronic flash tube, usually mounted in a suitable reflector, and the appropriate apparatus for activating and controlling the electronic flash tube.

3.4 automatic flash equipment : Equipment that varies the intensity or duration or both of a flash in such manner as to achieve the necessary exposure of the film independent of the object distance from the flash equipment within given limits (see ISO 5763).

3.5 half angle of coverage : The angle between the axis of the reflector and the direction where the luminous intensity falls to one half of the value in the axis.

On symmetrically designed reflectors the **angle of coverage** is equal to twice the half angle of coverage. For flash equipment producing a pattern which deviates significantly from a circle, a rectangle within which the luminous intensity does not vary by more than ± 50 % from the value on the axis may be specified by two angles in horizontal and vertical directions of the rectangle. For large flash sources, for example studio flash sources, where the dimensions are not smaller than 2 m, the method of specifying angle of coverage is not applicable.

3.6 light output (for bare flash tubes) : The light output measured in two mutually perpendicular equatorial lines around the bare tubes. The cross-line of the planes through the equatorial lines shall be parallel to the optical axis of the lens of the camera.

3.7 beam light output : The time integral of the luminous intensity of flash equipment in the direction specified by the axis of the reflector, expressed in candela seconds.

3.8 stored energy (E_n) : The energy stored in the main capacitor expressed in joules (watt seconds) and determined by the following formula

$$E_n = \frac{CU^2}{2}$$

where

C is the capacitance of the combined main capacitor in farads;

U is the peak voltage in volts (see 3.14).

3.9 effective flash duration ($t_{0,5}$) : The time interval from the instant the flash reaches one-half of its peak intensity to the instant it decays to the same value.

3.10 total flash duration ($t_{0,1}$) : The time interval from the instant the flash reaches 10 % of its peak intensity to the instant it decays to the same value.