

Leningrad
Optical-Mechanical
Enterprises,
Amalgamated

ILLUMINATOR
ОИ-19

TECHNICAL DESCRIPTION
AND OPERATION INSTRUCTIONS

Тип. ЛОМО, зак. № 5542, изд. на англ. яз.
Печатник Трубицына М. А.

I. APPLICATION

THE TYPE ОИ-19 ILLUMINATOR is an accessory for biological microscopes and coupled with a microscope condenser is intended for illuminating the specimens.

The illuminator will normally operate in premises at an ambient temperature from +10° C to 40° C and a relative humidity 80%, not over.

II. SPECIFICATION

Collector aperture	0.67
Limits of lantern rotation angle about horizontal and vertical axes	0°—360°
Limits of lantern movement along the column	0—89 mm

Light source — СЦ61 lamp 8 V, 20 W.

The lamp is supplied from the a. c. 127/220 V mains through the step-down transformer. *

* Input voltage of the transformer for instruments exported — supplied on special request.

Overall dimensions:

illuminator . . .	245 mm×130 mm××110 mm
transformer . . .	140 mm×110 mm××70 mm

Weight:

illuminator (in operating position without transformer)	1.5 kg
transformer	1.7 kg
the whole complete set . .	4.0 kg

III. OPTICAL SYSTEM

The illuminator optical system consists of filament lamp *1* (Fig. 1), two-lens collector *2*, iris diaphragm *3* and interchangeable light-filter *4*.

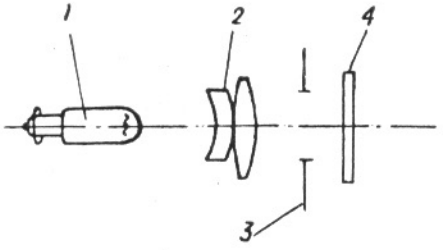


Fig. 1

IV. DESIGN

The main parts of the illuminator are: lantern, tripod and transformer.

Lantern *5* (Fig. 2) may be displaced up and down along the tripod column *6* and turned around the vertical axis; its position is fixed by means of clamping device *7*. The lantern in its turn may be also turned around the horizontal axis and its position is fixed by means of clamping device *8*.

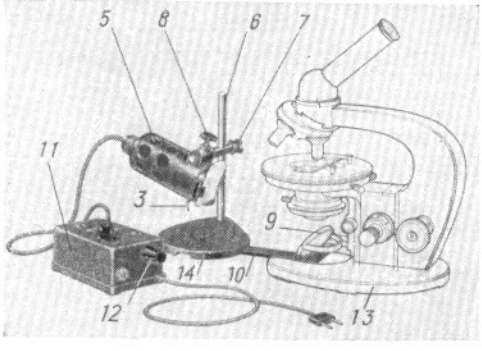


Fig. 2

To set a correct distance between the lantern and microscope mirror *9* connecting plank *10* is used.

The filament lamp is supplied through step-down transformer *11*, which is delivered being connected at 220 V. To change over the transformer at 127 V, it is necessary to move a lever through the opening in a base from the terminal "220" onto the terminal "127".

The adjustment of the lamp filament is made with rheostat knob *12*.

V. OPERATING INSTRUCTIONS

The illuminator connected with the biological microscope by means of connecting plank is shown in Fig. 2.

To illuminate the specimen normally the illuminator should be installed at a definite distance (approx. 125 mm) from the microscope mirror. For this purpose in shoe *13* of some microscope (e. g. biological ones) are intended the holes, wherein the pins of the connecting plank *10* end are inserted. The other end of the connecting plank bears illuminator tripod *14*, which is installed in such a way that the pin of the tripod base is inserted into the hole of the connecting plank. In case, there is no holes in the microscope shoe, the distance between the illuminator and

the microscope mirror is determined by eye.

To adjust the illumination by means of the illuminator proceed as follows:

After installing the specimen on the microscope stage, direct a light beam onto the center of microscope mirror *9*, turning the illuminator and moving it along column *6*; then by means of the mirror direct a light beam onto the specimen.

Focus the microscope on image sharpness. Shifting the holder with the lamp inside the illuminator body obtain such a position when the lamp filament is sharply produced on the closed iris aperture diaphragm of the microscope condenser.

Open the condenser diaphragm, close illuminator diaphragm *3* and, observing through the microscope, by shifting of the condenser obtain a sharp image of the illuminator diaphragm in the microscope field of view.

Bring the illuminator diaphragm image into the field of view center by means of turning the mirror, then open the illuminator diaphragm so that the only visible field of view will be illuminated.

IV. CARE

The illuminator should be kept clean and prevented from mechanical damages.

The illuminator should periodically be wiped after the dust is thoroughly removed, first with a rag soaked with acid-free vaseline, and then with a dry clean soft rag.

A particular attention should be paid on optical parts cleanliness.

Dust from the outer surfaces of the optical parts must be removed first with an artist's brush thoroughly washed in ether, and then wipe them with a soft cambric or linen rag slightly moistened with benzine or ether.

Never touch the lens surface with fingers.

VII. SCHEDULE OF SPARE PARTS SUPPLIED

Item No.	Designation	Drawing symbol
1	Clamp	ПРЛ-6 сб102-8
2	Lamp СЦ61 (8 V; 20 W)	ТУ No. 1-3-164 МПСС сар 2Ш-15-1
3	Connecting plank	Н212-55
4	Holder	1Н61-35
5	Blue filter	ОИ-19, дет. 86-11
6	Ground glass	ОИ-19, дет. 86-12
7	Step-down transformer of 127/220 V	ТР-10, сб100