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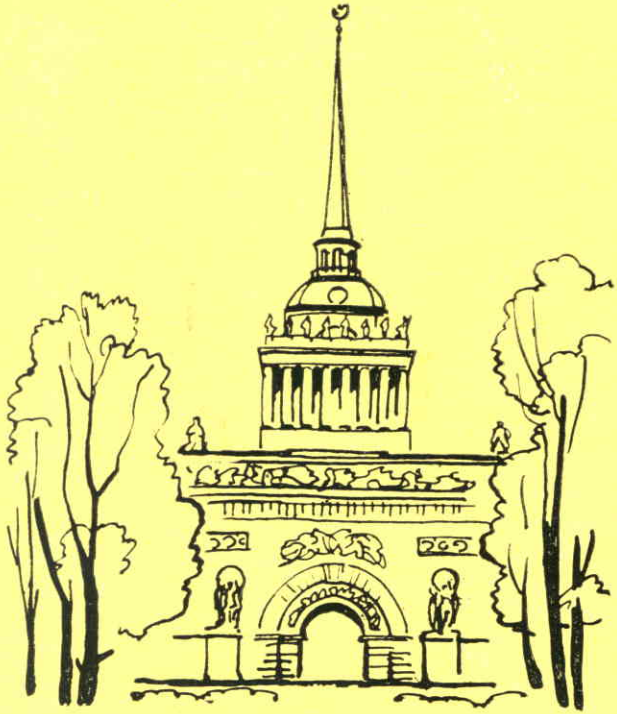
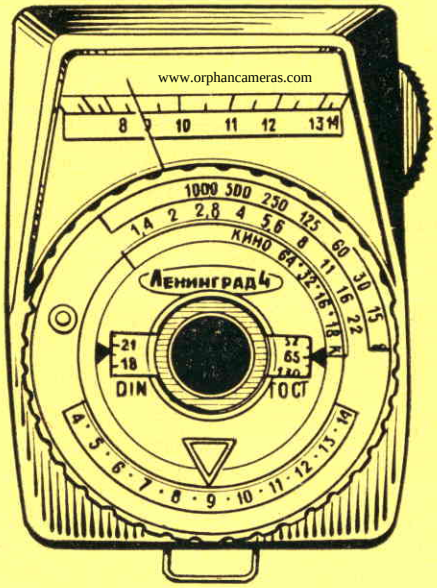
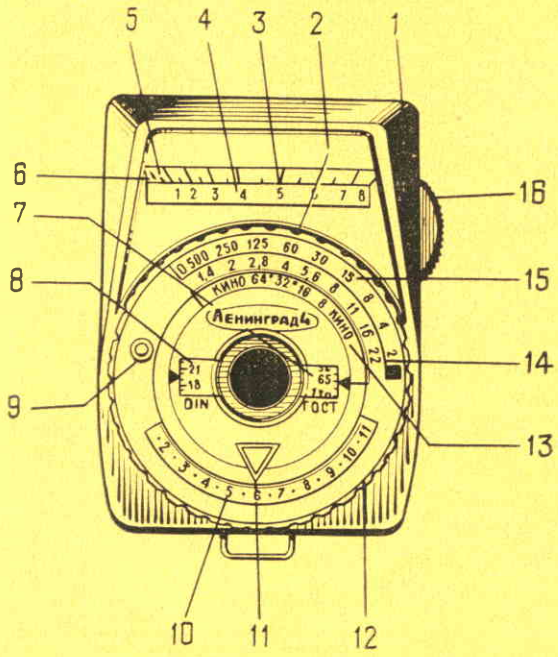


"LENINGRAD 4"



PHOTOELECTRIC EXPOSURE METER

Operating Instructions



1 — exposure meter window;
2 — measurer pointer;
3 — measurer scale;
4 — changing-over figures of measurer scale;
5 — beginning of working portion of measurer scale;
6 — zero mark of measurer scale;
7 — film speed scale in GOST (or ASA) units;
8 — film speed scale DIN grades;
9 — film speed dial;
10 — auxiliary scale;
11 — fixed index of auxiliary scale;
12 — setting ring of auxiliary scale;
13 — cine-camera speed scale;
14 — lens aperture scale;
15 — shutter speed scale;
16 — range switch knob

GENERAL

Please, study these instructions with care prior to handling your exposure meter.

APPLICATION

The "Leningrad 4" (Ю11/4) photoelectric exposure meter is intended to find the shutter speed or lens aperture in taking both black-and-white and colour pictures.

The meter can be used for movie purposes.

This is able to operate in the bright sun and artificial light both out- and indoors.

DELIVERY SET

Exposure meter Ю11/4	1 pc
Opal glass	1 pc
Cord	1 pc
Case	1 pc
Packing box	1 pc
Operating Instructions	1 copy

DESIGN

The photoelectric exposure meter consists of a selenium photocell, a measurer with its scale and a calculator.

The meter has two measurements ranges for reflected light (brightness) and two ones for incident light (illumination).

The measurement ranges are changed over with the help of a built-in diaphragm driven by a knob switch.

When measuring incident light (in either range), use the opal glass to be inserted into the meter window.

The photocell is exposed to light through the meter window and a current generated by the light starts to flow in the circuit of the photocell associated with the measurer.

The more intensive is illumination, the photocell is subjected to, the higher is the current and, hence, the meter pointer will show farther deflection.

The shutter speed or lens aperture are found with the help of the calculator composed of two dials (upper and lower). The upper dial is coupled with the film speed scale, while the lower one — with the ring.

The upper dial is graduated in lens aperture values from 1.4 to 22 and in film speeds from 4 to 1000 GOST units (or from 3 to 800 ASA) and from 6 to 30 degrees DIN.

The intermediate divisions on the film speed scale correspond to values 11, 22, 45, 90, 180, 350, 700 GOST units.

The lower dial bears a scale of shutter speeds from 1/1000 to 15 s, fractions of a second being indicated as whole numbers (e. g. 2 implies 1/2 s, etc.) in black figures on a light background, while seconds — in light figures on a dark background. The same

dial bears also a cine-scale ranging from 8 to 64 frames per second with intermediate divisions implying 24 and 48 f. p. s., and an auxiliary scale figured from 1 to 14.

The measurer scale is figured from 1 to 14: for the first measurement range 1 to 8 and for the second one — 8 to 14.

The exposure meter meets the requirements of GOST 9851—68.

HOW TO FIND SHUTTER SPEED OR LENS APERTURE

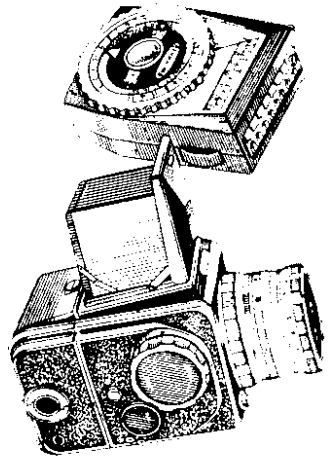
There are two basic methods to find shutter speed or lens aperture:

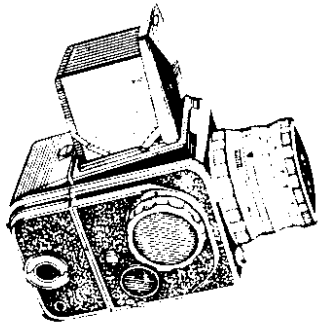
1. The method of reflected light (object brightness). In this case the exposure meter is used to measure an intensity of the light reflected into the camera by the object to be photographed.

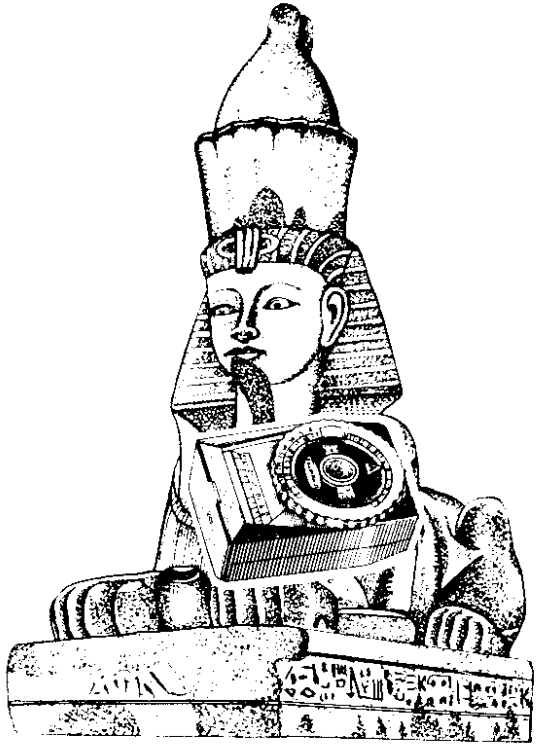
When using this method, place the exposure meter at the camera location and direct it to the object of interest.

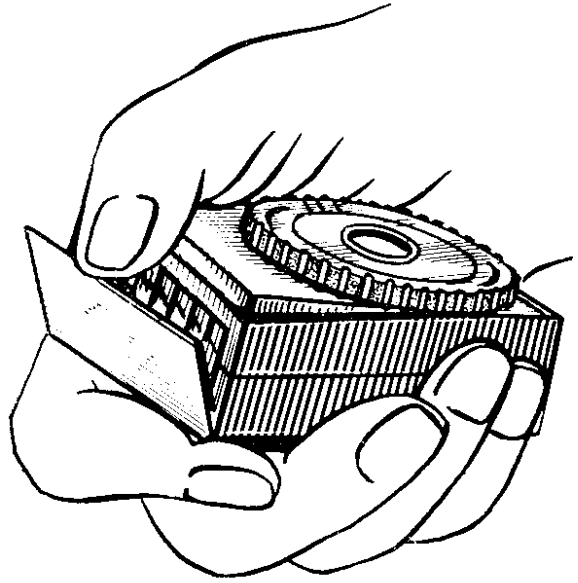
2. The method of incident light (illumination of object). In this case the exposure meter is used to measure an intensity of the light illuminating the object to be photographed.

When using this method, place the exposure meter at the object location and direct it to the camera, the opal glass being inserted into the meter window.



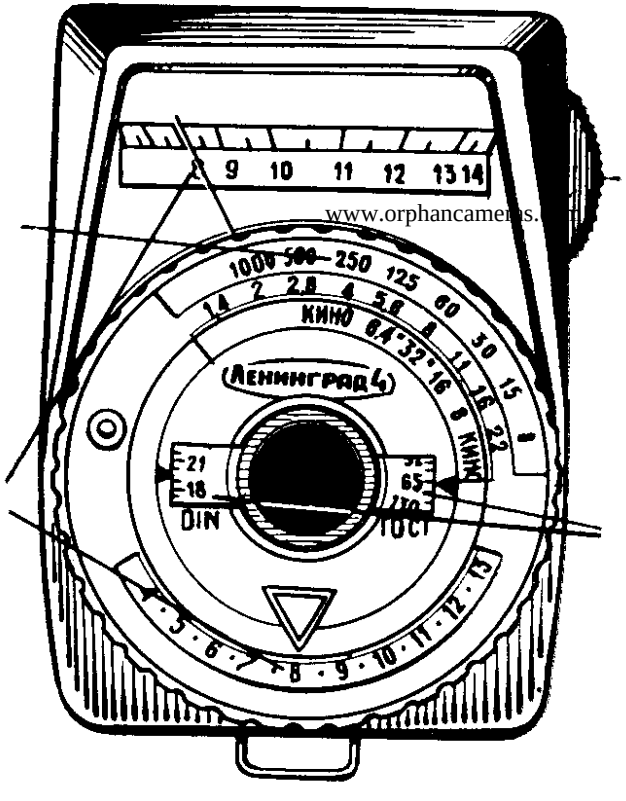






To take the opal glass out of its seat in the meter case, press the glass projection and pull it outwards.

To insert the opal glass into the meter window, put the spring into the slot in the lower wall of the meter window and place the glass into the window by gentle pressing its projection.



OPERATION PROCEDURE

1. Turning the transparent dial, set the required film speed in GOST (or ASA) units or degrees DIN.

2. Depending on the method of light measurement, direct the exposure meter either to the object to be photographed or to the camera.

If the measurer pointer fails to reach scale mark "8", change the meter over to the more sensitive (i. e. first) range of measurement, for which purpose pull the range switch knob fully outwards.

3. Turning the ring, set the auxiliary dial so that its fixed index is in the same position as the pointer on the measurer scale.

4. Take the shutter speed reading against the desired value of the lens aperture or take the reading of the lens aperture value against the desired shutter speed.

If you deal with a motion picture camera, take the reading of the lens aperture value against the desired frequency of frames.

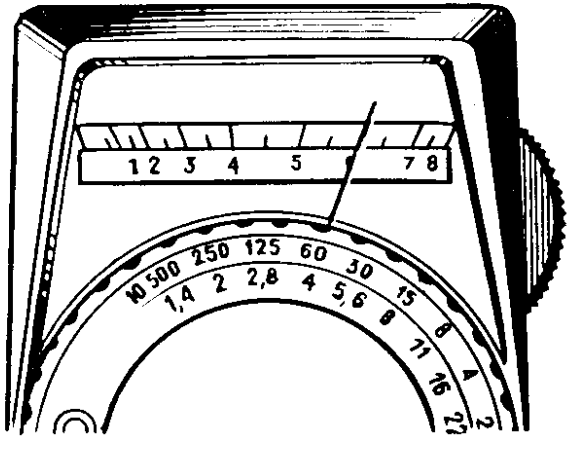
On the scale a camera speed corresponds to the camera wing angle of some 180°. For angles other than that a correction is to be introduced.

In cameras of old makes the scales of shutter speeds and of lens aperture values may differ from those of the exposure meter. In this case set the camera for a shutter speed or a lens aperture which is closest to that read from the respective scale of the exposure meter.

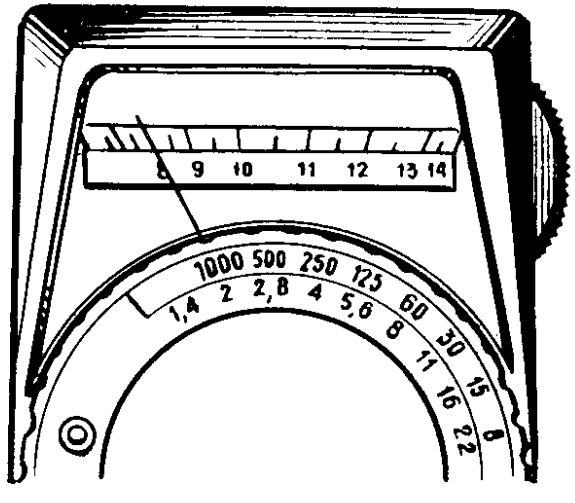
To avoid errors in determining the shutter speed by the reflected light method at nature shooting, it is advisable that the meter window should be inclined somewhat towards the ground.

In some cases, e. g. at picture taking in back lighting, on the snow, at the sea, in the mountains, with the use of light filters, at non-uniform illumination, etc., a correction is to be introduced into the shutter speed value read from the exposure meter scale.

For more detailed information on selection of methods how to find the shutter speeds and correction factors one should refer to special literature dealing with photography and exposure metering.



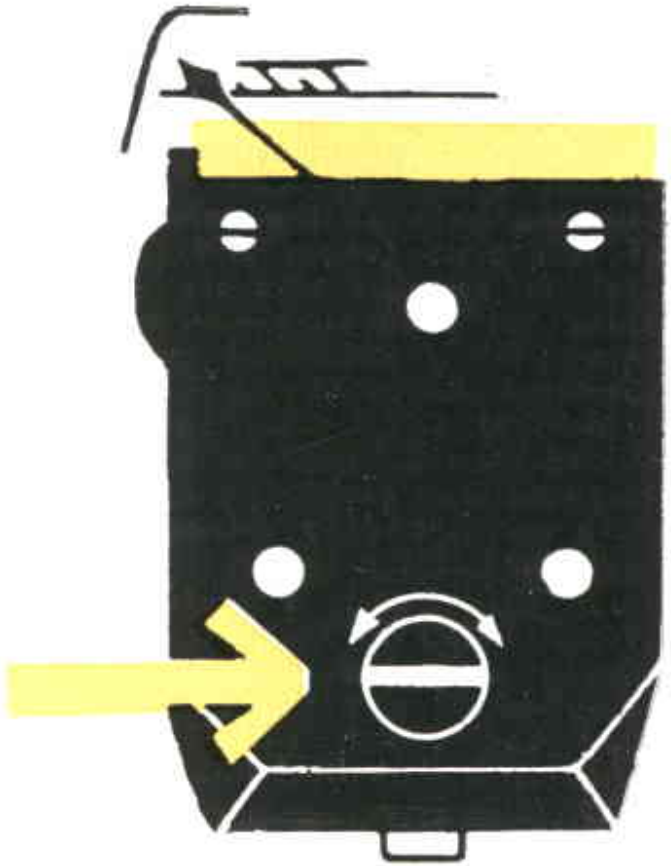
1st range



2nd range

The "Leningrad 4" exposure meter is a high-sensitive measuring instrument that requires a careful handling.

Always protect the exposure meter against sudden jolts and shocks. It is advisable to use the exposure meter without taking it out of its case.



Prior to using the exposure meter, check the measurer pointer for zero position and adjust it, if necessary. For this purpose take the exposure meter out of the case and turn the zero adjustment screw on the underside to bring the measurer pointer to zero, the meter window being tightly covered with some opaque material.

When using the exposure meter under hot climate conditions, one should bear in mind that at a temperature above +50°C the photocell may get out of order.

See that the pointer should never get beyond the measurer scale with the range switch knob pulled outwards.

It is advisable to keep the exposure meter in its case.

Protect the exposure meter and its opal glass against dust, dirt and moisture.

In case the opal glass or meter window glass becomes dirty, wipe it gently with a clean soft cloth.

The exposure meter may be repaired at special workshops only.

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