CARL ZEISS

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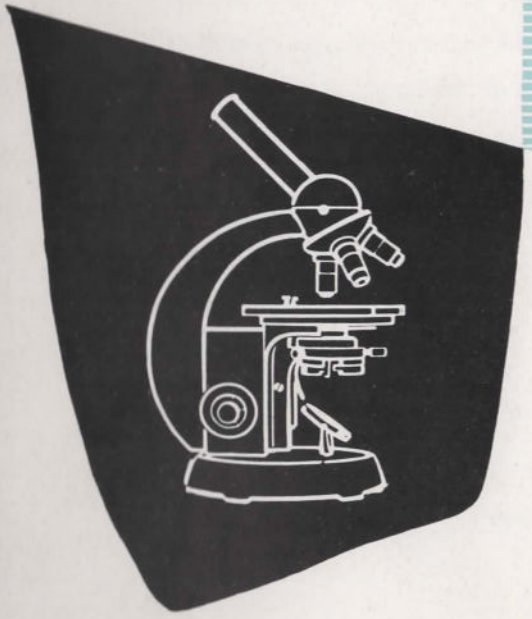
ZEISS



CARL ZEISS

INSTRUMENTS FOR DOCTORS AND HOSPITALS

ZEISS - instruments are aids for the doctor

Ever since Ernst Abbe found his way from the lecturing desk into the work shop of his friend Carl Zeiss, the reciprocal effect of science and practice has stood its test beyond the scope of this enterprise; it has been fused into a symbolic unity under the name of

ZEISS

Scientists and technicians of the Carl-Zeiss works in Oberkochen developed instruments in the fields of microscopy, of optical measuring technics and of medical optics which have become indispensable aids for both doctors and hospitals.

With this publication we present a summary of the most important instruments for doctors and hospitals.

CONTENTS

STANDARD JUNIOR

Microscope

The STANDARD JUNIOR serves as a reliable microscope in the routine of medical and biological examinations, courses in microscopy and routine work in laboratories. It is particularly well adapted to the operations required in microscopy and has all the properties of a modern microscope.

Low-set adjustment knobs, co-axial coarse and fine adjustment, **inclined eyepiece tubes** – monocular or binocular, **reliable protection of specimen** – with objectives of higher power through spring mount.

It is possible to use attachments with the microscope for phase contrast and dark-field examinations as well as the micro-projection equipment and the attachment camera. Either an illuminating mirror, a plug-in lamp for connection to the microscope base, or a microscope lamp mounted separate from the microscope serve for illumination.

STANDARD

Microscope

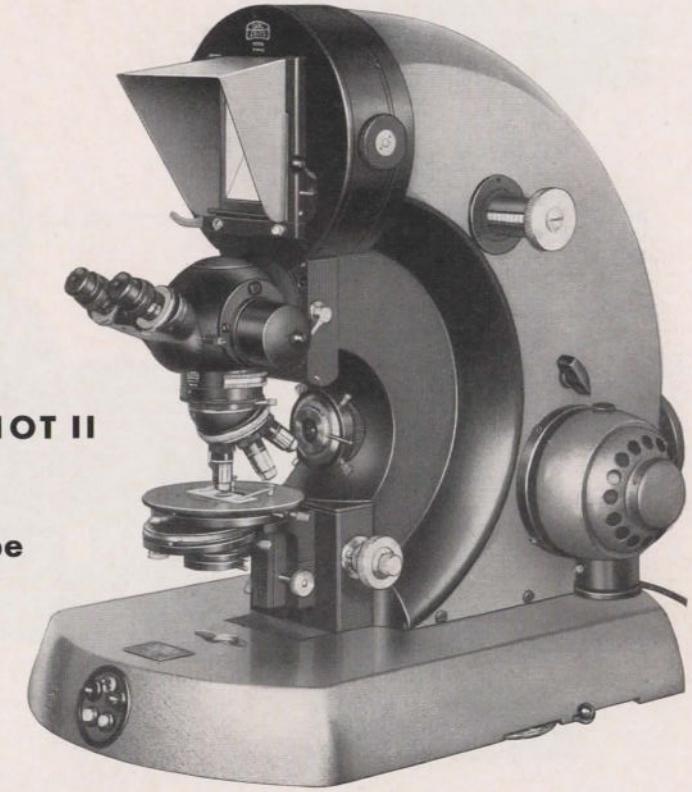
The STANDARD Microscope is a large microscope stand for universal application with completely built-in illumination and can be equipped with manifold attachments. It can be adapted for any microscopic work, such as bright and dark field observations, epi-illumination examinations, phase contrast microscopy, photomicrography – from the lowest to the highest magnifications – and for microprojection. An excellently plane field of vision is provided by our new **plane**-achromats.

With the lamp inserted in the microscope base the radiation may be exactly delimited according to Köhler's laws. The inclined binocular tube produces a particularly great brightness without additional magnification.

STANDARD MICROMAT

Photo-Microscope

This apparatus represents a combination of a microscope and a fully automatically operating miniature camera. It serves for microscopic observation and can be used at the same time for photomicrography with black and white or coloured film. The time of exposure is automatically regulated. All customary methods of examination in epi- and transmitted light can be applied.

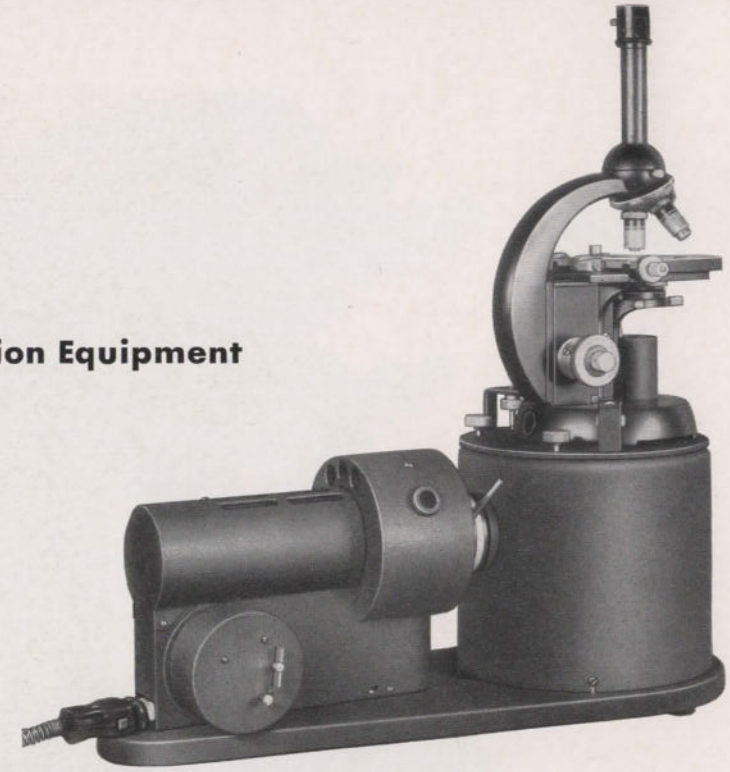


ULTRAPHOT II

Camera-Microscope

This modern apparatus with its built-in automatic camera is distinguished by its clear design and its easy handling. As to its optical and mechanical performance it stands up against most extraordinary requirements and is adapted for all methods of microscopic inspection. The camera with fully automatic exposure device is especially equipped for plates (9 x 12 cm).

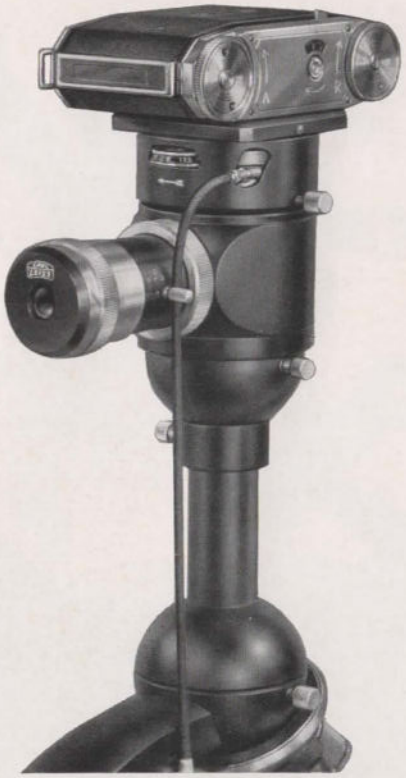
Micro-
Projection Equipment



This equipment was constructed in order to animate scientific lectures, to convey microscopic specimens to a wider circle and to be able to explain individual sections unequivocally.

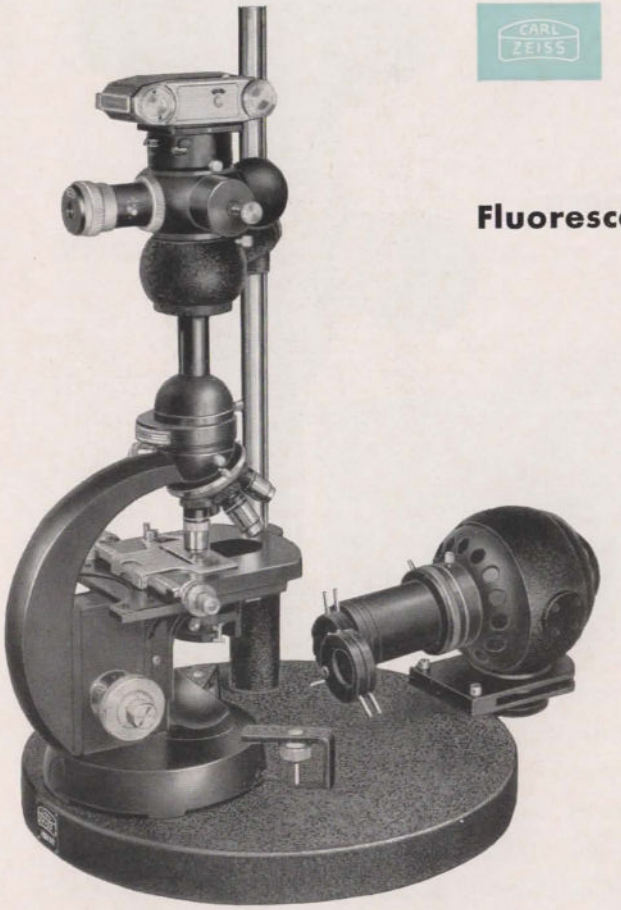
The equipment is distinguished by great brightness of the projection image and its easy handling. If desired, it can be supplied with automatically regulated feed of carbons for the arc lamp. Every ZEISS-microscope having a free opening in its stand can be attached to the projection base.

Attachment Camera



With the attachment camera any microscope can be turned into an easily operated photomicrographic device. Only few manipulations are required to mount it on the microscope and it is immediately ready to take photographs, since the optical equipment used for observation is also used for taking the photographs. The specimen can be observed while the photographs are being taken. In conjunction with the STANDARD Microscope survey photographs can be taken by using Luminars (slightly magnifying objectives). The camera may be either a miniature camera attachment, one of the usual miniature cameras, such as the CONTAX, EXAKTA, ROBOT, LEICA or a special adapter for plates 6.5 x 9 cm.

Above all for colour photomicrography we recommend our highly sensitive **exposure meters** with which even with darker specimens excellent results are obtained.



Fluorescence Equipment

The large fluorescence equipment for clinical and diagnostic routine examinations in hematology and parasitology is suitable for **blue-violet and ultra-violet excitation in transmitted and epi-illumination as well as for subjective observation and for photomicrography.**

The equipment is provided with a high efficiency mercury maximum pressure burner OSRAM HBO 200 in conjunction with suitable light filters (SCHOTT). Microscope and lamp are firmly attached to a base-plate. For photomicrography a miniature camera can be swung over the microscope.

Our **small** equipment is simpler and only intended for BV-excitation. The lamp, placed separately from the microscope, is equipped with an OSRAM HBO 74 mercury maximum pressure burner.

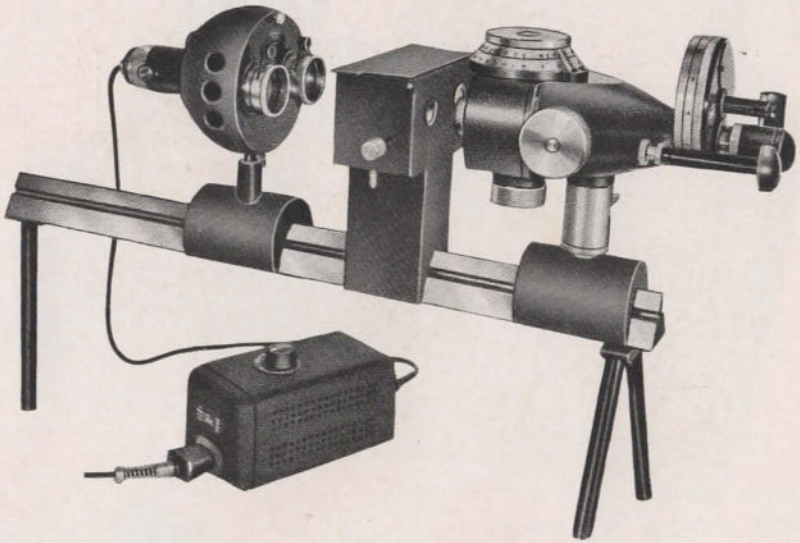
Stereo-Microscope

This very efficient instrument equipped with rapid magnification changer is especially suitable for specimen work and tissue examinations.

The convenient eyepiece of the instrument conveys a non-reversed image with an excellent three-dimensional impression. Its range of magnification is 6–160-fold. Merely by turning a drum another magnification stage is set. The working distance is sufficiently big to allow for all specimen work to be performed. A number of attachments can be supplied, such as lighting fixtures for transmitted and epi-illumination.

Pulfrich Photometer (Pupho)

Model G/2



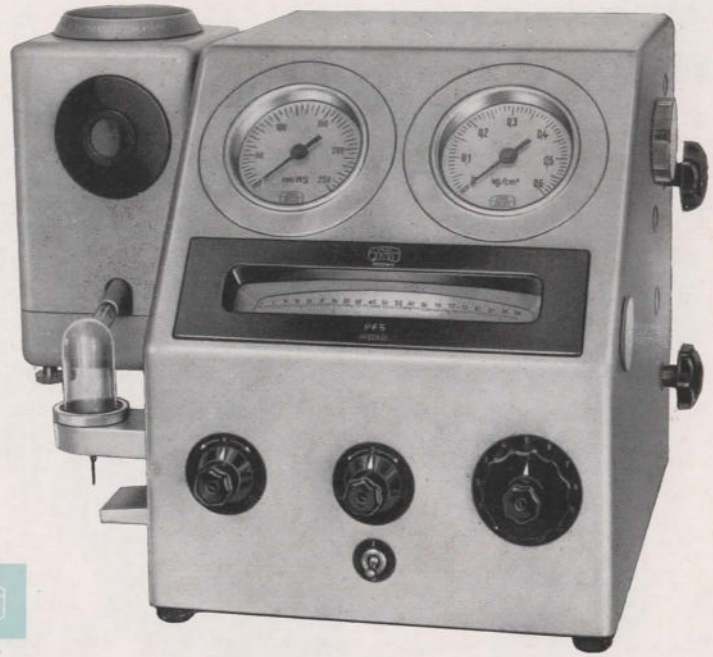
The **Pulfrich Photometer** (Pupho) Model G/2 represents an improved type of the visual photometer which has been well known for about three decades, especially in medical chemistry. Measuring of the extinction or absorption takes place only in one light path through a restrictor on a magnified, easily read scale. The second restrictor hitherto used was replaced by a grey wedge light absorption device. All cell changing devices (for standard and microcells) can be tempered.

In conjunction with the photo-electric Alternating Light attachment **Wepho** subjective measuring errors and fatigue of the eye are eliminated.

Electrophotometer

ELKO III

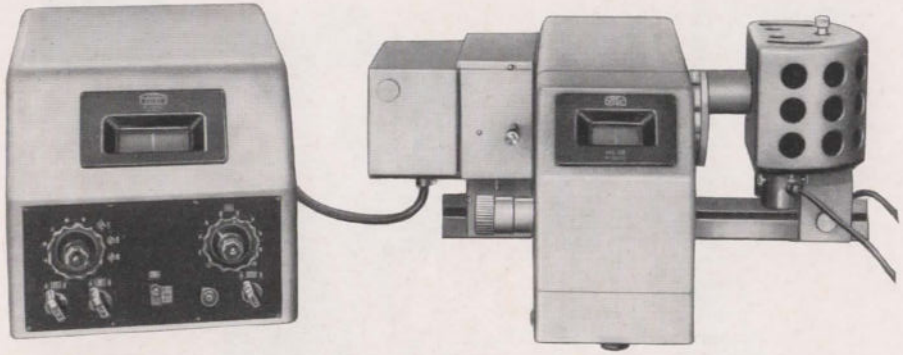
The standard instrument ELKO II operates with an unusually high degree of measuring accuracy which in various cases is dispensable, if other advantages are emphasized. Hence – at a considerably lower price – the **ELKO III** enjoys the special advantage of accelerated measurement by reading the extinction and absorption values on a ground glass plate with light-mark projection as well as a rapid change from filament to mercury lamp, merely by shifting a lever. Likewise the use of small cells besides standard cells may be of great importance in practice. The well-known ZEISS-S-Filters permit the unrestricted application of the **working instructions "Clinical Photometry".**



Filter Flame Photometer

If no Zeiss Spectrophotometer is available for use in conjunction with the flame attachment for flame photometric determination, the **Flame Photometer PF 5** successfully fulfils this task. The serum which in the first place is to be examined for Na, K and Ca content is atomized after appropriate dilution, mixed with a fuel gas and lighted. Via a special light filter the light of the flame reaches the receiver, a secondary electron multiplier, and throws a light mark on a ground glass scale via a microprojection system. With the help of a calibration table the scale values shown can be converted into concentration.

The apparatus is fed entirely from the mains; all devices required – with the exception of the high pressure cylinders – are built-in and easily accessible.



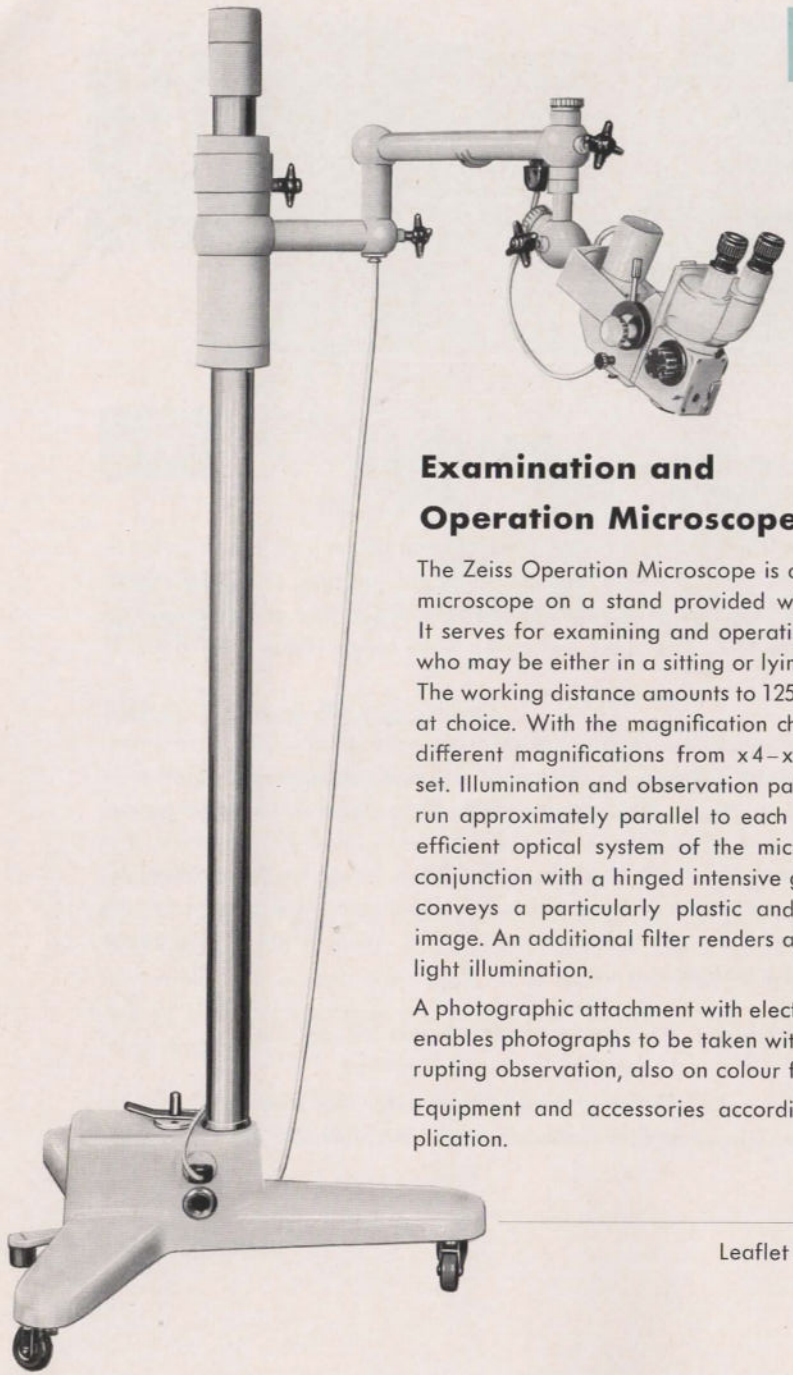
Spectrophotometer **PMQ II**

This instrument represents a further development of the well-known Spectrophotometer M 4 Q. Light-mark reading both in the indicator and in the monochromator is only one of the striking features of the new construction. The reading of the measured value and of the wave length is thus free of errors by parallax.

The recordable spectral region reaches from near infrared (2.5 μ) to short-wave ultraviolet (200 mμ). By means of an external lever the receiver is rapidly switched over at choice for the ultraviolet or the visible spectral region.

The instrument can be connected to the 220 V 50 cycles A.C. mains, no batteries or accumulators being necessary. The power consumption for the complete instrument amounts to about 320 VA. With different voltage an intermediate transformer is used.

Further attachments: Chromatogram Attachment (50–657/Chro)
Flame Attachment (50–675/Flaz)
Fluorescence Attachment (50–657/Fluor)
Diffuse Reflexion Device RA 2 (50–657/Re)

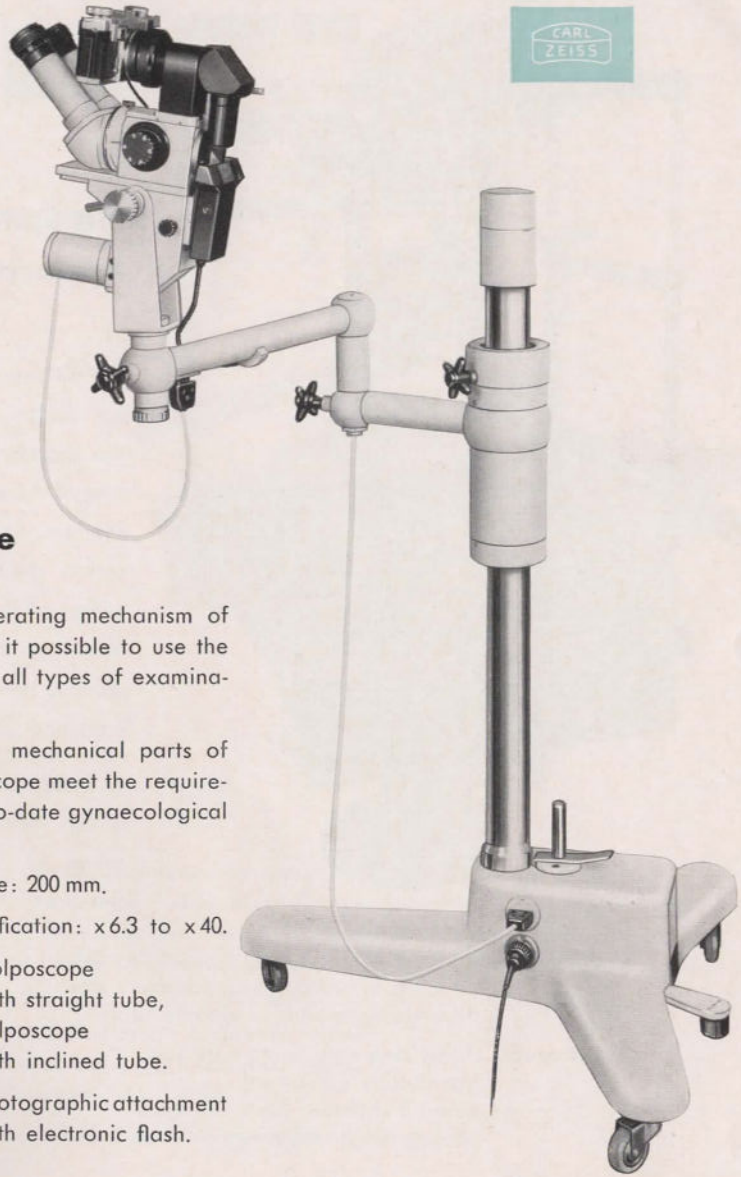


Examination and Operation Microscope

The Zeiss Operation Microscope is a binocular microscope on a stand provided with casters. It serves for examining and operating patients who may be either in a sitting or lying position. The working distance amounts to 125 or 200 mm at choice. With the magnification changer five different magnifications from x4–x64 can be set. Illumination and observation paths of rays run approximately parallel to each other. The efficient optical system of the microscope in conjunction with a hinged intensive green filter conveys a particularly plastic and contrasty image. An additional filter renders almost daylight illumination.

A photographic attachment with electronic flash enables photographs to be taken without interrupting observation, also on colour film.

Equipment and accessories according to application.



The Colposcope

The modern operating mechanism of the stand makes it possible to use the colposcope with all types of examination chairs.

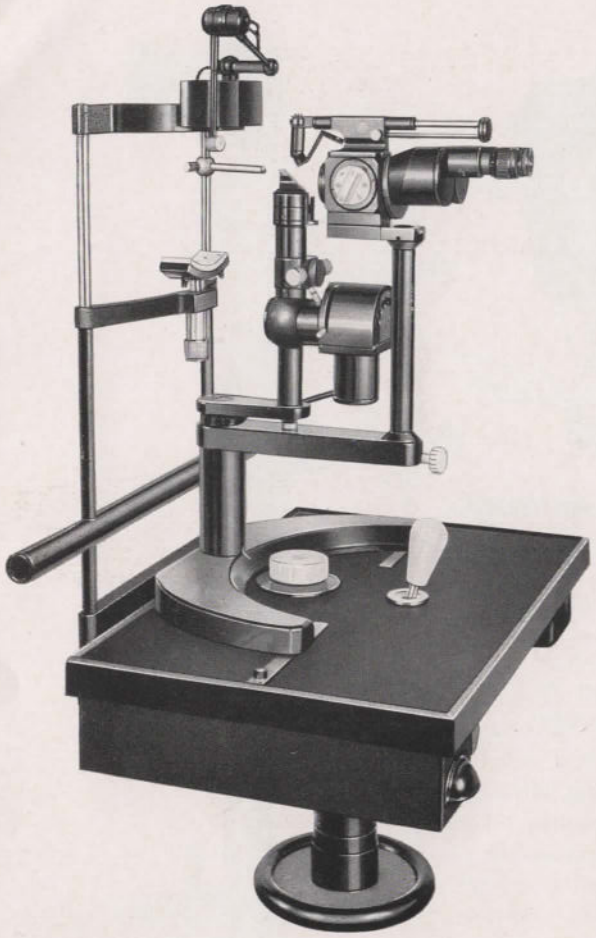
The optical and mechanical parts of the Zeiss Colposcope meet the requirements of an up-to-date gynaecological practice.

Working distance: 200 mm.

Range of magnification: x6.3 to x40.

Equipment: Colposcope with straight tube, colposcope with inclined tube.

Accessories: Photographic attachment with electronic flash.



Slit Lamp Apparatus

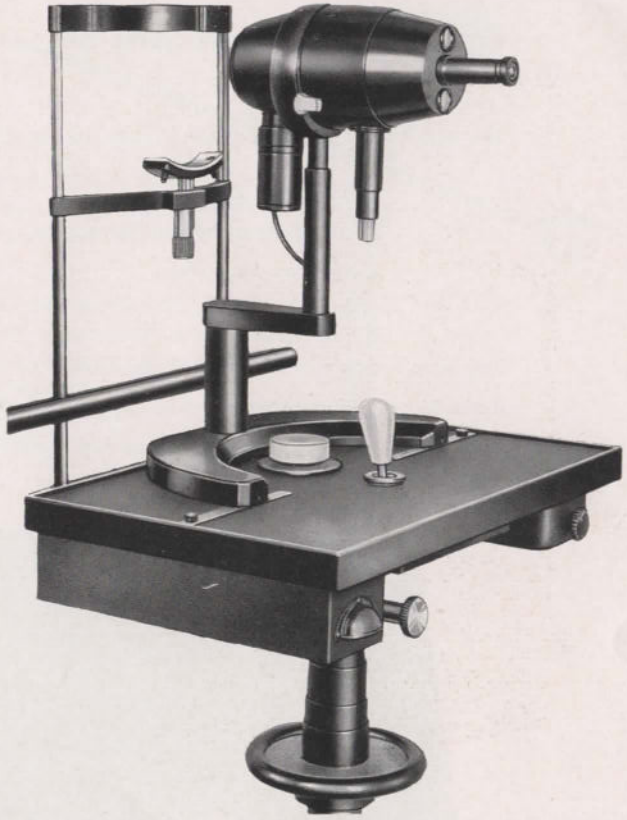
The slit lamp apparatus serves for slit-lamp microscopy of the anterior sections of the eye, of the fundus and of the chamber angle. The magnification changer permits the setting of five different magnifications from x 6 to x 40 without having to exchange eyepieces or objectives.

The photographic attachment allows photographs to be taken of the examination findings.

Equipment: Slit lamp apparatus on instrument table,
slit lamp apparatus on mechanical stage,
slit lamp apparatus on double table.

Accessories: Hruby lens with fixation device,
gonioscopy equipment,
anterior chamber depth micrometer,
photographic attachment with electronic flash.

Ophthalmometer



With the ophthalmometer the corneal astigmatism and the position of the principal astigmatic meridians are determined. The instrument has great measuring accuracy and a device for directed measurement of the smallest corneal regions. The amount of the corneal astigmatism is automatically calculated and appears on the scale of a reading eyepiece.

Equipment: Ophthalmometer on instrument table,
ophthalmometer on mechanical stage,
ophthalmometer on double table.

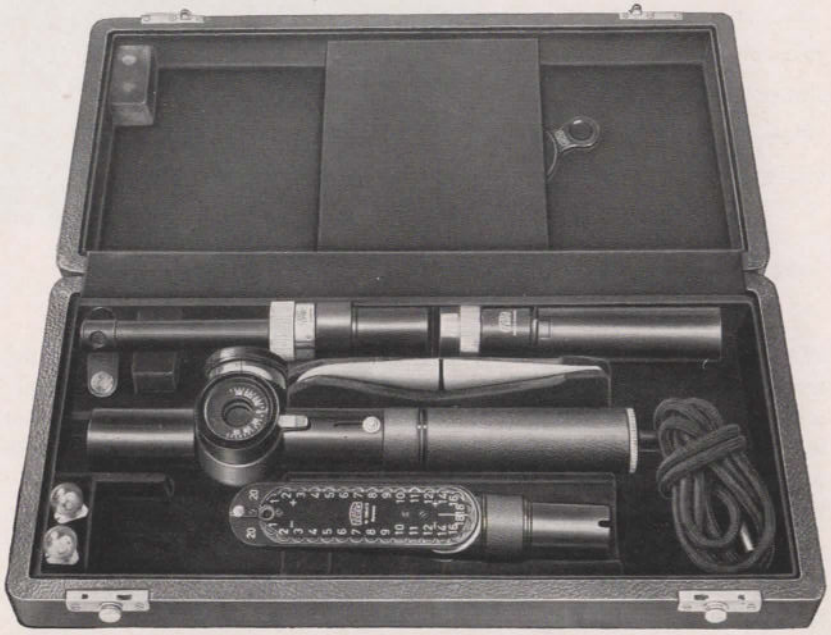
Accessories: Fixation device, contact lens holder.

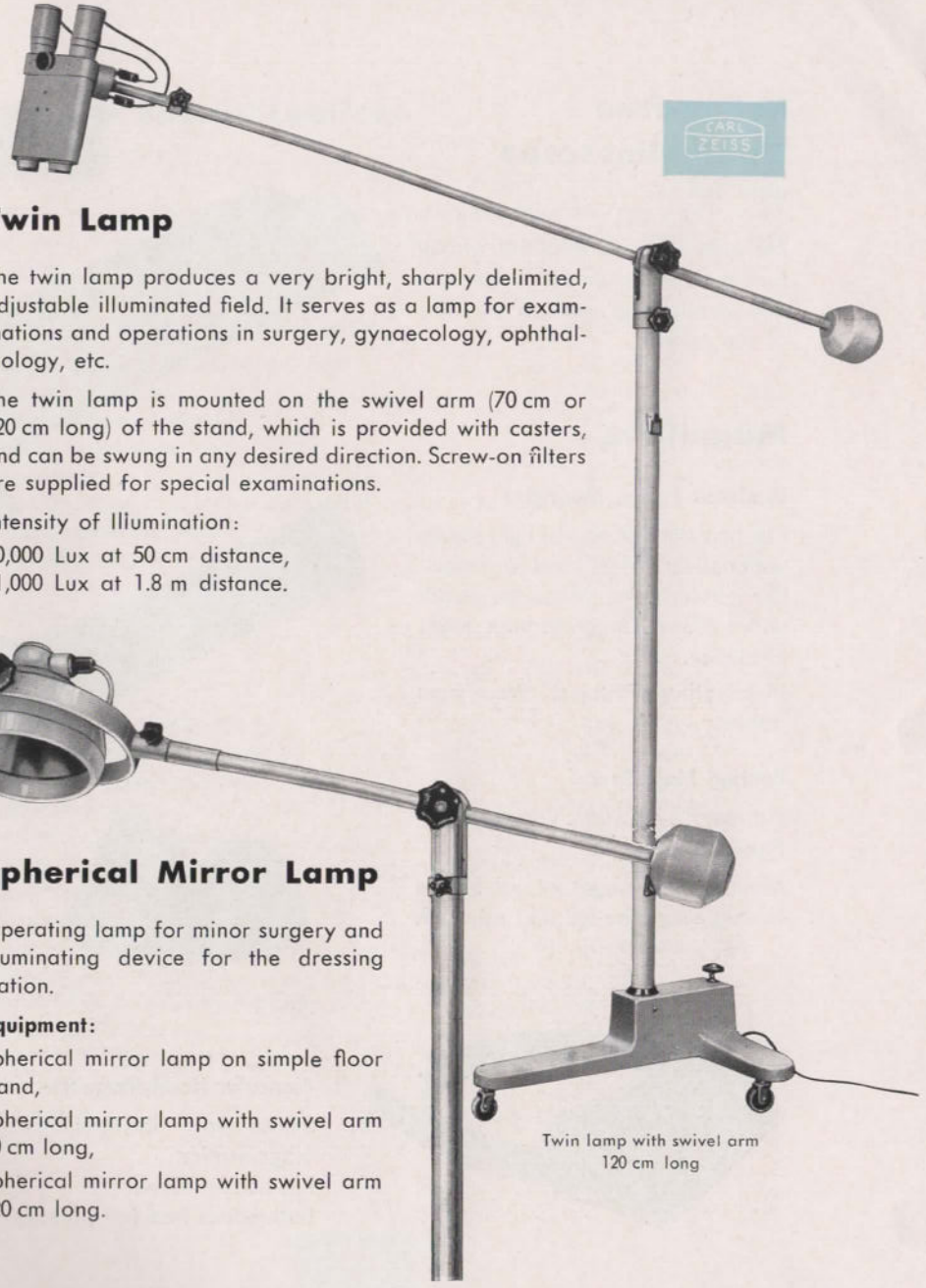
Ophthalmic Diagnostic Set

The ophthalmic diagnostic set consists of the following instruments:

Ophthalmoscope,
Hand Refractometer (Skiascope),
Slit Lamp Magnifier,
Diascleral Lamp.

The instruments can be supplied separately or in any desired combination as a set. Since all instruments can be mounted on the same handle, a convenient and rapid exchange during examination is possible.





Twin Lamp

The twin lamp produces a very bright, sharply delimited, adjustable illuminated field. It serves as a lamp for examinations and operations in surgery, gynaecology, ophthalmology, etc.

The twin lamp is mounted on the swivel arm (70 cm or 120 cm long) of the stand, which is provided with casters, and can be swung in any desired direction. Screw-on filters are supplied for special examinations.

Intensity of Illumination:
20,000 Lux at 50 cm distance,
1,000 Lux at 1.8 m distance.

Spherical Mirror Lamp

Operating lamp for minor surgery and illuminating device for the dressing station.

Equipment:

Spherical mirror lamp on simple floor stand,

Spherical mirror lamp with swivel arm 70 cm long,

Spherical mirror lamp with swivel arm 120 cm long.

Twin lamp with swivel arm 120 cm long

Leaflets see Index p. 25

Reflex-free Ophthalmoscope

after Thorner

For specialist examinations of the fundus, in particular for diagnosing and determining general ailments of the patient.

Magnifiers

Luminous Pocket Magnifier

Practical combination of light source with optical system ideal for magnifier observations. Magnifier heads with 4 different magnification stages at choice.

Illumination of object direct from above.

Folding Magnifiers

Achromatic-aplanatic correction;
Plastic case;

Magnification stages x6, x8, x10 or folding magnifier x3 and x6 = x9.

Binocular Head Magnifier

Stereoscopic viewing with x2.25 magnification;
big field of view;
both hands free for working.

Leaflets see Index p. 25

Index of Special Leaflets

(listed alphabetically)

In this master leaflet only the most important characteristics of the apparatuses and instruments are enumerated. For detailed information we shall be glad to supply the following leaflets:

We also supply:

Microscopes:

Travelling Microscopes
Polarizing Microscopes
Metal Microscopes
Plankton Microscopes
Trichinoscopes

Microscope Accessories:

Microscope Lamps
Drawing Apparatuses
Photo-micrographic Equipments
Micro-projection Apparatuses
Micro-cine-Cameras
Grinding and Polishing Machines
Heating Stages
Polarizing Equipments

Ophthalmic and Medical Instruments:

Eye Microscopes
Gonioscopes
Eye Cameras
Ophthalmoscopes
Skiascopes
Slit Lamp Magnifiers
Diascleral Lamps
Vertex Refractionometer
Hand Lamps
Otoscopes
Dermatoscopes
Technoscopes
Capillary Microscopes
Polarizing Spectacles

Optical Measuring Instruments:

Refractometers
Spectroscopes
Electrophotometers for Transmission, Reflexion and Turbidity Measurements
Monochromators
Registering Spectrophotometer
Galvanometer Reading Device
Photoelectric Diffuse Reflexion Photometers
Hydrogen Lamps
Spark Generator and Interruption-arc Instrument

Precision Measuring Instruments:

Universal Measuring Microscopes
Big Toolmaker's Microscopes
Small Toolmaker's Microscopes
Measuring Microscopes 0–50
Light Section Microscopes
Big Optical Dividing Heads
Optical Rotary Tables
Microscopes for Use on Machine Tools
Lead Measuring Instruments
Optical Flat Gauges

Interferometric Instruments:

Firedamp Interferometers
Gauge Block Interferometers
Diffusion Interferometers
Interference Microscopes
Interference Surface Tester
Schlieren Instruments

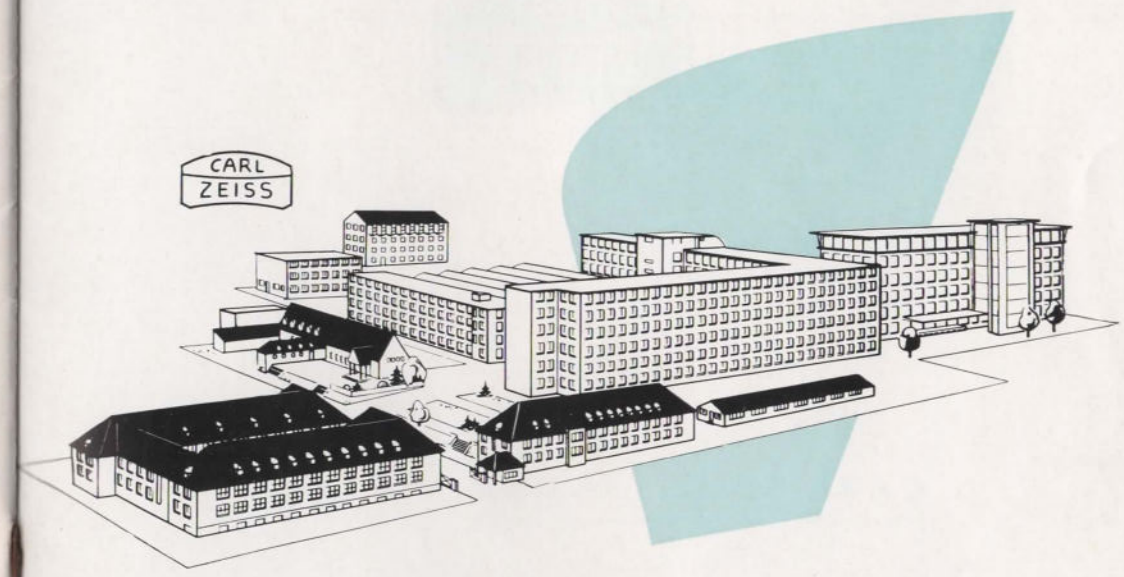
Surveying Instruments:

Levels and Theodolites

Spectacle Lenses – Polarizing High Efficiency Objectives – Magnifiers – Polarizing Filters – Colour Filters – Binoculars – Astronomical Instruments – Planetaria – Electron Microscopes

The illustrations are not binding in all details for the construction of the instruments.

Electros, or reductions of same when available, are supplied for scientific publications.



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