Leitz
WETZLAR

PANPHOT

Large Camera Microscope



Camera microscope incorporating system of direct illumination from objective to focal plane.

Instantaneous change-over from binocular observation to photography.

Interchangeable illumination for 12 v 60 W filament lamp, arc lamp, Xenon lamp or high-pressure mercury lamp.

Universally adaptable to all types of examination and methods of illumination in microscopy.

54-5 d / Engl.

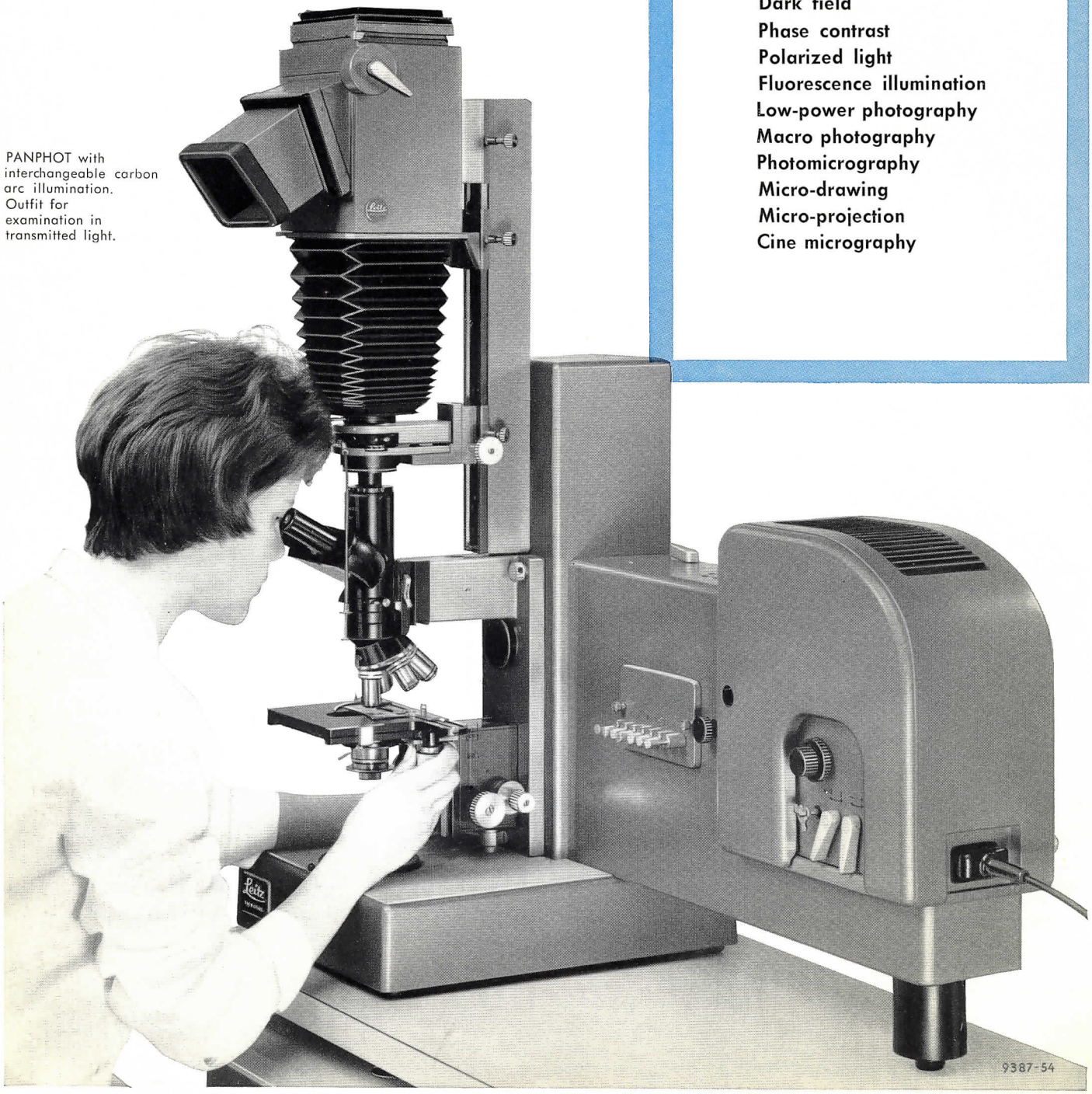
The **PANPHOT**® camera microscope combines light source, system of illumination, microscope and camera in a vertical, compact body. The illuminating system is permanently centred, so that the PANPHOT is at all times ready for use. All controls are easily accessible to the operator.

Versatility is an outstanding characteristic of the PANPHOT, which incorporates all the constructional elements of a large universal microscope for observation in transmitted and incident light.

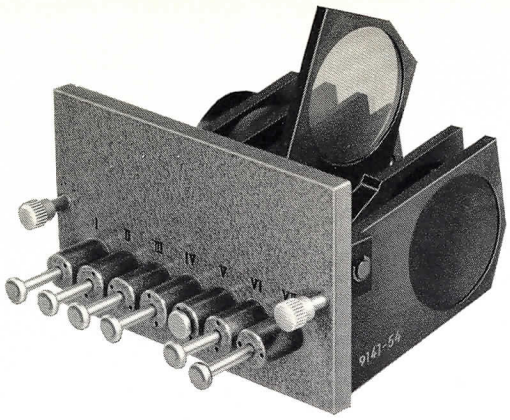
All methods of microscopic examination and types of illumination are possible with the PANPHOT camera microscope.

Transmitted light
Incident light
Bright field
Dark field
Phase contrast
Polarized light
Fluorescence illumination
Low-power photography
Macro photography
Photomicrography
Micro-drawing
Micro-projection
Cine micrography

® = registered Trade Marks



PANPHOT with interchangeable carbon arc illumination. Outfit for examination in transmitted light.



Detached filter set for
interchangeable illuminating system

Technical Description

Base rigid, cast alloy base with rectangular upright. The base incorporates surface-coated mirrors which guide the light rays from the illuminating system. Detachable illuminating system, microscope carrier and camera are mounted on the metal base.

Interchangeable system of illumination

The light-source on the right of the instrument consists of a self-contained unit which is designed as an interchangeable system of illumination. It is normally equipped with a 12 v 60 W low-voltage filament lamp but may, if desired, be fitted with a CS 150 W high-pressure mercury lamp, or a XBO 150 W Xenon lamp. The Xenon lamp is especially suitable for examinations in bright field.
The renewal of carbons is avoided; its colour temperature corresponds to that of daylight. The high-pressure mercury lamp is an extremely powerful light source for the visible and ultra-violet ranges. It is recommended for fluorescence microscopy and for microscopic work in which exact colour rendering is not essential. The lamp housing incorporates a set of filters, of which each may be inserted into, or removed from, the light path at the touch of a button - singly or in combination with others as required.
The outfit is delivered complete with the set of filters appropriate to the type of illumination specified. The 12 v 60 W low-voltage lamp is fitted with a separate set of filters, consisting of ground glass, blue and green filters for photomicrography.

Microscope Carrier

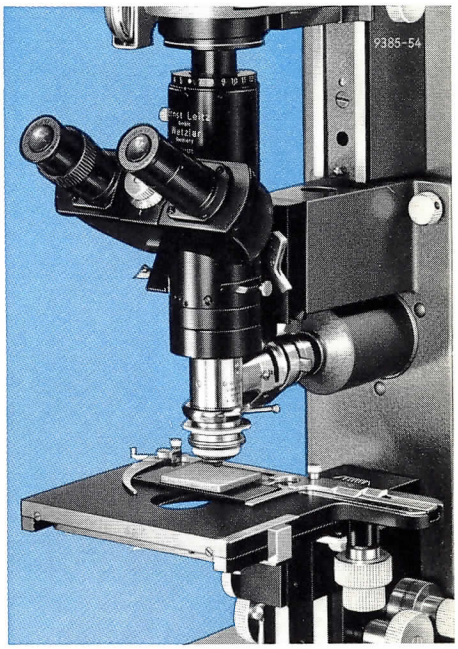
The carrier facing the operator accepts the components of the microscope, and is equipped with coarse and fine focusing actuating the object stage.

Object Stage

Large, square mechanical stage No. 253 with low-set coaxial milled knobs, mounted on common axis, with scales and verniers. Traversing and pinion fitting for vertical condenser adjustment with dovetail area 76×40mm for slides measuring up to 100×50mm. Substage rack bracket to take interchangeable condensers.

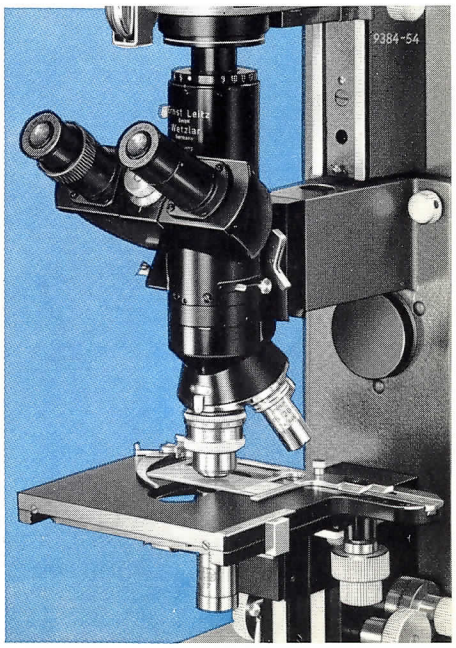
Condenser in Centring Mount on Slide

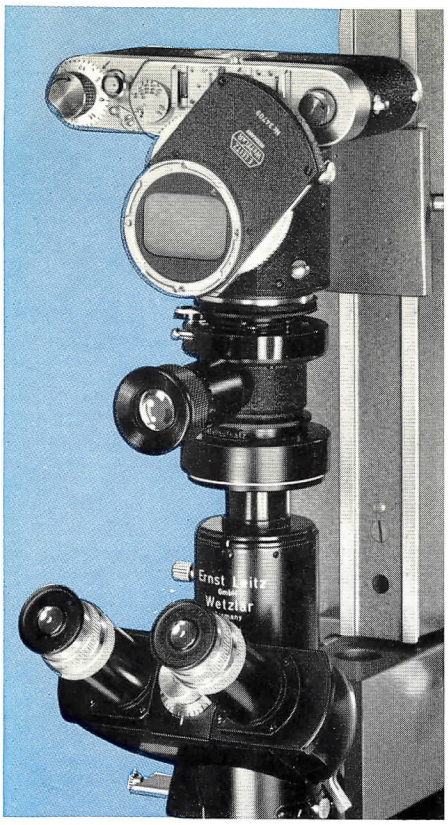
Two-diaphragm bright field condenser No. 76 with swing-out condenser top A 0.95 with aperture and field diaphragms. All condensers with dovetail mount may also be employed.



ULTROPAK incident light
illuminator

Phase contrast equipment
for transmitted light





LEICA
micro mirror
reflex attachment
and focusing
attachment as
accessory
for PANPHOT
for 35mm pictures.

Objective Changers and Incident Light Illuminators

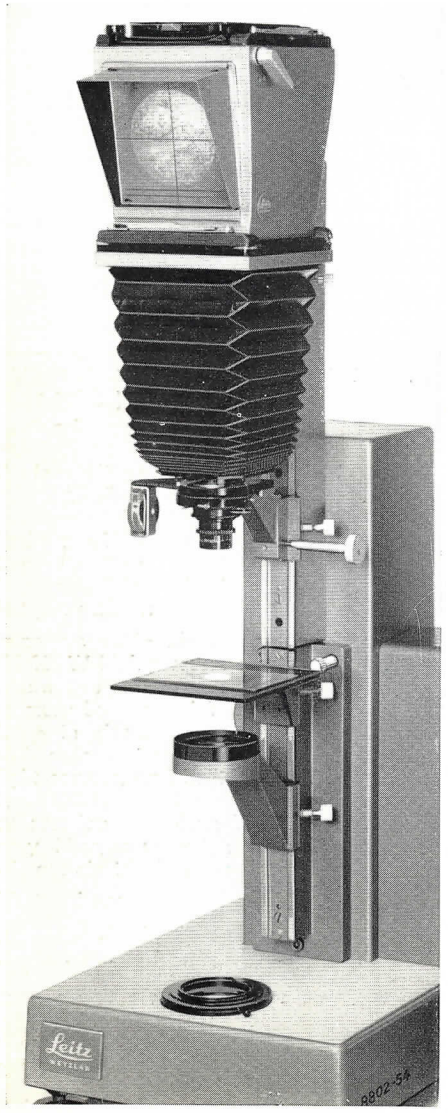
1. Revolving nosepiece for 5 objectives with slot and filter slide (this nosepiece is available also with a centring device for each individual objective and with a slot for compensators required for work in polarized light)
2. Objective centring clutch
3. Vertical illuminator
4. ULTROPAK® illuminator
5. Phase contrast incident light outfit

Tube

Photo tube FS with inclined binocular body with sliding prism for change-over from visual examination to photography. Adjustable eyepiece-mount to compensate for individual eyesight and adjustment for setting the correct interpupillary distance.

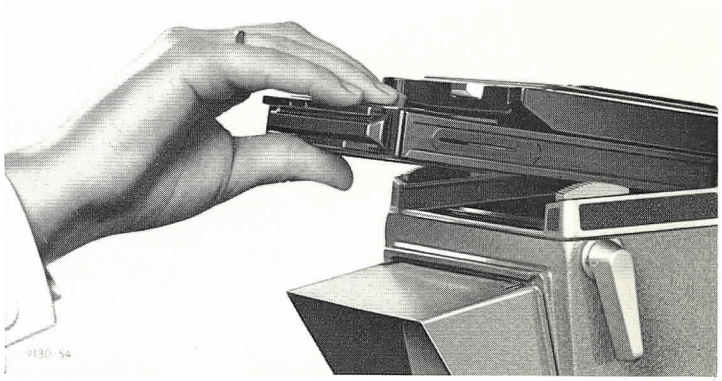
Camera

A mirror reflex bellows camera for plates 9×12cm is included in the standard PANPHOT equipment.

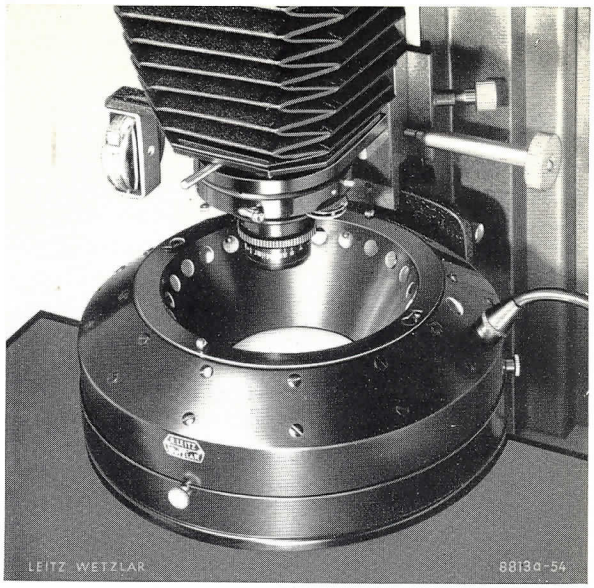


Bellows camera with international back and rotating darkslide frame on PANPHOT with outfit for low-power photography in transmitted light.

Simple and effortless insertion of the double darkslide into the frame of the rotating mirror reflex camera.

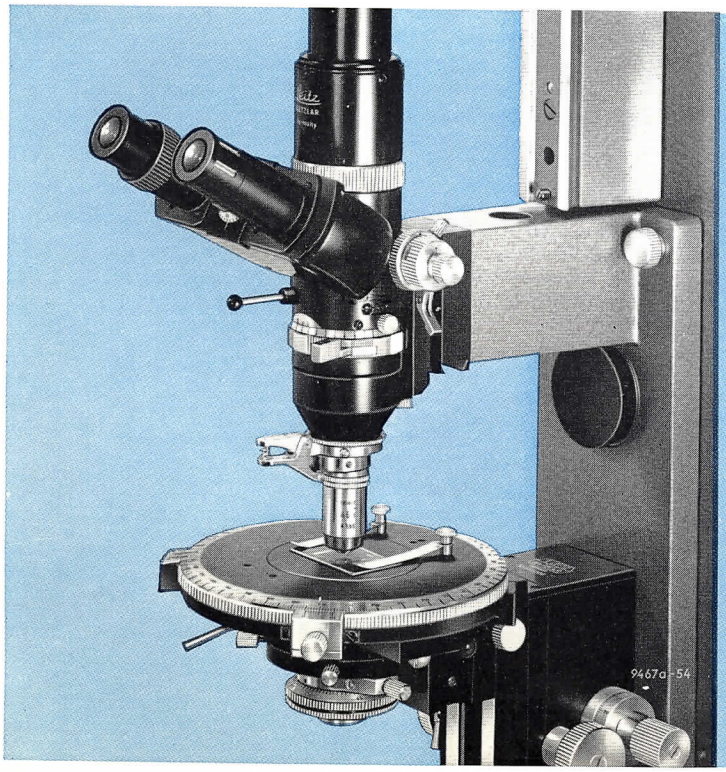


The shutter section of the camera contains a shutter for time and instantaneous exposures with cable release, socket for flash equipment, a bush to accommodate a light-trap ring or objective (macrophotographs) and a rack and pinion drive for focusing in macro photography.
In addition to the 9×12cm bellows camera a bellows camera with rotating darkslide frame and 4×5″ international back is available. The rotating darkslide frame makes it possible to align the cassette with the object, in any position; the negative format can therefore be fully utilized. The international back on the bellows or on the mirror reflex attachment accommodates most international standard cassettes; above all, it permits the use of the Polaroid-Land process which produces final, high-quality paper prints within 10 seconds. The image is focused on a groundglass screen with diagonal clearglass strips.
An adapter frame for simple book-type cassettes for the 6.5 ×9cm format is included in the outfit.
The 35mm camera may of course be used instead of these plate cameras. Thus the technical possibilities of the LEICA® system and its special advantages when making picture series and photographing living specimens can supplement those offered by the large formats. This fact is also of increased importance in colour photography.

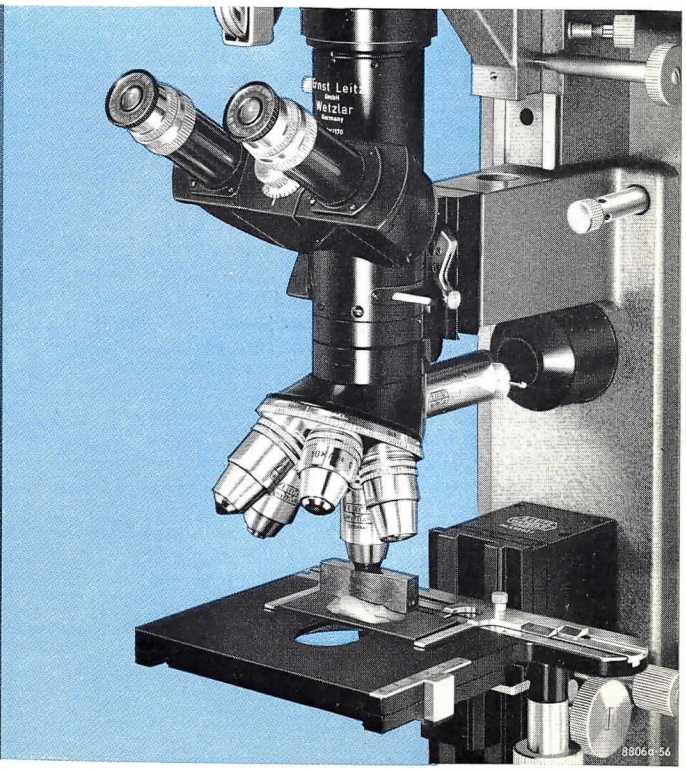


PANPHOT with macro-ring illuminator and large wooden object stage.

PANPHOT with outfit for examinations in polarized light. The pol-tube FS 45 is required together with revolving nosepiece with individual centring, or centring clutch, object stage No. 237 and polarizing condenser No. 50 p (see list 55-1 b).



PANPHOT with outfit for metallographic examinations of polished surfaces in incident light. The microscope carrier with vertical illuminator and revolving nosepiece for 5 objectives with 5 special objectives is required. For further details see our list No. 56-10 b.



Outfits

PANPHOT camera microscope
Basic outfit with interchangeable low-voltage filament lamp and arc lamp, for

Examinations in transmitted light (bright field)

Basic stand
with surface-coated mirrors, suitable for transmitted and incident light.

Detachable microscope carrier
with rack and pinion motion and micrometer fine focusing on double ball bearings, actuating the object stage.

9×12cm (3¼"×4¼") bellows camera
with detachable mirror reflex attachment, rack and pinion focusing for macrophotography, synchronised, anti-vibration mounted time and instantaneous shutter with cable release, tape-measure for reading off bellows extension, 2 ground glass screens, 1 clear glass screen, 2 metal darkslides with inserts 6.5×9 cm, and focusing magnifier.

Detachable objective carrier with slot and filter slide
with revolving nosepiece for 5 objectives (10·5·–·–)

Interchangeable rack and pinion drive with dovetail bracket for vertical condenser adjustment (–·–·8·–)

Illuminating equipment with interchangeable arc- and filament lamp
consisting of: lamp housing with 12 v 60 W low-voltage filament lamp, with spare lamp, large high-power arc lamp with clockwork feed, with dry heat-green panchromatic filter and 2 grey filters), swing-out mirror for rapid change-over from one type of filter, with built-in set of filters (N-diffusion screen, illumination to another (–·–·–·9)

Photo tube FS with inclined binocular body

Large square detachable mechanical stage No. 253

Two-diaphragm bright field condenser No. 76 in centring mount

Two-piece flexible dust cover

PANPHOT camera microscope for transmitted light, with interchangeable arc- and filament lamp, without objectives and eyepieces and electrical accessories IDBOL
(PANPHOT 14·5·8·9 FS 253/76)

The PANPHOT camera microscope may be equipped with the following illuminating systems as desired: —

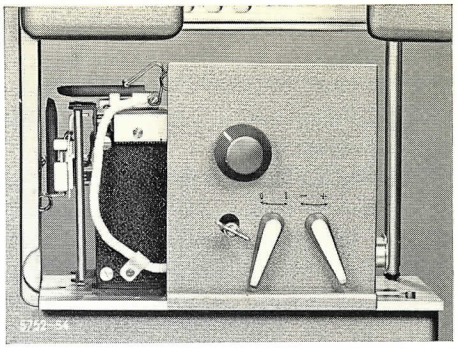
Interchangeable illuminating equipment with arc lamp (–·–·–·9)
without electrical accessories (included in the basic outfit IDBOL) LAYAY

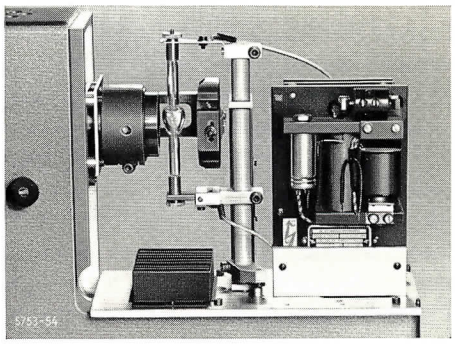
Electrical accessories
Regulating transformer with ammeter, for connecting the low-voltage lamp to 110–240 v 50–60 c/s a.c. REWOB
12 v 60 W filament lamp, replacement LILOM
Resistance 220–240 v 50–60 c/s BRGII
Resistance 110–127 v 50–60 c/s BQIIN
100 prs. carbons BTIIK
Rectifier 100–160–220 v 50 c/s GUUDS
100 prs. carbons BSIIL

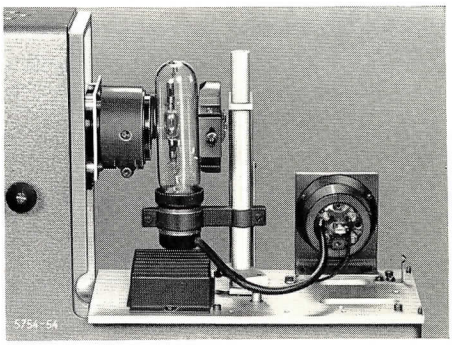
Interchangeable illuminating equipment with CS 150 W high-pressure mercury burner (–·–·–·25)
Alternative illumination with CS 150 W high-pressure mercury burner and 12 v 60 W low-voltage filament lamp in closed housing, with illuminating optics, with swing-out mirror for changeover between the light sources, and built-in set of filters (2 U.V. filters 2mm UG 1, filter 3mm BG 12, filter 5mm BG 12, red suppression filter 4mm BG 38, N-diffusion disc, 0.2% grey filter, suppression filter blue and u.v. abs.), without electrical accessories LAWOZ

Electrical accessories
Regulating transformer with ammeter, for connecting the low-voltage lamp to 110–240 v 50–60 c/s a.c. REWOB
12 v 60 W filament lamp, replacement LILOM

Supply unit for the high-pressure mercury burner CS 150 W for connection to
1. 220 v 50 c/s LOCIS
2. 110–120–127 v 50 c/s LOUNP
3. 160–240 v 50 c/s LOURS


Lamp housing raised to show arc lamp


XBO 150 W Xenon lamp (lamp housing removed)


CS 150 High-pressure mercury lamp (lamp housing removed)

4. 110–120–127 v 60 c/s LOUST
5. 220 v 50 c/s (rectifier) LOKEY
6. 110–120–160–240 v 50 c/s (rectifier) LOUXY

CS 150 W high-pressure mercury burner, for a.c. LUOHK
CS 150 W high-pressure mercury burner, for d.c. LUOLN

Interchangeable illuminating equipment with XBO 150 W xenon burner (–·–·–·43)
in closed housing, with 12 v 60 W low-voltage filament lamp, and XBO 150 W high-pressure xenon burner, with illuminating optics; with swing-out mirror for changeover between the light sources and built-in set of filters (R-diffusion disc, N-diffusion disc, 2 grey filters and green filter VG 9); protective goggles for interchanging the xenon burner; without electrical accessories LAWUB

Electrical accessories
Regulating transformer with ammeter, for connecting the low-voltage lamp to 110–240 v 50–60 c/s REWOB
12 v 60 W filament lamp, replacement LILOM
Supply unit for connecting the high-pressure xenon burner XBO 150 W to 120–127–220 v 50–60 c/s and 240 v 50 c/s LOHOY
XBO 150 W high-pressure xenon burner, replacement LAZEB
(Magnification range for visual observation 27–2000×)

Accessories for examinations in transmitted light
Example of an optical outfit for examinations in transmitted light with achromatic objectives
Achromatic objective 3.5/0.10 OANEE
Achromatic objective 10/0.25 ACORA
Achromatic objective 40/0.65 ACMAT
Achromatic oil immersion Oil 100/1.30 OILIM
Paired Huygens eyepieces 6× GIZRA

Paired PERIPLAN® wide-field eyepieces GF 10× PESIS
Paired PERIPLAN® wide-field eyepieces GF 16× PESOT

Huygens micrometer eyepiece with focusing eyelens with micrometer scale 10mm with 100 intervals OCMIR-OCASY
Stage micrometer with 2mm scale with 100 intervals, complete with case OBMET

Optical outfit A 2f bin **OPMAP**
or:
Example of an optical outfit for observations in transmitted light with **plano-objectives** and wide-field eyepieces
Plano objective Pl 4/0.10 PLAVS
Plano objective Pl 10/0.25 PLABY
Plano objective Pl 25/0.50 PLAWT
Plano objective Pl 40/0.65 PLASB
Plano objective Pl (oil) 100/1.32 PLARN
Paired PERIPLAN wide-field eyepieces GF 10× PESIS
PERIPLAN wide-field eyepiece GF 10× PERIR

Optical outfit A 10b bin **OPNUH**
(Magnification range for visual observation 50–1250×)

Accessories for examinations in dark field
for serial examinations and for general inspection of individual bacteriological specimens:
No. 84 dry dark field condenser D 0.80 in centring mount OREBK
Standard condenser for clinical or bacteriological examinations at high magnifications:
No. 82 immersion dark field condenser D 1.20 in centring mount ORCIX
The following objectives with built-in iris diaphragm are particularly simple to use:
With condenser D 0.80:
Achromatic objective 63/0.85 with iris diaphragm OBTOV
With condenser D 1.20:
Achromatic oil immersion Iris Öl 100/1.30 – 1.10 OBSOT
Fluorite oil immersion Fl Öl 95/1.32 – 1.10 OBSUV

Accessories for examinations in phase contrast
Detachable carrier with revolving nosepiece for 5 objectives (14·5·–·–) OMARC
In order to achieve the most favourable results during examinations in phase contrast, it is always advisable to use the phase contrast objectives on their own revolving nosepiece.
Phase contrast condenser No. 74 on changing slide with rack and pinion motion for vertical adjustment of mirror body, detachable immersion cap, filter holder with daylight and photographic filters, as well as auxiliary magnifier and case PFAHT
Example of an optical outfit:
Achromatic objective Pv 10/0.25 PHALZ
Immersion attachment PHAWK
Achromatic objective Pv 25/0.50 PHANC
Apochromatic objective Pv Apo L 40/0.70 PHASG
Apochromatic objective Pv Apo Öl 90/1.15 PHATH
Paired PERIPLAN wide-field eyepieces 10× PESIS
Paired PERIPLAN wide-field eyepieces 16× PESOT

Optical outfit C 6a bin complete FIXEC

Accessories for examinations in phase contrast, complete PHIHI
For a selection of further objectives and eyepieces, or alternative optical equipment, please see our microscope lists, in particular list No. 51_3-57 ("Objectives and Eyepieces").

Accessories for examinations in incident light with the ULTROPAK®:
ULTROPAK illuminator with carrier, built-in heat filter, 2 slots for polarizer and λ plate, 1 slot with cover for the sector stop, 2 adjustable sector stops, including illuminating attachment (13·18·–·–) MUPAN
Optical outfit:
Objective UO 6.5/0.18 AIREE
Objective UO 11/0.25 AKEER
Objective UO 22/0.45 ALVEE
Objective UO 50/0.65 AMEEP
A set of funnel stops for achieving greater depth of field AXUEE
Object slide 76×26mm of polished black glass with bevelled edges AYEEC

ULTROPAK incident-light illuminator
Equipment as MUPAN but with filter polarizer rotatable through 90° and analyser (in mount) to eliminate surface reflection on the object (13·19·–·–) MUPEP

Accessories for 35mm photography with the LEICA®:
LEICA M 1 housing without lens, viewfinder and cassette 10 620 H
Cable release with clamping screw 14 057 N
Micro-mirror reflex attachment (VISOFLEX II), with 5× focusing magnifier, cable release and bayonet cover, for LEICA-M models IFMAX
Adapter and holder with ¼" screw for prismatic bar IFMOB
Adapter ⅓× to screw between micro mirror reflex attachment and the focusing attachment ZOIIL
Focusing attachment, synchronized time and instantaneous shutter, swing-out prism, light screening-sleeve for the microscope, double release for prism and shutter ZOCII

Camera with international back and rotating darkslide frame
Camera bellows with international back (4×5") extensible to 60cm (24¾"), with mount for attachment to the guide-rail of the upright; rotating darkslide-frame with adapter for simple grooved cassettes; groundglass plate with two diagonal clear glass strips, bayonet fitting for light-tight connection between the bellows and the shutter on the lower bellows carrier, two simple grooved cassettes 9×12cm (3¼×4¼") with insert for size 6.5×9cm; focusing magnifier (Here, the bellows camera 9×12cm MADIK is not included in the basic outfit IDBOL) MAJUS
Micro mirror reflex attachment, for insertion into the rotating darkslide frame, with swing-out mirror for observation and focusing of the image on the groundglass screen from the user's position (The micro mirror reflex attachment PIIAH is thus not included in the basic outfit IDBOL) MAKEP

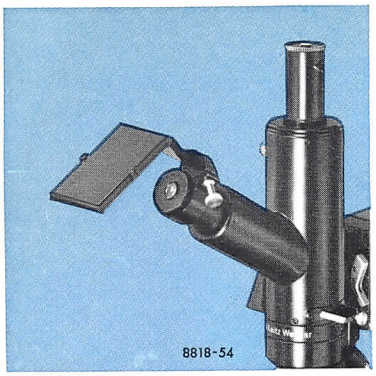
MICROSIX L exposure meter
Light-meter for determining the exposure time for photomicrography MITIX

Accessories for low-power photography in transmitted light
1. Low-power photography in transmitted light (without eyepiece) employing the normal object stage:
   Interchangeable tube with wide aperture and conical adapter OPWIM
   General survey objective 50mm MILAR PUZII
   Spectacle lens condenser No. 90 on slide mount OPWUP
2. Low-power photography with the large object stage:
   Object stage with insert diaphragm and object-clamps, on interchangeable carrier with dovetail fitting NUBII
   Holder with two illuminating lenses and two stage insert diaphragms, permitting vertical adjustment on the dovetail slide NUIIF
   SUMMAR or MILAR objectives, as selected.

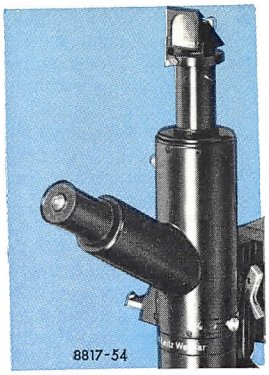
Low-power photography in incident light (without eyepiece)
1. Up to 10 mm object field:
   Low-power illuminator 10mm with wide tube IDMAT
   General survey objective 50mm MILAR PUZII
   Adjustable plane mirror for oblique illumination, on changer IPRTI
2. Up to 60mm object field:
   Low-power illuminator 60mm on carrier with adjustable macro stage IDLUX
   12 cm SUMMAR objective SUMZO-RIING

For macro photographs
Stage with insert diaphragm and object-clamps, on interchangeable carrier with dovetail guide-rail NUBII
Macro-ring illuminator with 12 6 v 5 W lamps, with ring-shaped opal glass plate in changing mount, reflector I, 2 adapters NOIIM
Regulating transformer with voltmeter for 110–240 v 50–60 c/s
Wooden object stage NOPII

Accessories for metallographic examinations
Detachable carrier with vertical illuminator and revolving nosepiece for 5 objectives, with highly reflecting plane glass, field of view diaphragm and adjustable aperture diaphragm, device for oblique illumination and illuminating tube (20·41·–·–) IDPOZ

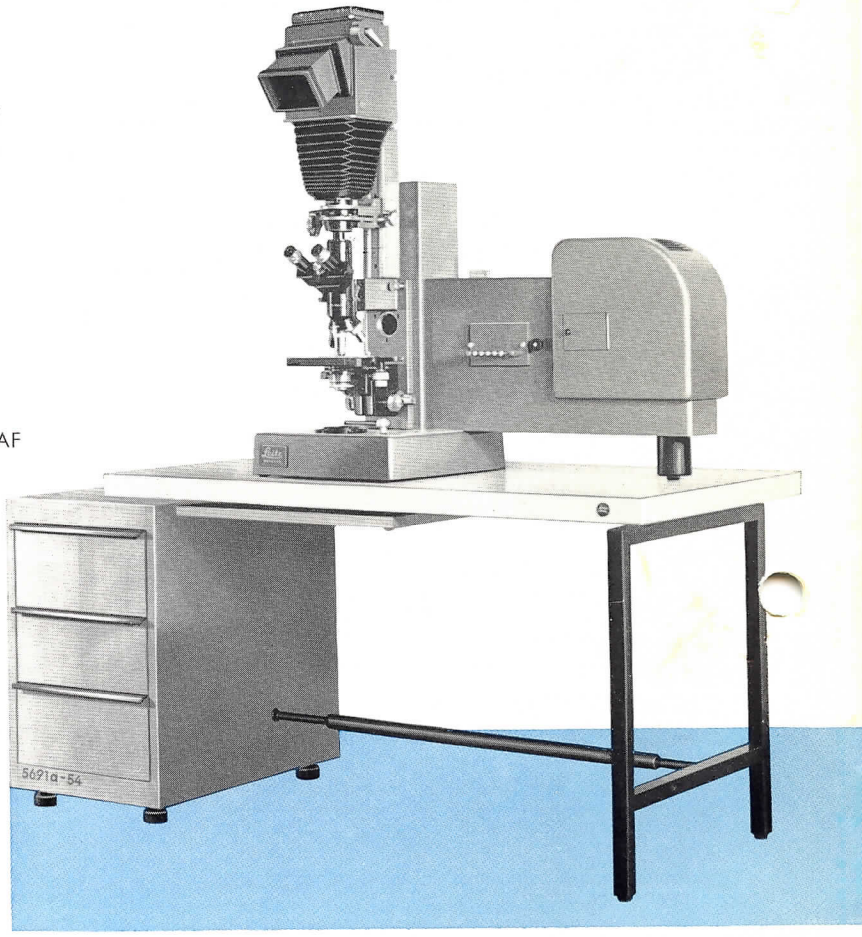


Drawing mirror PIIGL



Projection prism PRIAU

Objectives 5×/0.09	RVIIN
10×/0.18	RVZII
20×/0.35	RWBII
50×/0.85	RWIIM
100×/0.95	RXDII
Paired PERIPLAN eyepieces, with adjustable eyelenses, 10× M	NIITQ
Eyepieces for photomicrography	
Photo-eyepiece N 6.3× m	MZIIY
Photo-eyepiece N 6.3× h	MZNII
Accessories for the optical outfit	
Stage micrometer 1mm divided into 100 parts	IIDMU
Pr. of PERIPLAN micrometer eyepieces 10× M with adjustable eyelens and 10mm scale with 100 intervals	RXIIL-OCASY
Hand press with adjustable locking device for levelling metallographic specimens	RPIIT
6 polished metal object slides	IVZDI
Oil immersion objective Ol 100×/1.36	RIIQD
Accessories for phase contrast examinations in incident light	
Vertical illuminator for phase contrast with bright field illumination, with revolving nosepiece for 5 objectives and objectives with built-in phase rings for magnifications 50×, 100×, 200×, 500× and 1000×, rotating drum for phase contrast and bright field illumination	IIYBE
Two PERIPLAN eyepieces 10× M, with adjustable eyelenses, one of which has a scale to indicate photographic picture area	NIITQ-OCDAF
Focusing magnifier	PHADS
Tilting object holder for levelling the specimen	IIXWV
Equipment for microscopic drawing and micro projection	
Swing-out drawing mirror to be clamped to the inclined observation tube for table-top projection	PIIGL
Projection prism	
The projection prism is attached to the vertical mount of the tube. The prism may be tilted in order to adjust the picture on the projection screen	PRIAU
Individual prices of replacements	
Filters for filament lamps:	
Diffusion screen, in mount	NAVUH
Conversion filter CB 12, in mount	NAVOG
Green filter, in mount	NAWAD
Filters for arc lamps:	
Panchromatic green filter	NLIIP
N-Diffusion screen	NIIYF
Grey filter 0.2%	NAWUJ
Grey filter 0.5%	NAXIH
Filters for XBO 150 W	
R-diffusion screen	NAWIG
N-diffusion screen	NIIYF
Grey filter 0.2%	NAWUJ
Grey filter 5%	NAXIH
Green filter VG 9	NTIIG
Filters for CS 150 W	
UV filter 2mm UG 1	NAXOJ
Blue filter 3mm BG 12	NAYAG
Blue filter 5mm BG 12	NAYEH
Red suppression filter 4mm BG 38	NAYIJ
N-diffusion screen	NIIYF
Grey filter 0.2%	NAWUJ
9×12cm darkslide	GIIPL
6.5×9cm insert	GSDII
9×12cm sheet film adapter	GZIIO
6.5×9cm sheet film adapter	GXOII
Two-piece flexible dust cover, included in basic outfit, separate price	NIIVR
Work table	
writing desk, design table top covered with plastic, with slide-out drawing board and three locking drawers for accessories, light grey maple veneer	NIIUD
Dimensions: Height 27¼", table area 47¼"×25½"	
Drawer accessory fittings to individual specification.	



Design subject to alterations without notice.

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