

OUR PRODUCTION PROGRAMME ALSO INCLUDES

- Microscopes of all types for general biological and medical work, metallography, mineralogy, ore microscopy, coal-petrography
- Phase contrast equipment
- Binocular prism magnifiers
- Stereoscopic microscopes
- Photomicrographic apparatus
- Microtomes
- Micro-refractometers
- Spectroscopes
- Photometers for the colorimetric and nephelometric determination of concentrations
- Monochromators
- Infrared spectrographs
- Optical precision measuring instruments
- Workshop microscopes
- Contour projectors
- Instruments for measuring lengths and angles
- Optical dividing heads
- Surface testing apparatus
- Reading telescopes
- Prism binoculars
- The LEICA 35 mm. camera with its supplementary equipment for scientific and technological photography
- Enlarging and copying equipments
- Lecture hall projectors, school epidiascopes, miniature projectors, micro-projectors

Literature will be gladly sent on request. Electros of the illustrations contained in our lists, also smaller sizes or photographs, are offered for scientific publications free of charge. The illustrations contained in our catalogues are not binding in every detail, since we are continually striving to improve our instruments in every respect.

ERNST LEITZ GMBH WETZLAR
GERMANY

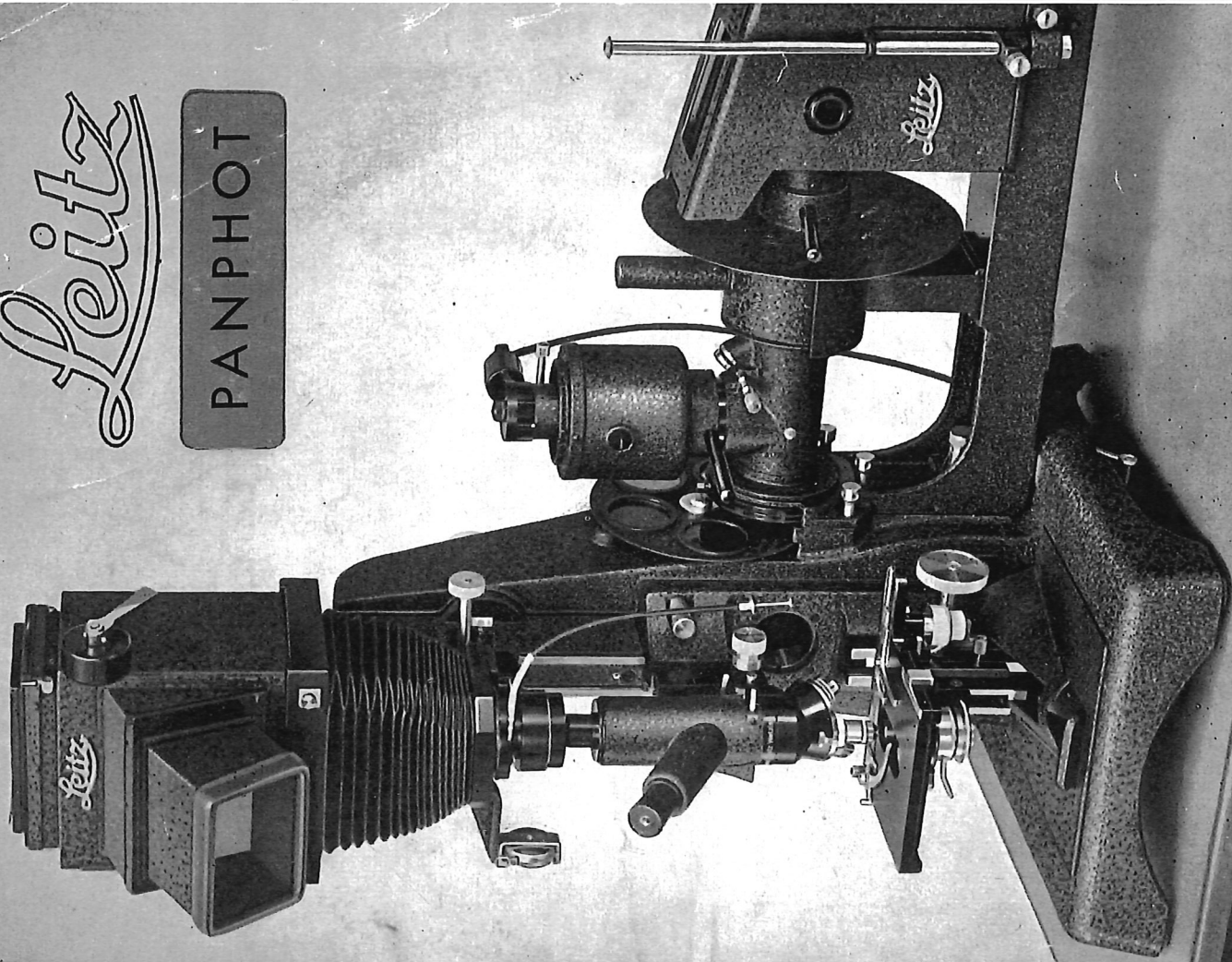
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PANPHOT



ERNST LEITZ · GMBH · WETZLAR



PANPHOT

Camera Microscope

The PANPHOT has generally been recognized as being the most efficient type of a large universal research microscope with vertical camera and illuminating arrangement combined. In its design and high standard of workmanship it is the result of a hundred years' experience in the manufacture of microscopes and other precision instruments. Besides being a highly developed microscope the PANPHOT also replaces the former elaborate photomicrographic outfits of horizontal construction with all their disadvantages, especially as regards centration of the main components and convenience in operation. The compact design of the PANPHOT apparatus enables the operator to carry out all manipulations from a sitting position in front of the instrument.

The PANPHOT design is further characterized by an **unrivalled versatility** owing to the interchangeability of standardized fittings. These provide for observations and photomicrography in transmitted and incident light. The change-over from visual examination to photomicrography is instantaneous, only a sliding prism in the microscope body requiring the attention of the operator. There is no reflecting element between the microscope and the photographic emulsion so that photographs of optimum definition and short exposure times are ensured.

The **interchangeable fittings** include monocular and binocular bodies with photographic tube combined, various types of object stages and substages while most of the standard microscope accessories can also be used to adapt the apparatus for practically all requirements in microscopy and photomicrography:

- | | |
|---------------------------|-----------------------------------|
| transmitted light | micro drawing |
| incident illumination | wall projection |
| bright field | photomicrography |
| dark field | (a) on plates (3 1/4" x 4 1/4") |
| phase contrast | (b) on 35 mm. film (24 x 36 mm.) |
| polarized light | (c) on ciné films (35 and 16 mm.) |
| fluorescence illumination | macrophotography |

Even this list of applications cannot be considered complete since further auxiliary apparatus can be successfully accommodated, such as heating stages, integrating and universal rotating stages and the microscope photometer.

Illustrations and specifications may not conform in every detail to instruments supplied as efforts are constantly made to improve designs whenever possible.

Electros of the illustrations, also photographs, are sent out on loan for use in scientific publications, if desired.

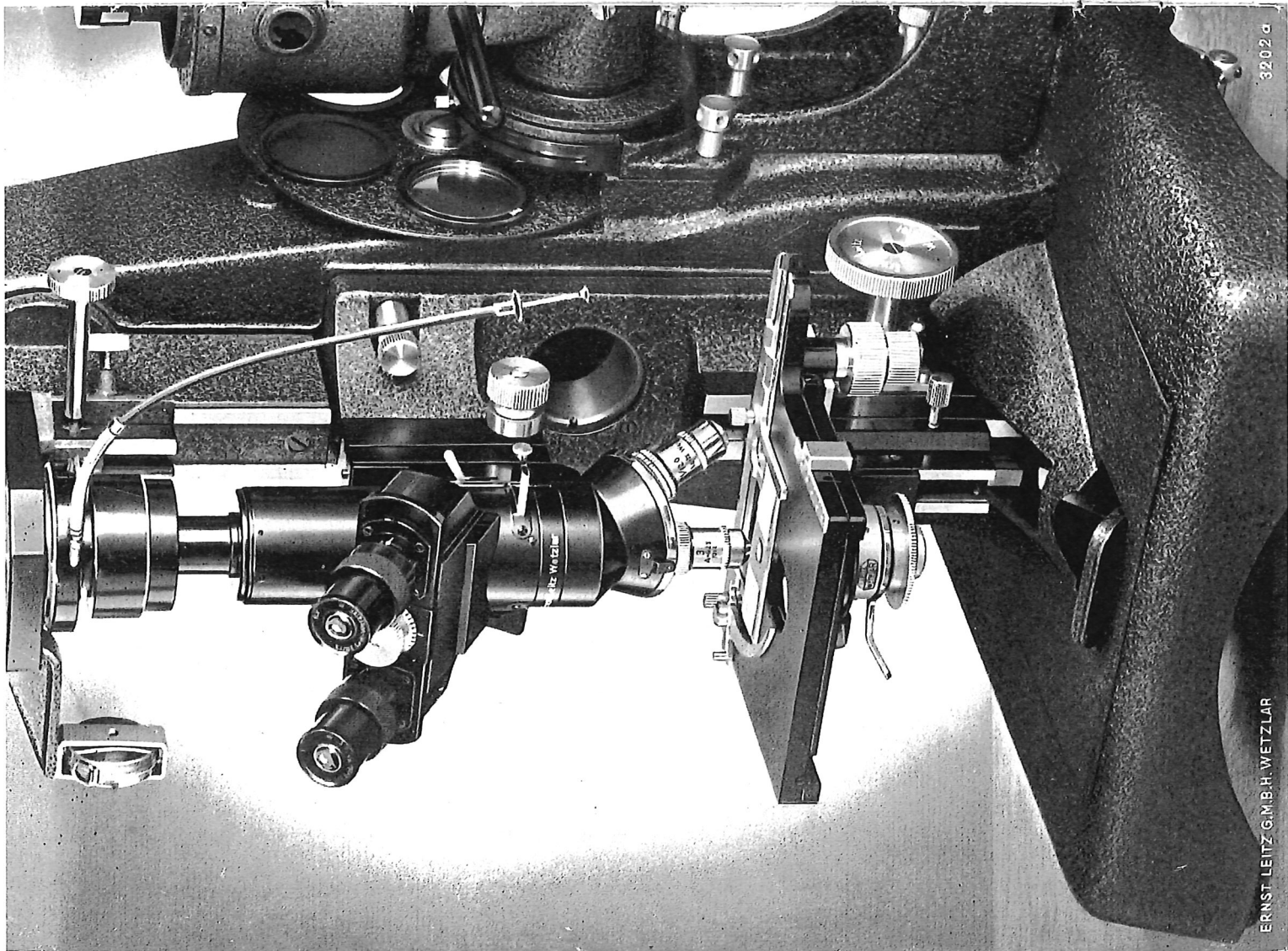
Special attention has been paid to the construction of the **illuminating system** in order to eliminate the danger of unsatisfactory results due to errors in operating the outfit. Aperture and illuminated field diaphragms are provided in the substage condenser. The former method of exchanging condenser lenses when making the transition from low-power to high-power work or vice versa has been eliminated by the adoption of a swing-out top lens. This enables all the illuminating rays to be concentrated for high-power objectives and the larger field of low-power systems to be evenly illuminated with the main condenser components only.

The extensible **bellows camera** takes plates 9×12 cm. (or $3\frac{1}{4} \times 4\frac{1}{4}$ ") and includes a mirror-reflex arrangement for utmost convenience in determining the image area to be photographed and for focusing. The necessary manipulations can be made by the operator when seated in front of the apparatus. The mirror inside the reflex housing projects the image on to the viewing screen and is swung out of the path of light by a lateral lever after focusing, thereby allowing the light to reach the photographic plate in the darkslide accommodated on top.

The **LEICA 35 mm. camera** is also ideal for photomicrography and especially sequence photographs. It is now even more important in this field than in former years due to the ever growing use of 35 mm. colour film in scientific and technological work. In this instance the camera is used without its general purpose lens and supplemented by the MIKAS micro attachment with lateral focusing telescope with swing-out prism or by a micro reflex housing with ground and clear glass focusing screens and magnifier. The former equipment is mainly recommended for magnifications not less than 100X since the large depth of field experienced with low-power work would make focusing difficult and inaccurate. The combination of micro attachment and mirror reflex housing is therefore recommended for most exacting photomicrographic work in all ranges of magnification.

The **working desk** specially constructed for the PANPHOT adds to the convenience already afforded by the instrument. It has three drawers with lock and key while special fittings for storing the various components and accessories can be provided at an extra cost. A sliding drawing board underneath the top plate is ideal for tracing the microscopic image for which purpose a small drawing mirror is clamped to the observation tube. The dimensions of the desk are: height 30", size of top plate $47" \times 28"$.

Fig. 1
PANPHOT with equipment for work in transmitted light, photo tube with binocular observation, quadruple objective nosepiece, mechanical stage and two-diaphragm substage.



Explanatory Notes on Specifications

To order a complete PANPHOT apparatus it should be noted that additions must be made to the basic outfit in the form of a supplementary equipment and accessories for the various fields of application. Particulars on further accessories for even more specialized work which are not included in this catalogue will be gladly furnished on request.

Fuller information on the PANPHOT Polarizing Microscope and the PANPHOT Metallographic outfit will be found in special catalogues although the latter can also be built up from the basic outfit below and the equipment specified on page 11.

The interchangeability and standardization of all principal components not only make the PANPHOT the most versatile microscope and photomicrographic apparatus but allow of the purchase of a simple outfit at a moderate initial cost and the addition of accessories at any time later on.

The designations of microscope objectives (3.5/0.10 etc.) indicate the initial magnification and the numerical aperture (N.A.) of the system concerned. Fuller particulars will be found in our publications THE MICROSCOPE AND ITS APPLICATION and the PANPHOT INSTRUCTION BOOK.

Codeword

A PANPHOT Basic Outfit with combined filament and arc lamps

Large metal base with upright cast integrally and incorporating a revolving mirror for transmitted and incident illumination.

Extensible mirror reflex camera for plates 9×12 cm. ($3\frac{1}{4}'' \times 4\frac{1}{4}''$), with 2 darkslides, ground and clear glass focusing screens, focusing magnifier, time and instantaneous shutter, wire release, focusing motion to the front panel for macrophotography and tape measure on holder.

Detachable microscope carrier with rack and pinion motion to the object stage slide and micrometer slow motion on double-ball-bearings actuating the tube changing slide.

Detachable revolving nosepiece for 4 objectives.

Interchangeable inclined binocular body FS combined with Codeword photographic tube.

Detachable square mechanical stage No. 250 with scales and verniers, traversing area 76×40 mm.

Substage rack and pinion fitting with fork bracket to take interchangeable condensers.

Centring two-diaphragm condenser No. 76 on slide.

Combined illuminating arrangement on bracket, with low-voltage filament lamp 6 volts 5 amps and arc lamp for 10 amps D.C. or 15 amps A.C. with clock-work feed, adjustable condenser lenses, swing-out mirror for alternative illumination, double heat-absorbing filter, revolving holder with daylight and photographic filters, light-screening shield, spare bulb and forked cable with mains plug and two equipment plugs.

PANPHOT basic outfit for transmitted light, exclusive of objectives, eyepieces and electrical accessories IDFIN

Xenon discharge lamp in large housing, in place of the arc lamp, with electrical equipment for 220 volts A.C., extra charge IMYLI

Electrical Accessories

If not stated otherwise on the order PANPHOT outfits will be supplied complete with electrical equipment for 220 volt A.C. mains additional codeword IDIKY).

Electrical equipment comprising

Transformer or resistance with regulation for the 6 volt 5 amp filament lamp.

100 pairs of carbons and resistance for the arc lamp with special connecting cables and plugs:

- (a) for 110/220 volts A.C. (15 amps) IDIFT
- (b) for 220 volts A.C. (15 amps) IDIKY
- (c) for 110 volts D.C. (10 amps) IDILS
- (d) for 220 volts D.C. (10 amps) IDIMB

(for individual prices of electrical items see page 21)

B Supplementary Equipment for Work in Transmitted Light

	Codeword
Optical equipment A 2 c-FE-bin with achromatic objectives	
Achromatic objective 3.5/0.10	OANEE
Achromatic objective 10/0.25	ACORA
Achromatic objective 45/0.65	ACMAT-FE
Achromatic oil immersion 100/1.30	OILIM-FE
Paired Huygens eyepieces 6X	GIZRA
Paired Huygens eyepieces 10X	GIVYR
Paired periplanatic eyepieces 8X	GIROT
Paired periplanatic eyepieces 12X	GIZOY
Micrometer eyepiece with scale 10/100 mm.	OKAME
Stage micrometer 2/200 mm.	OBMET
Optical equipment A 2c-FE-bin complete	OPGUZ-FE

(Magnifications in visual observation 23—1500X)

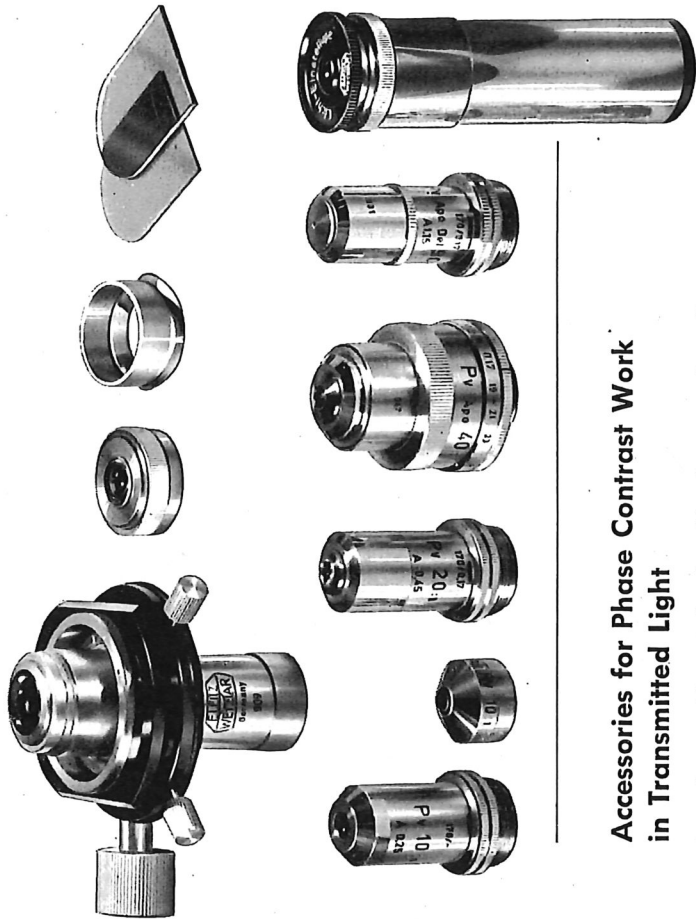
Optical equipment A 10 α-bin with plano-objectives and wide-field eyepieces:

Plano-objective Pl 4/0.10	PLAYS
Plano-objective Pl 10/0.25	PLABY
Plano-objective Pl 40/0.65	PLASP
Plano-objective Pl oil 100/1.32	PLARN
Paired wide-field eyepieces GF 10X	PESIS
Optical equipment A 10 α-bin complete	OPGIX

(Magnifications in visual observation 52—1250X)

Particulars of other types of objectives and eyepieces will be found in our microscope catalogues, especially that on the ORTHOLUX.

- PANPHOT Camera Microscope, complete for 220 volts A.C., outfit IDFIN with optical equipment A 2-c-FE-bin IDGIP-IDIKY
- PANPHOT Camera Microscope, complete for 220 volts A.C., outfit IDFIN with optical equipment A 10 α-bin IDHIR-IDIKY



Accessories for Phase Contrast Work in Transmitted Light

Interchangeable quadruple objective nosepiece (for permanent use with adjusted phase contrast objectives)
 Phase contrast condenser No. 74 after Heine on changing slide, with rack and pinion focusing motion to the mirror body and attachable immersion cap, filter holder with daylight and photographic filters as well as auxiliary magnifier for centering the phase ring.

Case for the condenser and 4 objectives PFAHT

Optical Equipment C 6-bin

Achromatic objective Pv 10/0.25	PHALZ
Immersion attachment	PHAWK
Achromatic objective Pv 20/0.45	PHANC
Aplanatic objective Pv Apo L 40/0.70	PHASG-FE
Aplanatic objective Pv Apo Oil 90/1.15	PHATH-FE
Paired periplanatic eyepieces 8X	GIROT
Paired periplanatic eyepieces 12X	GIZOY
Optical equipment C 6-bin	FOEBS
Complete phase contrast equipment (C 6-bin)	PHILC

Further information on phase contrast equipment and its application, also details on objectives for specialized investigations, will be found in a separate catalogue and an instruction booklet which are available upon request.

Codeword
ORKAT

Individual Prices and Accessories

- Objective changer:** Codeword
- Quadruple revolving nosepiece** on slide carrier (as included in IDFIN) ORKAT
- Microscope tubes:**
- Interchangeable inclined binocular body FS** combined with photo tube (as included in IDFIN) OYEEESINE
- Alternative items:
- Interchangeable inclined monocular body FP** combined with photo tube, particularly recommended for table top projection and drawing OYEEDSINE
- Case for OYEEDSINE MPSII
- Interchangeable inclined binocular body S** (without photo tube) ORSEH
- Case for ORSEH OEEPB

Eyepieces:

Wide-field eyepieces for visual observation and photomicrography ensuring full utilization of the performance of the new plano-objectives, also suitable for all standard objectives.

Periplanatic wide-field eyepieces:	Single	Pair
GF 10X	PERI	PESIS
GF 16X	PEROS	PESOT
GF 20X	PERUT	PESUV
GF 25X	PESAP	PETAR
MGF 25X with 10/100 mm. scale	PESER-OCASY	

High-point eyepieces for use with the microscope by persons wearing glasses.

	Single	Pair
Huygens high-point eyepiece 6.3X	HUFEB	HUFIR
Periplanatic high-point eyepiece 10X	PERAN	PEREP

Photo eyepieces specially designed for use in the PANPHOT photo tubes for optimum definition throughout the negative (but not for use with plano-objectives).

- Photo eyepiece N 6.3Xm for medium-power objectives (see table) MZIIY
- Photo eyepiece N 8X h for high-power objectives (see table) . MUIID

Object stages:

- Detachable square mechanical stage No. 250** with scales and verniers (as included in IDFIN) IDKIT

Detachable gliding stage No. 249, 110X120 mm., with range of movement 70X70 mm. covering a traversing area 35X40 mm., glass and metal insets, ring plate and clamping screw to one direction of movement IDITH

Detachable revolving and centring stage No. 223, 120 mm., dia. (taking the attachable mechanical stage No. 43) IDIRF

Detachable plain square stage No. 220 (taking the attachable mechanical stage No. 43) IDINC

Attachable mechanical stage No. 43 (without graduation) for traversing specimens 76X26 mm. (fitting stages Nos. 220 & 223) in case PIEEV

Condensers:

Two-diaphragm bright-field condenser No. 76 in centring mount on slide (as included in IDFIN) ORBER

Interchangeable condenser cap N.A. 1.40 ORAPU

Interchangeable condenser cap for use with counting chambers ORZEL

Three-lens condenser No. 72, N.A. 1.40, with iris diaphragm, filter holder, on changing slide (specially recommended for fluorescence work) IKNUIT

Exposure meter:

Light meter for determining the exposure times for photomicrographs comprising measuring eye (selenium photoelectric cell), cable and indicating instrument, in case with directions MICROSIX



Accessories for Dark Field Examinations

	Codeword
Dark field condenser D 1.20A in centring mount on slide	ORCXSINE
Case for above*	MIIBR

In place of the condenser D 1.20A we recommend the dark field condenser D 0.80 when serial examinations have to be carried out with the aid of medium or high-power dry objectives of a numerical aperture up to 0.75. The D 0.80 condenser does not require the use of immersion oil.

Dark field condenser D 0.80 on slide	OREKSINE
Case for above*	MIIBR

Intermediate objective adapter with iris diaphragm to be used for dark field observations with all LEITZ objectives with screw-off front

IRTS

Drop-in funnel stop for LEITZ objectives with non-detachable front (state type of objective and condenser to be used when ordering)

IRSOP

Accessories for Polarized Transmitted Light

Filter polarizer fitting the substage

ORPOL

Filter analyser fitting the revolving nosepiece bracket

ORNAL

Attachable revolving stage for mounting on the large square mechanical stage, in case

ORDRE

For exacting mineralogical work in polarized light the PANPHOT is also available with a special equipment fully dealt with in catalogue No. 8314.

Accessories for Fluorescence Microscopy

1. UV Fluorescence

(a) with transmitted light and bright field:
Filter UG 1, 4 mm. thick, fitting revolving filter holder

EEUSQ

(b) with incident light (ULTROPAK) or transmitted light with dark field illumination:

Filter UG 1, 2 mm. thick, fitting revolving filter holder

EEUNF

UV protective filter, 2.5 mm. thick, to screw underneath the eyepiece, for visual observation and colour photography

DQEER

UV protective filter, 2 mm. thick, to screw underneath the eyepiece, for black-and-white photography

DQCEE

2. Blue-light Fluorescence

(For specimens that have had preliminary treatment with fluorescing solutions)

Filter BG 12, 4 mm. thick, fitting revolving filter holder

EEUPK

* Not required when a working desk with fitted drawers or an accessory case is ordered.

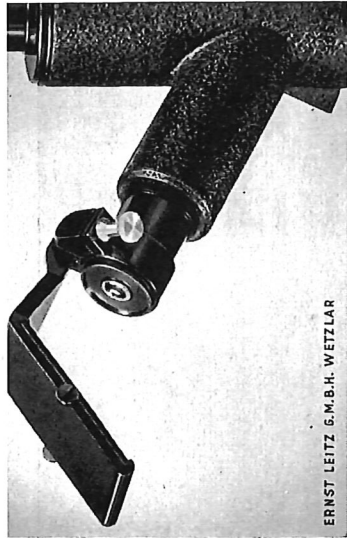


Fig. 2 Drawing mirror mounted on monocular observation tube

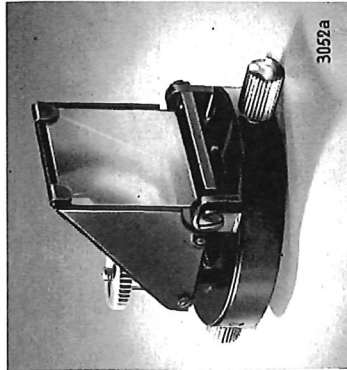


Fig. 3 Projection prism PRIAU

OG suppression filter, 2.5 mm. thick, to screw underneath the eyepiece

Codeword
EEUQM

In order to avoid a loss of contrast in the fluorescence image due to fluorescence effects within the glass components or the cementing of the objectives it is usually recommended to use cover glasses made of Euphos glass. The tedious application of the latter can be eliminated by making use of our special fluorescence objectives which have a permanently mounted Euphos glass. The special construction of these objectives also does away with glare which is often experienced with ordinary objectives and luminous specimens. In the case of observations in incident light the standard ULTROPAK objectives will meet all requirements in fluorescence microscopy.

Fluorescence Objectives for examining smear preparations without cover glass:

Fluorescence objective Apo 24/0.65	OBPIP
Fluorescence objective FI 42/0.85 (Euphos)	EEYB
Fluorescence objective FI 70/0.90 (Euphos)	EEYTO
Fluorescence objective FI Oil 95/1.32 (Euphos)	EEYU
Non-fluorescing immersion oil, 10 g bottle	EEUCH
Glass cell, bottle-shaped, for filter solutions	QYGI1

For fluorescence work this cell is fitted with a 3—10% copper sulphate solution with a few drops of sulphuric acid to keep it clear. However, frequent renewal of this solution is advisable.

Accessories for Micro Drawing

Drawing mirror to clamp to the observation tube for table top projection	PIIGL
Case for drawing mirror*	IPZKI
Wooden stage plate with sliding drawing board for attaching the tracing paper	PIIHY
Folding light-screening device	ZDHEE

Accessories for Wall Projection

Projection prism attachable to the photo tube, in case

PRIAU

(The prism can be fitted to adjust the image in the required height on the wall.)

* Not required when a working desk with fitted drawers or an accessory case is ordered.

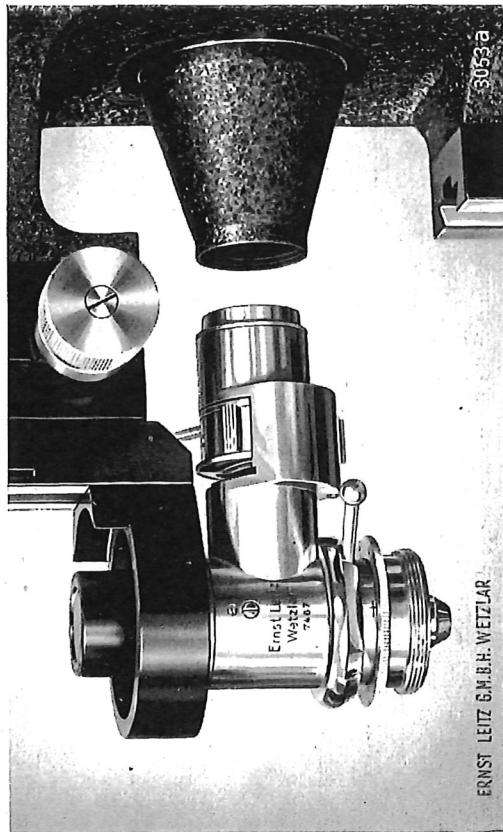


Fig. 4 ULTROPAK on the PANPHOT

Supplementary Equipment for Incident Light Work with the ULTROPAK ILLUMINATOR

Codeword

The ULTROPAK differs from the ordinary vertical illuminator by the use of special objectives with annular condensers arranged around them and through which the light is directed on to the specimen, whereby glare is effectively eliminated, especially with the polarizing ULTROPAK, even in the case of rough specimens. Moreover, the objective aperture can be fully utilized. Dark field effects are also made possible by this method.

ULTROPAK illuminator on bracket	MIIVD
Case for ULTROPAK (recommended when the special work table is not available)	IQHZI
Optical equipment H 2 a (without eyepieces)	
UO 5X/0.15	AIEES
UO 11X/0.25	AKEER
UO 22X/0.45	ALVEE
UO 50X/0.65	AMEEP
Set of 6 different objective stops to enhance the depth of field	AXUEE
Object slide 79x26 mm. of polished black glass with bevelled edges, for obtaining best contrast with small objects or powders	AYEEC
Optical equipment H 2 a (without eyepieces)	MUXOZ
Complete supplementary equipment for work in incident light with the ULTROPAK	MUXUB
ULTROPAK illuminator with filter polarizing arrangement, i. e. rotatable polarizer in swing-out mount and tube analyser fitted to the ULTROPAK bracket	MIIVR
Gypsum plate in mount fitting holder of polarizing ULTROPAK	AFLEE

Further particulars on the ULTROPAK are given in a special catalogue No. 8731.
For eyepieces, if not already included in the PANPHOT outfit, see page 7.

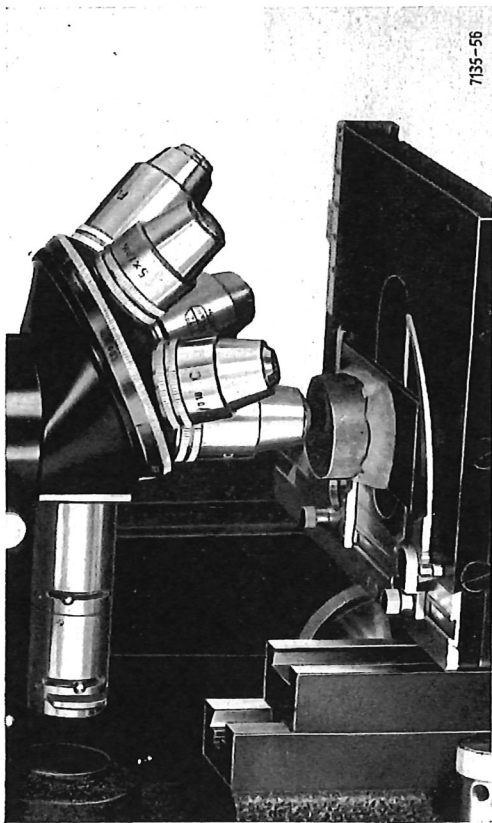


Fig. 5 Vertical illuminator

Supplementary Equipment for Metallographic Work with the Vertical Illuminator

Codeword

Large Vertical Illuminator on bracket with highly reflecting plane glass, revolving nosepiece for 5 objectives, field of view and aperture diaphragms, half-stop for oblique illumination and illuminating attachment with lateral black-glass mirror to facilitate adjustment

NIIOA

Optical equipment F 2 a

Metallurgical objectives (with anti-reflection coating)

5X/0.09 for 50X total magnification	RVIIN
10X/0.18 for 100X total magnification	RVZII
20X/0.35 for 200X total magnification	RWBII
FI 50X/0.85 for 500X total magnification	RWTIM
FI 100X/0.95 for 1000X total magnification	RXDII

Eyepieces for visual observation:

Paired periplanatic eyepieces 10X with focusing eyelens NIITQ

Eyepieces for photomicrography:

Photo eyepiece N 6.3X m (for use with objectives 5X, 10X and 20X) MZIIY
Photo eyepiece N 6.3X h (for use with objectives 50X and 100X) MZNII

Accessories for optical equipment:

Stage micrometer 1 mm. divided into 100 parts on metal, in case IIDMU
Micrometer eyepiece 10X with scale 10/100 mm. RLIIIX
Hand press with adjustable stop for levelling the metallurgical specimens on the object slide RPIIT
6 polished metal object slides IVZDI

Complete optical equipment F 2 a

The standard magnifications 50, 100, 200, 500 and 1000X are obtained by using the 10X periplanatic eyepieces for visual observation and the 6.3X photo eyepieces with a camera extension of 336 mm.

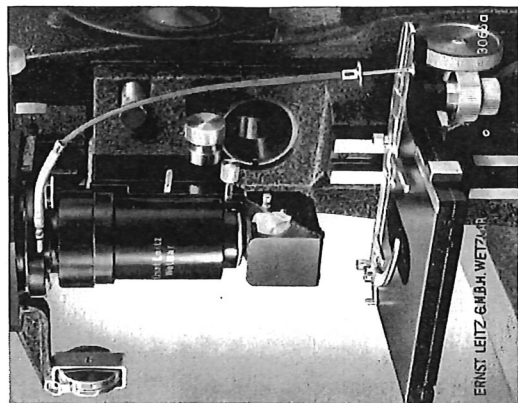


Fig. 6 Plane glass illuminator

Plane glass illuminator for object field 10 mm. dia. with wide tube for photographing general features IWKX1

General survey objective MILAR 50 mm. with iris diaphragm and anti-reflection coating PUZII

Adjustable mirror for oblique illumination IPRTI

Complete supplementary equipment for metallographic work (vertical illuminator, optical equipment F2a and accessories for photographing general features) MICIG

Fuller particulars on the PANPHOT outfits for metallography will be found in a special catalogue.

E Accessories for Macrophotography (Incident Light)

Wooden object stage, covered with black felt, fitting over the PANPHOT base PIIOB

Macro ring illuminator with 12 low-voltage bulbs 8 volts 0.6 amps for lighting opaque and glossy specimens on the macro stage, inclusive of regulating resistance and cable for 110 or 220 volts A.C. or D.C. MIISP

Photographic lenses to be selected from the specification on the opposite page.

For macro photographs with lenses of 80 mm. focal length or shorter the following accessory is required if a ring illuminator is not utilized:
Attachment with short guiding rail and slide taking the camera lens panel for extra extension MRIIG

Fig. 7 Ring illuminator for macrophotographs fitted to the PANPHOT, with macro stage PIIOB below.

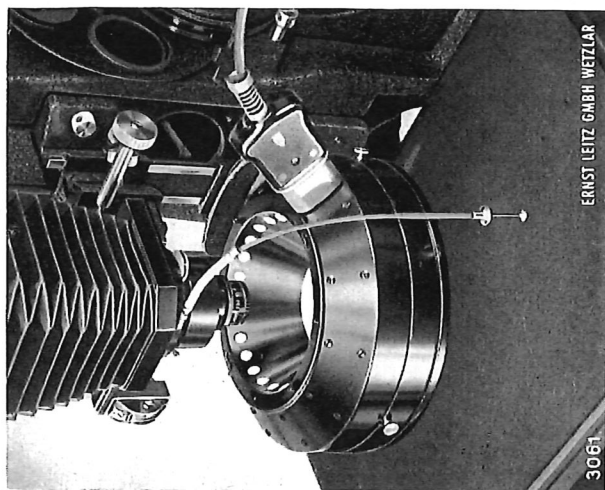
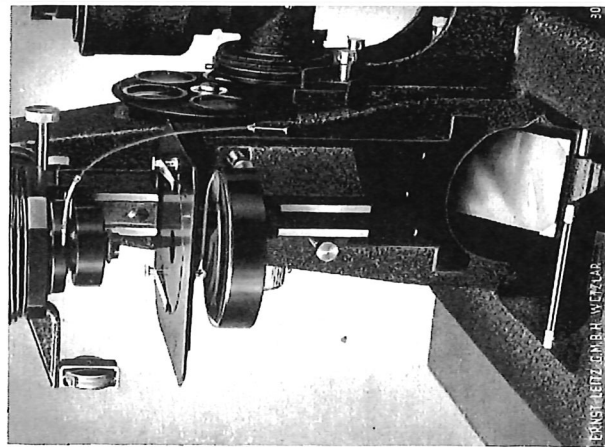


Fig. 8 Large transmitted light stage in position on the PANPHOT.



Codeword

E Accessories for General Features Photography in Transmitted Light (without Eyepiece)

1. Photographing general features of specimens on the normal object stage:

Interchangeable wide photo tube with large light-screening sleeve OPZOS

General survey objective MILAR 50 mm. with adapter PUZII-RING

Spectacle lens condenser, on slide, fitting substage IIDUL OPWUP

2. Photographing general features of specimens on the large transmitted light stage:

Large transmitted light stage with two illuminating lenses, large mirror and stage inset diaphragms of 50 and 25 mm. opening PIIMA

Coated F/4.5 120 mm. SUMMAR lens with iris diaphragm SUMZO

Adapter ring for above PWI1H

Coated F/4.5 80 mm. SUMMAR lens with iris diaphragm SUMUR

Adapter ring for above PBD1I

Coated F/4.5 80 mm. MILAR lens with iris diaphragm PUZII

Adapter ring for above PYHIL



Fig. 9
LEICA 35 mm.
camera with
micro mirror
reflex housing,
magnifier
(shown separate)
and additional
focusing telescope

3036-54

© Accessories for Photomicrography on 35 mm. Film with the LEICA Camera (24 x 36 mm).

Any LEICA camera with interchangeable lens can be successfully used on the PANPHOT, and if none is available the following simple model will meet all requirements:

LEICA camera body 1f, with cassette (without lens and without viewfinder) OEFGO

1. For photomicrographs:

- (a) Micro mirror reflex attachment with swing-out mirror, rotatable frame for horizontal and vertical 24x36 mm. pictures, ground and clear glass screens in revolving holder, double release and focusing magnifier 5X, with holder fitting camera bar IFLEX-EEXRL
- Intermediate adapter $\frac{1}{3}X$ to screw between micro mirror reflex attachment and the focusing attachment with lateral telescope ZOIII

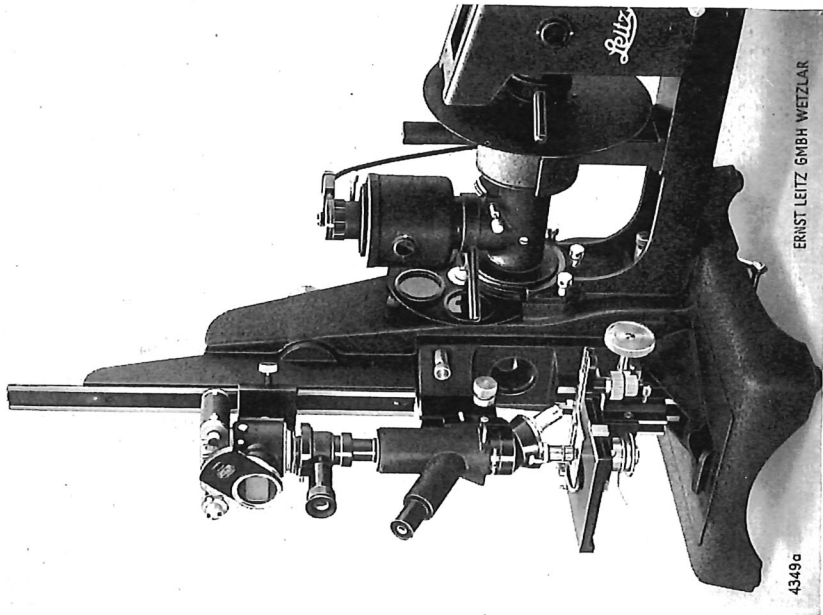


Fig. 10
LEICA 35 mm.
camera and
reflex focusing
arrangement
in position
on the PANPHOT

4349a

LEICA photographs (24x36 mm.) taken with the standard $\frac{1}{3}X$ adapter and enlarged 3X will be found identical with plate photographs $3\frac{1}{4}'' \times 4\frac{1}{4}''$ taken with a 25 cm. bellows extension and will be equal to the magnification obtained with visual observation provided the same objective-eyepiece combination is employed. However, the LEICA photographs invariably require a considerably shorter time of exposure than the large sized plate.

Codeword

Focusing attachment with lateral telescope, swing-out prism, time and instantaneous shutter, light-screening sleeve for the microscope, double release for prism and shutter ZOIII

For special requirements, when particular importance is to be attached to the central area of the microscopic image, this can be further magnified (at the expense of longer exposure times) by the following item which can replace the $\frac{1}{3}X$ adapter:

Intermediate adapter $\frac{1}{2}X$ ZPEII

- (b) Micro attachment with conical adapter $\frac{1}{3}X$, lateral focusing telescope with swing-out-prism, time and instantaneous shutter, two wire releases, periplanatic eyepiece 10X and clamping collar, in case MIKAS
- Release coupler for swing-out prism and shutter CALOS

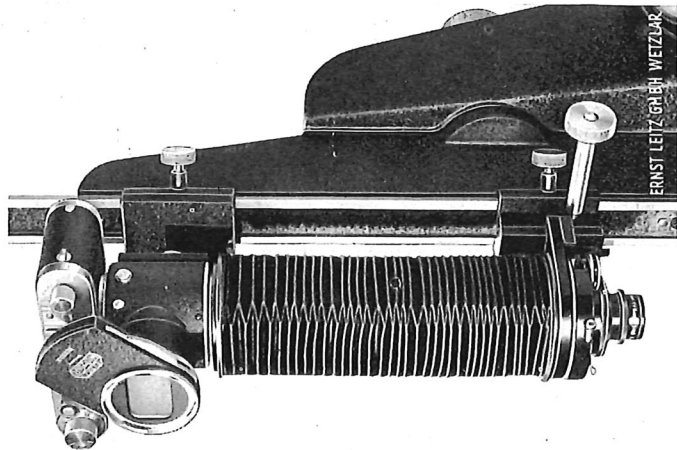


Fig. 11
LEICA 35-mm. camera
with reflex housing
and long bellows
for macrophotographs

4348

2. For general features photographs with the large transmitted light stage and for macro photographs (image ratios 1:3 to 30:1)

- Micro mirror reflex attachment (as described on page 18) IFLEX-EEEXL
- Long LEICA bellows, extensible to 50 cm., with thread connection for the lower bellows bracket EEXSN
- Lower bellows bracket with rack and pinion, time and instantaneous shutter, wire release, and light-screening sleeve for the microscope ORHAL

For bellows extensions between 14 and 18 cm. the bellows EEXSN is replaced by:

- Short LEICA bellows, extensible to 12 cm. EXTBE

When attaching the LEICA bellows to the thread of the mirror reflex housing it should not be tightened completely to allow for the necessary rotation to the right and left.

Photographic lenses to be selected from the specification on page 16.

3. For general features photographs in transmitted light (without eyepiece) with the normal object stage

- Micro mirror reflex attachment, LEICA bellows and lower bellows bracket, as specified above.
- If the wide photo tube OPZOS is not connected to the lower bellows bracket but directly to the micro mirror reflex attachment the following items are required:
- Intermediate collar for the light-screening sleeve (of the bellows bracket ORHAL) and the mirror reflex attachment MAACOK
- Light-screening sleeve of the bellows bracket ORHAL MABIH

H Individual Prices of Electrical Accessories and Replacements

Code word

(a) for the low-voltage filament lamp:

Regulating transformer with ammeter, adjustable for 110 and 220 volt A.C. mains REDYX

Resistance with tapings for 6 and 5 amps, inclusive of cable and switch

for 110 volts D.C. or A.C. REDIG-BEEUL

for 220 volts D.C. or A.C. REDUK-BEEUL

or

Regulating resistance consisting of a fixed part and a rheostat, with ammeter and cables

for 110 volts REKUR-BEEUL

for 220 volts REGAM-BEEUL

(b) for the arc lamp:

Resistance for 10 amps D.C. 110 volts BPCI

220 volts BQEI

Resistance for 15 amps A.C. 110 volts BQIIN

220 volts BRGII

or

Choking transformer 110 and 220 volts A.C. HMQUU

100 pairs of cored carbons

8X135 mm. (horizontal) and 8X110 mm. (vertical) for D.C. BSIL

8X135 mm. (horizontal) and 10X110 mm. (vertical) for A.C. BTIHK

If both D.C. and A.C. are available it is recommended to connect the filament lamp to the A.C. supply through a transformer and the arc lamp to D.C. using a suitable resistance.

Filament lamp 6 volts 5 amps with prefocus cap ATIIH

Filament lamp 8 volts 0.6 amps (for ring illuminator) LISEY

Heat-absorbing filter in metal frame QUYII

Replacement filter without frame QWCI

Replacements for the revolving filter holder:

Green filter combination MLIIN

Light subduing filter in mount MLKII

Daylight filter, frosted ANIIE

Daylight filter, clear ANOII

Attachable darkslide 9X12 cm. (3 1/4" X 4 1/4") GIPL

Adapter for plates 6 1/2 X 9 cm. GSDII

■ PANPHOT Working Desk

Writing desk form, with sliding drawing board underneath top, Codeword
 3 lock-up drawers for storing accessories, height 30", top plate
 47" x 28" IWNDI
 Resilient top plate with metal springs to eliminate vibrations . . . IXDKI
 The same top plate resting on plastic dampers IYNBY
 Felt or velvet lined fittings are provided in the drawers. Extra cost according
 to the number of items to be accommodated.

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