SERVICE MANUAL

Photoelectric Exposure Meter

LENINGRAD 8

TENTO
USSR·MOSCOW

GENERAL

The present service manual contains brief information on the exposure meter I0102 "Leningrad 8" and directions for use.

Prior to using the exposure meter, study the service manual with care.

The exposure meter is intended for determining the exposure conditions (the shutter speed and lens aperture) for a given film speed value for amateur shooting black-and-white and colour films.

The exposure meter can be operated in the bright sun and artificial light both out- and indoors at an ambient temperature from minus 20 to plus 45 °C.

SPECIFICATIONS

Exposure meter conforms to GOST 9851–79, accuracy: class Б.

Exposure meter has:

two ranges for object brightness measurement:

first range 4.75–850 cd/sq. m,

second range 600–56,000cd/sq. m;

three ranges for object illumination measurement:

first range 95.0–18,000 lx,

second range 12,500–1120,000 lx,

third range 6.00–95.0 lx,

the first and second ranges for object illumination measurement operate when the attachment is used.

Perception angle: vertical – 40°, horizontal – 60°.

Overall dimensions: 54×88×27 mm.

Mass of exposure meter less case and cord: 90 g.

STANDARD EQUIPMENT

Exposure meter I0102 "Leningrad 8"	1
Attachment (opal glass)	1
Cord	1
Case	1
Storage box	1
Service manual	1

DESIGN

The photoelectric exposure meter comprises a selenium photocell, a moving-coil meter with scales and a calculator.

The shutter speed and lens aperture are determined with the help of the calculator.

The calculator is composed of two dials: upper and lower.

The upper dial bears: lens aperture scale from 1.4 to 22 and film speeds from 3 to 3,200 GOST (or ASA) units and from 6 to 36 degrees DIN.

The intermediate divisions of the GOST (or ASA) scale correspond to values 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 125, 160, 250, 320, 500, 640, 1000, 1250, 2000, 2500.

The film speed value is set with the help of a carrier.

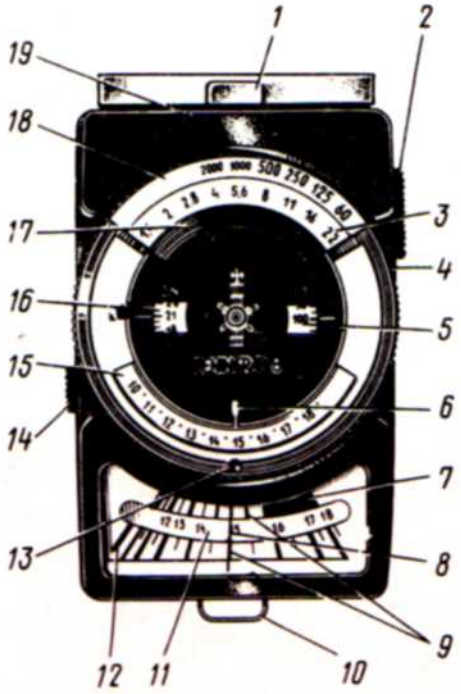
The lower dial bears a scale of shutter speeds for cameras from 1/4000 s to 2 min, fractions of a second being indicated as whole numbers (2 implies 1/2, etc.), seconds as " (1 " is 1 s, etc.); minutes as '(1 ' is 1 min, etc.).

The same dial bears two more scales: a cine camera speed scale from 4 to 95 frames per second with the intermediate division 6, 12, 24, 48 and 95 frames per second and an auxiliary scale figured from 1 to 18.

The lower dial is associated with a ring for setting the auxiliary scale.

The meter scale bears figures from 1 to 18: from 5 to 12 on the first range of measurement, from 12 to 18 on the second range of measurement and from 1 to 5 on the third one.

For convenience of exposure meter use two cuts are provided on the rear wall of its case to attach it to the camera strap.



1 – attachment (opal glass); 2 – measurement range switch button; 3 – lens aperture scale; 4 – ring for setting auxiliary scale; 5 – film speed scale in GOST (or ASA) units; 6 – fixed index of auxiliary scale; 7 – non-effective scale portion of third measurement range; 8 – meter pointer; 9 – meter scales; 10 – cord loop; 11 – changeable number series of the meter scale; 12 – zero mark of meter scale; 13 – carrier for setting film speed; 14 – button to pull photocell out; 15 – auxiliary scale; 16 – film speed scale in DIN grades; 17 – cine camera speed scale; 18 – shutter speed scale; 19 – exposure meter window

Determination of shutter speed or lens aperture by reflected light method

Determination of shutter speed or lens aperture by incident light method

PREPARATION FOR WORK

There are two methods of determination of shutter speed or lens aperture with the help of the exposure meter.

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

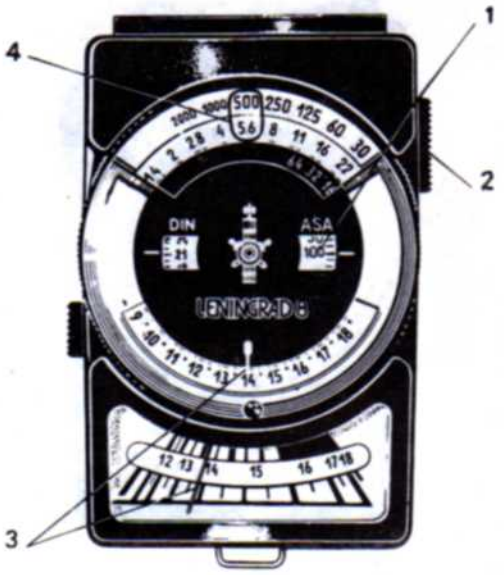
When determining the exposure conditions, place the exposure meter at the camera location and direct its window to the object of interest.

In this case either the first or the second range is read off without the opal glass.

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

When using this method, place the exposure meter at the object location and direct its window to the camera.

In this case either the first or the second measurement range is read off with the opal glass put on the exposure meter window, or the third range is used without the opal glass, the photocell being extended.



OPERATION

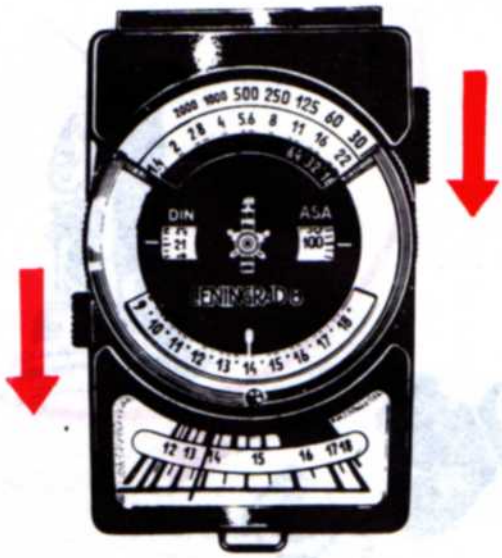
1. Move the carrier to set the film speed by GOST (or ASA) scale or DIN scale.

2. Depending on the method used, direct the exposure meter either to the object to be photographed or to the camera, the second measurement range being previously set.

If the meter pointer does not reach the scale mark "12", change the meter over to a more sensitive (i. e. the first) range by pushing the range switch button fully outwards.

If with the incident light method the pointer fails to reach mark "5" due to poor lighting, remove the opal glass from the meter window and push the photocell button as far as it will go to bring out the photocell, then read the third measurement range scale.

The first measurement range



The second measurement range

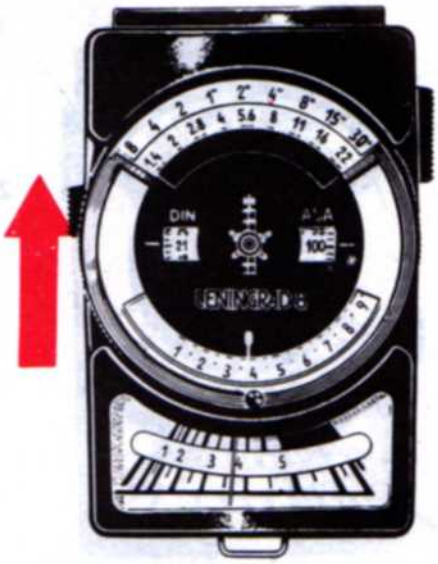
3. Turn the ring to set the auxiliary scale so that it is in the same position relative to the fixed index as the pointer on the meter scale.

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.

In case you deal with a cine camera, take the reading of the lens aperture value against the desired camera speed.

On the scale the camera speed corresponds to the cine camera angular aperture of ca. 180°.

For angles other than that a correction is to be introduced.



The third measurement range

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

To avoid errors caused by sky light when determining shutter speed by the reflected light method at nature shooting, it is advisable to incline somewhat the exposure meter window towards the ground.

STORAGE

The exposure meter should be kept in the closed case at a temperature from 1 to 40 °C.

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

If the opal glass or exposure meter window glass becomes dirty, wipe them gently with a clean soft cloth. Never use solvents, alcohol, acetone and the like for this purpose.

The "Leningrad 8" exposure meter is a highly sensitive measuring instrument that requires careful handling.

Protect the exposure meter from sudden jolts and shocks.

The exposure meter should be repaired at special workshops only.

Since efforts are continually made to improve the reliability and performance of the exposure meter, minor changes may be introduced without special notice.

Внешторгиздат. Изд. № ЛО-2109.
Экспонометр фотоэлектрический „Ленинград 8". Руководство по эксплуатации на англ. яз.
Л—4. Зак. 507