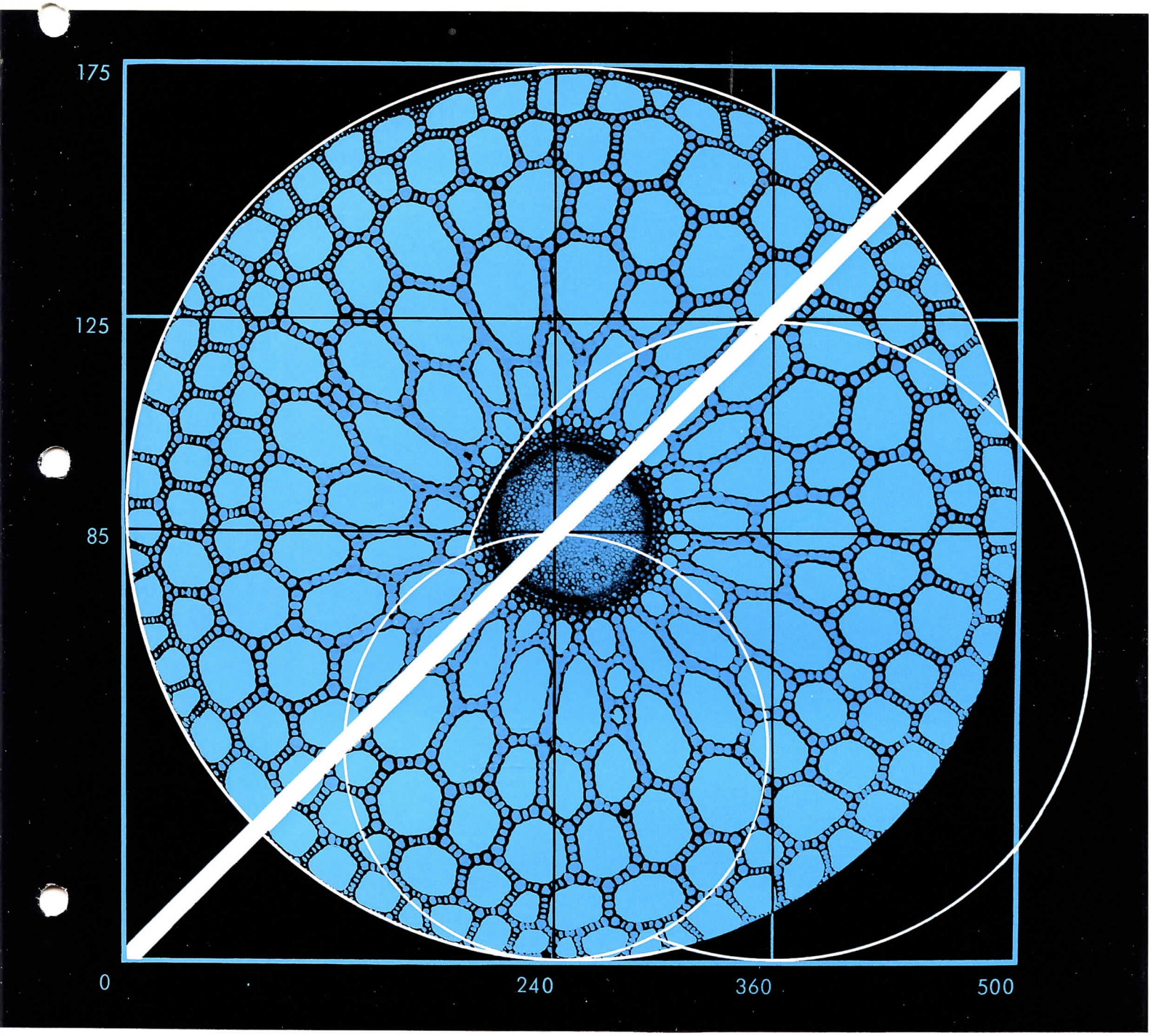
Leitz

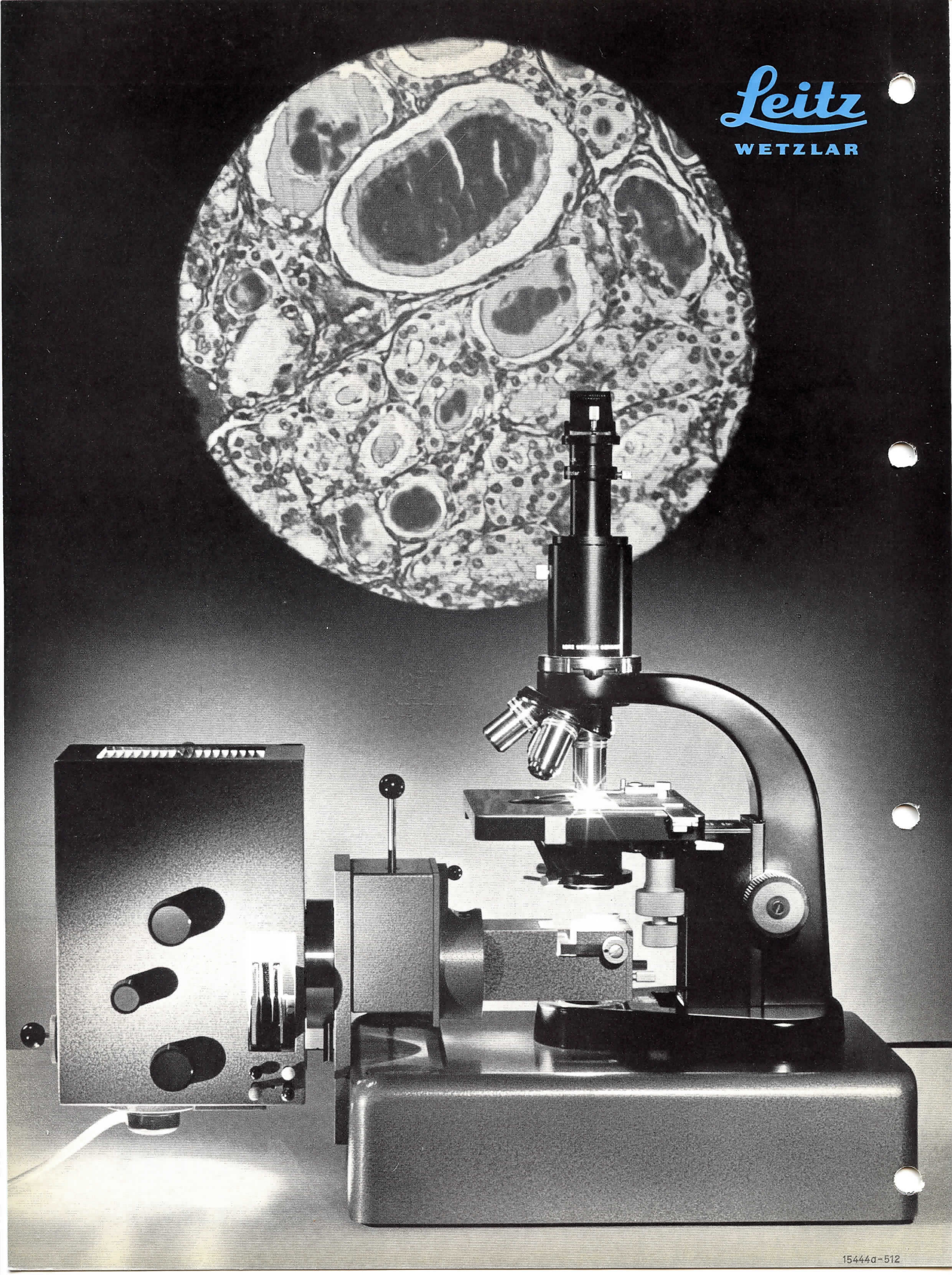


Leitz WETZLAR

512-87/Engl.

SM

Micro-projector


Leitz
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SM
Micro-projector

Visual presentation in biology and medicine is very instructive and makes a great impact on the audience. Often, success or failure of a lecture is entirely dependent on the picture material available. The lantern slide, however convincing it may be, can never give more than a frozen aspect of the moment, the individual phase of a whole event. This applies particularly to live processes within the microscopical range. But inaminate specimens, too, are far more effective in direct projection with its possibilities of changing the magnification, the mechanical stage movement, and focusing in depth, than a collection of lantern slides. Schools will therefore look for a powerful, yet moderately-priced micro-projector which permits the pupils directly to observe processes taking place under the microscope.

Powerful microprojection outfit – unit component system.

Can be used as:

Micro-projector in biology classrooms and small lecture theatres

microscope for all conventional and classical methods of transmitted-light microscopy.

Convenient operation, simple projection.

Maintenance-free halogen lamp emits practically pure white light.

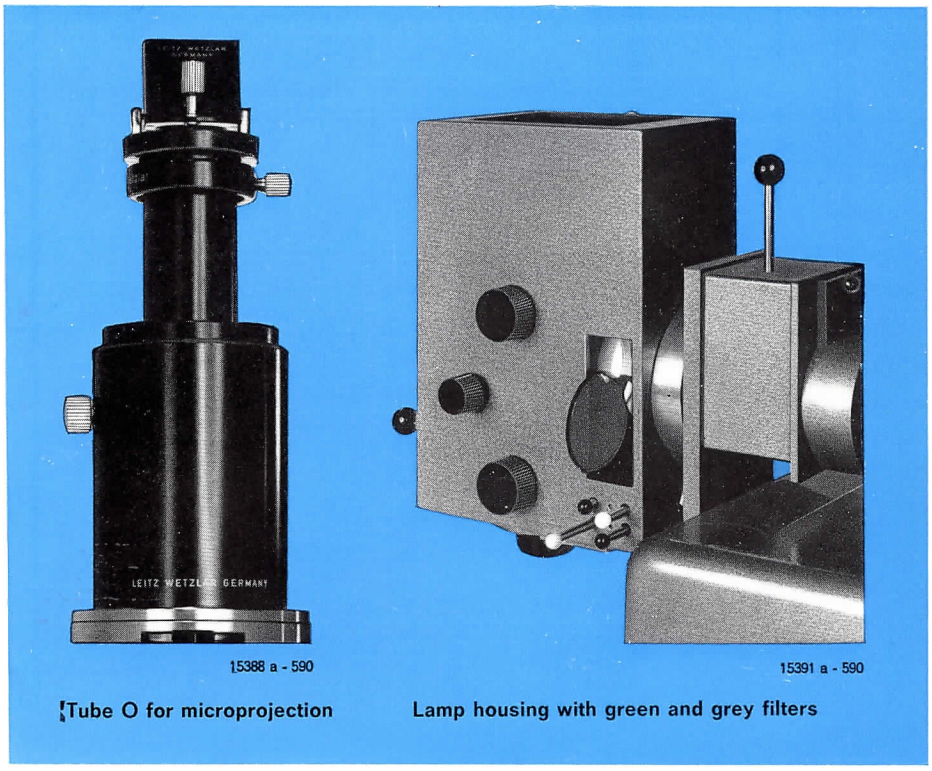
Large and bright screen images of up to 175cm (70″) diameter* at reproduction ratios from 100:1 to 3200:1.

Optical equipment according to choice with well-corrected achromats or highly corrected plano objectives.

Highly effective object protection through built-in heat filter and insertable grey filters.

Instant operation during microscopical work.

* under favourable conditions. Generally 125cm (50″).



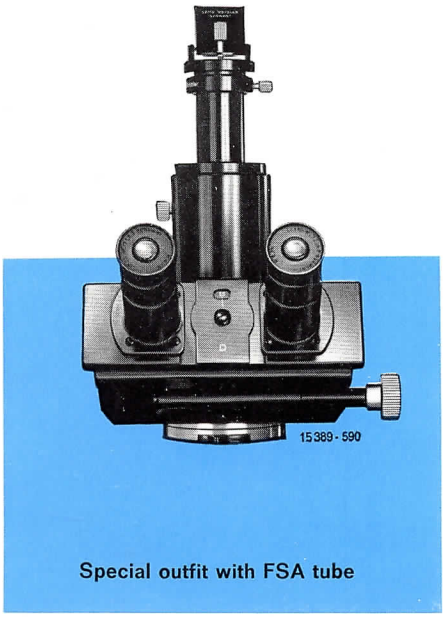
Tube O for microprojection — **Lamp housing with green and grey filters**

The LEITZ SM micro-projector is a highly efficient demonstration instrument for teaching and lecturing. All the objects likely to occur in botany, zoology and medicine from the single cell to the large histological section or living specimen can be shown even to a large number of viewers.

The micro-projector is designed according to the unit component system; it consists of the SM microscope, the base with lamp housing 250, the mirror housing and the vertical tube O with projection prism. This unit component system offers a number of considerable advantages:

1. It offers the user a powerful micro-projector adapted to the needs of the school,
2. If the vertical tube is replaced by a monocular or binocular observation tube, the instrument can be used as an integrated unit for microscopical investigations in brightfield transmitted light,
3. The microscope can be readily detached from the lamp housing and used as an easily portable table stand,
4. The use of the microscope can be extended for special methods in transmitted light, such as darkfield, phase contrast and fluorescence.

The individual components are described below, and the SM microscope in our List 512-37.

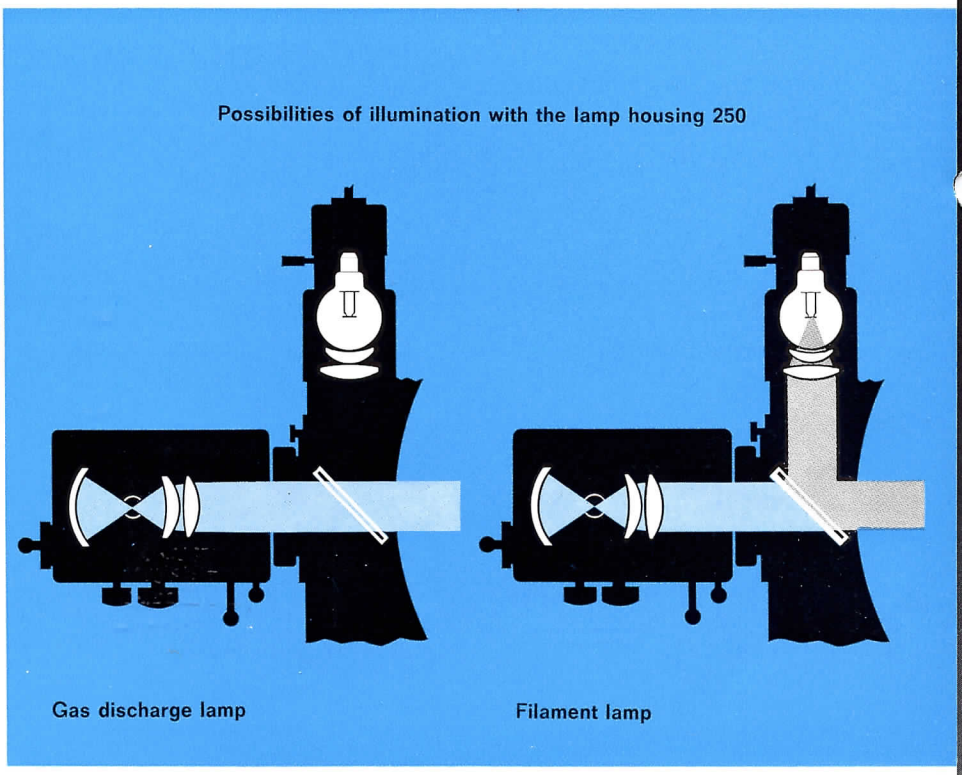


Special outfit with FSA tube

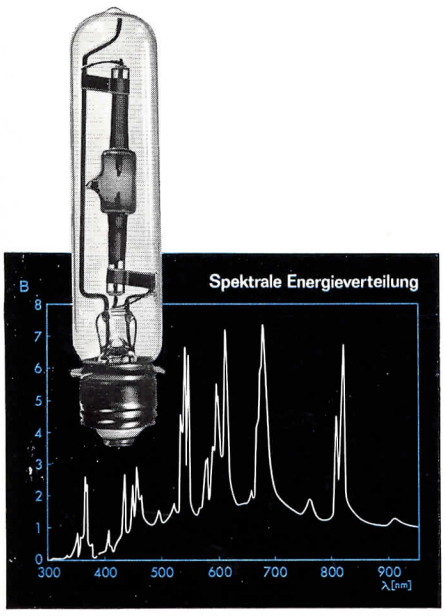
Lamp housing 250

The lamp housing contains a 250 W halogen arc lamp. The light is transmitted to the substage condenser of the microscope through a lamp condenser, a heat filter, and a light tunnel. The swing-out lens below the substage condenser has settings for the optimum illumination with each objective obviating a lowering of the condenser.

All control elements for the adjustment of the lamp condensers, the vertical and lateral movement of the lamp and the centration of the reflector are easily accessible. 4 filters can be accommodated in any combination in the filter changer of the lamp housing; they allow the variation of the brightness in steps up to the maximum value and its adaptation to the maximum permissible load on the object. The built-in, variable field diaphragm affords the specimen further protection from heat damage in addition to that provided by the heat filters.



If the micro-projector is to be used as an integrated unit for general microscopy with a filament lamp, a 6 v 15 W low-voltage lamp with lamp condenser and transformer must be ordered unless it is already part of the outfit. This combination allows the alternative use of the halogen- and the filament lamp.



Light source

The light source of the microprojector is the newly developed 250 W halogen arc lamp, which has considerable advantages over the light sources used in the past:
Lamp and supply unit are moderately priced,
The practically pure-white light guarantees faithful colour reproduction for all visual observation,
Image brightness approximates that of the carbon-arc lamp; however, the halogen lamp requires no care and maintenance.
These advantages make it the ideal light source for micro-projection in biology classrooms, small lecture theatres, etc.

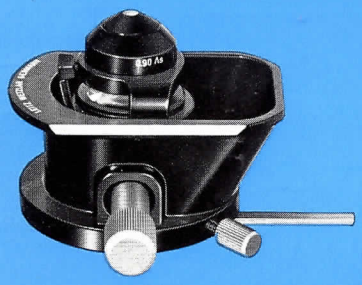
Optical outfit

The SM micro-projector can be equipped with achromatic objectives or plano objectives of 2.5–40 x primary magnification as required. Naturally, the plano objectives are more expensive because of their high state of correction. However, as their projection images are flat from corner to corner, they provide considerably more information than the achromats. Microprojection with immersion objectives is possible in principle; however whether the brightness of the screen image is adequate at the maximum screen image size depends very much on the properties of the object (thickness, staining, etc.).

The illuminating system consists of the aspherical condenser No. 601 (Köhler's illumination). In order to produce perfect illumination also of the large fields of the low-power objectives, a swing-out lens is mounted below the condenser. The eyepiece is a PERIPLAN® 4 x projection eyepiece. With this outfit screen

Projection eyepiece

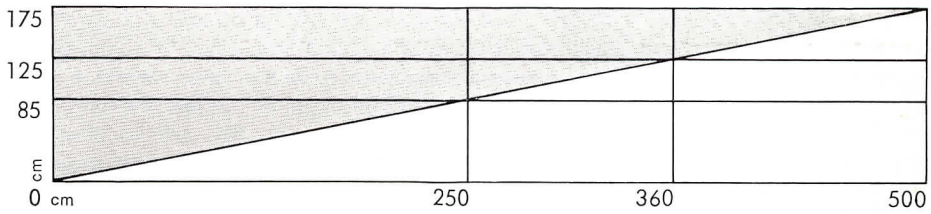
Four achromatic objectives or



Swing-out condenser No. 601

Four plano objectives

image diameters of up to 175cm (6ft.) can be obtained under favourable conditions. A rotating, tilting prism is mounted on the projection eyepiece. This eyepiece is unsuitable for visual observation.



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Screen image diameter	Objective/Aperture Reproduction Scales						Eyepiece and projection distance in m
	2,5/0.08	6/0.18	10/0.25	13/0.40	25/0.50	40/0.65	Projection eyepiece PERIPLAN 4 x
85cm	100:1	240:1	400:1	520:1	1000:1	1600:1	2,50m
125cm	140:1	340:1	570:1	740:1	1400:1	2250:1	3,60m
175cm*	200:1	480:1	800:1	1040:1	2000:1	3200:1	5,00m

* In favourable conditions

Leitz WETZLAR

Our production programme includes:

Microscopes

Microscopes of the most advanced design for all investigations in transmitted, incident and polarized light.

Microscope accessories, such as phase contrast equipment, Heating and cooling stages.

Microtomes

Special accessories for microscopy, e. g. micromanipulator,

Interference microscope, forensic comparison microscope,

Binocular prism magnifiers, stereo-microscopes

Photomicrographic apparatus

ORTHOMAT® fully automatic microscope camera

Physical research instruments based on optical methods

Infra-red spectrophotometer

Monochromators

Micro-refractometer

Instruments for routine dust measurements

Optical material testing instruments

Miniload hardness testers

Dilatometers

Heating microscopes

Optical-mechanical precision measuring instruments

Measuring microscopes

Angle measuring instruments

Telescope for alignment and direction finding

Measuring and contour projectors

Surface measuring instruments

Optical installations and attachments for machine tools

Photographic equipment

LEICA® 35mm camera with accessories

LEICAFLEX® 35mm single lens reflex camera

Accessories for scientific and technical photography

Projectors

Classroom projectors,

Miniature projectors

PRADOVIT®-Colour automatic 35mm projector

Epidiascopes

Microprojectors, large lecture hall projectors

Binoculars

TRINOVID®

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