INTERNATIONAL STANDARD 2720

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Photography — General purpose photographic exposure meters (photoelectric type) — Guide to product specification

Photographie — Posemètres photographiques pour usage général (type photoélectrique) — Base de spécification

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

International Standard ISO 2720 was drawn up by Technical Committee ISO/TC 42, *Photography*, and circulated to the Member Bodies in July 1972.

It has been approved by the Member Bodies of the following countries :

Australia	Germany	Spain
Belgium	Italy	Switzerland
Canada	Japan	Thailand
Czechoslovakia	Mexico	United Kingdom
Egypt, Arab Rep. of	Romania	U.S.A.
France	South Africa, Rep. of	U.S.S.R.

No Member Body expressed disapproval of the document.

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0 INTRODUCTION

This International Standard has been prepared in order to make information available for the development, manufacture and test of photoelectric exposure meters. It does not cover the automatic or semi-automatic control of exposure in cameras.

Photographic exposure is defined as the product of exposure time and image illuminance. Satisfactory exposure is achieved within the camera by control of the effective exposure time (shutter speed) and the relative aperture (*f*-number) and depends on the speed of the photo-sensitive material used and on the light incident upon it. In order to determine the exposure required, the luminance of, or illuminance falling upon, a given scene is measured by the exposure meter and a calculating mechanism is used to correlate the meter indication with the camera exposure settings for the photo-sensitive material used.

Exposure meters are calibrated by reference to a standard subject; reflected light meters by reference to an area of known uniform luminance which covers completely the whole field of view of the meter; incident light meters by reference to a point source of light of known luminous intensity located on the meter axis.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies calibration levels and test conditions for general purpose photoelectric exposure meters which measure reflected light or incident light, or both, in determining photographic exposure for camera use.

It applies to meters containing a light sensitive element, an indicating electrical instrument calibrated in suitable units such as luminance, illuminance, or some factor of photographic exposure, a directional system and a calculator to correlate the meter indications with the camera exposure settings for the particular photographic film being used.

Quality of product is not covered.

2 REFERENCES

IEC Publication 68-2-6, *Basic environmental testing procedures — Test Fc : Vibration.*

IEC Publication 68-2-27, *Basic environmental testing procedures — Test Ea : Shock.*

3 GENERAL REQUIREMENTS

3.1 Meter and calculator markings

3.1.1 *Nomenclature*

The preferred exposure-parameter markings shown on the calculator or scale of the instrument shall be compatible with the symbols, abbreviations, and relationships given in clause 6.

3.1.2 *Relative aperture scale*

Numbered aperture markings shall be selected from the series of *f*-numbers given in table 2. The symbol used to indicate relative aperture shall be $1 : A$ or $f : A$ or f/A or $f\text{-}A$ where A is the *f*-number.

Intermediate scale divisions may be used and may be numbered.

3.1.3 *Effective exposure time scale (shutter speed)*

Effective exposure time scale markings shall be selected from the series of effective exposure times given in table 2.

Intermediate scale divisions may be used and may be numbered.

3.1.4 *Film speed markings*

Markings shall include the logarithmic and/or arithmetic film speeds (S° or S respectively) selected from the series of film speeds given in table 2. These film speeds may be designated as ISO if they are consistent with ISO proposals or International Standards.

3.1.5 *Exposure value scale*

Exposure values, when shown, shall be in numerical sequence determined from the equations given in clause 6 for any combination of relative aperture and effective exposure time. A change in meter reading of one exposure value unit, E_V, will require a change in exposure by a factor of 2. This unit is called a STEP.

3.1.6 *Light scale*

Because the light reading is used as a basis for setting the calculator, the light scale may be marked in light units or in any arbitrary units, or may not be marked at all, provided that transfer of the measured light value to the calculator can be made effectively.