

SPECIFICATIONS & PRICES

LEITZ

**RESEARCH MICROSCOPE
ORTHOLUX & ACCESSORIES**



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Introduction:

The LEITZ ORTHOLUX Microscope is firmly established as one of the most advanced, as well as versatile research instruments available. Many have attempted to copy the design, but none have been able to equal it.

The many uncharted research projects in all fields, whether they are medical or industrial, require the greatest flexibility, so that each avenue of approach may be examined under all possible conditions, under each type of illumination and always with the utmost of precision.

The basic integrity of design of the Ortholux Microscope permits the addition of interchangeable parts, so that the one instrument will serve equally well for transmitted light, reflected light, polarized light, fluorescent microscopy, phase contrast, UV and many others.

The LEITZ ORTHOLUX has over the years established an enviable reputation for maximum performance and convenience in operation. The pages of this catalog will serve to illustrate the infinite variations which the ORTHOLUX is capable of; each interchangeable part fits perfectly to the basic stand and once attached becomes integrated to form a research microscope of unequalled quality.

Beginning with a simple outfit for transmitted light, this catalog attempts to show all the possible combinations - one of these will surely be suited to your specific research project.

STAND

The basic stand is a precision cast aluminum/magnesium alloy, incorporating a coarse and fine focusing adjustment on double-ball bearings, counter balanced to accept microscope stages, condensers, etc. The fine adjustment travels through a depth of 3.8 mm at an accuracy of 0.001 mm. The arm has a dovetail slider with spring lock to accept various observation tubes and accessories.

Fittings are provided in the base and the arm to introduce light sources for transmitted, as well as reflected illumination. The base contains an iris diaphragm which is operated by a knurl and can be focused into the image plan by means of the substage condenser.

ILLUMINATION

The ORTHOLUX Microscope is supplied with a special low voltage lamp, the intensity of which may be regulated by means of a transformer. The lamp is used for transmitted light, as well as for reflected light, or for both simultaneously. If higher light intensities are required, the Universal Lamp Housing Model 250 can conveniently be attached to the Ortholux stand. If required, a reflex housing permits alternate use of low voltage lamp or high power light source. The Universal Lamp Housing Model 250 accepts a xenon burner XBO 150, a high pressure mercury vapor lamp CS 150, or the fluorescence lamp HBO 200.

CONDENSERS

The substage of the ORTHOLUX has facilities for the interchange of condensers by means of a dovetail slider. For transmitted light/brightfield, 3 highly corrected swing-out condensers are available, models 601 - 603. Phase contrast, darkfield and other special purpose condensers are interchangeable with these.

OPTICAL EQUIPMENT

LEITZ manufactures for the ORTHOLUX Microscope a wide variety of lenses, achromats, fluorite systems, apochromats, plano objectives, phase contrast objectives, Ultropak, and infinity corrected objectives for covered or uncovered specimens. A special booklet, covering all of these optics is available. No other manufacturer offers a larger variety.

EYEPIECES

LEITZ supplies suitable eyepieces for every need, in order to obtain maximum definition from these objectives. They are the Huygens type, Periplanatic/Compensating eyepieces, Widefield eyepieces, high eyepoint and negative eyepieces.

PHOTOMICROGRAPHIC EQUIPMENT

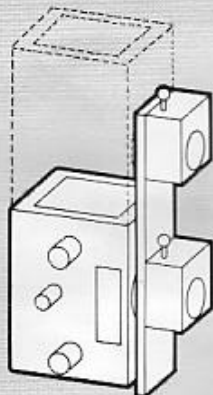
The ORTHOLUX accepts many types of photomicrographic accessories. In addition to simple camera attachments, such as the MAKAM or the 35 mm LEICA Camera, it can be equipped with the fully automatic microscope camera ORTHOMAT.

For those who wish to photograph on large formats, the Leitz ARISTOPHOT serves as the most universal photomicrographic accessory.

For motion picture photomicrography on 8 mm film, the film camera LEICINA is recommended.

Accessories for other 8 and 16 mm motion picture cameras and the required optical systems are also available.

EXPLODED VIEW OF



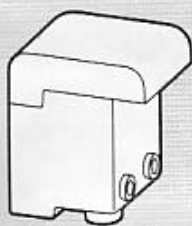
Lamp housing 250 for incident and transmitted light



6 v 30 w lamp attachment



6 v 30 w lamp attachment



Fully automatic microscope camera ORTHOMAT



FSA photo-tube with automatic focusing compensation



9 x 12 cm camera attachment



FS photo-tube with inclined binocular eyepiece tubes



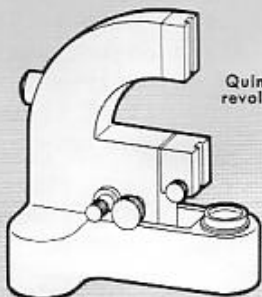
Micro-attachment for the LEICA



FP photo-tube with inclined monocular eyepiece tube



Projection prism for wall projection



ORTHOLUX stand

Quintuple objective revolving nosepiece with



transmitted-light or special fluorescent-light objectives



plano objectives



phase contrast objectives



Mechanical stage No. 250 with condenser holder



Centring rotating stage No. 223 with condenser holder



Heating stage 80



Two-diaphragm brightfield condenser No. 76

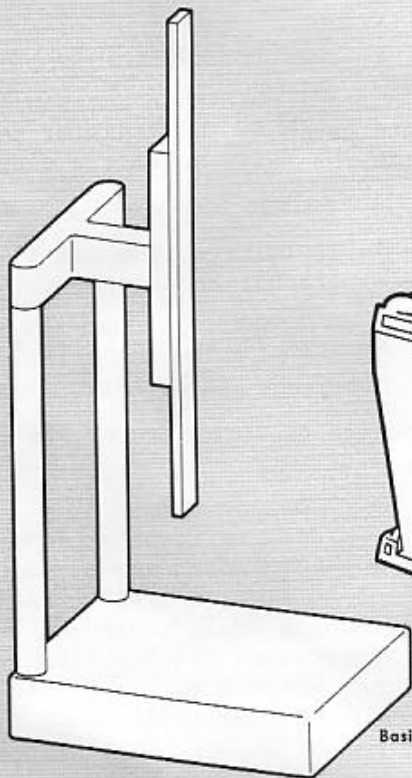


Three-lens oil immersion condenser in centring mount No. 72 r

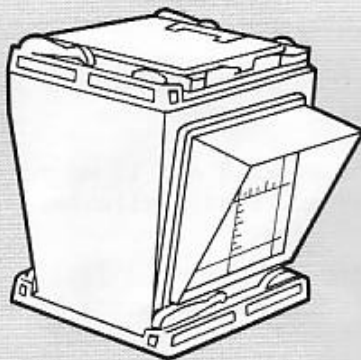


Darkfield condensers No. 82 D 1.20 and No. 84 D 0.80

ARISTOPHOT universal photographic out



Basic stand



4 x 5 cm camera



Mirror reflex attachment for the LEICA



Photographic lenses SUMMAR MILAR

ORTHOLUX COMPONENTS



Drawing mirror for bench-top projection

Polarized light



Attachment analyser



Pol-photo-tube FS 45 with inclined binocular eyepiece tubes



ULTROPAK



OPAK with revolving nosepiece and 5 objectives



Phase contrast OPAK with revolving nosepiece and 5 objectives



Objective centring clutch



Objective centring revolving nosepiece



Pol-OPAK with collector



Heating stage 350



Heating stage 1350



Vacuum heating stage 1750



Rotating stage No. 237 with angle calibration and condenser holder



Universal rotating stage UT 5



Phase contrast condenser No. 74



Micro electronic flash Mikroblitz 300



Pol-condenser No. 58f

Photometer



MPE microscope photometer



LEICA bellows for the ARISTOPHOT



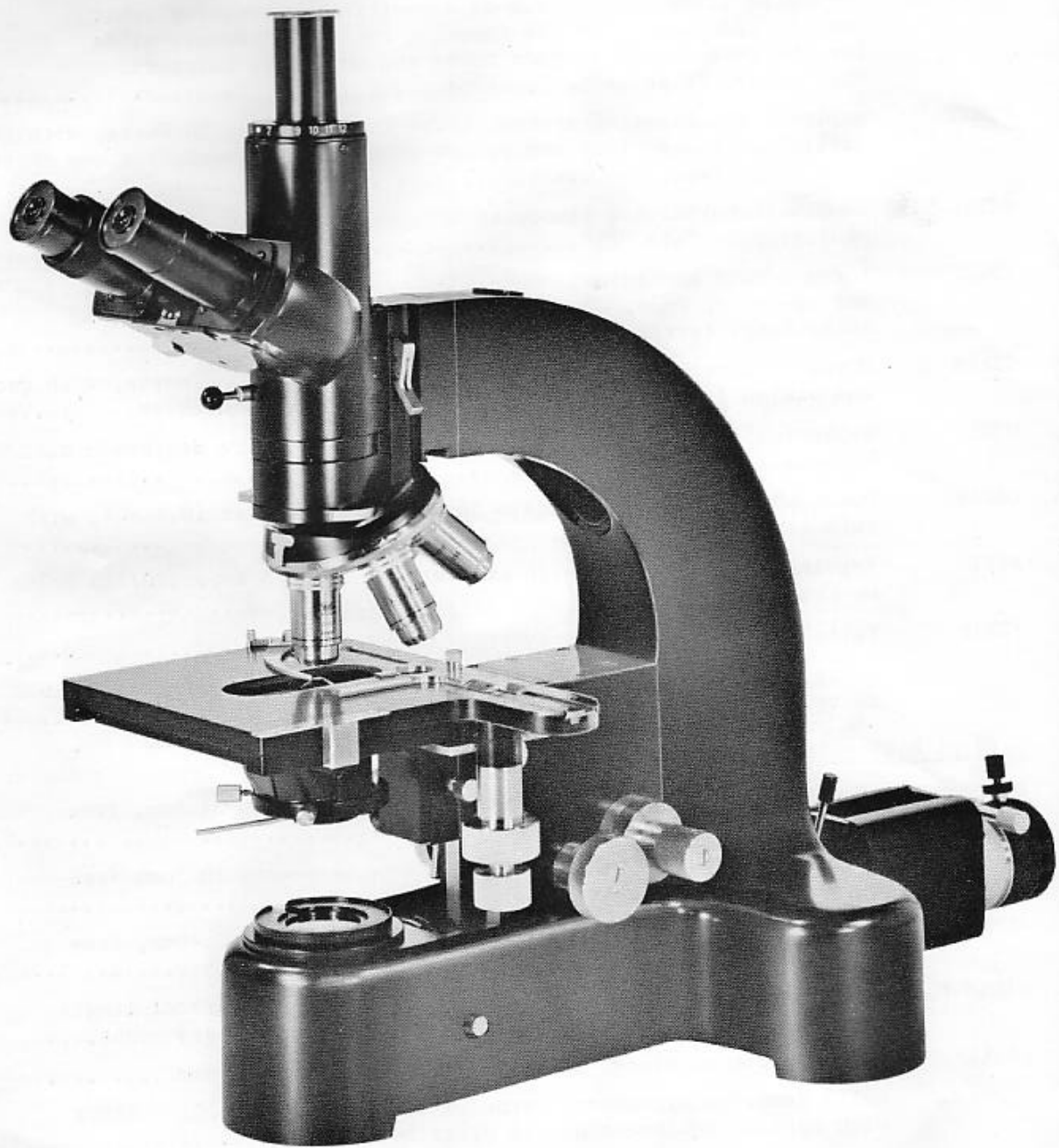


A) Ortholux equipped for: Brightfield Transmitted Light (Achromats)

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container.....	\$ 780.00
EYMZE	Built-in illuminating system, lower lamp 6 Volts, 30 Watts, with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.1.....	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS".....	244.00
IDKIT	Large square mechanical stage #250, with scales and verniers, low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier.....	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser.....	44.00
OHCEV	Aspherical swing-out condenser #601, with aperture diaphragm N.A. 0.90.....	54.00
ORKAT	Quadruple revolving objective nosepiece on carrier 10.4.-.-, with tube lens 1.25x.....	76.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.....	67.00
EEVIB	Polished mahogany accessory case with fittings.....	53.00
	Leitz Microscope Ortholux 10.4.8.1 FS 250/601 - REDYX as described above.....	\$1,609.00

Optical Equipment A2n:

OANEE	Achromatic dry objective, 3.5x/0.10, focal length 31.6mm, free working distance 23 mm.....	\$ 30.00
ACORA	Achromatic dry objective, 10x/0.25, focal length 16.3mm, free working distance 5.7 mm.....	31.00
ACMAT	Achromatic dry objective, 40x/0.65, focal length 4.46mm, free working distance 0.67mm with spring loaded mount.....	47.00
OILIM-FE	Achromatic oil immersion objective, oil 100x/1.30, focal length 1.8mm, free working distance 0.14mm with spring loaded mount.....	83.00
PELEK	Periplanatic eyepiece, paired 10x0, field of view 18mm.....	48.00
	Leitz Research Microscope Ortholux 10.4.8.1 FS 250/601 - REDYX with optical equipment A2n as described above.....	\$1,848.00



A1) Ortholux equipped for: Brightfield Transmitted Light (Achromats and Fluorites)

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001mm) made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container.....	\$ 780.00
EYMZE	Built-in illuminating system, lower lamp 6 Volts, 30 Watts, with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.l.....	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS".....	244.00
IDKIT	Large square mechanical stage #250, with scales and verniers, with low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier.....	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser.....	44.00
OHCOX	Achromatic swing out condenser #602 with aperture diaphragm N.A. 0.90.....	105.00
OPAZT	Quintuple revolving objective nosepiece on carrier 10.5.-.-, with tube lens 1.25x.....	92.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.....	67.00
EEVIB	Polished mahogany accessory case with fittings.....	53.00
	Leitz Microscope Ortholux 10.5.8.1 FS 250/602 - REDYX as described above.....	\$1,676.00

Optical Equipment:

OANEE	Achromatic dry objective, 3.5x/0.10, focal length 31.6mm, free working distance 23mm.....	\$ 30.00
ACORA	Achromatic dry objective, 10x/0.25, focal length 16.3mm, free working distance 5.7mm.....	31.00
FLUCA-FE	Fluorite dry objective, F1 40x/0.85, focal length 4.3mm, free working distance 0.38mm, with spring loaded mount.....	115.00
FLUIM-FE	Fluorite oil immersion objective, F1 Oil 54x/0.95, focal length 3.4mm, free working distance 0.22mm, with spring loaded mount.....	127.00
FLUES-FE	Fluorite oil immersion objective, F1 Oil 95x/1.32, focal length 1.9mm, free working distance 0.14mm, with spring loaded mount.....	161.00
PELEK	Periplanatic eyepieces, paired 10x0, field of view 18mm.....	48.00
	Leitz Research Microscope Ortholux 10.5.8.1 FS 250/602 - REDYX with optical equipment as described above.....	\$2,188.00

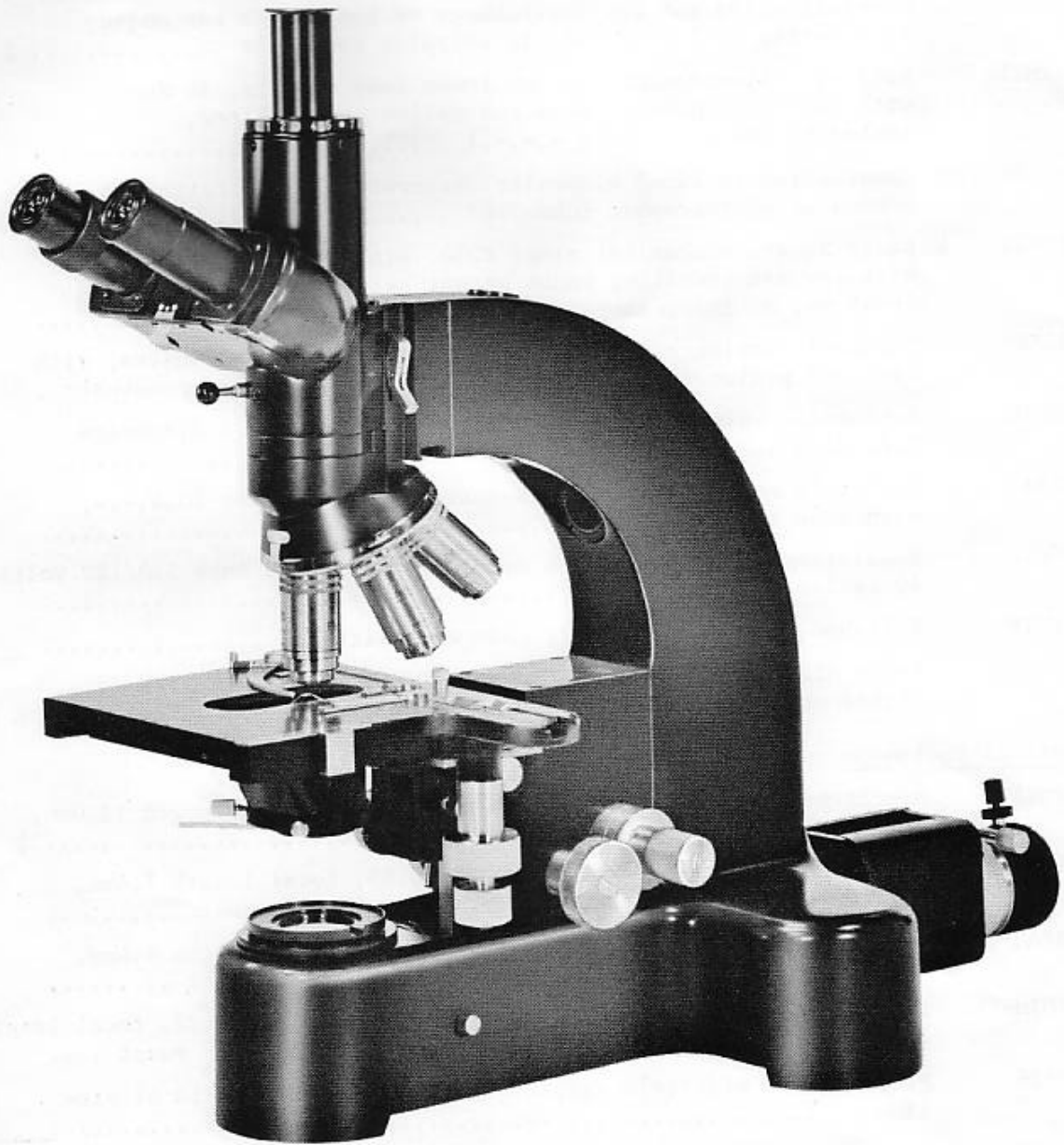


A2) Ortholux equipped for: Brightfield Transmitted Light (Apochromats)

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
EYMZE	Built-in illuminating system, lower lamp 6 Volts, 30 Watts, with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.1	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
IDKIT	Large square mechanical stage #250, with scales and verniers, with low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser .	44.00
OHCOX	Achromatic swing-out condenser # 602 with aperture diaphragm N.A. 0.90	105.00
ORKAT	Quadruple revolving objective nosepiece on carrier 10.4.-.-, with tube lens 1.25x	76.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
EEVIB	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux 10.4.8.1 FS 250/602 + REDYX as described above	\$ 1,660.00

Optical Equipment

APOSA	Apochromatic dry objective, APO 12.5x/0.30, focal length 13.0mm, free working distance 2.5mm	\$ 89.00
APOCT-FE	Apochromatic dry objective, APO 25x/0.65, focal length 7.4mm, free working distance 0.8mm with spring loaded mount	154.00
OBPAM-FE	Apochromatic dry objective, APO 40x/0.95, focal length 4.4mm, free working distance 0.12mm with spring loaded mount	230.00
APOIM-FE	Apochromatic oil immersion objective, APO Oil 90x/1.32, focal length 2mm, free working distance 0.13mm with spring loaded mount	297.00
PESIS	Periplanatic widefield eyepieces, Paired GF 10x, field of view 18mm	62.00
	Leitz Research Microscope Ortholux 10.4.8.1 FS 250/602 + REDYX with optical equipment, as described above	\$ 2,492.00
	As an accessory upon request:	
PESOT	Periplanatic widefield eyepieces, Paired GF 16x, field of view 15.0mm	\$ 82.00



A3) Ortholux equipped for: Brightfield Transmitted Light with Plano Objectives
for Maximum Flatness of Field

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers. Dust cover, in shipping container	\$ 780.00
EYMZE	Built-in Illuminating system, lower lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.1	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
IDKUW	Large square mechanical stage #255 with scales and vernier, with low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers with rack and pinion for the adjustment in the height of condenser	44.00
OHCOX	Achromatic swing-out condenser #602 with aperture diaphragm N.A. 0.90	105.00
OPAZT	Quintuple revolving objective nosepiece on carrier 10.5.-.- with tube lens 1.25x	92.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts 60 cycles A.C.	67.00
EEVIB	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux 10.5.8.1 FS 255/602 + REDYX as described above	\$ 1,676.00

Optical Equipment A9

PLAVS	Achromatic Plano objective, PL 4x/0.10, focal length 41.5mm, free working distance 15mm	\$ 94.00
PLABY	Achromatic Plano objective, PL 10x/0.25, focal length 17.9mm, free working distance 7.5mm	118.00
PLAWT	Achromatic Plano objective, PL 25x/0.50, focal length 7.6mm, free working distance 0.9 mm with spring loaded mount	160.00
PLASP	Fluorite Plano objective, PL 40x/0.65, focal length 4.63mm, free working distance 0.58mm with spring loaded mount	182.00
PLARN	Apochromatic Plano oil immersion objective, PL 100x/1.32, focal length 2.43mm, free working distance 0.27mm with spring loaded mount	373.00
PESIS	Periplanatic widefield eyepieces, paired, GF 10x, field of view 18mm	62.00
	Leitz Research Microscope Ortholux 10.5.8.1 FS 255/602 + REDYX with optical equipment A9 as described above	\$ 2,665.00

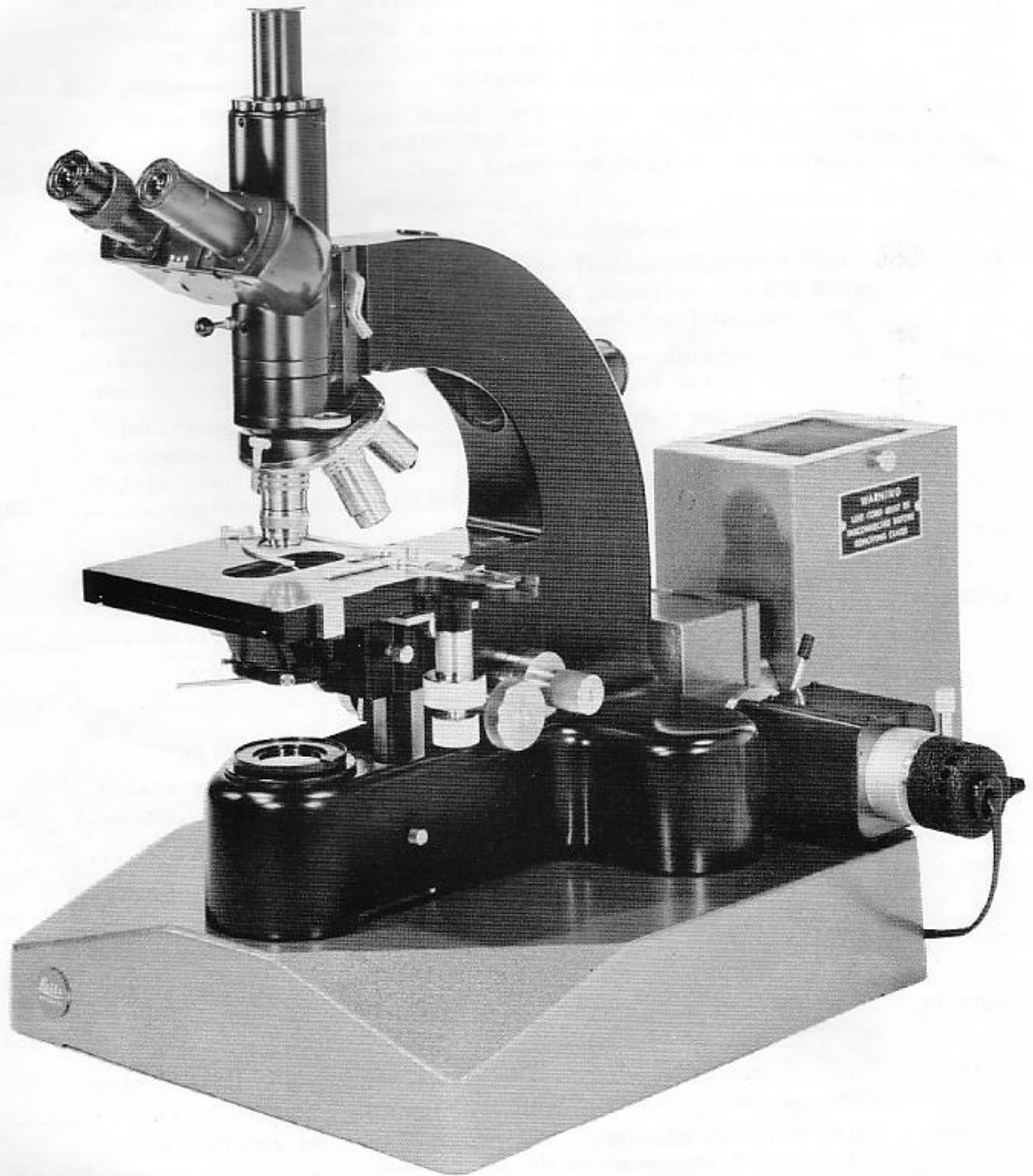


A4) Ortholux equipped for: Transmitted Light - Phase Contrast

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers. Dust cover, in shipping container	\$ 780.00
EYMZE	Built-in Illuminating system, lower lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.1	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
IDKIT	Large Square mechanical stage #250, with scales and verniers, with low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers with rack and pinion for the adjustment in the height of condenser	44.00
PFAHT	Phase Contrast condenser #74 with control knob for vertical adjustment of mirror component (N.A. 0.25 to 0.70), screw-on immersion cap (N.A. 0.50 to 1.40), focusing magnifier, filter holder with daylight and photographic filter and case	201.00
ORKAT	Quadruple revolving objective nosepiece on carrier 10.4.-.- with tube lens 1.25x	76.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 Cycles A.C.	67.00
	Leitz Microscope Ortholux 10.4.8.1 FS 250/74 + REDYX as described above	\$ 1,703.00

Optical Equipment

PHALZ	Achromatic Phase objective Pv 10x/0.25, free working distance 5.8mm	\$ 59.00
PHAWK	Immersion attachment for Pv 10x objective	12.00
PHANC	Achromatic Phase objective, Pv 25x/0.50, free working distance 0.9mm with spring loaded mount	98.00
PHASG-FE	Apochromatic Phase objective, Pv 40x/0.70, free working distance 0.38 mm with spring loaded mount	228.00
PHATH-FE	Apochromatic Phase oil immersion objective, Pv 90x/1.15, free working distance 0.12mm with spring loaded mount	288.00
PESIS	Periplanatic widefield eyepieces, paired, GF 10x field of view 18mm	62.00
	Leitz Research Microscope Ortholux 10.4.8.1 FS 250/74 + REDYX with optical equipment as described above	\$ 2,450.00
	As an accessory upon request:	
PESOT	Periplanatic widefield eyepieces, paired, GF 16x field of view 15.0mm	\$ 82.00



A5) Ortholux equipped for: Transmitted Light Fluorescence

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers. Dust cover, in shipping container	\$ 780.00
EYMZE	Built-in Illuminating system, lower lamp 6 Volts, 30 Watts with daylight ground glass and yellow green filter, including one spare bulb -.-.1	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
IDKIT	Large square mechanical stage #250, with scales and verniers, with low set operating knobs on one axis traversing area 76x40mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers with rack and pinion for the adjustment in the height of condenser ...	44.00
OHCEV	Aspherical swing-out condenser #601, with aperture diaphragm N.A.0.90	54.00
ORCIX-SINE	Immersion darkfield condenser D 1.20, in centering mount # 82 ...	76.00
OMARC	Quintuple revolving objective nosepiece on carrier 14.5.-, with tube lens 1.25x and blank horizontal slider	122.00
REDYX	Regulating transformer with ammeter 6 Volts, 5 Amps 110/120 Volts 60 cycles A.C.	67.00
EEVIB	Polished Mahogany accessory case, with fittings	53.00
	Leitz Microscope Ortholux 14.5.8.1 FS 250/601 + 82 + REDYX	\$ 1,731.00

Optical Equipment

ACORA	Achromatic dry objective, 10x/0.25, focal length 16.3mm, free working distance 5.7mm	\$ 31.00
APOCT-FE	Apochromatic dry objective APO 25x/0.65, focal length 7.3mm, free working distance 0.85mm with spring loaded mount	154.00
FLUCA-FE	Fluorite dry objective, FL 40/0.85, focal length 4.3mm, free working distance 0.38 with spring loaded mount	115.00
FLUIM-FE	Fluorite oil immersion objective, FL Oil 54x/0.95, focal length 3.4mm, free working distance 0.22mm with spring loaded mount	127.00
OBSUV	Fluorite oil immersion objective, FL Oil 95x/1.32-1.10 with built-in iris diaphragm, focal length 1.96mm, free working distance 0.15 mm with spring loaded mount	235.00
GIVYR	Huyghens eyepieces, paired 10x, field of view 14mm	19.00

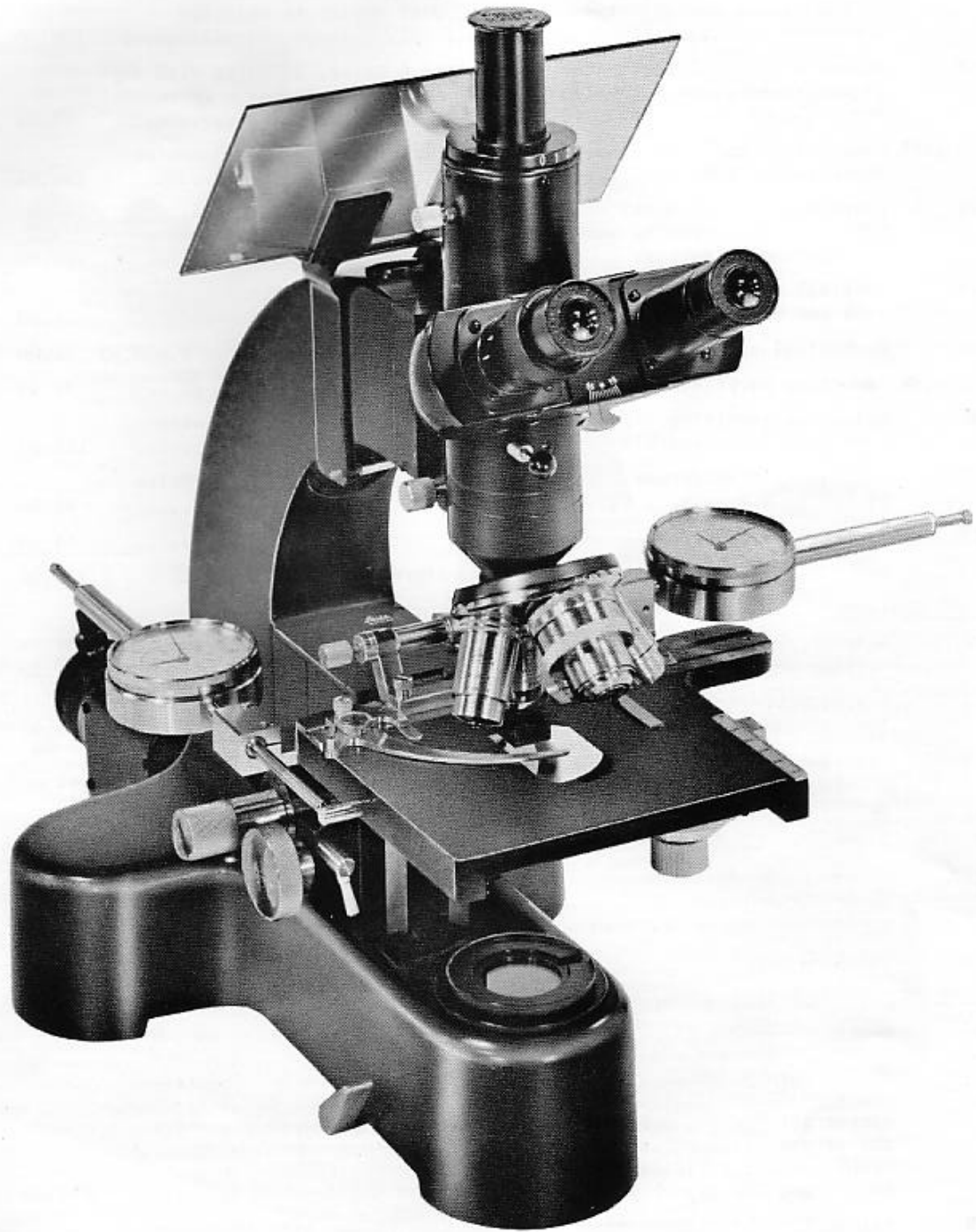
Fluorescence Light Source

81853	Universal Lamp Housing, Model #250, with socket to accept HBO 200 burner, reflector and two lens collector, filter changing device with one each 2mm KG 1 filter, 2mm UG 1 filter, 3mm BG 12 filter and 4 mm BG 38 filter. Mirror Housing #30 with swing out deflecting mirror for the reception of the low voltage lamp. Base plate for the proper alignment of the microscope. Ignitor, choke and special transformer for 110/120 Volts A.C., with high pressure mercury burner HBO 200 type L II, protective smoked goggles	751.00
LOSIH	Slider for objective carrier with one each UV and blue absorbing filter	18.00
	Leitz Research Microscope Ortholux 14.5.8.1 FS 250/601 + 82 + REDYX with optical and Fluorescence equipment as described above \$	3,181.00

As an accessory upon request:

If fluorescence equipment is also used for multi-color observation, we recommend either of the following two pairs of eyepieces:

PELEK	Periplanatic eyepieces 10x ⁰ , paired, field of view 18mm.....	48.00
PESIS	Periplanatic widefield eyepieces, paired, GF 10x field of view 18mm	62.00



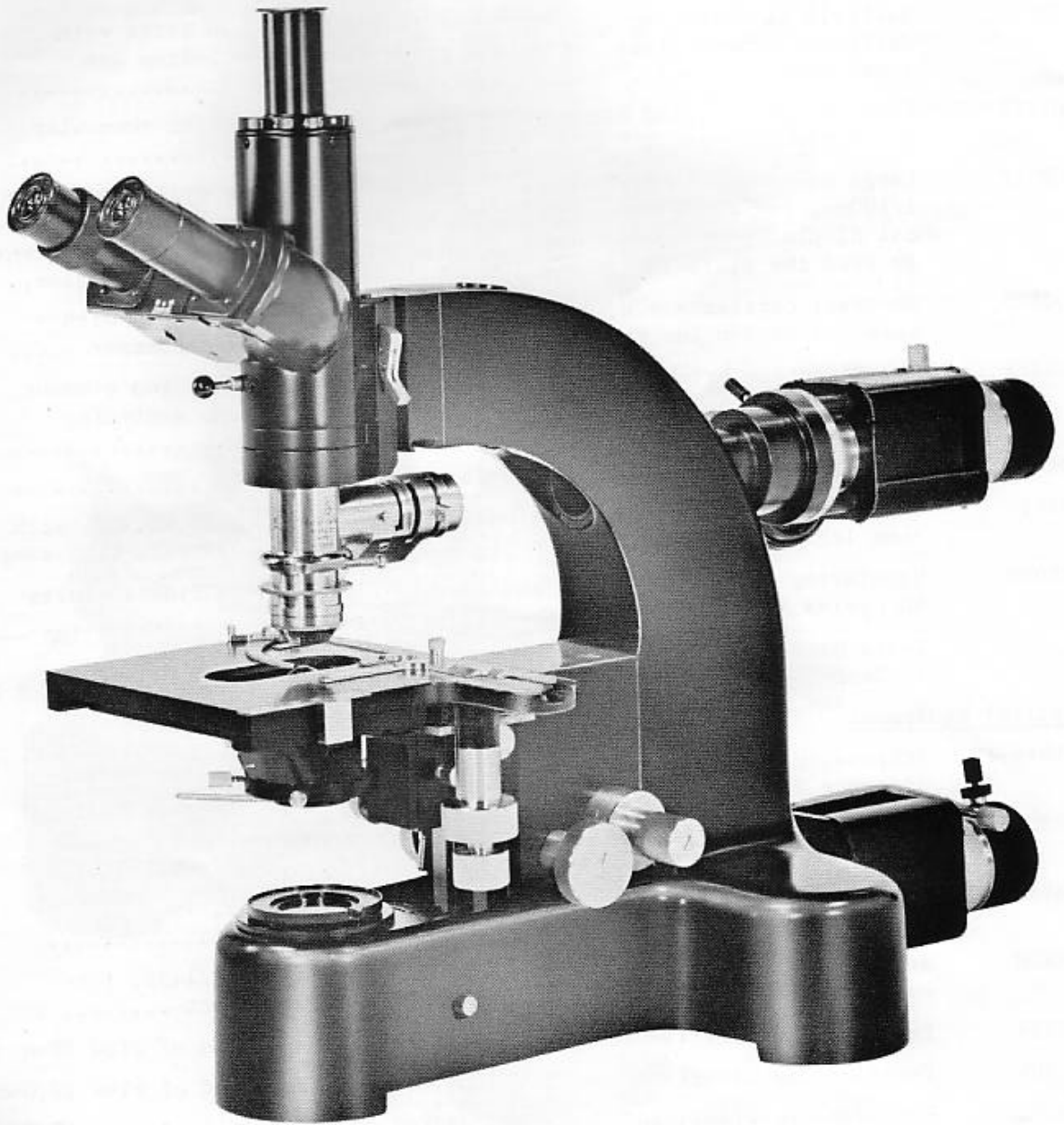
A6) Ortholux equipped for: Nuclear Track Work in Transmitted Light -
Microscopic Examinations of Photographic Layers

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
EYMZE	Built-in illuminating system, lower lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb, -.-.-.1	75.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
OPALF	Large square mechanical stage #251, with micrometer dials, accuracy 1/100mm, for the measurement of the horizontal as well as the vertical displacement of the stage, with observation mirror to conveniently read the dials in observation position, on interchange carrier..	567.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser	44.00
ORBER	Two diaphragm brightfield condenser #76 with swing-out top element, N.A. 0.95, with field of view and aperture diaphragm, centering mount, on interchange carrier	150.00
ORZEL	Condenser cap, N.A. 0.65, for # 76 condenser	23.00
81414	Quadruple revolving objective nosepiece, on carrier 10.4N.-.-, with tube lens 1.25x, objective openings reversed, for use with #251 stage	76.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts 60 cycles A.C.	67.00
	Leitz Microscope Ortholux 10.4N.8.1 FS 251/76 + ORZEL + REDYX as described above	\$ 2,026.00

Optical Equipment

OBRAN-FE	Achromatic oil immersion objective, KS Oil 22x/0.65, free working distance 2.3 to .07 mm with spring loaded mount	\$ 124.00
OBRUT-FE	Achromatic dry objective, KS 45x/0.65, free working distance .68 to .061mm with spring loaded mount	85.00
OBSAP-FE	Fluorite oil immersion objective, KS FL Oil 53x/0.95, free working distance 1.07 to .07mm with spring loaded mount	160.00
OBKUM	Apochromatic oil immersion objective, KS APO Oil 100x/1.32, free working distance .38 to .01 mm with spring loaded mount	470.00
PESIS	Periplanatic widefield eyepieces, paired GF 10x, field of view 18mm	62.00
PESUV	Periplanatic widefield eyepieces, paired GF 20x, field of view 12.0mm	86.00
PETAR	Periplanatic widefield eyepieces, paired GF 25x, field of view 10.0mm	90.00
OCMIR-OCASY	Huyghens micrometer eyepiece, 6xM 10mm = 100 with adjustable eye-lens, field of view 17.5mm	36.00
OBTER	Stage micrometer on glass, 1 mm = 100 parts optically divided in case	27.00
	Leitz Research Microscope Ortholux 10.4N.8.1 FS 251/76 + ORZEL + REDYX with optical equipment as described above	\$ 3,166.00

Note: When using the condenser # 76 the field diaphragm in the stand must remain wide open.



B) Ortholux equipped for: Ultropak Illumination (Darkfield Reflected Light, as well as Transmitted Light simultaneously).

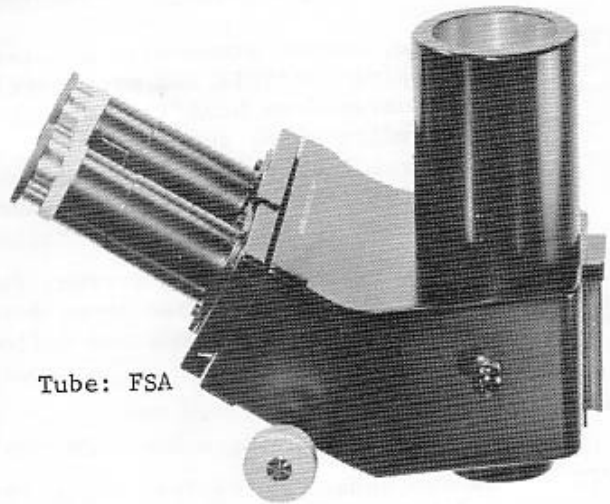
81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OKLUP	Built-in illuminating system, for both transmitted and incident light, lower and upper lamp, 6 Volts, 30 Watts, with two each daylight, ground glass and yellow green filters, including two spare bulbs -.-.-.11	174.00
OIYEE-SINE	Combination inclined binocular observation and straight monocular, photographic tube "FS"	244.00
IDKIT	Large square mechanical stage #250, with scales and verniers, with low set operating knobs on one axis, traversing area 76x40 mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers with rack and pinion for the adjustment in the height of condensers ..	44.00
OHCEV	Aspherical swing-out condenser #601 with aperture diaphragm N.A. 0.90	54.00
ORULT-SINE	Ultropak illuminator with built-in, orientated mirror with central stop, lateral tube with adjustable cover and slot to accept daylight, heat absorbing, green and yellow filters, precision bayonet objective changing device, on carrier 13.16.-.-	107.00
RERAS	Dual regulating transformer with two ammeters, 6 Volts, 5 Amps, 110/120 Volts, 60 cycles A.C.	115.00
EEVIB	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux 13.16.8.11 FS 250/601 + RERAS, as described above	\$ 1,787.00

Optical Equipment

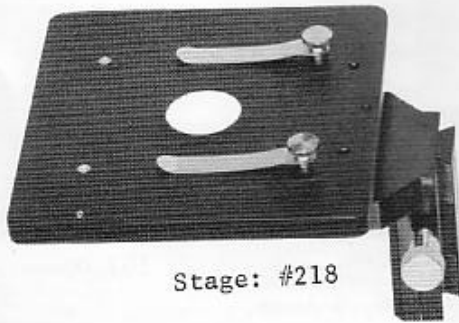
AHPEE	Achromatic dry objective, UO 3.8x/0.12 with ring condenser, free working distance 33mm	\$ 52.00
AIREE	Achromatic dry objective, UO 6.5x/0.18 with ring condenser, free working distance 16.2mm	71.00
AKEER	Achromatic dry objective, UO 11x/0.25 with ring condenser, free working distance 5.8 mm	86.00
ALVEE	Achromatic dry objective, UO 22x/0.45 with ring condenser, free working distance 2.2mm	99.00
PAKAW	Achromatic dry objective, UO 32x/0.55 with ring condenser, free working distance 1.0mm	106.00
AMEEP	Achromatic dry objective, UO 50x/0.65 with ring condenser, free working distance 0.7mm	115.00
GIZRA	Huyghens eyepieces, paired 6x, field of view 16.7mm	19.00
PESIS	Periplanatic widefield eyepieces, paired GF 10x, field of view 18mm	62.00
	Leitz Research Microscope Ortholux 13.16.8.11 FS 250/601 + RERAS with optical equipment as described above	\$ 2,397.00



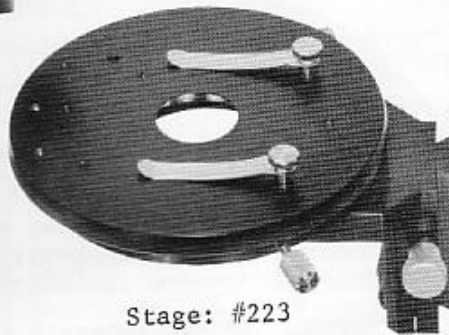
Tube: FP



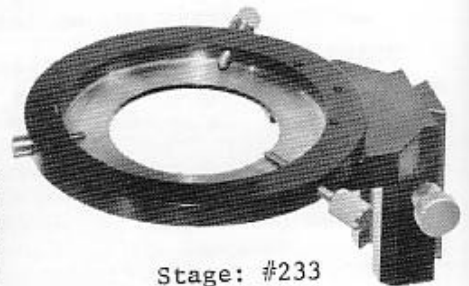
Tube: FSA



Stage: #218



Stage: #223



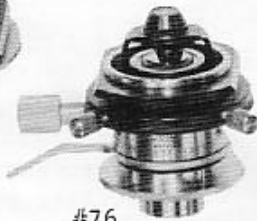
Stage: #233



#85



#90



#76



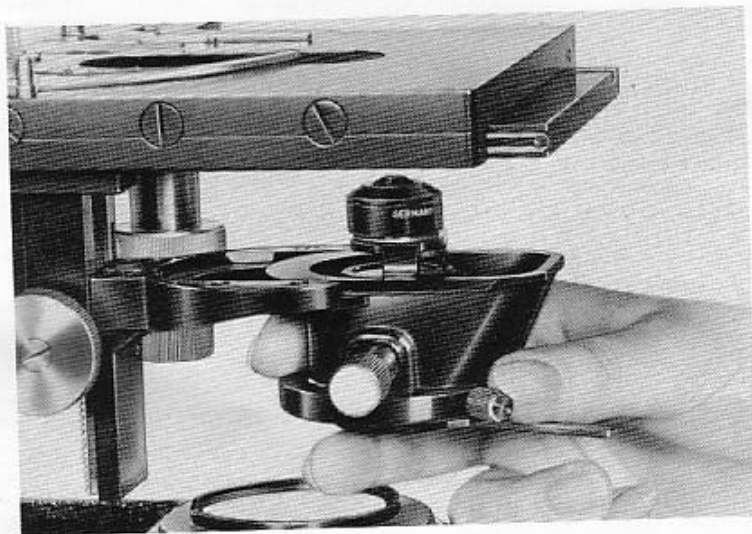
#601



#602



#603



Accessories (interchangeable), available upon request:

Microscope Tubes

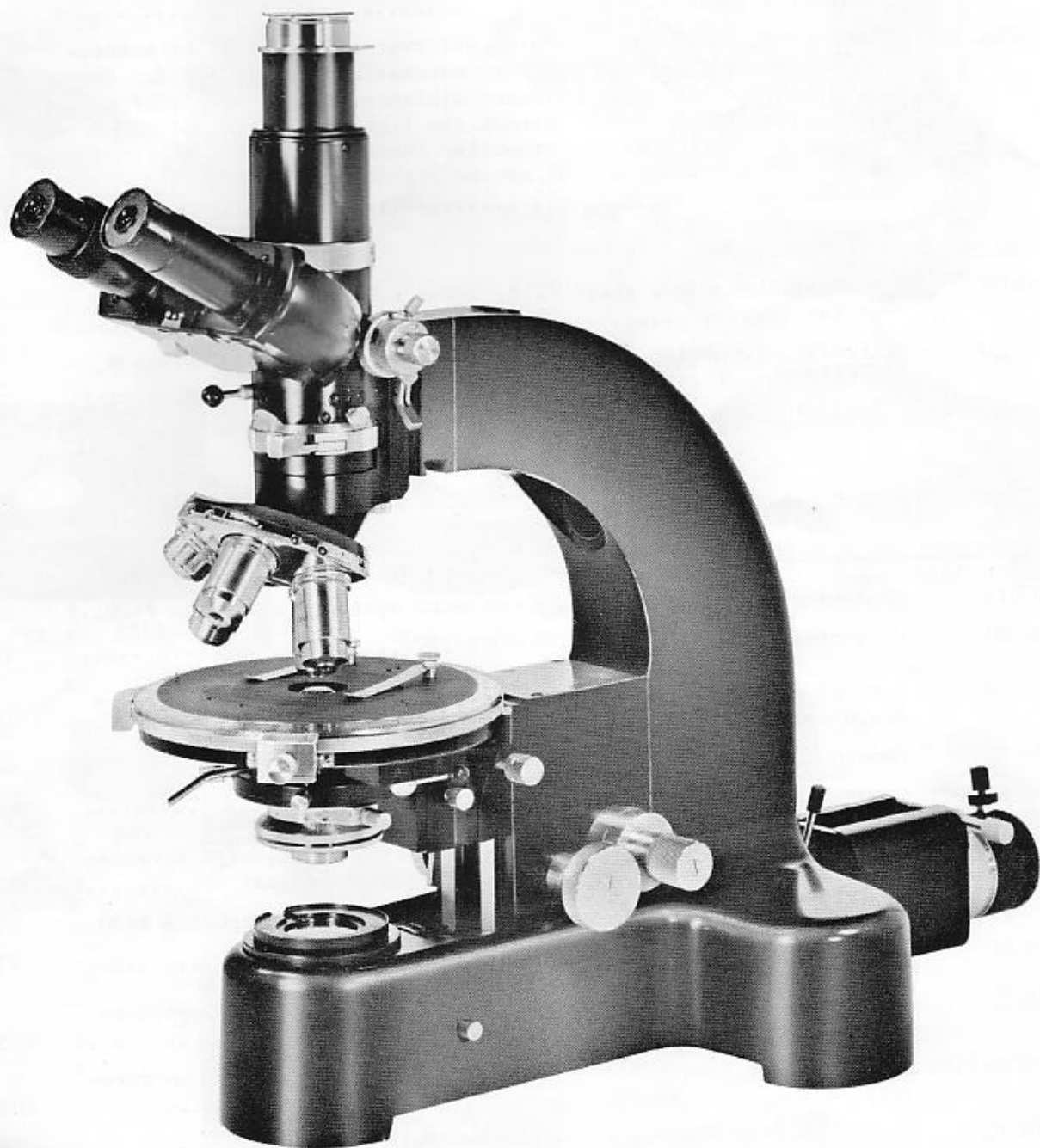
OYEED-SINE	Combination, inclined <u>monocular</u> observation and straight monocular photographic tube "FP"	\$ 92.00
ORFAX	Combination, inclined binocular observation and straight monocular photographic tube "FSA" with automatic compensation for the adjustment of the interpupillary distance. Prisms on slider can be switched in and out to direct the light at a ratio of 80% to the camera and 20% to the binocular observation tube. A second prism position directs 100% of the light into the binocular tube, for observation	550.00

Stages

IDINC	Plain square object stage #218, 140mm x 140mm, on interchange carrier	\$ 49.00
IDIRF	Circular, revolving and centering, object stage #223, 130mm \emptyset , on interchange carrier	78.00
IDJAP	Centering stage assembly only #233 for heating stages	52.00

Condensers for Transmitted Light

OHBIV	Condenser base in centering mount with aperture diaphragm #600..	\$ 44.00
OHBCW	Condenser top element As 0.90 #001	10.00
OHCEV	Aspherical swing-out condenser in centering mount with aperture diaphragm N.A. 0.90 # 601	\$ 54.00
OHBIV	Condenser base in centering mount with aperture diaphragm #600..	44.00
OHBOX	Condenser top element ACHR 0.90 #002	61.00
OHCOK	Achromatic swing-out condenser in centering mount, with aperture diaphragm N.A. 0.90 #602 (included in basic outfits)	\$ 105.00
OHBIV	Condenser base in centering mount, with aperture diaphragm #600.	44.00
OHCAT	Condenser top element APL - Oil 1.25 #003	91.00
OHCUY	Aplanatic swing-out condenser in centering mount, with aperture diaphragm N.A. Oil 1.25 #603	\$ 135.00
OREBK-SINE	Dry darkfield condenser #85, D 0.80, in centering mount on dovetail carrier	108.00
OPWUP	Spectacle lens condenser #90, on dovetail carrier	24.00
ORBER	Two-diaphragm Berek condenser #76 on dovetail slider N.A. 0.90	\$ 150.00



C) Ortholux equipped for: Transmitted Polarized Light

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
EYMZE	Built-in Illuminating system, lower lamp 6 Volts, 30 Watts, with daylight, ground glass and yellow filter, including one spare bulb -.-.-.1	75.00
IIXAD	Combination inclined binocular observation and straight monocular tube "FS 45" with built-in rotating analyser, graduated and indexed to 1/10 degree, centerable and focusable Bertrand lens and pinhole diaphragm	623.00
PEMUP	Rotating object stage #237, 150mm diameter with scales and verniers and locking device on interchange carrier	276.00
OZARB	Dovetail carrier -.-.-.8, for the interchange of condensers with rack and pinion for the adjustment in the height of condenser	44.00
PAXAJ	Five lens condenser #58f on dovetail carrier with swing-out upper element, aperture and field diaphragms, filter polarizer in rotating mount graduated at 5° intervals	343.00
PEXUZ	Quintuple revolving objective nosepiece on carrier, with individual centering device and slot to accept compensators, 13.35.-	170.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
EEVIB-POL	Polished mahogany accessory case with fittings to match	53.00
	Leitz Microscope Ortholux-Pol 13.35.8.1 FS45 237/58f + REDYX as described above	\$ 2,431.00

Optical Equipment B 2b

PEBAY	Achromatic dry objective, free from polarization, P 3.5x/0.10, free working distance 23mm	48.00
PETRI	Achromatic dry objective, free from polarization, P 10x/0.25, free working distance 5.7mm	56.00
PECAZ	Achromatic dry objective, free from polarization, P 50x/0.85, free working distance 0.40mm with spring loaded mount	108.00
PELIM-FE	Achromatic oil immersion objective, free from polarization, P Oil 100x/1.30 free working distance 0.13mm with spring loaded mount	131.00
IBLTI- IBXTI	Huyghens eyepiece, 30 mm Ø P 6x with adjustable eyelens, fitted with eyepiece micrometer 10mm = 100 parts and crosslines, field of view 21.5mm	45.00
IIAXU	Huyghens eyepiece, 30mm Ø, P 8x with adjustable eyelens and crosslines, field of view 19.4mm	45.00
PAVEH	Periplanatic <u>widefield</u> eyepieces, paired GF 10x, one with adjustable eyelens and crosslines, field of view 18.0mm	86.00
PUKAP	Immersion condenser cap, N.A. 1.40	28.00
OBMET	Stage micrometer on glass, 2mm = 200 parts with photographic scale in case	20.00
	Leitz Research Microscope Ortholux-Pol 13.35.8.1 FS45 237/58f + REDYX with optical equipment B2b, as described above	\$ 2,998.00

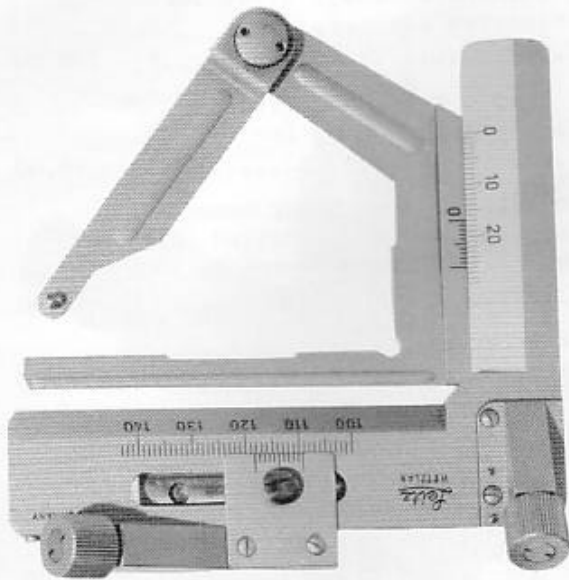


C1) Ortholux equipped for: Polarized Reflected Light

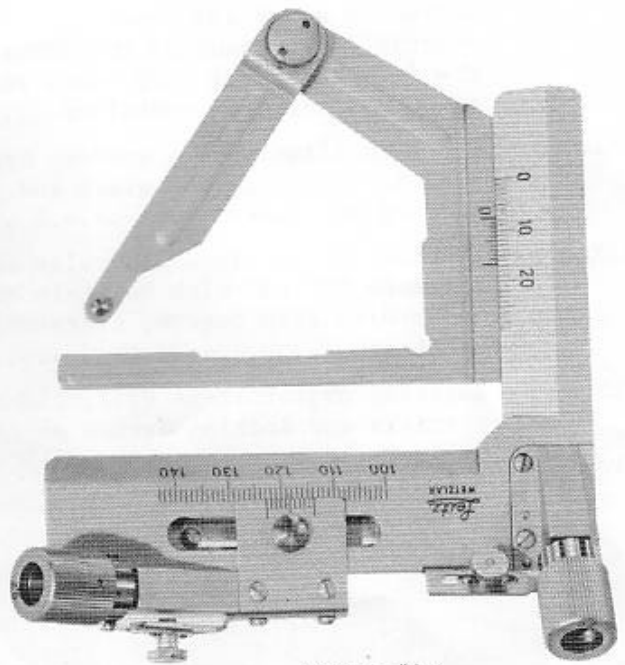
81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OKLON	Built-in Illuminating system, upper lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.5	99.00
IIXAD	Combination inclined binocular observation and straight monocular tube "FS 45" with built-in rotating analyser, graduated and indexed to 1/10 degree, centerable Bertrand lens and pinhole diaphragm	623.00
PEMUP	Rotating object stage #237, 150mm diameter with scales and verniers and locking device on interchange carrier	276.00
OPARK	Vertical illuminator on carrier with slot to accept compensators, compensating prism and plane glass plate on common axis, polarizing prism, objective changing clutch and five objective centering collars. Supplementary front collector on clamping holder with iris diaphragm and half-stop for oblique illumination, and centerable diaphragm on slide 13.55.-	449.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
EEVIB-POL	Polished mahogany accessory case with fittings to match	53.00
	Leitz Microscope Ortholux-Pol 13.55.-.5 FS45 237/- + REDYX, as described above	\$ 2,347.00

Optical Equipment E 2e

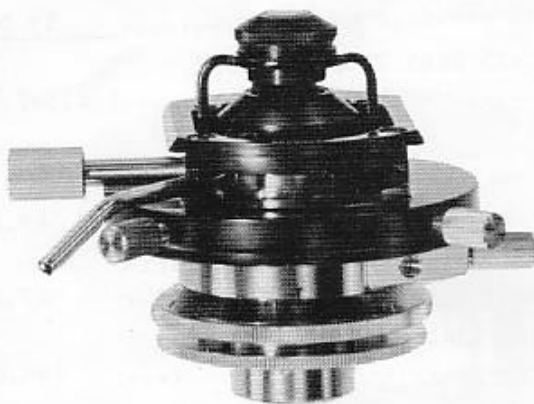
IICVO	Achromatic dry objective, free from polarization P 5.6x/0.15, free working distance 26mm	\$ 49.00
IICYU	Achromatic oil and water immersion objective, free from polarization P Oil - Water 12.5x/0.25, free working distance 0.35mm..	82.00
IICXS	Fluorite dry objective, free from polarization P FL 45x/0.85, free working distance 0.43mm	144.00
IIDAX	Fluorite oil immersion objective, free from polarization P FL Oil 60x/0.95, free working distance 0.38mm	162.00
IIDCB	Fluorite oil immersion objective, free from polarization P FL Oil 105x/1.32, free working distance 0.30mm	218.00
IIAXU	Huyghens eyepiece, 30mm Ø P8x with adjustable eyelens and crosslines, field of view 19.4mm	45.00
PAVEH	Periplanatic widefield eyepieces, paired GF 10x, one with adjustable eyelens and crosslines, field of view 18.0mm	86.00
IIDMU	Stage micrometer on metal, 1 mm = 100 parts	31.00
RPIIT	Hand press, with adjustable stop, for levelling specimens	41.00
IWMBI	Set of six metal object slides	12.00
	Leitz Research Microscope Ortholux-Pol 13.55.-.5 FS45 237/- + REDYX with optical equipment E2e, as described above	\$ 3,217.00



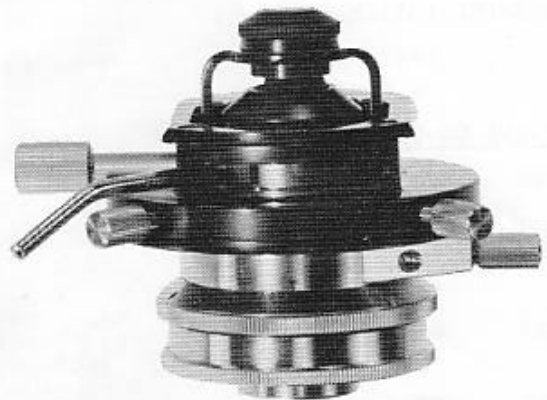
Stage #42



Stage #40



Condenser #58P



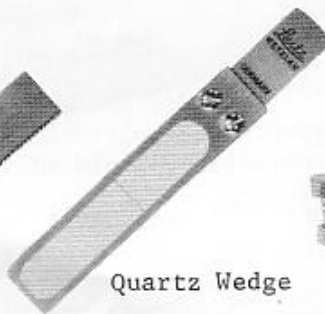
Condenser #58 PZ



KOGIP



KOMER



Quartz Wedge

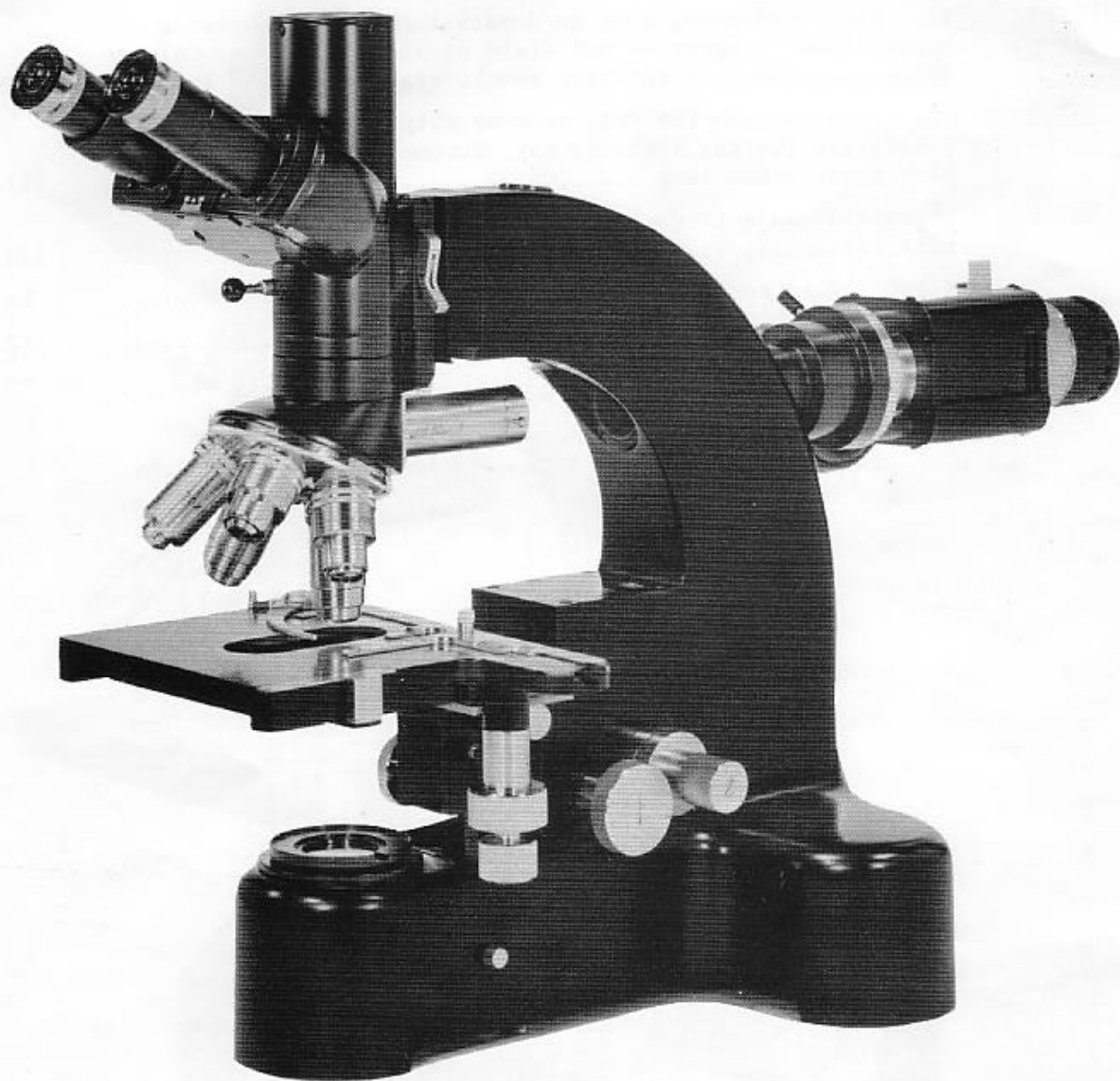


Objective Clutch

Supplementary Equipment and Optional Accessories for: Ortholux-Pol

PIRAZ	Attachable mechanical stage #42, traversing area 40x20mm, graduated vernier reading to 0.1mm	\$ 138.00
PIREB	Special attachable mechanical stage #40 for point counting, including six pairs of interchangeable pinion heads, to advance the slide at intervals of 0.1mm, 0.2mm, 0.3mm, 0.4mm, 0.5mm, 1.0mm and one pair of normal milled heads without stop	201.00
PAXEK	Five lens condenser, #58p on dovetail carrier with swing-out upper element, aperture and field of view diaphragm, calcite <u>prism</u> polarizer, in rotating mount, graduated to 5° intervals	644.00
PAXIL	Five lens condenser #58PZ, same as #58p, however with exit facilities for the ordinary ray. Recommended when using the high power xenon lamp	747.00
PEZAX	Individual objective clutch changer with four centering collars	125.00
KOGIP	First order, red, compensator, on metal slide	14.00
KOMER	Quarter wave compensator, on metal slide	12.00
IIVZD	Quartz wedge, 1st to the 4th order, short type	75.00

For additional accessories, please refer to catalog #55-20 "Leitz Polarizing Microscopes"

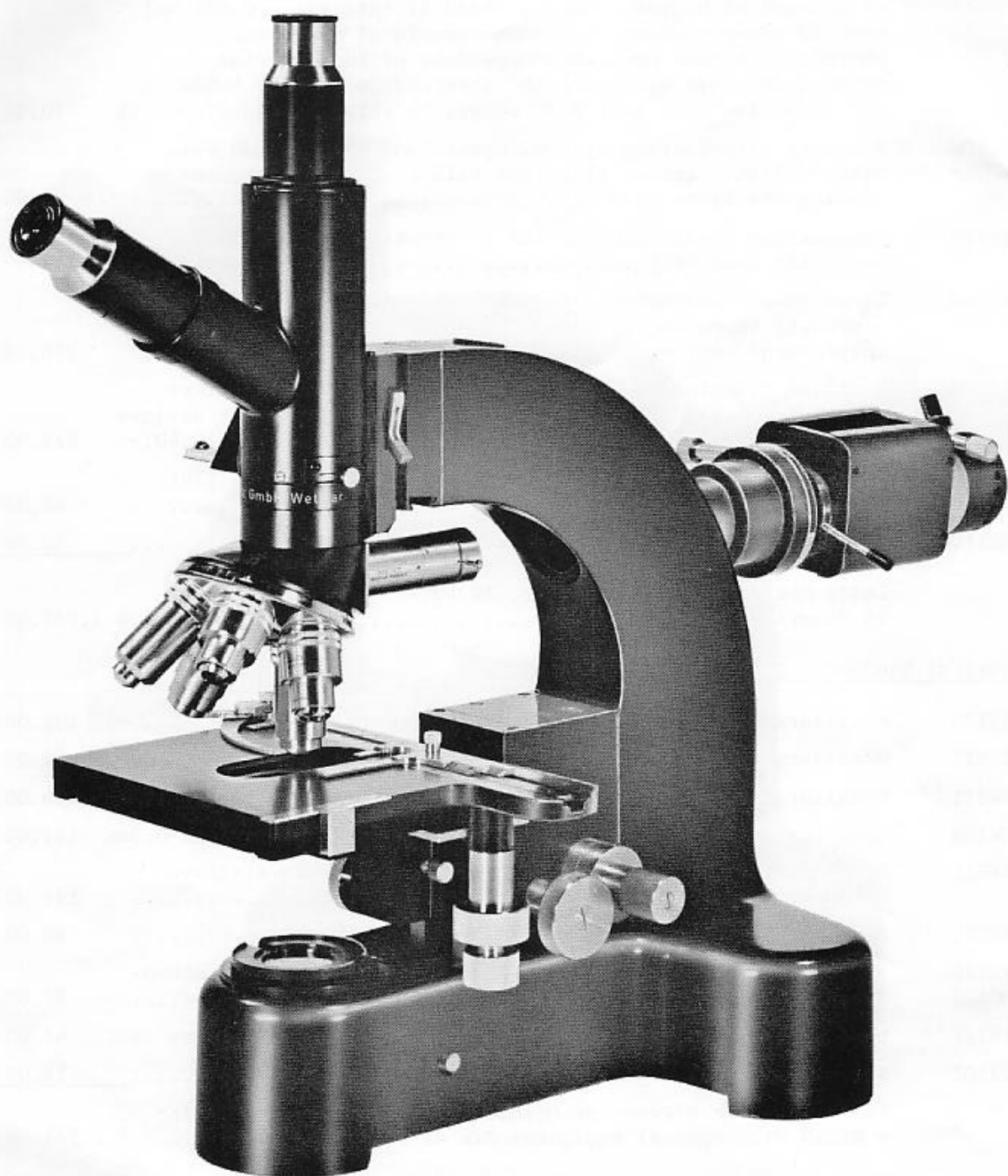


D) Ortholux equipped for: Brightfield Reflected Light (Metallographic Examinations)

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion; dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container...\$	780.00
OKLON	Built-in illuminating system, upper lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.5	99.00
RTIIP	Combination inclined binocular observation and straight monocular tube "FS"	244.00
IDKAR	Large square mechanical stage #252 with low set abbreviated operating knobs on one axis, traversing area 76x40mm, on interchange carrier	216.00
IDPUB	Vertical illuminator, with quintuple, revolving objective nosepiece, variable aperture diaphragm, half-stop for oblique illumination, adjustable field diaphragm, on carrier 20.40.-	278.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
RMIIV	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux-Met. 20.40.-.5 FS 252/- + REDYX as described above	\$ 1,737.00

Optical Equipment F2a

RVIIN	Metallurgical objective, 5x/0.09, free working distance 12.7mm	101.00
RVZII	Metallurgical objective, 10x/0.18, free working distance 13mm	62.00
RWBII	Metallurgical objective, 20x/0.35, free working distance 1.2mm	106.00
RWIIM	Metallurgical objective, 50x/0.85, free working distance 0.3mm	182.00
RXDII	Metallurgical objective, 100x/0.95, free working distance 0.12mm	193.00
RXIIL	Periplanatic eyepiece 10x with focusing eyelens	40.00
RXIIL-OCASY	Periplanatic eyepiece 10x M with focusing eyelens and micrometer 10mm = 100 parts	57.00
RPIIT	Hand press, with adjustable stop, for levelling specimens ..	41.00
IVZDI	Set of six metal object slides	12.00
	Leitz Research Microscope Ortholux-Met. 20.40.-.5 FS 252/- + REDYX with optical equipment F2a as described above	\$ 2,531.00



D1) Ortholux equipped for: Brightfield Reflected Light (Metallographic Examinations)
with Plano Objectives for Maximum Flatness of Field and Large Field of View (30mm Ø)

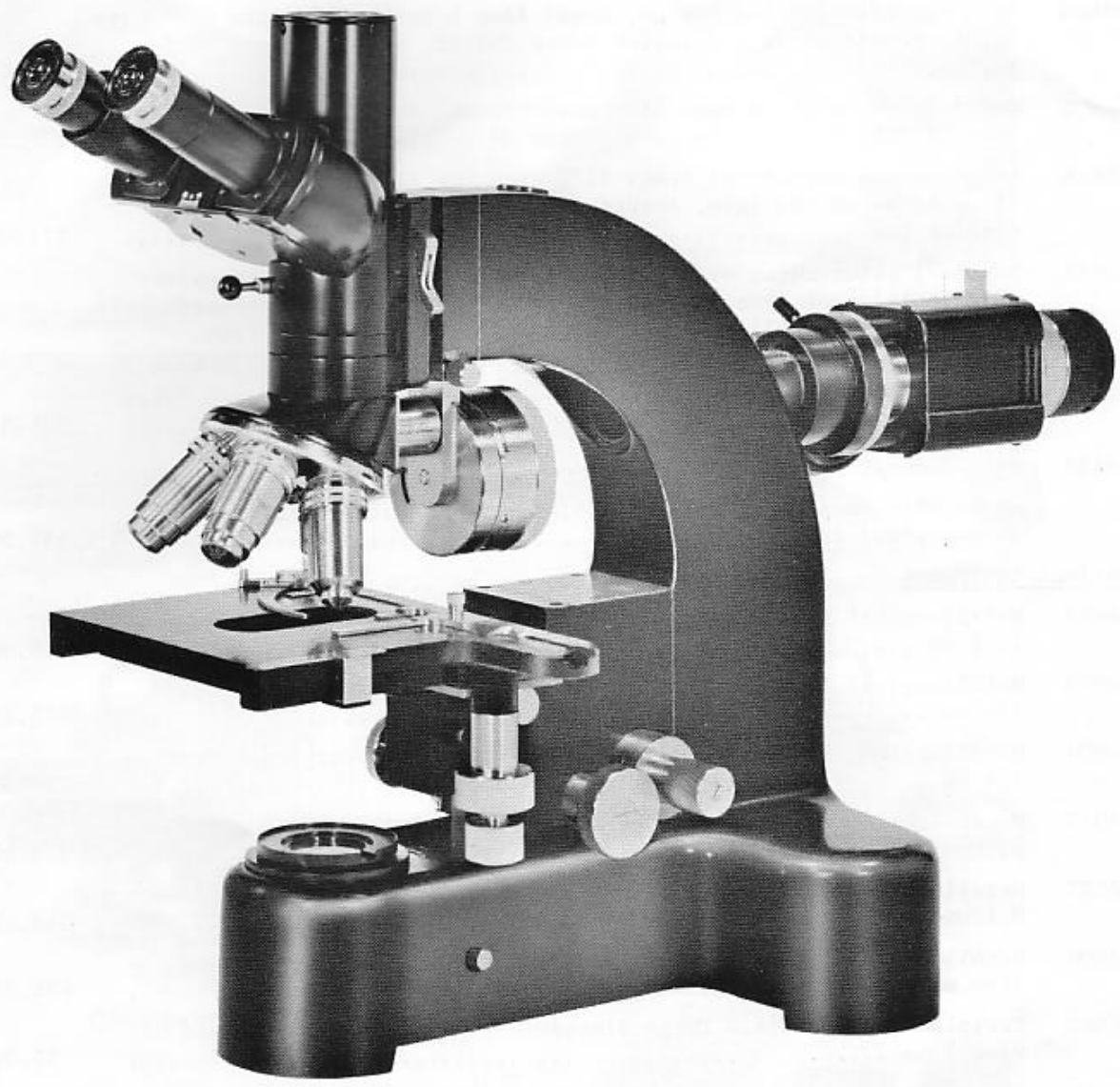
81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion; dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OKLON	Built-in illuminating system, upper lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.5	99.00
MANUX	Combination inclined monocular observation and straight monocular tube "W 30" to accept large diameter GW eyepieces	127.00
IDKAR	Large square mechanical stage #252 with low set abbreviated operating knobs on one axis, traversing area 76x40mm, on interchange carrier	216.00
IDRAX	Vertical illuminator with quintuple revolving objective nosepiece and special tube lens for plano objectives, aperture diaphragm, half stop for oblique illumination and adjustable field diaphragm, on carrier 20.46.-	290.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts 60 cycles A.C.	67.00
RMIIV	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux-Met. 20.46.-.5 W30 252/- + REDYX as described above	\$ 1,632.00

Optical Equipment

MAMIT	Metallurgical Plano objective, PL 3.2x/0.06, free working distance 12.1 mm	\$ 115.00
MAMOV	Metallurgical Plano objective, PL 8x/0.16, free working distance 13.9mm	173.00
MAMUW	Metallurgical Plano objective, PL 16x/0.25, free working distance 7.4 mm	201.00
MANAS	Metallurgical Plano objective, PL 32x/0.50, free working distance 2.3mm	316.00
MANET	Metallurgical Plano objective, PL 80x/0.95, free working distance 0.13mm	348.00
MANOW	Metallurgical oil immersion plano objective, PL Oil 160x/1.40, free working distance 0.3mm	476.00
PENAL	Periplanatic widefield large diameter eyepiece, GW 6.3x, field of view 30mm	55.00
PENEM- OCLAN	Periplanatic widefield large diameter eyepiece, GW 8x M, with micrometer 10mm = 100 parts, field of view 30mm	75.00
PENOP	Periplanatic widefield large diameter eyepiece, GW 10x, field of view 30mm	59.00
RPIIT	Hand press with adjustable stop for levelling specimens	41.00
IVZDI	Set of six metal object slides	12.00
	Leitz Research Microscope Ortholux-Met. 20.46.-.5 W30 252/- + REDYX with optical equipment as described above	\$ 3,503.00

Please note: In place of Plano Objective PL 160x Oil MANOW we can supply:

MANIV	Metallurgical Plano objective, PL 160x/0.95, free working distance 0.13 mm	\$ 413.00
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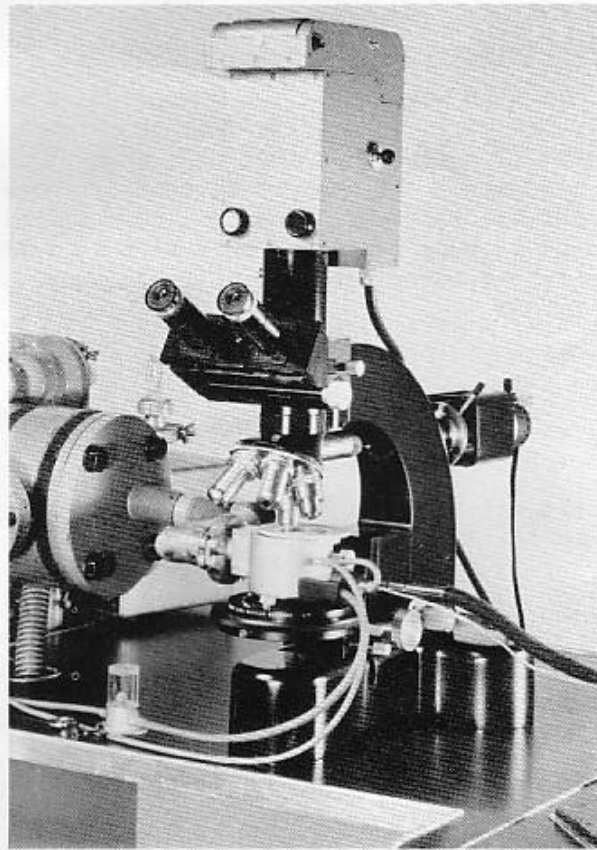


D2) Ortholux equipped for; Reflected Light - Phase Contrast (Metallographic/Industrial)

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion; dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OKLON	Built-in illuminating system, upper lamp 6 Volts, 30 Watts with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.5	99.00
RTIIP	Combination inclined binocular observation and straight monocular photographic tube "FS"	244.00
IDKAR	Large square mechanical stage #252 with low set abbreviated operating knobs on one axis, traversing area 76x40mm, on interchange carrier	216.00
IDPAW	Vertical illuminator with quintuple revolving objective nose-piece, detachable rotating drum with phase diaphragms, bright-field condenser with aperture iris and quick-change lever for switching to brightfield without rotating the drum; highly reflective plane glass, on carrier 20.42.-	633.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
RMIIV	Polished mahogany accessory case with fittings	53.00
	Leitz Microscope Ortholux-Met. 20.42.-.5 252/- + REDYX as described above	\$ 2,092.00

Optical Equipment G2

MVIIC	Metallurgical phase objective, Pv 5x/0.09, free working distance 12.7mm	184.00
MWGII	Metallurgical phase objective, Pv 10x/0.18, free working distance 13mm	112.00
MWIIB	Metallurgical phase objective, Pv 20x/0.35, free working distance 1.2mm	174.00
MYIIZ	Metallurgical phase objective, Pv 50x/0.85, free working distance 0.3mm	275.00
RIIYH	Metallurgical phase objective, Pv 100x/0.95, free working distance 0.12mm	325.00
RXIIL	Periplanatic eyepiece 10x with focusing eyelens	40.00
RXILL- OCASY	Periplanatic eyepiece 10x M with focusing eyelens and micrometer 10mm = 100 parts	57.00
PHADS	Focusing magnifier for centering the light ring	31.00
IIXWV	Specimen levelling stage	21.00
RPIIT	Hand press with adjustable stop for levelling specimens	41.00
IVZDI	Set of six metal object slides	12.00
	Leitz Research Microscope Ortholux-Met. 20.42.-.5 FS 252/- + REDYX with optical equipment G2 as described above	\$ 3,364.00



D3) Ortholux equipped for: High Temperature Microscopy

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion; dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OKLON	Built-in illuminating system, upper lamp 6 Volts, 30 Watts, with daylight, ground glass and yellow green filter, including one spare bulb -.-.-.5	99.00
ORFAX	Combination, inclined binocular observation and straight monocular photographic tube "FSA" with automatic compensation for the adjustment of the interpupillary distance. Prisms on slider can be switched in and out to direct the light at a ratio of 80% to the camera and 20% to the binocular observation tube. A second prism position directs 100% of the light into the binocular tube, for observation	550.00
IDIRF	Circular, revolving and centering, object stage #223, 130 mm Ø, on interchange carrier	78.00
IDPUB	Vertical illuminator, with quintuple, revolving objective nose-piece, variable aperture diaphragm, half-stop for oblique illumination, adjustable field diaphragm, on carrier 20.40.-	278.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps 110/120 Volts, 60 cycles A.C.	67.00
	Leitz Microscope Ortholux-Met. 20.40.-.5 FSA 223/- + REDYX, as described above	\$ 1,852.00

Optical Equipment

RVIIN	Metallurgical objective, 5x/0.09, free working distance 12.7mm ...\$	101.00
RVZII	Metallurgical objective, 10x/0.18, free working distance 13mm	62.00
HEFAF	Achromatic objective, H20x/0.40, free working distance 8.3mm	163.00
HEFEG	Achromatic objective, H32x/0.60, free working distance 5.7mm	235.00
NIIQ- ORMUK	Periplanatic eyepieces, paired 10x, with focusing eyelens; one with concentric focusing ring and markings, circumscribing the image area	96.00

High Temperature Equipment

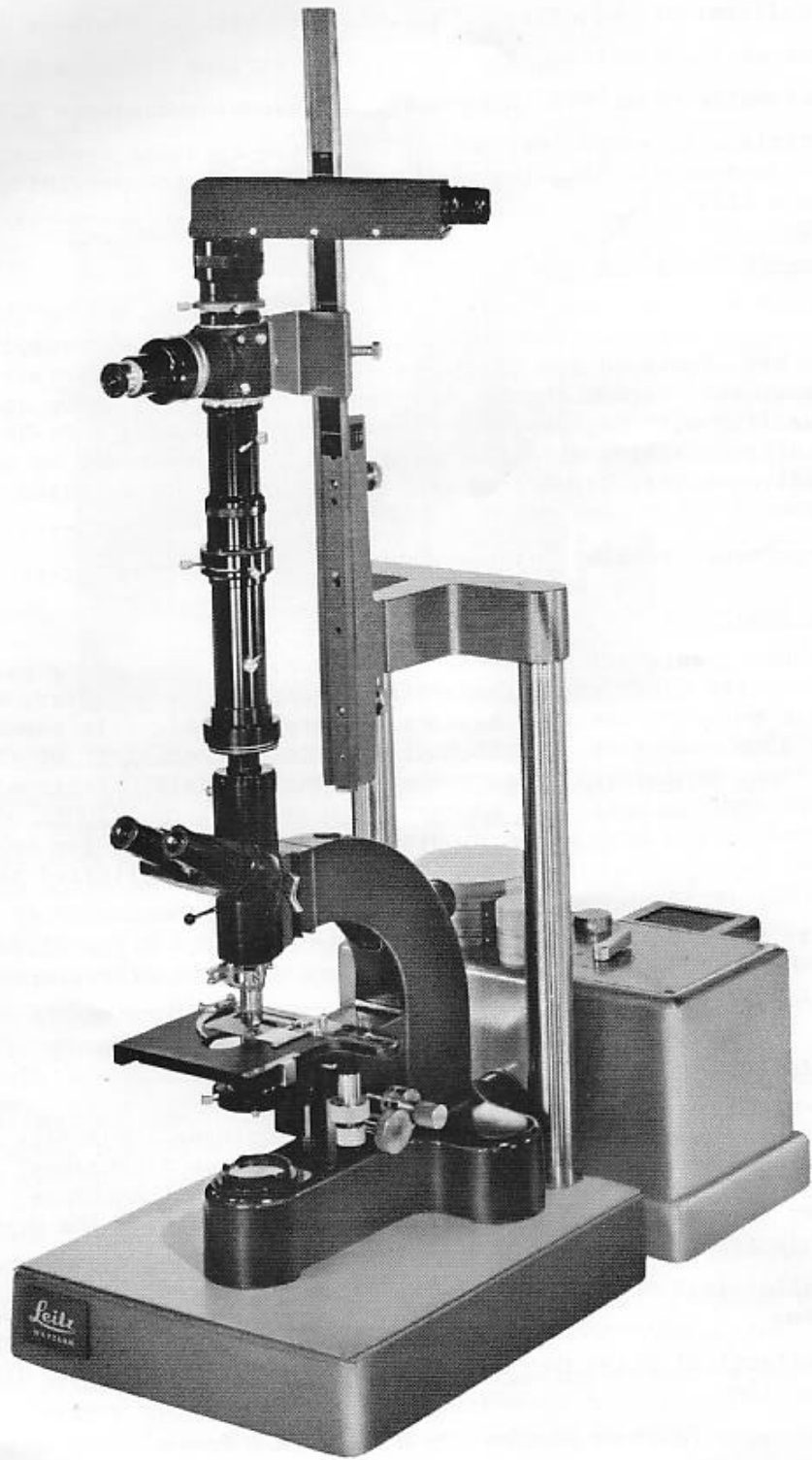
HEVUZ	Vacuum Heating Stage Model 1750 ^o , complete with cooling chamber for water circulation. Rotating quartz window, power supply cords and key. Equipped for investigation in vacuum or a protective gas atmosphere. Vacuum chamber mounted spherically to allow specimen levelling with magnets. Interchangeable thermocouple Pt-Rh 18, with compensating wires for measuring the temperature by means of a galvanometer. Regulating transformer 0-220 Volts, fixed transformer 5 Volts, and connecting cords	\$ 1,440.00
HEWAW	Temperature reading instrument up to 1800 ^o	400.00

Photographic Equipment

ORMAF	Orthomat, automatic photomicrographic camera, including photo-multiplier tube; electromagnetic, vibration-free shutter; automatic motor-driven film advance, interchangeable film chamber for 35mm cassettes. Detail exposure measurement of 1% of field of view; or integral measurement of entire field. Electronic power control unit, for automatic exposures from 1/100th of a second to 1/2 hour or more, with film speed setting for color or black and white, capable of solving the most complicated photographic tasks	\$ 2,450.00
	Leitz Research Microscope Ortholux-Met. 20.40.-.5 FSA 223/- + REDYX with optical, high temperature and photomicrographic equipment, as described above	\$ 6,799.00

Optional Equipment

IDPAW	Vertical illuminator, with quintuple, revolving, objective nosepiece, detachable rotating drum with phase diaphragms, brightfield condenser with aperture iris and quick-change lever for switching to brightfield without rotating the drum; highly reflective plane glass, on carrier 20.42.-	\$ 633.00
MVIIC	Metallurgical Phase Objective, Pv 5x/0.09, free working distance 12.7mm	184.00
MWGII	Metallurgical Phase Objective, Pv 10x/0.18, free working distance 13mm	112.00
HEMAN	Achromatic Phase Objective, Pv H 20x/0.40, free working distance 8.3mm	197.00
HEMEM	Achromatic Phase Objective, Pv H 32x/0.60, free working distance 5.7mm	266.00



E) Ortholux equipped as: Micro Spectrophotometer

81164	Large, modern stand with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval - 0.001 mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion; dovetail slide for the interchange of body tubes and objective carriers; dust cover, in shipping container	\$ 780.00
OYEED-SINE	Combination, inclined monocular observation and straight monocular photographic tube "FP"	92.00
IDKIT	Large square mechanical stage #250, with scales and verniers, low set operating knobs on one axis, traversing area 76x40mm, on interchange carrier	216.00
OZARB	Dovetail carrier -.-.8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser .	44.00
PORIS	Centering mount, #06, for substage, on dovetail mount	25.00
82360	Adapter to use objective as a condenser mount	5.50
HEFAF	Achromatic objective, H 20x/0.40, free working distance 8.3 mm, as condenser	163.00
	Objective clutch changer, similar to "PEZAX", however, with only two centering collars	107.00

Optical Outfit consisting of:

APOCT-FE	Survey objective Apo 25/0.65, focal length 7.3mm, free working distance 0.85mm, with spring loaded mount	154.00
FLUES-FE	Fluorite oil immersion objective, FL Oil 95x/1.32, focal length 1.9mm, free working distance 0.14mm, with spring loaded mount .	161.00
PERIR	Periplanatic widefield eyepiece GF 10x, for monocular observation tube	31.00
PERIR	Periplanatic widefield eyepiece GF 10x, for monocular photographic tube	31.00
MADAH	Stand "Aristophot" consisting of large base plate with mipolam pad, vertical camera carrier on twin-column with adjustable prismatic bar (63cm/25" long)	184.00
84689	Lower light excluding ring	4.00
EEXRL	Holder to attach reflex housing to prismatic bar	19.00
82350	Optical train consisting of: light-tight tubular connection between microscope and reflex housing, built-in 1/3 reducing lens, adjustable by means of helical focusing mount, IRISA Iris Diaphragm, located on centering mount POCON, horizontal slider with full opening and 6 pre-selected holes from 5 to 1/2 mm Ø, tubular column with Milar objective 65mm PRTII-RIING, with Iris Diaphragm, focusable by means of a helical mount with set-screw, mirror reflex housing Visoflex # 16484, the ground glass of which has been removed, visual observation is made through a lateral observation tube on bayonet mount and includes a 10x Periplan eyepiece RXIIL with focusable lens and eyepiece micrometer OCBUH 10mm = 100 parts	\$ 1,073.00

IKACH	Linear Mirror Monochromator for the visible range (370-1100 mu) with F2 glass prism	\$ 2,555.00
IKFOJ	Lamp Housing with low voltage lamp 6 Volts, 4.35 Amps, pre-focused	118.00
REDYX	Regulating transformer with ammeter, 6 Volts, 5 Amps, 110/120 Volts, 60 cycles A.C.	67.00
LILUN	Spare bulb, prefocused, 6 Volt, Special	3.00
PHADS	Alignment telescope	31.00
82355	Photovolt photomultiplier with power unit, 520 M	<u>655.00</u>
	Leitz Micro Spectrophotometer, complete, as described above ...	\$ 6,518.50

Alternate Accessories available upon request:

OIYEE-SINE	Combination inclined binocular observation and straight monocular photographic tube "FS" in place of OYEED-SINE.....	\$ 244.00
PERIR	Periplanatic widefield eyepiece GF 10x (required when using binocular observation tube)	31.00
89165	Voltage stabilizer for transformer to avoid fluctuations, 120 Watt, Raytheon #VR 6113CP	60.00

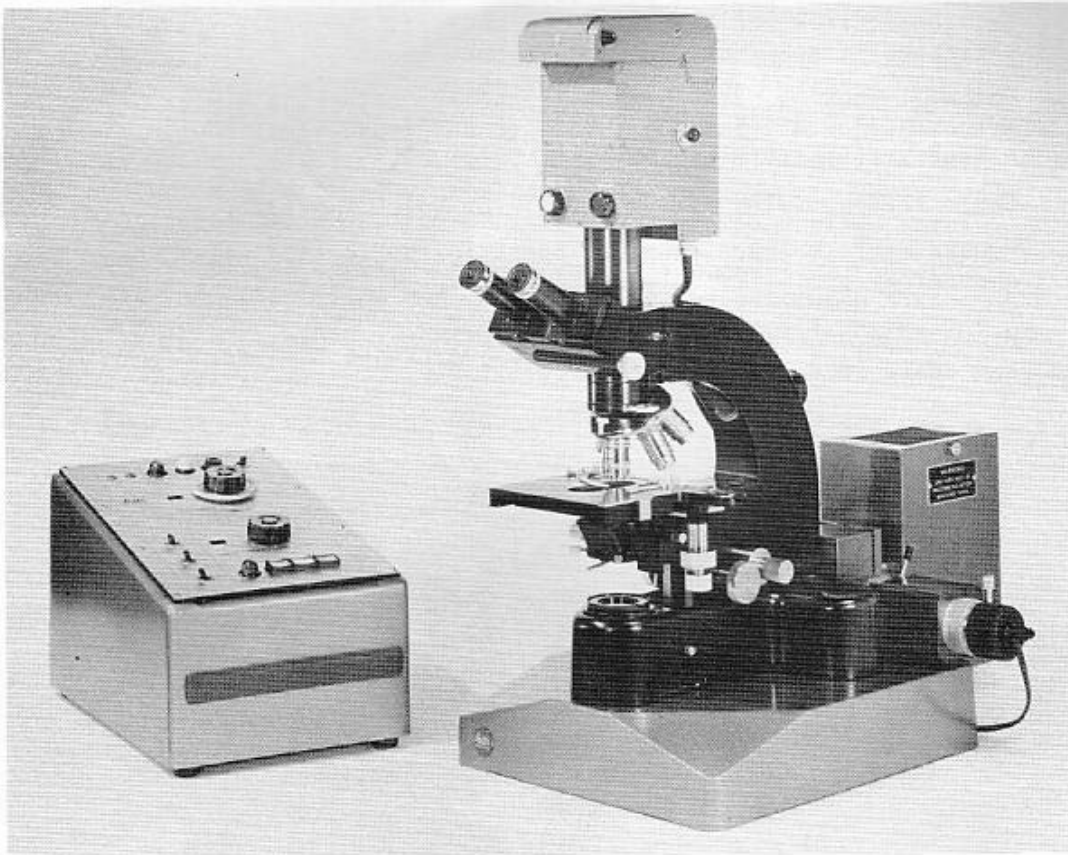
Note:

If U.V. work is anticipated, the Monochromator can be supplied with a dual prism for both the visible, as well as the U.V. range.

The necessary U.V. optics are available upon special request.

PHOTOMICROGRAPHIC EQUIPMENT

Fully automatic, exposure pre-determining, 35mm Camera "ORTHOMAT"



ORMAF Orthomat, automatic photomicrographic camera, with photomultiplier tube; electromagnetic, vibration-free, shutter; automatic, motor driven, film advance; interchangeable film chamber for 35mm cassettes. Detail exposure measurement of 1% of field of view; as well as integral measurement of entire field. Electronic power control unit, for automatic exposures from 1/100th of a second, to 1/2 hour or more, with film speed setting for color or black and white, capable of solving the most complicated photographic tasks\$ 2,450.00

Tube:

It is recommended that the combination tube "FSA" code ORFAX (see page 23) be substituted in place of the standard "FP" or "FS" tubes, when purchasing the Ortholux and Orthomat together.

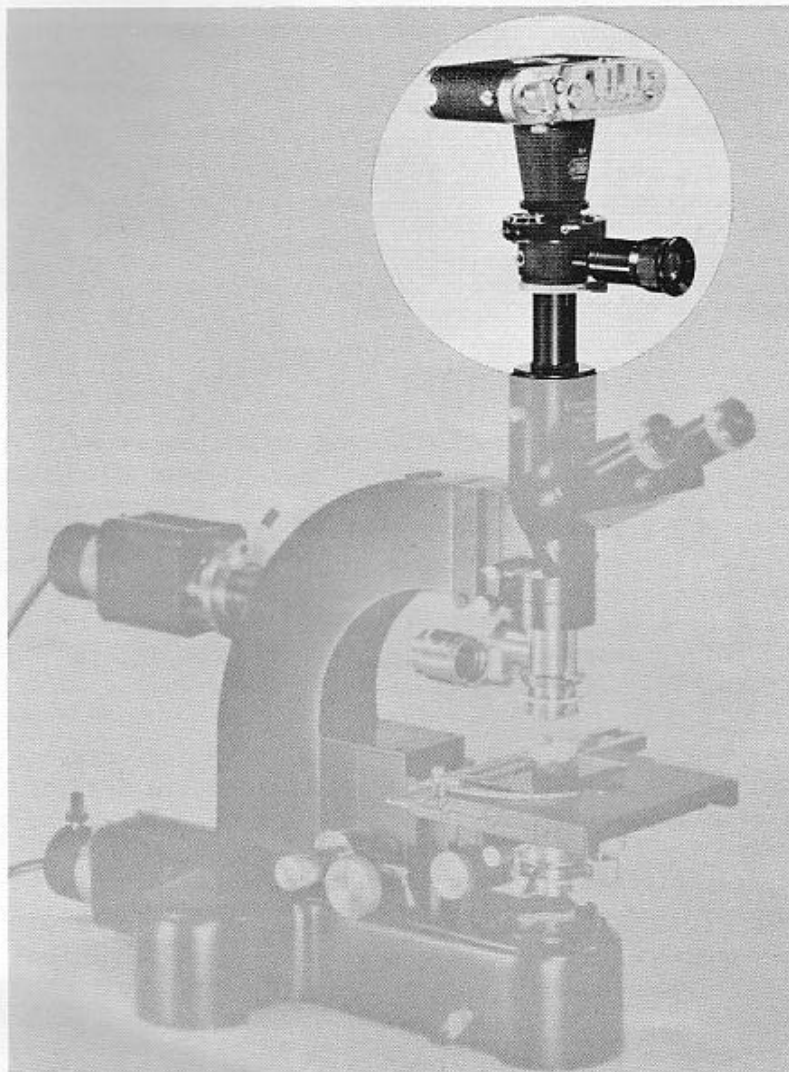
Eyepieces:

The following eyepieces must be used instead of the GF 10x eyepiece included in the complete equipments previously specified:

NIITQ- ORMUK	Periplanatic eyepieces, paired 10x, with focusing eyelens; one with concentric focusing ring and markings, circumscribing the photo-image area	96.00
ORWEP	Spare film chamber for 36 exposures	64.00
	<u>Accessories, (optional):</u> Required equipment when using the Orthomat on tubes other than the FSA (FP, FS, FS45, etc.)	
NAGBA	Focusing Magnifier	26.00
ORNOK	Ground glass screen	12.00

Micro-Camera Attachment "MIKAS", for 35 mm only:

MIKAS-M	Micro Camera Attachment with lateral observation and focusing telescope, time and instantaneous shutter, two cable releases, periplanatic eyepiece 10x with bayonet mount	\$ 146.00
10120	Leica M1 housing with bayonet flange for attaching a micro attachment or a Leica lens, but without lens, viewfinder or cassette	188.00
14067	Cable release (with fixing screw) for Leica shutter	1.50
CALOS	Double cable release coupler, operating deflecting prism and shutter	<u>12.80</u>
	Micro-Camera Attachment, complete, with Leica Camera Body M1 and cable release	\$ 348.30

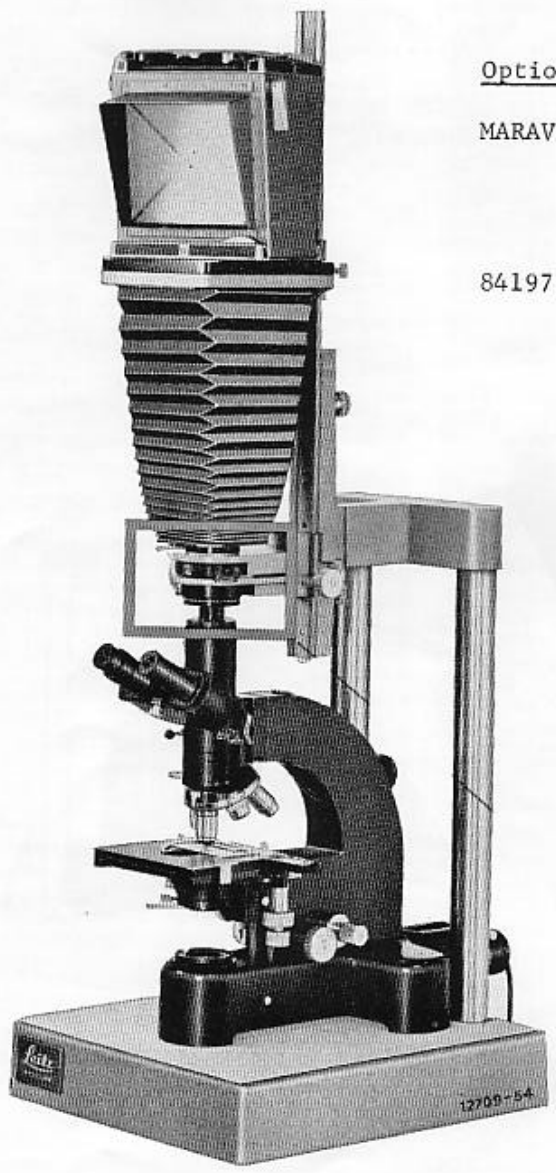


Universal Photo-Micrographic Apparatus "ARISTOPHOT" for films and plates up to 4x5", including Polaroid

MADAH	Stand "Aristophot" consisting of large base plate with "Mipolam" pad, vertical camera carrier on twin-column with adjustable prismatic bar (63cm, 25" long)	\$ 184.00
MAJUS	Camera bellows, 4x5", extensible up to 60cm, with two double film holders Graflex #1284, ground glass screen and focusing magnifier	320.00
MAKEP	Mirror reflex housing, rotatable, with swing-out mirror for observing and focusing the image on the ground glass screen...	220.00
ORHAL	Lower bellows carrier on rack and pinion carrier, vibration-free mounting, time and instantaneous shutter, with strobe contact and cable release; tape measure; upper light excluding collar and separate lower light excluding collar	107.00
MALER	Photomicrographic apparatus Aristophot, complete for 4x5"	\$ 831.00

Optional and Replacement Parts:

MARAV	Polaroid Land film holder #500 for 4x5" single sheet film fitting the camera bellows "MAJUS".....	\$ 49.95
84197	Double film holder 4x5" Graflex #1284 spare, (as supplied with MAJUS) ..	\$ 4.95

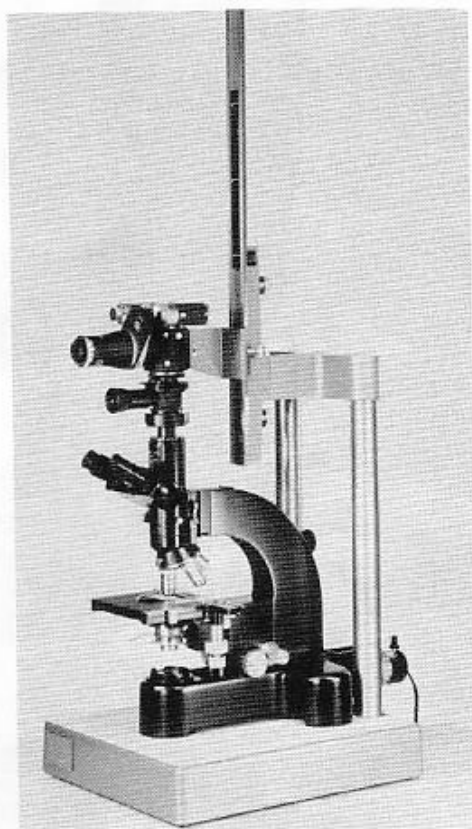


Aristophot with Leica Reflex Accessories:

MADAH	Stand "Aristophot" consisting of large base plate with "Mipolam" pad, vertical camera carrier on twin column with adjustable prismatic bar (63cm 25" long)	\$ 184.00
IFLEX-M	Micro mirror reflex attachment with rotating rectangular diaphragm, clear and ground glass on revolving holder, double release and focusing magnifier 5x	161.00
EEURL	Holder to attach reflex housing to prismatic bar	19.00
ZOIII	Short intermediate adapter 1/3x to join mirror reflex attachment and central shutter	23.00
ZOCII	Focusing telescope with central time and instantaneous shutter, strobe contact, synchronized swing-out deflecting prism, upper and lower light screening sleeves; two cable releases and release coupler	<u>138.00</u>
MAALK	Photomicrographic apparatus ARISTOPHOT complete for 35mm without Leica camera back	\$ 525.00
10120	Leica M1 housing with bayonet flange for attaching a micro attachment or a Leica lens, but without lens, viewfinder or cassette ...	\$ 188.00



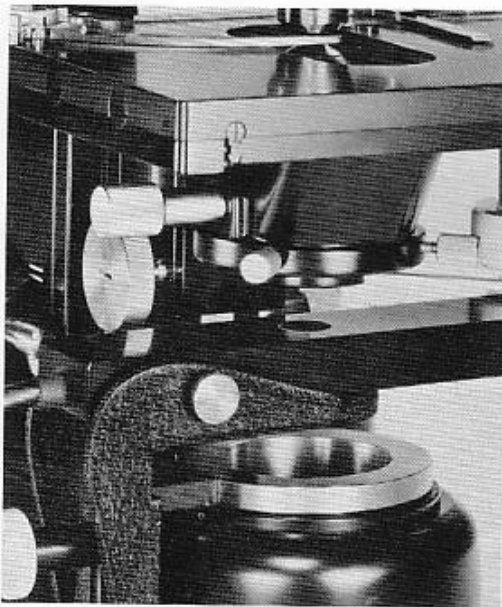
Leica with Reflex Housing
for 35mm film



Aristophot with Leica Reflex
Housing

Photomicrographic Accessories, Flash Units, Exposure Meters, etc.

MIWIZ	Micro Flash Attachment with flash tube in housing, emission area 9mm diameter, set of neutral density filters D = 6% and D = 0.4% and power supply for 110 Volts, 60 cycles A.C.	\$ 489.00
MIZEC	Flash tube holder for Ortholux	23.00
MIWUC	Flash tube holder for phase condenser #74	20.00
MIZUG	Flash tube holder for Ultropak Illuminator	53.00
MIXUD	Spare flash tube in housing	143.00
MITIX-L	Light meter Microsix-L for determining the exposure times for photomicrography and macrophotography, comprising measuring eye, cable and reading instrument	147.00

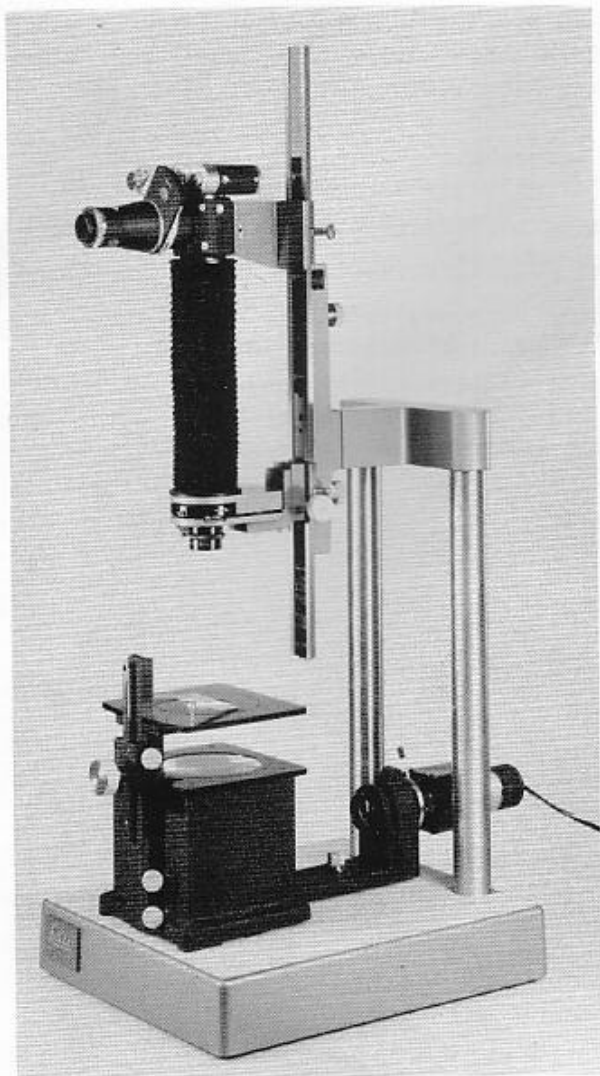


Micro flash attachment with holder for Ortholux

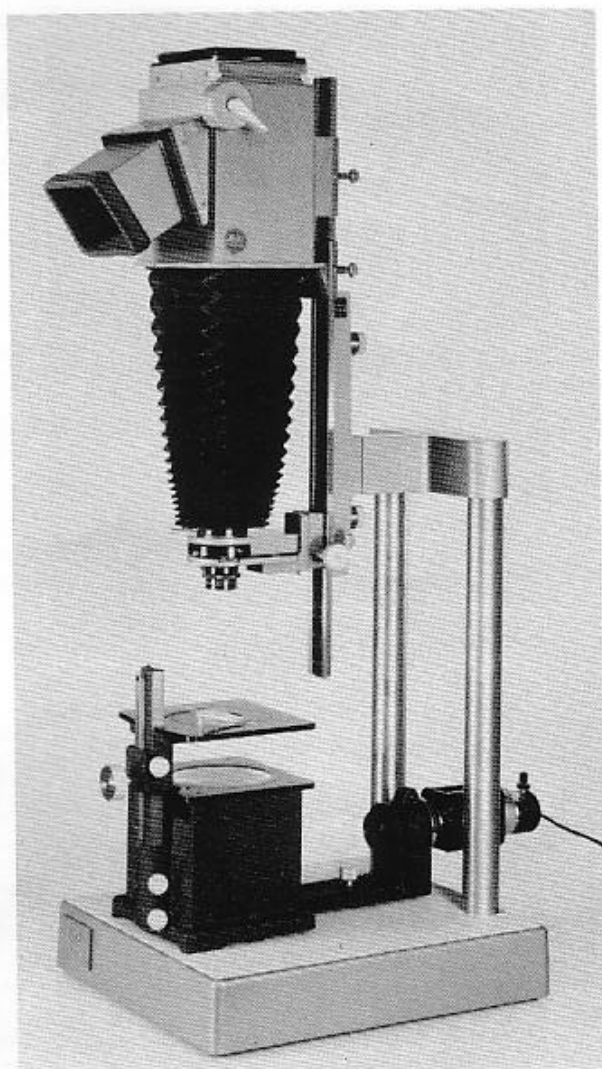
Control Unit for Electronic Flash



Exposure meter MIFIX-L



Aristophot with Macro-Dia Apparatus
for 35mm film

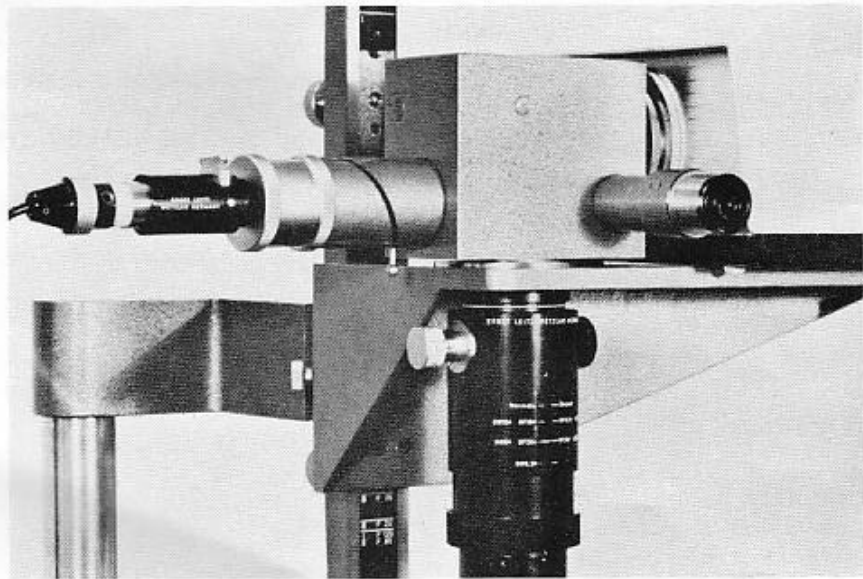
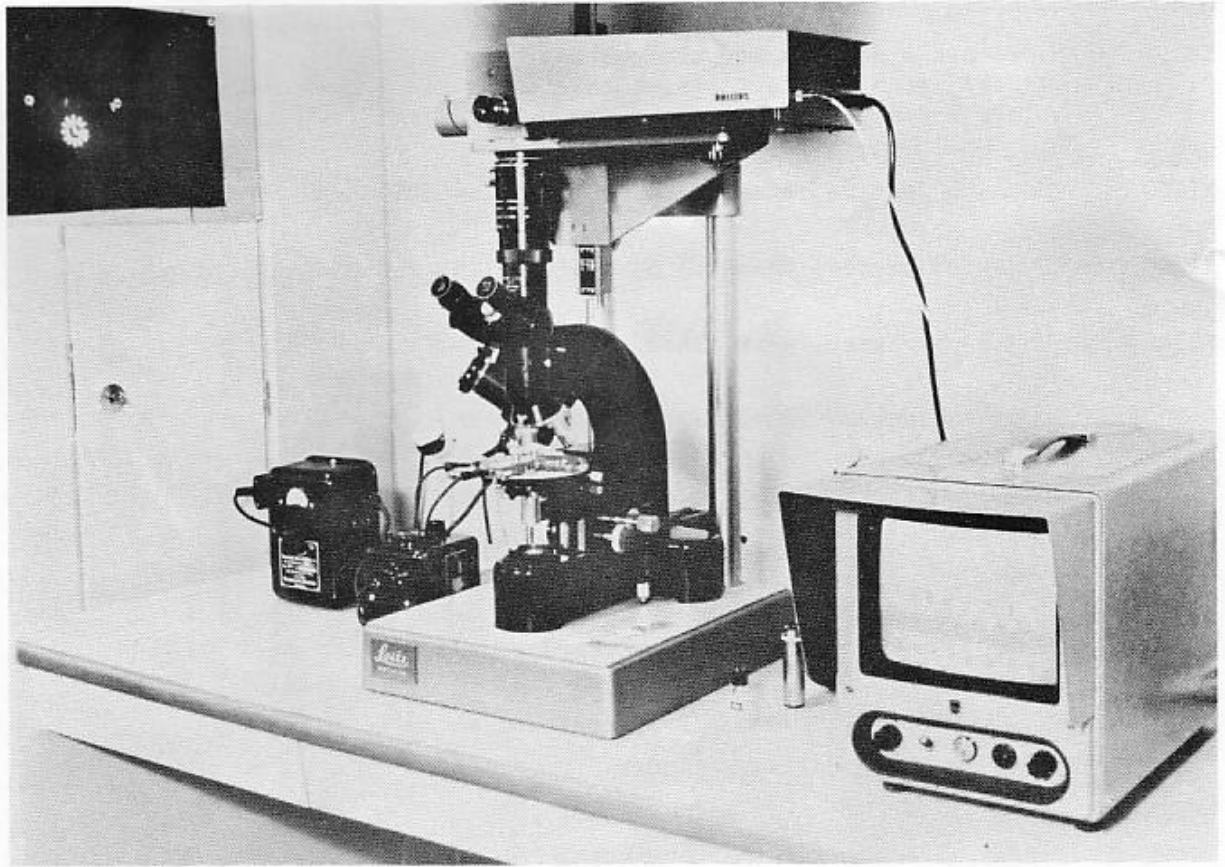


Aristophot with Macro-Dia
Apparatus for plates and film
of larger than 35 mm size

MACROPHOTOGRAPHY:

EEZYX	Macro-Dia apparatus for macrophotography in transmitted light, with adjustable object stage, inset with aperture 45mm, condenser holder and sliding sleeve for low voltage lamp	\$ 299.00
SUMAN- RIING	SUMMAR objective, 24mm f/4.5, coated with iris and adapter ring ...	\$ 68.00
SUMEX- RIING	SUMMAR objective, 35mm f/4.5, coated with iris and adapter ring ...	68.00
SUMIT- RIING	SUMMAR objective, 42mm f/4.5, coated with iris and adapter ring ...	68.00
SUMUR- RIING	SUMMAR objective, 80mm f/4.5, coated with iris and adapter ring ...	101.00
SUMZO- RIING	SUMMAR objective, 120mm f/4.5, coated with iris and adapter ring ..	120.00
PUZII- RIING	MILAR objective, 50mm f/4.5, coated with iris and adapter ring	53.00
PRTII- RIING	MILAR objective, 65mm f/4.5, coated with iris and adapter ring	53.00
PQRII- RIING	MILAR objective, 100mm f/4.5, coated with iris and adapter ring ...	53.00
EEWIZ	Condenser lens for 24mm SUMMAR	\$ 12.00
EEWKX	Condenser lens for 35mm SUMMAR	12.00
EEWIV	Condenser lens for 42mm SUMMAR and 50mm MILAR	12.00
EEWHT	Condenser lens for 50mm MILAR	16.00
EEWGR	Condenser lens for 80mm SUMMAR	20.00
EEWFP	Condenser lens for 100mm MILAR	22.00
EEWDL	Condenser lens for 120mm SUMMAR	23.00
MACUL	Set of stage inserts with apertures from 7mm to 80mm diameter	29.00

For complete specifications: see special Aristophot catalog No. 54-3/Engl.



Supplementary Equipment for TV Microscopy in Connection with the Philips TV Camera

MADAH	Aristophot Stand	\$ 184.00
FIRIX	Carrier for TV Camera EL 8000/00	120.00
FIRUZ	Beam splitting device with slide mounted telescope, including special eyepiece G 12.5x with adjustable eyelens, field stop and crosslines for focusing. A built-in lens system is provided to pick up figures and test material for reproduction on the TV receiver	690.00
FISAW	Attachment for the simultaneous projection of measuring scales, arrow pointers as well as mounted grati- cules of two microns at a magnification of 1000x, including low voltage lamp 8 volts, 0.6 Amperes	166.00
RESEV	Regulating transformer for the low voltage lamp, for connection to 110/120 Volts A.C.	45.00
FITAX	Microscope tube with built-in adjustable lens system with click stops for three intermediate magnifications, 0.33x, 1x and 3x to change the image ratio without changing the eyepieces (all types of eyepieces can be used, excluding negative and high eyepoint eye- pieces). To compensate for the different lengths arising from changing the objectives, the knurled ring has to be manipulated. In each case, the graduations have to be aligned with the appropriate engraving on the tube. A light trap and a reducing adapter for the standard eyepiece PEWUY, as well as a periplanatic wide field eyepiece GF 10x, PERIR, is included	286.00
	Supplementary equipment for TV Microscopy, as described above, however, without TV camera or receiver	\$ 1,491.00

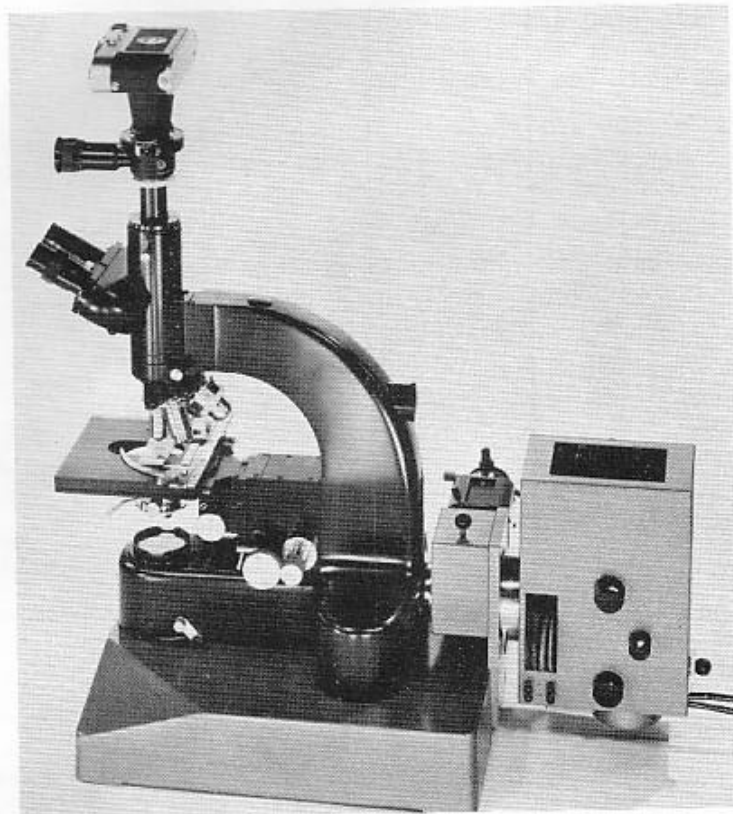
The following additional Accessories are available:

FISOZ	Graticule, 1 micron : 1000x magnification, mounted	\$ 32.00
FISUB	Same as above, but 20 microns : 1000x magnification	32.00
FISEX	As above, but 2 microns : 1000x magnification	32.00

Special High Intensity Light Sources:

High intensity light source Model 250 recommended for motion picture photomicrography, time-lapse studies, projection, and photomicrography of living specimens where short exposures are essential. Alternate illumination between high power and normal Ortholux illumination (Eymze-lamp 6 V, 5 Amp.) is provided by means of reflex housing model 30.

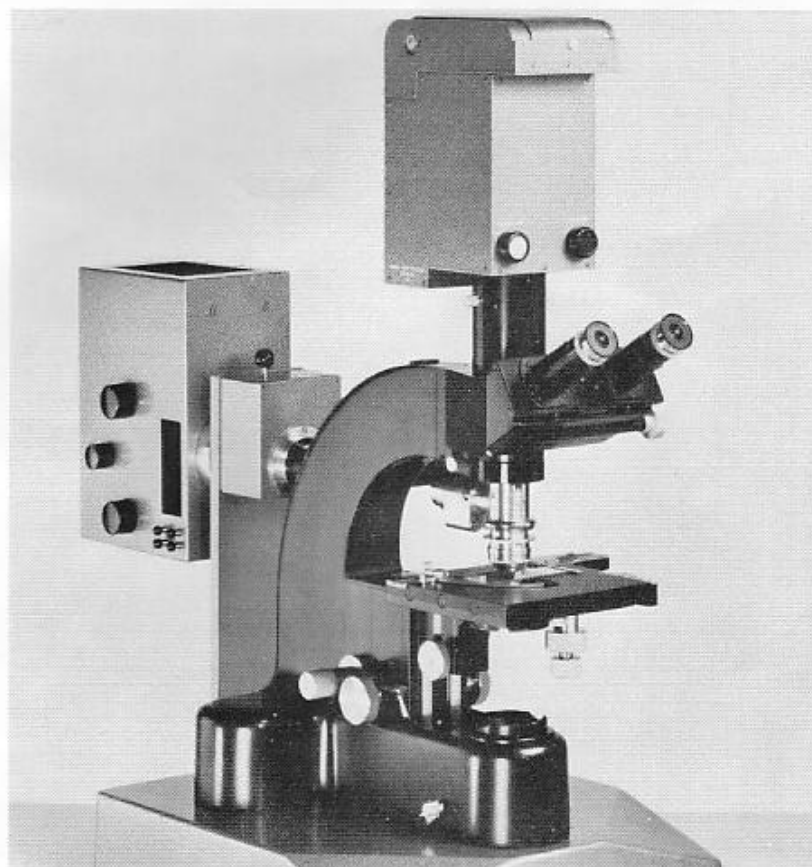
1) For Transmitted Light:



- | | |
|-------|--|
| LOCAP | <p><u>Universal Lamp Housing Model #250</u>, with socket to accept <u>XBO 150 Xenon burner</u>, reflector and two lens collector, filter changing device with one each heat filter B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N" and storage case for the filters. Mirror Housing #30 with swing-out deflecting mirror for the reception of the low voltage lamp "EYMZE" (lamp not included). Base with carrier plate #17 for the proper alignment of the microscope. Xenon burner XBO 150 Watt and one pair of protective goggles to wear when adjusting the burner. Mains rectifier ready for connecting the lamp to a 110/120 Volts A.C. supply, which automatically starts the lamp when the current is switched on; including protective dust cover\$ 1,302.00</p> |
| 81853 | <p><u>Universal Lamp Housing Model #250</u>, as above, however equipped with socket to accept <u>HBO 200 burner</u>, one each 2mm KG1 filter, 2mm UG1 filter, 3mm BG12 filter and 4mm BG38 filter; ignitor, choke and special transformer for 110/120 Volts A.C., with high pressure mercury burner HBO 200 Type L II 751.00</p> |
| 81864 | <p><u>Universal Lamp Housing Model #250</u>, as above, however equipped with socket to accept <u>CS150 burner</u>, high pressure mercury burner CS150 and power unit for connection to 110/120 Volts A.C. 733.00</p> |

High Intensity Light Sources:

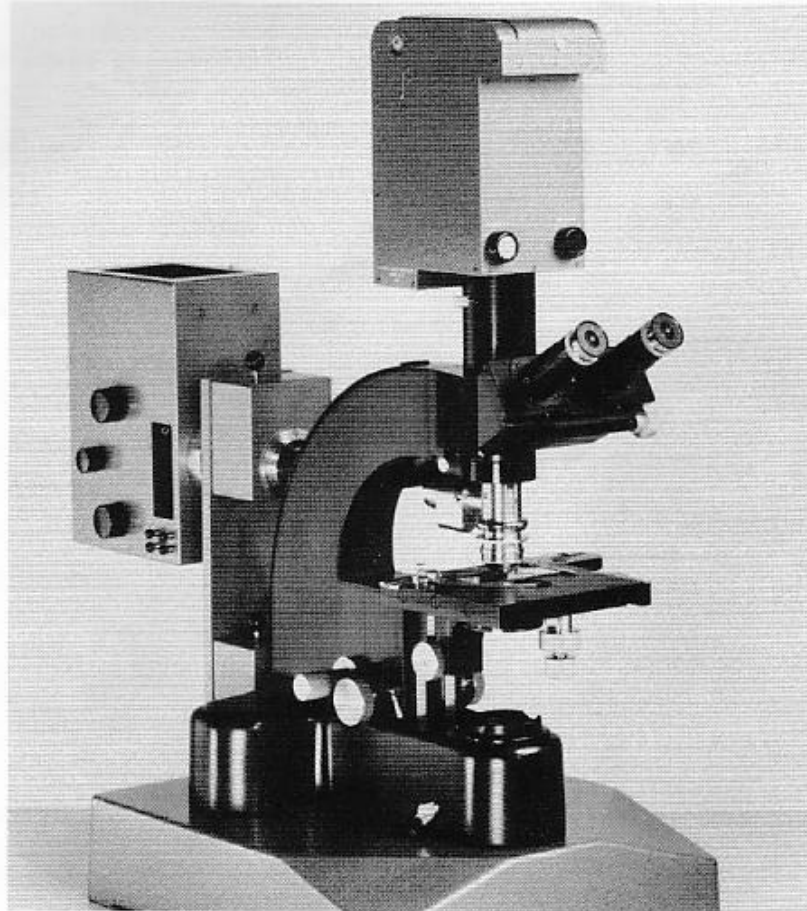
2) For Reflected Light:



LOZIP- LOHOY- LOITS	Universal Lamp Housing Model #250, with socket to accept <u>XBO 150 Xenon burner</u> , reflector and two lens collector, filter changing device with one each heat filter B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N" and storage case for the filters. Mirror housing #30 with swing-out deflecting mirror for the reception of the low voltage lamp "EYMZE" (lamp not included). Base with carrier plate #37A for the proper alignment of the microscope. Xenon burner XBO 150 Watt and one pair of protective goggles to wear when adjusting the burner. Mains rectifier ready for connecting the lamp to a 110/120 Volt A.C. supply, which automatically starts the lamp when the current is switched on; including protective dust cover	\$ 1,312.00
LOYEM- 81851- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept <u>HBO 200 burner</u> , one each 2mm KG1 filter, 2mm UG1 filter, 3mm BG12 filter, and 4mm BG38 filter; ignitor, choke and special transformer for 112/120 Volts A.C., with high pressure mercury burner HBO 200 Type L II	762.00
LOXIM- LOCIS- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept <u>CS150 burner</u> , high pressure mercury burner CS150 and power unit for connection to 110/120 Volts A.C.	744.00

High Intensity Light Sources:

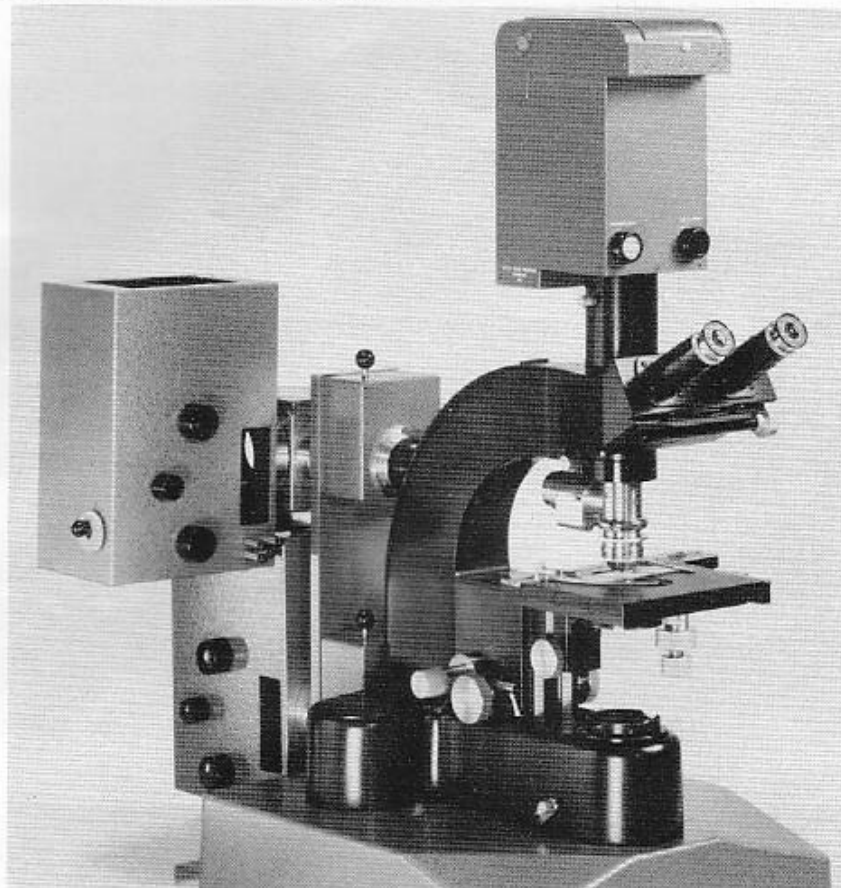
3) For Transmitted or Reflected Light:



LOYOP- LOHOY- LOITS	Universal Lamp Housing Model #250, with socket to accept <u>XBO 150 Xenon burner</u> , reflector and two lens collector, filter changing device with one each heat filter B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N" and storage case for the filters. Mirror housing #30 with swing-out deflecting mirror for the reception of the low voltage lamp "EYMZEE" (lamp not included). Base with carrier plate #37 and light tight extension tubes for either transmitted or reflected light for the proper alignment of the microscope. Xenon burner XBO 150 Watt and one pair of protective goggles to wear when adjusting the burner. Mains rectifier ready for connecting the lamp to a 110/120 Volt A.C. supply which automatically starts the lamp when the current is switched on; including protective dust cover	\$ 1,370.00
LOXUP- 81851- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept <u>HBO 200 burner</u> , one each 2mm KG1 filter, 2mm UG1 filter, 3mm BG12 filter, and 4mm BG38 filter; ignitor, choke and special transformer for 110/120 Volts A.C., with high pressure mercury burner HBO 200 Type L II	819.00
LOXAK- LOCIS- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept <u>CS150 burner</u> , high pressure mercury burner CS150 and power unit for connection to 110/120 Volts A.C.	801.00

High Intensity Light Sources:

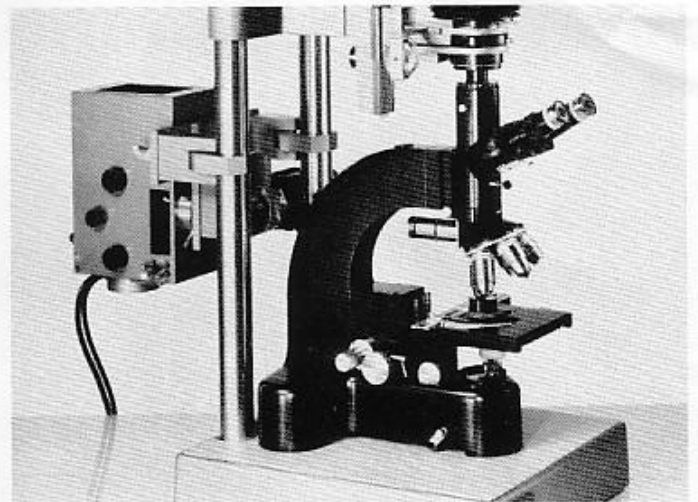
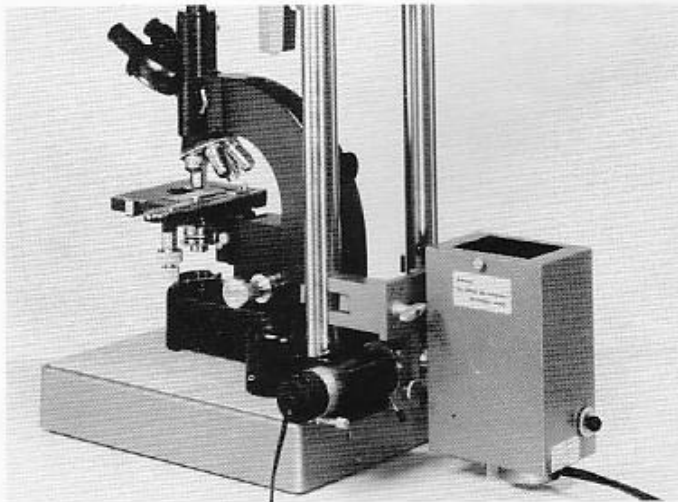
4) For Transmitted and Reflected Light:



- 82875 Two Universal Lamp Housings Model #250, with sockets to accept two XBO 150 Xenon burners, reflectors and two lens collectors, two filter changing devices and two each heat filter B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N", and storage cases for the filters. Two mirror housings #30 with swing-out deflecting mirrors for the reception of the low voltage lamp "EYMZE" (lamp not included). Base with carrier plate #37 and light tight extension tubes for transmitted and reflected light for the proper alignment of the microscope. Deflecting mirror for positioning the upper #250 Lamp Housing at a 90° angle to the microscope. Two Xenon burners XBO 150 W and one pair of protective goggles to wear when adjusting the burner. Two mains rectifiers ready for connecting the lamps to a 110/120 Volt A.C. supply which automatically starts the lamps when the current is switched on\$ 2,620.00
- 82877 Two Universal Lamp Housings Model #250, as above, however with sockets to accept HBO 200 burners, two each 2mm KG1 filters, 2mm UG1 filters, 3mm BG12 filters, and 4mm BG38 filters; two ignitors, chokes and special transformers for 110/120 Volts A.C. with two high pressure mercury burners HBO 200 Type L II 1,518.00
- 82879 Two Universal Lamp Housings Model #250, as above, however equipped with sockets to accept CS150 burners, two high pressure mercury burners and two power units for connection to 110/120 Volts A.C. 1,485.00

High Intensity Light Sources for Photomicrography with the ARISTOPHOT

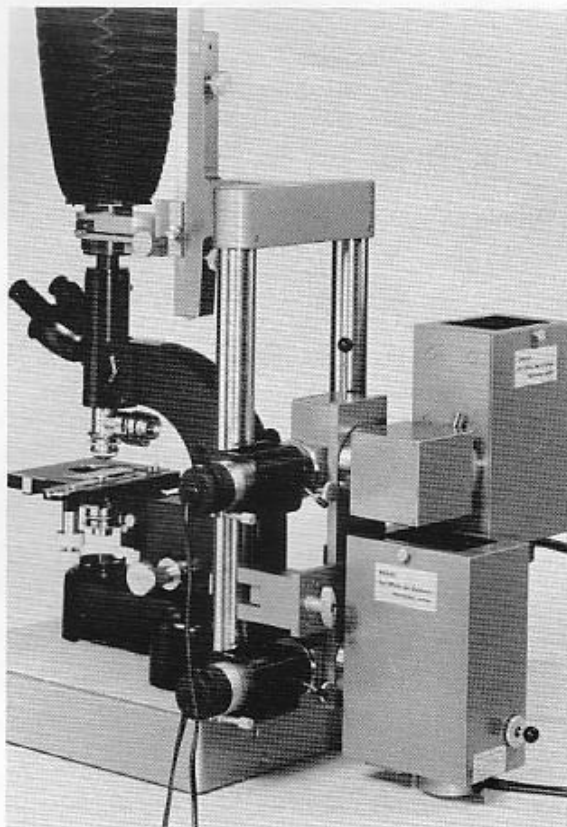
a) For Transmitted or Reflected Light



MAUJM- LOHOY- LOITS	Universal Lamp Housing Model #250, with socket to accept XBO 150 Xenon burner, reflector and two lens collector, filter changing device with one each heat filter B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N" and storage case for the filters. Lamp holder with mirror housing #30, swing-out deflecting mirror for the reception of the low voltage lamp (lamp not included); clamping brackets fitting the twin columns of the Aristophot stand; light tight extension tubes for the proper alignment of the Lamp Housing to the Ortholux Microscope for either transmitted or reflected light. Xenon burner XBO 150 Watt and one pair of protective goggles to wear when adjusting the burner. Mains rectifier ready for connecting the lamp to 110/120 Volts A.C. Lamp starts automatically when the current is switched on	\$ 1,315.00
MATOB- 81851- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept <u>HBO 200 burner</u> , one each 2mm KG1 filter, 2mm UG1 filter, 3mm BG12 filter, and 4mm BG38 filter; ignitor, choke and special transformer for 110/120 Volts A.C., with high pressure mercury burner <u>HBO 200 Type L II</u>	764.00
MATEY- LOCIS- RADOL	Universal Lamp Housing Model #250, as above, however equipped with socket to accept CS150 burner, high pressure mercury <u>burner CS150</u> and power unit for connection to 110/120 Volts A.C.	746.00

High Intensity Light Sources for Photomicrography with the ARISTOPHOT

b) For Transmitted and Reflected Light



- | | | |
|-------|---|-------------|
| 82881 | Two Universal Lamp Housings Model #250, with sockets to accept two XBO 150 burners, reflectors and two lens collectors, two filter changing devices and two each heat filters B1/K2, grey 0.2%, grey 5%, green 1.5mm VG9, dispersion disc "R", dispersion disc "N" and storage cases for the filters. Two mirror housings #30 with swing-out deflecting mirrors for the reception of the low voltage lamp "EYMZE" (lamp not included). Clamping bracket with carrier plate for two lamp housings fitting the twin columns of the Aristophot stand; light tight extension tubes for the proper alignment of the Lamp Housings to the Ortholux Microscope. Deflecting mirrors for positioning the upper #250 Lamp Housing at 90° to the microscope. Two <u>Xenon burners XBO 150 Watt</u> and one pair of protective goggles to wear when adjusting the burners. Two mains rectifiers ready for connecting the lamp to 110/120 Volts A.C. Lamp starts automatically when the current is switched on | \$ 2,636.00 |
| 82883 | Two Universal Lamp Housings Model #250, as above, however with sockets to accept HBO 200 burners, two each 2mm KG1 filters, 2mm UG1 filters, 3mm BG12 filters, and 4mm BG38 filters; two ignitors, chokes and special transformers for 110/120 Volts A.C. with two high pressure <u>mercury burners HBO 200 Type L II</u> | 1,534.00 |
| 82885 | Two Universal Lamp Housings Model #250, as above, however equipped with sockets to accept CS150 burners, two high pressure <u>mercury burners CS150</u> and power units for connection to 110/120 Volts A.C. | 1,501.00 |

Filters and Spare Bulbs

A) For Low Voltage Lamp "EYMZE"

WXYEE	Blue filter	\$ 3.00
WYEEU	Ground glass	2.00
ORFIL	Yellow green	5.00
LINID	Spare bulb, 6 Volts, 30 Watts screw base	3.00

B) For CS 150 and HBO 200 Mercury Lamps

LODES	Heat filter 2mm KG1, unmounted	\$ 7.00
LOERN	Heat filter 4mm BG38, mounted	10.00
LOSOJ	UV filter 1mm UG1, mounted	10.00
LOSUK	UV filter 1mm UG5, mounted	13.00
LODOV	UV filter 2mm UG1, mounted	10.00
LOFET	UV filter 3mm UG5, mounted	17.00
LOTAG	Blue filter 1.5mm BG12, mounted	10.00
LOEHF	Blue filter 2mm, BG12, mounted	10.00
LODUW	Blue filter 5mm, BG12, mounted	10.00
LUOHK	Spare burner, CS 150	\$ 76.00
89194	Spare burner, HBO 200	53.00

C) For XBO 150 Xenon Lamps

LOIHG	Heat filter B1/K2, unmounted	\$ 18.00
LOEBY	Grey filter 0.2%, mounted	10.00
LOFIV	Grey filter 5%, mounted	10.00
LOILK	Green filter 1.5mm VG9, mounted	10.00
LODIT	Dispersion disc "R", mounted	9.00
LOIRP	Dispersion disc "N", mounted	7.00
LAZEB	Spare burner XBO 150	\$ 120.00

Barrier Filters

For Ortholux with slot for filter slider:

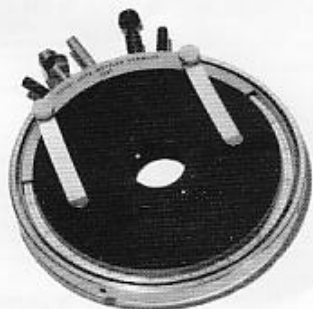
LOSIH	Slider for objective carrier with one each UV and blue absorbing filter	\$ 18.00
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For Ortholux without slot for filter slider:

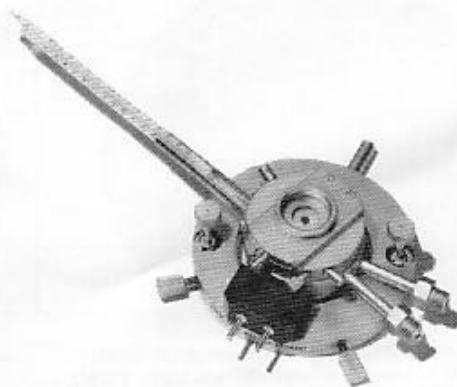
LOKAX	Blue absorbing filter fitting the intermediate optical system	12.00
LOREF	UV absorbing filter fitting the intermediate optical system	11.00
EEUQM	Blue absorbing filter in mount to screw into the eyepiece, single ..	5.00
DQEER	UV absorbing filter in mount to screw into the eyepiece, single	5.00

Heating Stages:

HECOG	A) Heating and cooling stage <u>Model 80</u> , complete with temperature stabilization plate and three screw-in openings, cable, and regulating transformer with ammeter. Connecting piece and two rubber tubes for water circulation cooling, metal tubing with safety valve, and adjustable stop-cock for the CO ₂ cylinder, including washer and three hexagon spanners for connecting the metal tubing. Storage case with fittings. Stage suitable for 110-240 Volts, 60 cycles A.C.	\$ 380.00
HEDEF	Nitrogen chamber and protective tube	23.00
HECUH	Thermometer with holder, for temperature reading	9.00
HEJUN	B) Heating stage <u>Model 350</u> , complete with base for centering, built-in electric heating coil, cooling chamber with tube connections, cable with special plug for regulating transformer, detachable specimen chamber with lateral opening to receive thermometers. Interchangeable cover with quartz glass disc on a metal slider with handle	\$ 225.00
HEBEC	Set of fifty special object slides, 38x26mm, and one hundred cover glasses 18x18mm	4.00
HEHAH	Thermometer from -25° to + 120° C	9.00
HEHIK	Thermometer from + 100° to + 240° C	9.00
HEHOL	Thermometer from + 220° to + 360° C	9.00
REWIZ	Regulating transformer with ammeter for connection to 110/240 Volts A.C.	93.00
HEJIL	Water circulation cooling, consisting of two lengths of rubber tubing, connection piece and two twin-head wrenches	16.00
HEBOF	Microscope Heating Stage, Model 350, complete	\$ 365.00
HEDIG	Accessories for cooling and freezing by means of CO ₂ , consisting of: metal tubing with connecting nuts, safety valve and adjustable shut-off valve for the CO ₂ cylinder, washer, one hexagon spanner wrench for connecting the metal tubing to the cylinder	69.00
HEDOH	Ramsden eyepiece, 8x, for the simultaneous observation of the microscope image and the thermometer scale, for monocular tubes .	167.00
HEDUJ	Special screw in top lens H 0.90 (required when using the H20x and H32x with the Berek condenser #76	28.00



Model 80



Model 350

Heating Stages (continued)

HEXUC	C) Heating stage Model 1350 ^o , complete with centering device ± 3 mm, control for the parallel alignment of the specimen. Rotable quartz window and cooling chamber for water circulation. Stage equipped for investigation in a protective gas atmosphere. Thermocouple made of platinum-rhodium and connected directly to the specimen carrier support. Sapphire specimen carrier and centering keys\$	840.00
REVOZ	Regulating transformer with ammeter 0-15 Volts	231.00
HEZEB	Heating stage, complete for transmitted light up to 1350 ^o C and incident light up to 1150 ^o C	\$ 1,071.00
HEYEZ	Temperature reading instrument 1350 ^o C (Micro-Amperemeter)	400.00

Required Accessories:

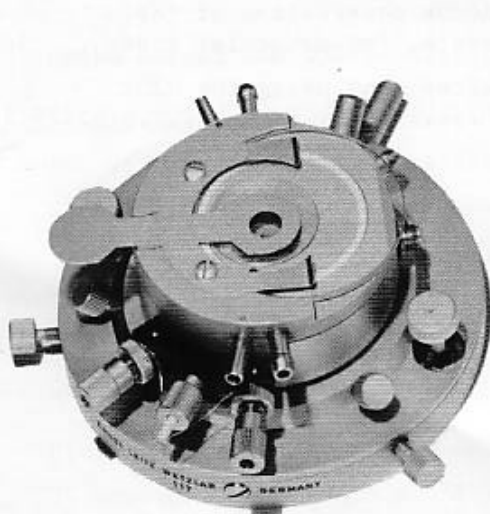
IDIRF	Circular revolving and centering object stage #223, 130 mm ϕ , on interchange carrier for use on Ortholux	\$ 78.00
OPWUP	Spectacle lens condenser #90, on dovetail carrier	24.00

HEVUZ	D) Vacuum heating stage Model 1750 ^o , complete with cooling chamber for water circulation. Rotating quartz window, power supply cords, key. Equipped for investigation in vacuum or a protective gas atmosphere. Vacuum chamber mounted spherically to allow specimen levelling with magnets. Interchangeable thermocouple Pt-Rh 18, with compensating wires for measuring the temperature by means of a galvanometer. Regulating transformer 0-220 Volts and fixed transformer 5 Volts and connecting cords	\$ 1,440.00
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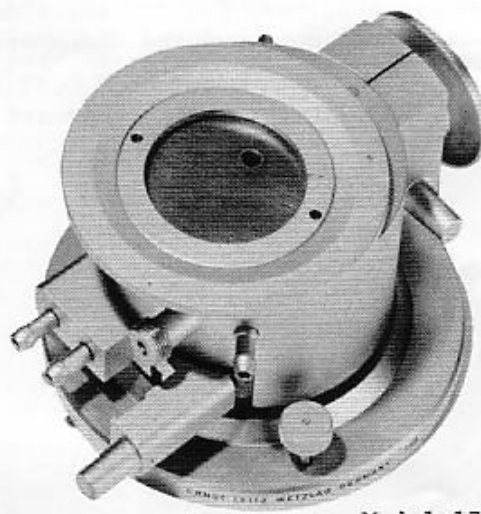
Required Accessory:

IDIRF	Circular revolving and centering objective stage #223, 130mm ϕ , on interchange carrier for Ortholux	\$ 78.00
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For additional accessories, spare parts and recommended optical equipment, please refer to the following catalogs: #51.3-8d, #51.3-33b, #51.3-73 and #51.3-68a.



Model 1350



Model 1750

Objectives and eyepieces for transmitted light observations in bright- and darkfield

Designation of objectives (scale / aperture)	Cover glass correction*	Eyepiece	Codeword	Price	Focal length mm.	Working distance mm.	Total magnifications with Huygens, Periplanatic or wide-field eyepieces at a tube factor of 1.25 x (rounded off values)						
							6x	8x	10x	12x	16x	25x	
Achromatic dry systems	2.5/0.07	D O	P	OBSIS	48.00	56.8	14	20	25	30	38	50	78
	3.2/0.12	D O	H	ACUBE	25.00	32.6	20	24	32	40	48	64	100
	3.5/0.10	D O	H	ONANE	30.00	31.6	23	26	35	44	53	70	110
	6/0.18	D O	H	ACEDU	27.00	24.5	17	45	60	75	90	120	190
	10/0.25	D O	H	ACORA	31.00	16.3	5.7	75	100	125	150	200	315
	25/0.50	D	P	ACVIR	52.00	7.1	0.88	190	250	310	375	500	780
	40/0.65	D	P	ACMAT	47.00	4.46	0.67	300	400	500	600	800	1250
	63/0.85	D I	P	ACISE	58.00								
Iris 63/0.85	D	P	OBSOV	90.00	2.9	0.29	470	630	785	950	1280	1975	
Achromatic immersions (W = water-immersions)	Oil + W 22/0.65	D O	P	OILAT	DISC.	8.1	0.32	165	220	275	330	440	690
	W 90/1.20	D	P	WATIM	135.00	2.1	0.09	675	900	1125	1350	1800	2800
	Oil 100/1.30	D	P	OILIM	83.00								
	Iris Oil 100/1.30-1.10	D	P	OBSOT	130.00	1.8	0.14	750	1000	1250	1500	2000	3100
Fluorite dry systems	Fl 40/0.85	D I	P	FLUCA	115.00	4.3	0.38	300	400	500	600	800	1280
Fluorite oil immersions	Fl Oil 54/0.95	D O	P	FLUIM	127.00	3.4	0.22	400	540	675	800	1100	1700
	Fl Oil 70/1.30	D	P	FLURI	168.00	2.5	0.20	525	700	875	1050	1400	2200
	Fl Oil 95/1.32	D	P	FLUES	161.00	1.9	0.14						
	Iris Fl Oil 95/1.32-1.10	D	P	OBSUV	235.00	1.9	0.14	710	950	1200	1422	1900	3000
Apochromatic dry systems	Apo 12.5/0.30	D O	P	APOSA	89.00	13.0	2.5	95	125	150	185	250	375
	Apo 25/0.65	D	P	APOCT	154.00	7.3	0.85	190	250	300	370	500	760
	Apo 40/0.95	D I	P	OBPAM	230.00	4.4	0.12	300	400	500	600	800	1250
	Apo 63/0.95	D I	P	OBSUN	230.00	3.0	0.12	470	630	785	950	1250	1975
Apochromatic oil immersions	Apo Oil 90/1.32	D	P	APOIM	297.00	2.0	0.13						
	Apo Oil 90/1.40	D	P	APOXU	363.00	1.9	0.08	675	900	1125	1350	1800	2800
Plano objectives	Pl 4/0.10	D O	P	PLAYS	94.00	41.5	15	30	40	50	60	80	125
	Pl 10/0.25	D O	P	PLABY	118.00	17.9	7.5	75	100	125	150	200	310
	Pl 25/0.50	D	P	PLAWT	160.00	7.6	0.90	190	250	310	375	500	780
	Pl 40/0.65	D	P	PLASP	182.00	4.93	0.58	300	400	500	600	800	1250
	Pl Apo Oil 100/1.32	D	P	PLARN	373.00	2.43	0.27	750	1000	1250	1500	2000	3125

Huygens eyepieces					Periplanatic wide-field eyepieces						Periplanatic eyepieces									
Magnification	Field of view mm.	Codeword			Magnification	Field of view mm.	Codeword			Magnification	Field of view mm.	Codeword								
		Single	Price	Pair			Price	Single	Price			Pair	Price	Single	Price	Pair	Price			
6x	19	HYZWA	9.50	-	GF 10x	18	PERIR	31.00	PESIS	62.00	10x*	18.0	PELAJ	24.00	PELEK	48.00				
6x	17	-	-	GIZRA			19.00													
10x	14	HVYR	9.50	GIVYR			19.00													
16x	10	HYPEE	DISC.	-																
Micrometer 6x M 10mm=100intervals	17.5	OCMIR-OCASY	36.00	-	GF 10x M Micrometer 10mm=100intervals	15	PEROS	41.00	PESOT	82.00	high-point eyepieces	18.0								
					GF 16x	10	PESAP	45.00	PETAR	90.00			8x	18.0	PEXAV	39.00	PEXEW	78.00		
					GF 25x M Micrometer 10mm=100intervals	10	PESER-OCASY	68.00	PELOM-OCASY	112.00			10x	15.0	PERAN	43.00	PEREP	86.00		

Phase-contrast objectives

* with large field of view

Type	Designation ¹	Free working distance	Micrometer value measured with eyepiece # 6 x	Cover glass correction ²	Type of eyepiece ¹	Code word	Price	Type	Designation	Free working distance	Micrometer value measured with eyepiece # 6 x	Cover glass correction	Type of eyepiece	Code word	Price
Dry system	Pv 10/0.25	5.8	15	D O	P	PHALZ	59.00	Water dipping objective	Pv WE 22/0.60	0.05	6.5	O	P	PHESH	108.00
	Immersion attachment for Pv 10/0.25	0.3				PHAWK	12.00		Water dipping objective	Pv WE 50/0.70	0.05	2.8	O	P	PHEWL
Dry system	Pv 25/0.50	2.0	7.6	D	H (P)	PHANC	98.00	Water dipping objective		Pv WE 80/1.00	0.06	1.9	O	P	PHEYN
Dry system with very long working distance	Pv Apo L 40/0.70 in correction mount with automatic focusing compensation	0.38	3.8	D I	P	PHASG	228.00		Oil immersion	Pv Fl Oil 70/1.15	0.20	2.0	D O	P	PHELB
Dry system with very long working distance	Pv Apo L 63/0.70 in correction mount with automatic focusing compensation	0.35	2.4	D I	P	PHERG	232.00	Oil immersion	Pv Apo Oil 90/1.15	0.12	1.6	D O	P	PHATH	288.00
								Oil immersion	Pv Apo Oil 90/1.32	0.12	1.6	D O	P	PHIBS	337.00

D: with cover glass D = 0.17 (cover glass thickness should be observed accurately to within ± 0.05mm)

O: without cover glass, DO: can be used with or without cover glass.

D I: Cover glass thickness should be observed accurately to within ± 0.01mm., or should be accurately set with the correction mount.

Objective in correction mount with automatic focusing compensation renders a sharp image by compensating different or unknown cover glass thickness by means of the correction mount.

H = use Huygens eyepieces; P = use Periplanatic eyepieces.

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