

POLARIZING
MICROSCOPES

LEITZ

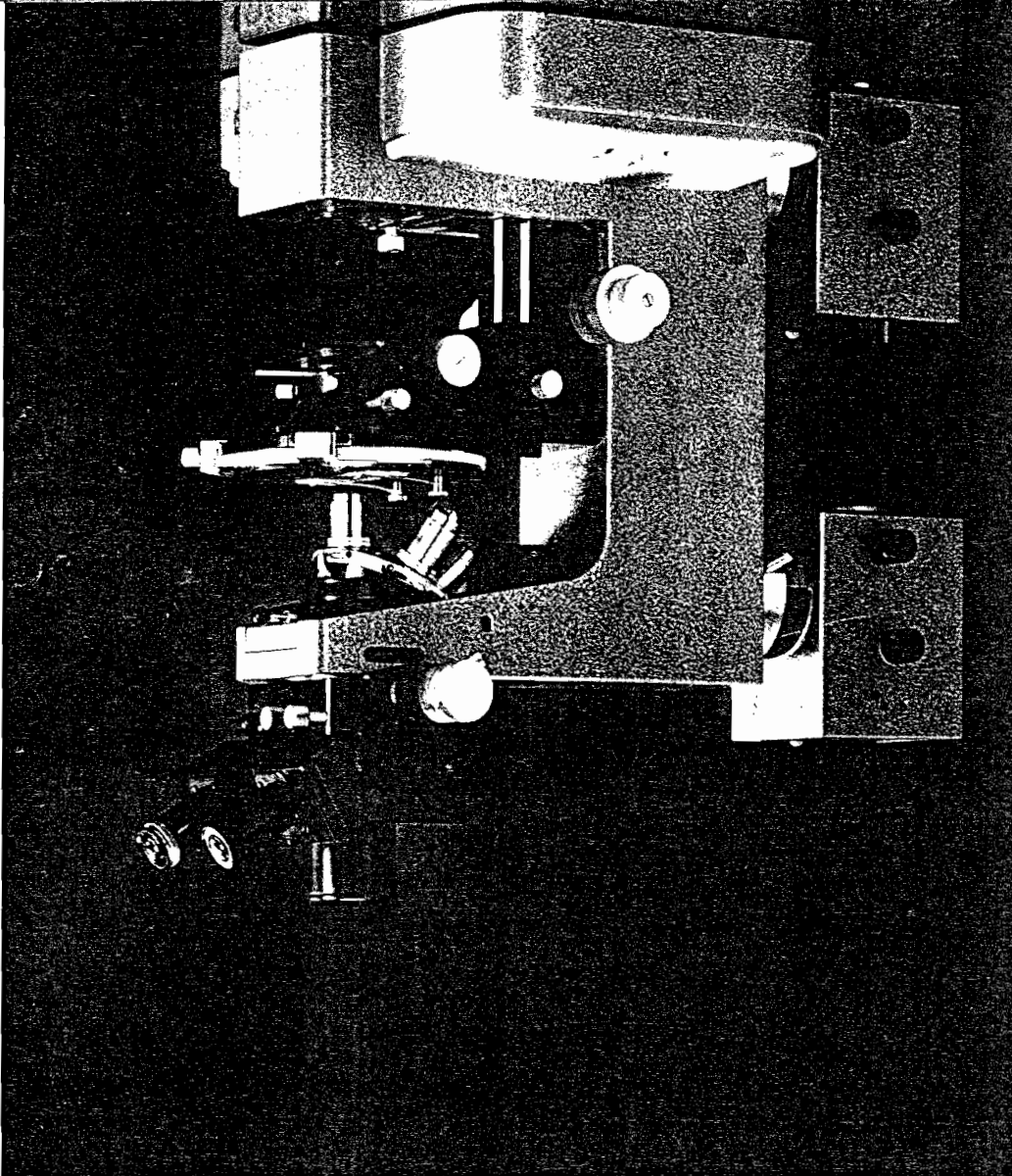


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Optical methods of examination with the aid of polarized light have been perfected to such a remarkable extent in the course of the past hundred years that they have been introduced with great success into almost all fields of the natural sciences and technology.

The importance of polarized light for optical research work was recognized very early, and it was Brewster (1781 - 1868) who pointed out, only a few years after the discovery of polarization, the practical possibility of examining organic and inorganic materials in polarized light, with emphasis, however, on the identification of minerals. The development of special polarizing instruments, however, proceeded very slowly at this early stage. H. F. Talbot equipped a compound microscope with polarizer and analyzer (Nicol prisms) for the first time in 1834 and thus introduced an efficient polarizing microscope.

But still in 1860, the Utrecht scientist Pieter Harting wrote in his book *The Microscope*: "The applications for which a specially constructed polarizing microscope may be desirable are very rare, and therefore an ordinary microscope supplemented by attachable polarizing elements should generally be preferred." In accordance with such opinions, LEITZ microscopes supplied at the time were offered with separate polarizers and analyzers for mineralogical work, and special polarizing microscopes such as the Rosenbusch polarizing stand of Carl Kellner (founder of the LEITZ works) remained exceptions. It was not until the development of the preparation of polished mineralogical thin sections that more exacting methods of examination were called for, leading to a growing demand for polarizing microscopes.

The first LEITZ polarizing microscope was supplied in 1885, and only five years later a special petrographic instrument was introduced. Ample proof of the efforts made in this new field is the fact that in 1893 a special catalog on polarizing microscopes and accessories was published by LEITZ WETZLAR.

axis immediately below the coarse focusing heads proved to be extremely successful for half a century. It was only in recent years that advanced designs with built-in illuminating system were introduced.

In 1912, Max Berek, former student of Theodor Liebisch, joined the LEITZ staff. His work found expression in the advancement of the polarizing microscope and optical methods of examination which consolidated the leading position of LEITZ microscopes in the mineralogical field. It is his merit to have laid down an exact theory on microscopy in transmitted and incident light, including polarized light, and to have introduced remarkable design improvements. His achievements are most outstanding in incident light microscopy. His compensating prism (trapezoidal prism), widely used today, deflects the illuminating rays without changing their state of polarization. This optical means became the basis of quantitative examination in incident light. The application of polarized light in microscopy, initially confined to the work of mineralogists, gradually found its way into other fields of the natural sciences. W. J. Schmidt greatly contributed to the introduction of polarized light microscopy into biological and medical research in his fundamental work by which new methods were established and former prejudices removed.

The classical form of the polarizing microscope stand as it was introduced at the beginning of this century was manufactured with more or less external modifications until radically new designs appeared a few years ago which followed the example set by the large biological research microscope ORTHOLUX about 25 years earlier. The outstanding features of this famous instrument were adopted for creating a range of polarizing microscopes which met all requirements of modern teaching and routine laboratory work, as well as research. Their versatility, performance and operation convenience were outstanding since LEITZ designers worked closely with noted scientists and users of polarizing outfits. Like the well-known ORTHOLUX, the new polarizing stands offered the advantages of a built-in illuminating system, low-placed focusing controls for utmost conven-

ence and displacement of the freely accessible object stage, while the observation height of the interchangeable monocular and binocular tubes remained unchanged. Binocular vision could now be applied to orthoscopic as well as conoscopic observations. A remarkable degree of interchangeability ensured ready adaptation of the new polarizing stands to all types of work.

The current line of LEITZ polarizing microscopes is as follows:

1. SM-POL. Simple polarizing microscope for general examinations in transmitted light.

2. LABOLUX-POL. Polarizing microscope with built-in illuminating system for investigations in transmitted light and with provision for work in reflected light.

3. DIALUX-POL. Large polarizing microscope with built-in illuminating system for all types of research work in transmitted light and with provision for work in reflected light.

4. EPIUX-POL. Polarizing microscope for work in reflected light with provision for fitting transmitted light equipment.

5. ORTHOLUX-POL. Universal research microscope with built-in illuminating system for work in transmitted and reflected light including incident phase contrast illumination.

6. ORTHOPLAN-POL. The new member of this versatile product line is the ORTHOPLAN-POL, introduced in 1970. When the basic ORTHOPLAN Wide-Field Research Microscope was developed by LEITZ several years ago, it was selected by an international jury for excellence in industrial design. Here for the first time was an exceptionally contemporary microscope designed for functional accessory integration.

Now a special ORTHOPLAN, the ORTHOPLAN-POL, is available for polarized light investigations — for orthoscopic and conoscopic observations

and for photomicrography in both transmitted and reflected light.

The polarizing elements of LEITZ microscopes are in most cases high-grade polarizing filters with a neutral-gray polarizing film to suit microscopic requirements. These filters have been considerably improved in recent years and their efficiency is equal to calcite prisms formerly exclusively used in LEITZ microscopes. As constructional elements for microscopes, these filters are more advantageous since they require less space. Moreover, the microscopic images of instruments equipped with polarizing filters are free from astigmatism without the interposition of additional optical means. The DIALUX-POL research stand is alternatively made with calcite polarizing prisms which are still preferred for specialized work such as spectro-photometric measurements or prolonged examinations and photomicrography with the aid of high-power light sources, i.e., xenon discharge lamps.

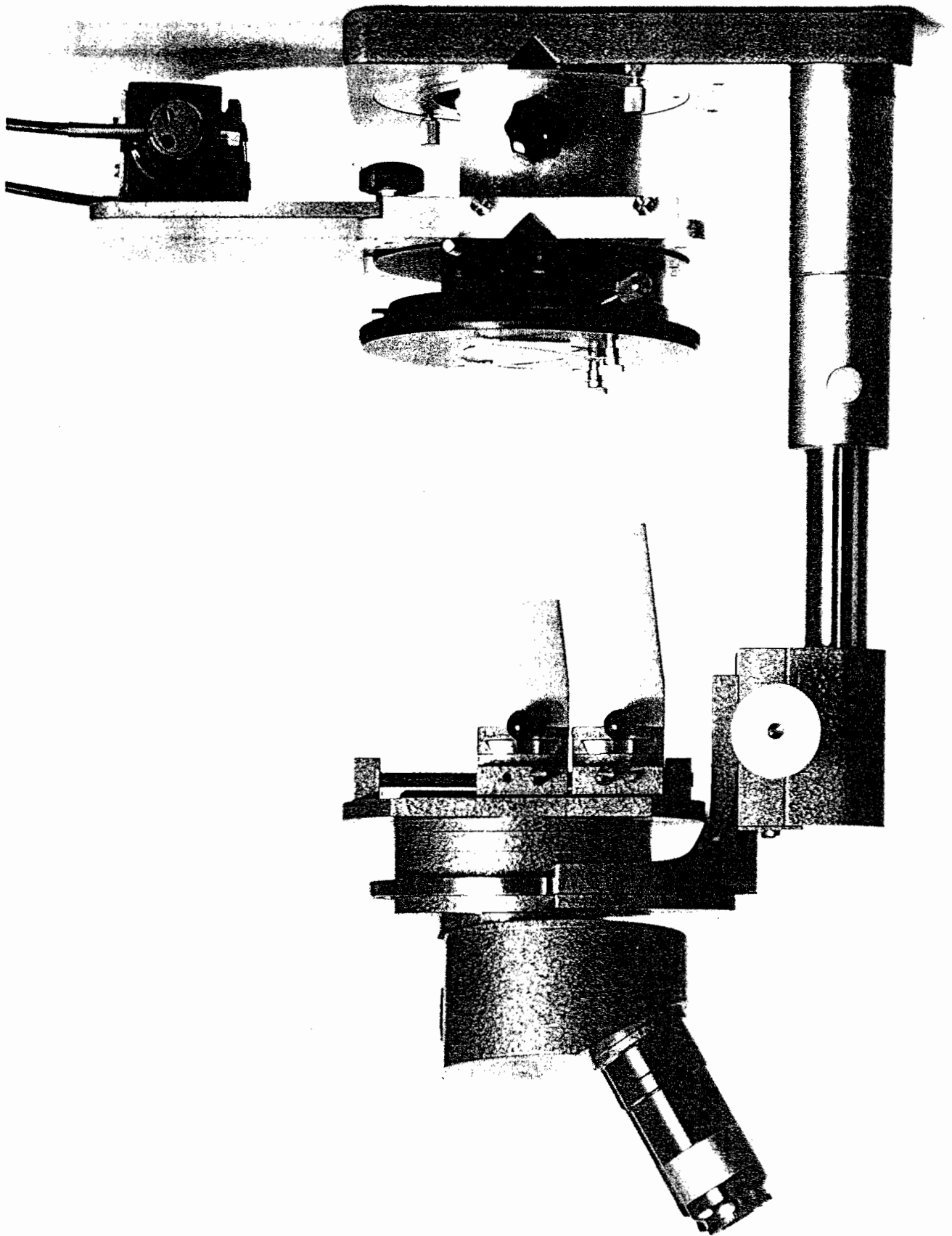
In addition to the standard microscope outfits described in this catalog, we would like to call your attention to the special accessories and attachments such as the MACRO-DIA Apparatus for photomicrography, Compensators (mica, Berék, Brace Kohler and tilting types; quartz wedges and Wright eyepiece), the Universal Rotating Stages and the Micro Hardness Tester.

Unique to the LEITZ polarizing microscope system is the family of interference contrast accessories: the Smith, Nomarski, Francon and Jamin Lebedeff attachments.

Equipment for projecting interference figures with the PRADO UNIVERSAL makes this instrument particularly valuable for lecture work.

And for three-dimensional observations, you will want to review the Stereo-Pol equipment described at the front of this catalog.

Of course, we will be happy to assist you in selecting the LEITZ polarizing microscope, attachments and accessories most suitable for your requirements. Please feel free to contact us at any time for technical advice.



**LEITZ STEREOSCOPIC - POL MICROSCOPES
WITH FIELD OF VIEW UP TO 28MM ϕ
FOR ORIENTATING INVESTIGATIONS IN TRANSMITTED
POLARIZED LIGHT**

**STEREOSCOPIC - POL MICROSCOPE, MODEL RS - POL,
WITH RAPID OBJECTIVE CHANGER**

511 271	Large field stereo body, RS-POL, with field of view up to 28mm ϕ , inclined eyepiece tubes rotatable through 360° with click stops at 90° and swing-out filter analyser; rapid objective changer for three pairs of parfocal objectives. The pair of 1x/0.05 objectives being permanently mounted	\$ 735.00
511 233	Incident light stand with extensible column (76mm), rack and pinion focusing motion and base plate with stage plate, metal insert, black glass plate, opal glass plate, clear glass plate and two object clamps	111.00
511 236	Transmitted light stage with built-in adjustable illuminating mirror; the front side concave and reverse side white	91.00
511 272	Rotating and centering object stage with filter polarizer rotatable 90° and slot to accept compensator	283.00
512 036	Flexible plastic protective dust cover	3.00
511 276	LEITZ STEREOSCOPIC - POL MICROSCOPE RS - POL as described above, however, without optical equipment	\$1,223.00
Optical Equipment ST 12		
511 204	Paired achromatic stereo objectives, 1.6x/0.07 on slider, free working distance 120mm	\$ 82.00
511 205	Paired achromatic stereo objectives, 4x/0.08 on slider, free working distance 60mm	89.00
511 206	Paired achromatic stereo objectives, 10x/0.10 on slider, free working distance 30mm	93.00
511 211	Paired large field eyepieces, W 6.3x, one with adjustable eyelens, field of view up to 28mm ϕ	100.00
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for reticles, field of view up to 16mm ϕ	123.00
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm ϕ	114.00
LEITZ LARGE FIELD STEREOSCOPIC - POL MICROSCOPE RS - POL WITH OPTICAL EQUIPMENT ST 12 FOR MAGNIFICATIONS 6.3X TO 250X (TRANSMITTED LIGHT)		
511 273	First order red compensator	\$ 149.00
511 274	Quarter wave compensator	89.00
511 235	Twin transmitted light illuminators 6 volt 5 watt with mounting bracket	\$ 140.00
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110/120 volts, 60 cycles A.C.	78.00
514 001	Monia lamp 6 volts, 30 watts with centerable lamp socket, focusable condenser lens, blue and ground glass filters; adjustable on pillar stand	\$ 107.00
500 101	Combination regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts; for connection to 110/120 volts, 60 cycles A.C.	130.00
511 253	Fitted cabinet with handle, lock and key	\$ 67.00

511 270	Large field stereo body, ES-POL, with field of view up to 28mm ϕ , inclined eyepiece tubes rotatable through 360° with click stops at 90° and swing-out filter analyser, dovetail fittings accepting paired objective slider. The pair of 1X/0.05 objectives being permanently mounted	\$ 620.00
511 233	Incident light stand with extensible column (76mm), rack and pinion focusing motion and base plate with stage plate, metal insert, black glass plate, opal glass plate, clear glass plate and two object clamps	111.00
511 236	Transmitted light stage with built-in adjustable illuminating mirror, the front side concave and reverse side white	91.00
511 272	Rotating and centering object stage with filter polarizer rotatable 90° and slot to accept compensators	283.00
512 036	Flexible plastic protective dust cover	3.00
511 275	LEITZ STEREO SCOPIC - POL MICROSCOPE ES - POL as described above, however, without optical equipment	\$1,108.00
Optical Equipment ST 12		
511 204	Paired achromatic stereo objectives, 1.6x/0.07 on slider, free working distance 120mm	\$ 82.00
511 205	Paired achromatic stereo objectives, 4x/0.08 on slider, free working distance 60mm	89.00
511 206	Paired achromatic stereo objectives, 10x/0.10 on slider, free working distance 30mm	93.00
511 211	Paired large field eyepieces, W 6.3x, one with adjustable eyelens, field of view up to 28mm ϕ	100.00
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for recticles, field of view up to 16mm ϕ	123.00
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm ϕ -	114.00
LEITZ LARGE FIELD STEREO SCOPIC - POL MICROSCOPE ES - POL WITH OPTICAL EQUIPMENT ST 12 FOR MAGNIFICATIONS 6.3X TO 250X (TRANSMITTED LIGHT)		
511 273	First order red compensator	\$ 149.00
511 274	Quarter wave compensator	89.00
511 235	Twin transmitted light illuminators 6 volt 5 watt with mounting bracket	\$ 140.00
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110/120 volts, 60 cycles A.C.	78.00
514 001	Monta lamp 6 volts, 30 watts with centerable lamp socket, focusable condenser lens, blue and ground glass filters; adjustable on pillar stand	\$ 107.00
500 101	Combination regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts; for connection to 110/120 volts, 60 cycles A.C.	130.00
511 253	Fitted cabinet with handle, lock and key	\$ 67.00

STEREO SCOPIC - POL MICROSCOPE, MODEL ES - POL, WITH DOVETAIL FITTING FOR PAIRED OBJECTIVE SLIDER

OPTICAL EQUIPMENT FOR STEREO MICROSCOPES ES & RS

Optical data for the RS and ES wide-field stereo microscopes						
Working distance mm	Eyepieces					
	W 32 x	W 25 x	W 16xM	W 10 x	W 6.3 x	W 10 x
140	32 x	25 x	16 x	10 x	6.3 x	10 x
120	50 x	40 x	25 x	16 x	10 x	16 x
90	80 x	63 x	40 x	25 x	16 x	25 x
60	125 x	100 x	63 x	40 x	25 x	40 x
30	320 x	250 x	160 x	100 x	63 x	100 x
	0.8	1	1.6	2.4	2.8	2.8
						Magnif. Field mm
						Magnif. Field mm
						Magnif. Field mm
						Magnif. Field mm
						Magnif. Field mm
						Magnif. Field mm

Objectives	
511 204	Paired achromatic stereo objectives, 1.6x/0.07 on slider, free working distance 120mm
511 207	Paired achromatic stereo objectives, 2.5x/0.08 on slider, free working distance 90mm
511 205	Paired achromatic stereo objectives, 4x/0.08 on slider, free working distance 60mm
511 206	Paired achromatic stereo objectives, 10x/0.10 on slider, free working distance 30mm
Large Field Eyepieces	
511 211	Paired large field eyepieces, W 6.3x, one with adjustable eyelens, field of view up to 28mm ϕ
511 215	Paired large field eyepieces, W 10x, one with adjustable eyelens, field of view up to 24mm ϕ
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for reticles, field of view up to 16mm ϕ
511 219	Paired large field eyepieces, W 16xM, both with adjustable eyelens and mount for reticles, field of view up to 16mm ϕ
511 217	Single large field eyepiece, W 16xM, with adjustable eyelens and mount for reticles, field of view up to 16mm ϕ
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm ϕ
511 223	Paired large field eyepieces, W 32x, with fixed eyelens, field of view up to 8mm ϕ
511 251	Paired eyecups, soft rubber

\$ 8.00
136.00
114.00
69.00
138.00
123.00
119.00
\$ 100.00

93.00
89.00
82.00
\$ 82.00

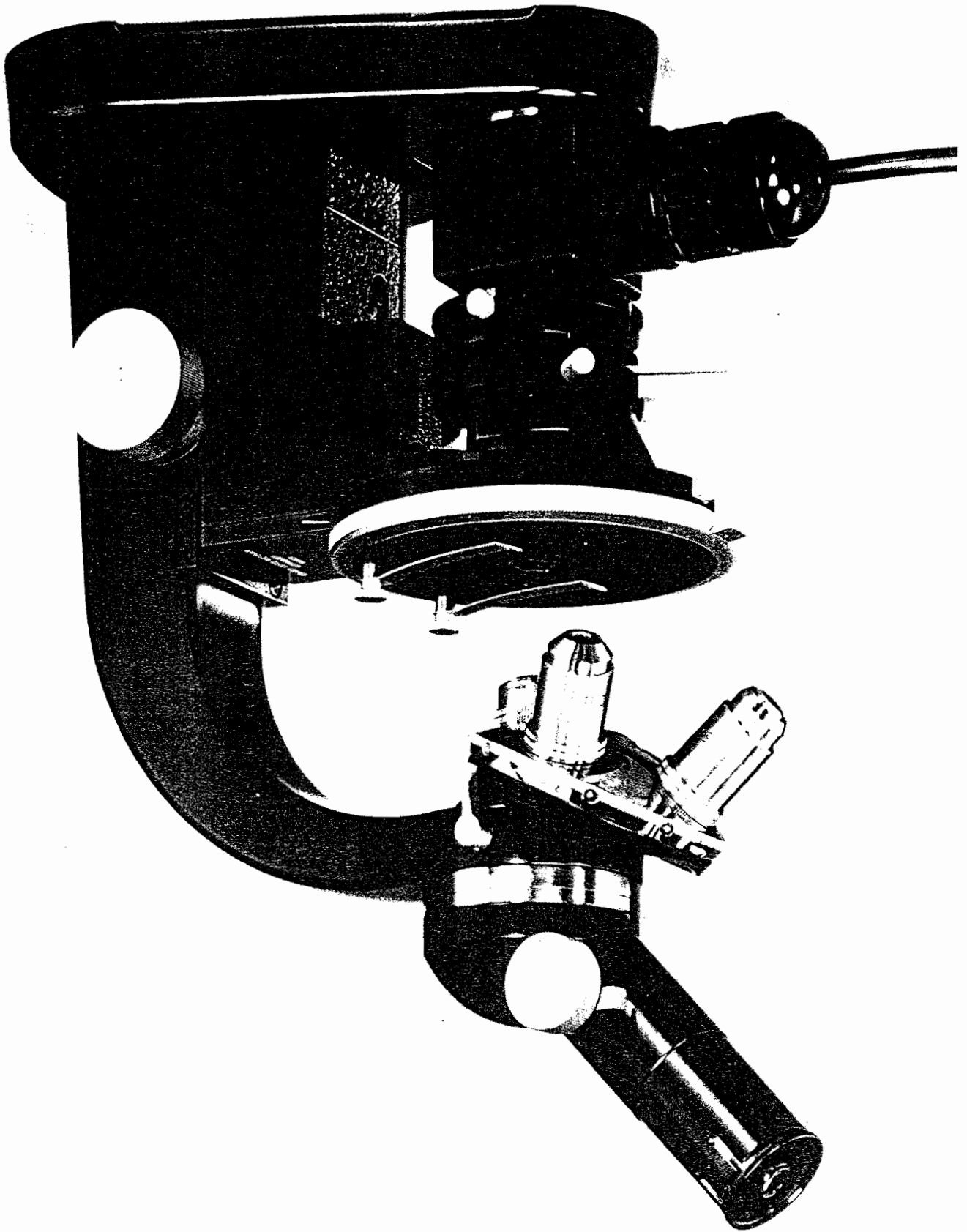
EYEPiece RETICLES
FOR "M" EYEPieces ONLY

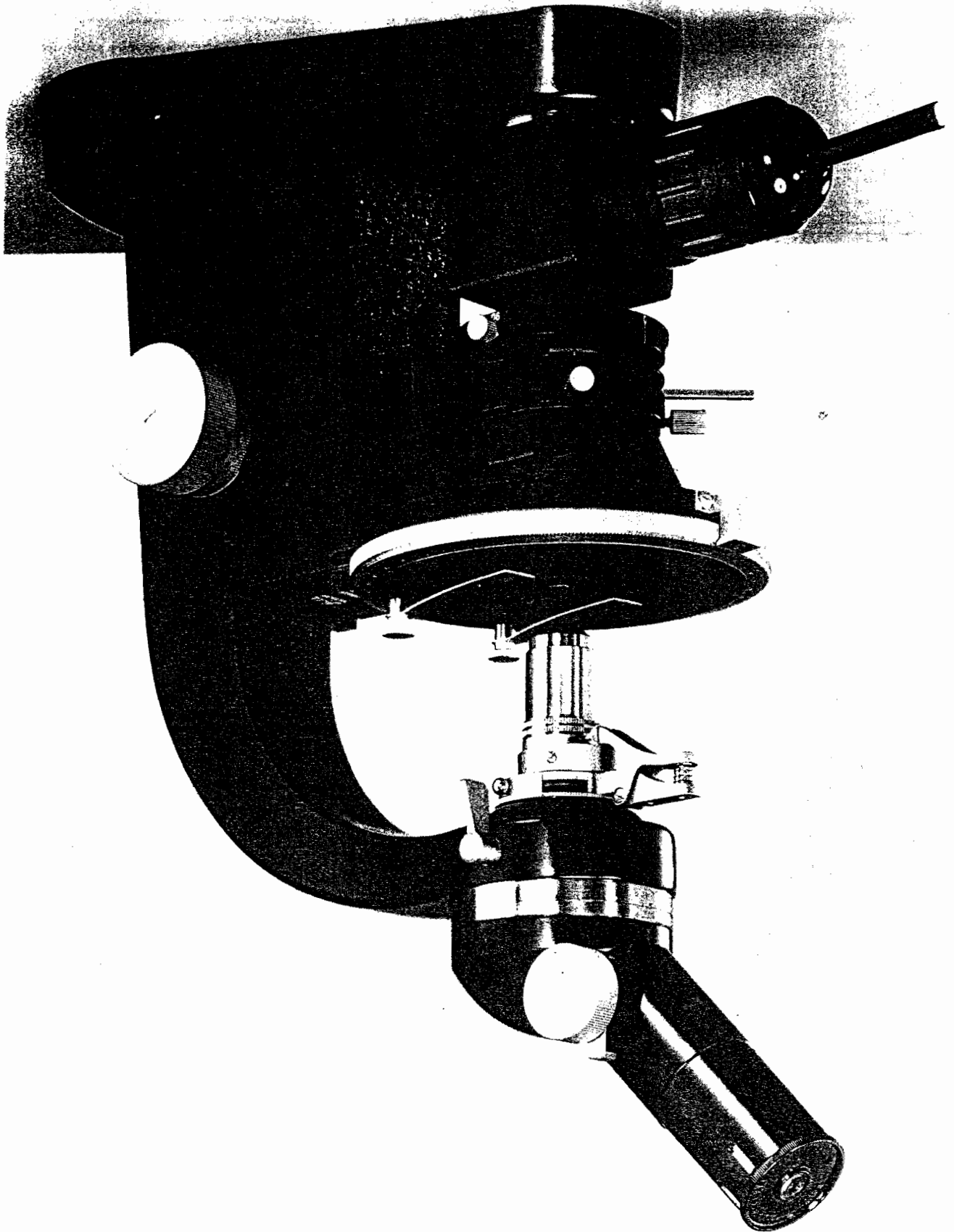
For Stereoscopic Microscopes, Models ES, RS and FS	
511 310	Eyepiece micrometer, 6.3mm = 100 divisions \$ 31.00
511 311	Eyepiece micrometer, 5mm = 100 divisions 31.00
519 920	Eyepiece micrometer, 10mm = 100 divisions 31.00
511 313	Eyepiece micrometer, 10mm = 200 divisions 31.00
511 139	Crossline plate \$ 31.00
519 937	Eyepiece micrometer, 10mm = 100 divisions and crosslines \$ 31.00
511 309	Eyepiece net micrometer, 10 x 10mm divided into squares 0.075mm \$ 31.00
511 308	Eyepiece net micrometer, 10 x 10mm divided into squares 0.10mm 31.00
511 307	Eyepiece net micrometer, 10 x 10mm divided into squares 0.20mm 31.00
511 306	Eyepiece net micrometer, 10 x 10mm divided into squares 0.50mm 31.00
511 305	Eyepiece net micrometer, 10 x 10mm divided into squares 0.65mm 31.00
511 304	Eyepiece net micrometer, 10 x 10mm divided into squares 1.0mm 31.00

Stage Micrometer

513 106 Stage micrometer on glass 2mm = 200 divisions with photographic scale \$ 34.00

See page 10 for SM-POL M Microscope.





MONOCULAR POLARIZING MICROSCOPE, SM - POL M, WITH OBJECTIVE CENTERING CLUTCH

Modern stand, SM-POL M, made of non-corroding alloy with single knob combined coarse and fine adjustment and built-in swing-out filter analyser
 Permanently attached objective clutch changer with three centering collars and slot to accept compensators 0.73.-
 Dovetail carrier --.5-, for the interchange of condensers with rack and pinion for the adjustment in the height of condensers
 First order red compensator (Gypsum plate)
 Flexible plastic protective dust cover
 Leatherette carrying case, upright
 Interchangeable inclined monocular observation tube P 11 (30mm ϕ), with swing-out Bertrand lens and pinhole diaphragm
 Rotating and permanently centered ball bearing object stage No 39, 120mm diameter, with 360° graduations
 Swing-out condenser No. 70ZF, free from polarization, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier
 LEITZ POLARIZING MICROSCOPE SM-POL M 0.73.5. P 11 39/70ZF as described above

552 131 \$ 808.00

Optical Equipment B1A Mono

559 037 Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm
 559 045 Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm
 559 038 Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount
 559 006 Huygens eyepiece P 8x (30mm ϕ) with adjustable eyelens and fixed crosslines, field of view 19mm
 550 045 LEITZ MONOCULAR STUDENT AND LABORATORY POLARIZING MICROSCOPE SM-POL M 0.73.5. P 11 39/70ZF COMPLETE WITH OPTICAL EQUIPMENT B1A MONO as described above
 512 078 Plane and concave mirror with bayonet mounting device ---12

61.00
 87.00
 218.00
 70.00
 \$1,244.00
 17.00
 \$1,261.00
 514 096 Micro-dia lamp 15 watts, 110 volts A.C., with bayonet mounting device ---13 \$ 29.00
 051 475 Low voltage lamp 6.3 volts, 5 watts with adjustable aspherical condenser, blue and ground glass filters and bayonet mounting device; regulating transformer 6.5 volts, 0.8 amps for connection to 110/120 volts, 60 cycles A.C. ---22 \$ 66.00

Alternate Substage Illuminators



SM-POL MICROSCOPE

INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

Tubes

552 035	Interchangeable straight monocular photographic tube O 14 (30mm ϕ), with swing-out Bertrand lens and pinhole diaphragm	\$ 136.00
552 029	Interchangeable inclined monocular observation tube P 11 (30mm ϕ), with swing-out Bertrand lens and pinhole diaphragm (included with basic equipment)	182.00
552 028	Interchangeable inclined binocular observation tube S 20; for standard diameter (23.2mm) eyepieces	451.00

Discussion Tube

553 193	Discussion tube for the simultaneous observation by two people of the microscope image with built-in mechanical arrow pointer, quartz plate and bayonet mounts to accept the standard observation tubes (not included)	\$ 721.00
054 385	Shock absorbing base	82.00

Note:

We recommend the monocular observation tube P 11 (catalog No. 552 029) in conjunction with the P 8x eyepiece (catalog No. 559 006). To insure adequate illumination the low voltage lamp 6 volts, 15 watts (catalog No. 514 095) is required.

Attachable Mechanical Stages

553 082	Attachable mechanical stage No. 42, with graduated vernier reading to 0.1mm; traversing area 34 x 20mm	\$ 212.00
553 083	Attachable mechanical stage No. 40 for point counting with seven 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 2.0mm; traversing area 34 x 20mm	378.00

Equipment for Reflected Light

553 107	Vertical illuminator with swing-out polarizer and analyser, aperture and field diaphragm, bayonet mounting device; built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5, ground glass and green filters (objectives for 215mm tube length)	\$ 558.00
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
559 051	Achromatic dry objective, free from polarization, F 6.3x/0.20, focal length 30mm, free working distance 21mm	79.00
559 015	Achromatic dry objective, free from polarization, F 8x/0.18, focal length 23mm, free working distance 16mm	79.00
559 008	Achromatic dry objective, free from polarization, F 16x/0.40, focal length 13mm, free working distance 3.3mm	93.00
559 033	Achromatic dry objective, free from polarization, F 44x/0.65, focal length 4.5mm, free working distance 0.53mm	128.00

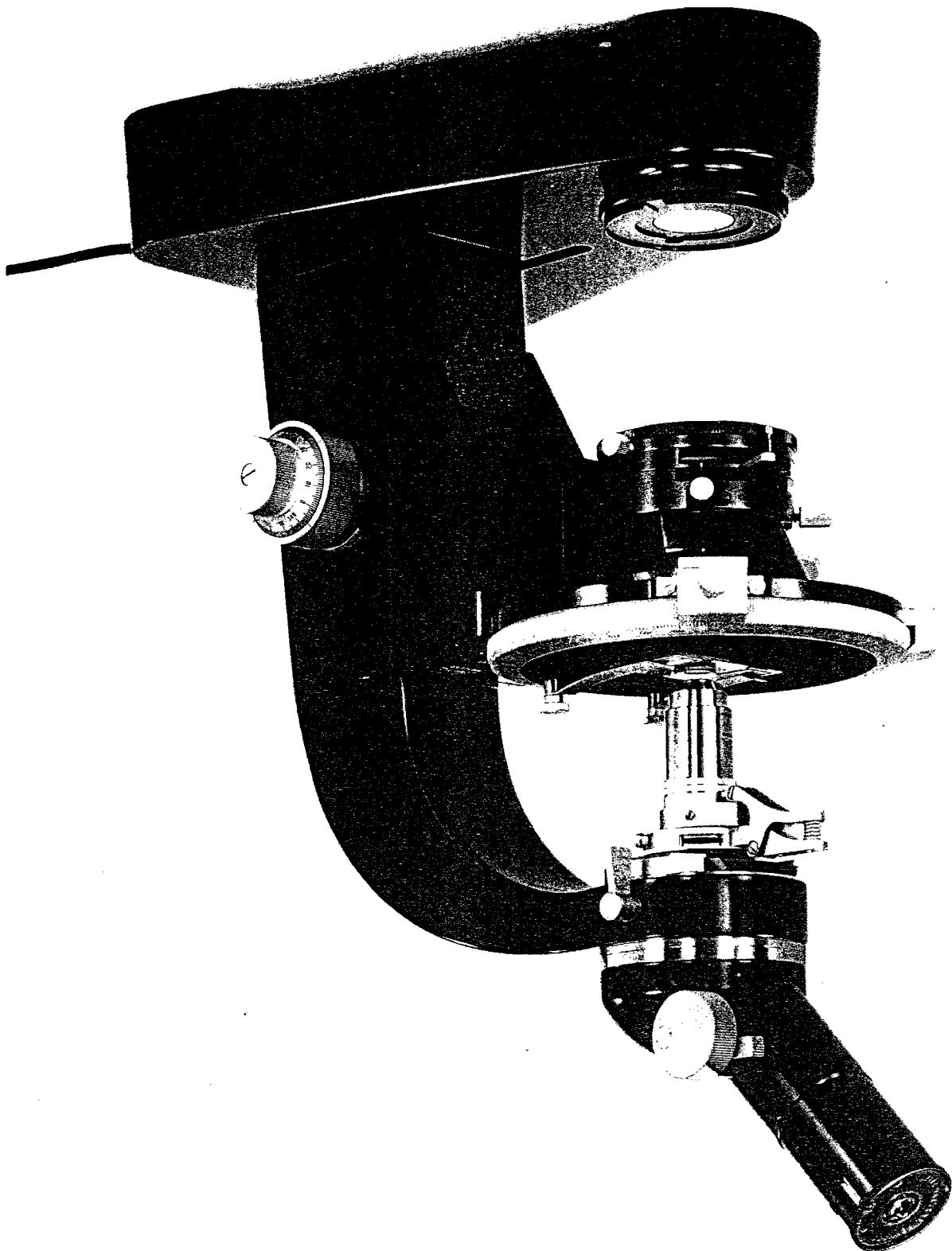
Note:

Due to the limited travel of the object stage, samples exceeding 10mm thickness, including the slide, cannot be used.

\$1,015.00

553 192	Drawing attachment with 80/20 prism, built-in quartz plate, adjustable lateral drawing tube, focusing device with built-in achromatic objective, eyepiece tube for the projection eyepiece (eyepiece not included), 45° mirror and bayonet mount for the observation tube	\$ 451.00
519 051	PERIPLAN widefield eyepiece, single GF 12.5x, field of view 18mm (drawing area 14 - 23cm)	59.00
Note:		
The microscope light source must be equipped with a regulating transformer. A 60 watt desk lamp is also required to illuminate the drawing area.		
512 078	Plane and concave mirror with bayonet mounting device ---12	\$ 17.00
514 096	Micro-dia lamp 15 watts, 110 volts A.C., with bayonet mounting device ---13	29.00
051 475	Low voltage lamp 6.3 volts, 5 watts with adjustable aspherical condenser, blue and ground glass filters and bayonet mounting device; regulating transformer 6.5 volts, 0.8 amps for connection to 110/120 volts, 60 cycles A.C. ---22	66.00
514 095	Low voltage lamp 6 volts, 15 watts with bayonet mounting device ---17	\$ 108.00
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
Spectral Lamp		
514 090	Lamp housing, monia type, with adjustable collector, socket for sodium bulb and ground glass; adjustable on pillar stand	\$ 98.00
500 032	Sodium bulb Na 4 watt	25.00
514 092	Sodium vapor lamp for SM-POL M Microscope, however, without power unit	\$1,123.00
500 116	Power unit for sodium spectral lamp 4 watt, 220 volts, 60 cycles A.C.	138.00
500 039	Step-up transformer for connection to 110 volts, 60 cycles A.C.	69.00
Miscellaneous Accessories and Replacement Parts		
553 030	First order red compensator - Gypsum plate (included with basic equipment)	\$ 36.00
553 035	Quarter wave compensator - Mica plate	32.00
553 044	Quartz wedge I - IV orders, short type	143.00
512 037	Flexible plastic protective dust cover (included with basic equipment)	\$ 2.00
552 008	Leatherette carrying case, upright (included with basic equipment)	48.00
500 013	Bulb 15 watt, 110 volts A.C. (as replacement for catalog No 514 096)	\$ 1.00
050 520	Bulb 6.3 volts, 5 watts (as replacement for catalog No. 051 475)	0.40
500 012	Bulb 6 volts, 15 watts (as replacement for catalog No. 514 095 and 553 107)	3.30
\$ 330.00		

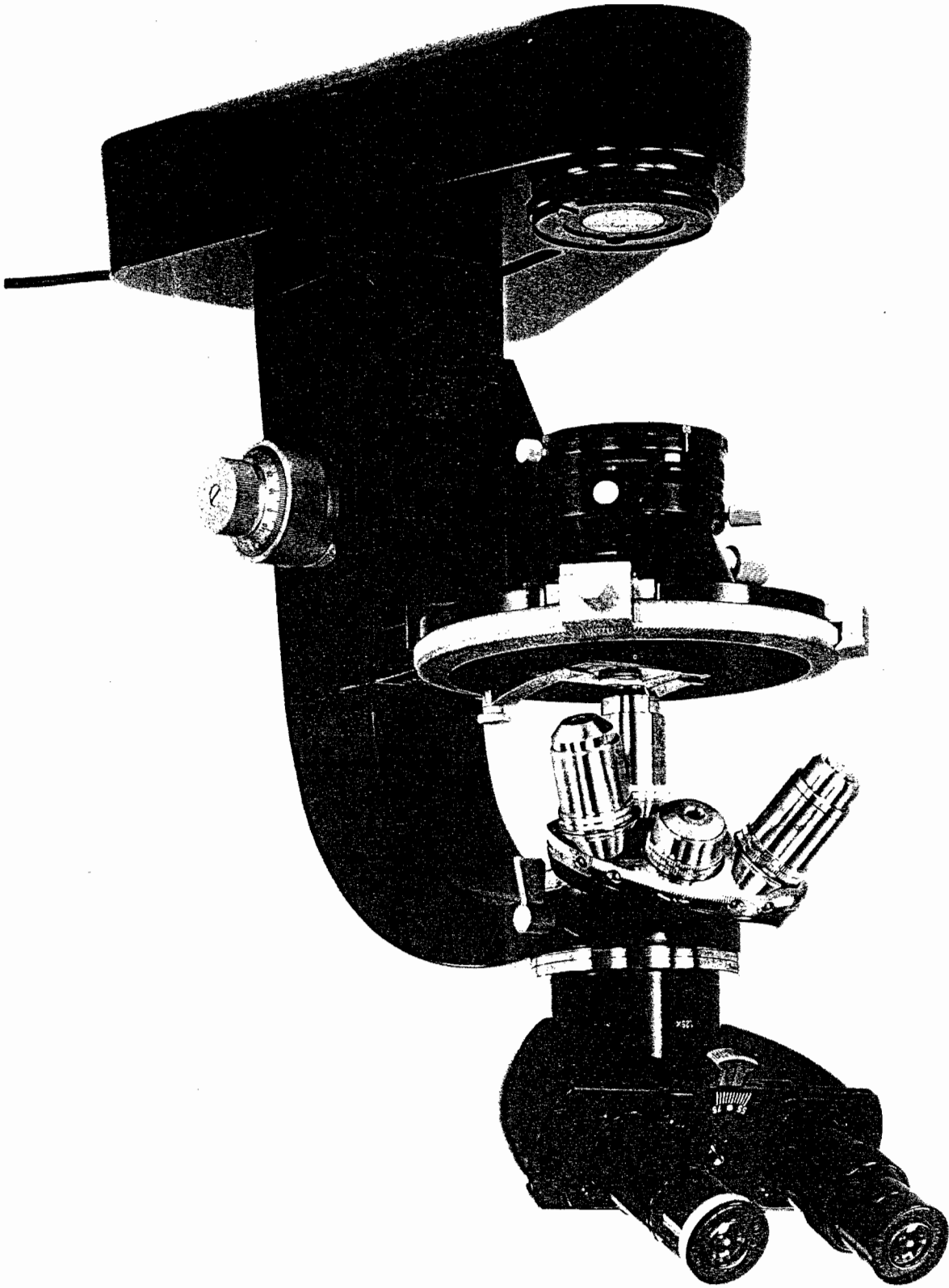
See page 18 for LABOLUX-POLD Microscope.



**MONOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE
LABOLUX-POL D: EQUIPPED FOR TRANSMITTED LIGHT**

055 219	Modern stand, LABOLUX-POL D, made of non-corroding alloy, with dual knob, coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in swing-out filter analyser, bayonet mount for interchangeable body tubes and Mipolam pad. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser --5. Built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5, ground glass and green filter, including one spare bulb --.31 and built-in field diaphragm for Koehler illumination	\$ 790.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 048	Objective centering clutch on carrier with four centering collars and slot to accept compensators 7.74	118.00
552 029	Inclined monocular observation tube P11 30mm ϕ , with swing-out Bertrand lens and independently operated pinhole diaphragm	182.00
552 032	Rotating object stage No. 38, 130mm ϕ , with scales and verniers, reading to 0.1 μ	274.00
552 077	Swing-out condenser No. 702F1, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90 $^{\circ}$ intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE LABOLUX-POL D 7.74.5.31 P11 38/702FL as described above	\$1,692.00
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization P Oil 100x/1.30, focal length 1.9mm, free working distance 0.10mm, with spring loaded mount	188.00
559 001	Huygens eyepiece 30mm ϕ , single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm	45.00
519 910	Eyepiece reticle 10mm = 100 divisions and crossline	30.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Apl Oil 1.25	120.00
513 106	Stage micrometer on glass 2mm = 200 divisions with photographic scale	34.00
	LEITZ MONOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE LABOLUX-POL D 7.74.5.31 P11 38/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$2,545.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt lamps, 6 volt, 5 watt or 8 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
	\$2,623.00
552 038	Mahogany cabinet	\$ 142.00

*Discontinued, limited supply still available.

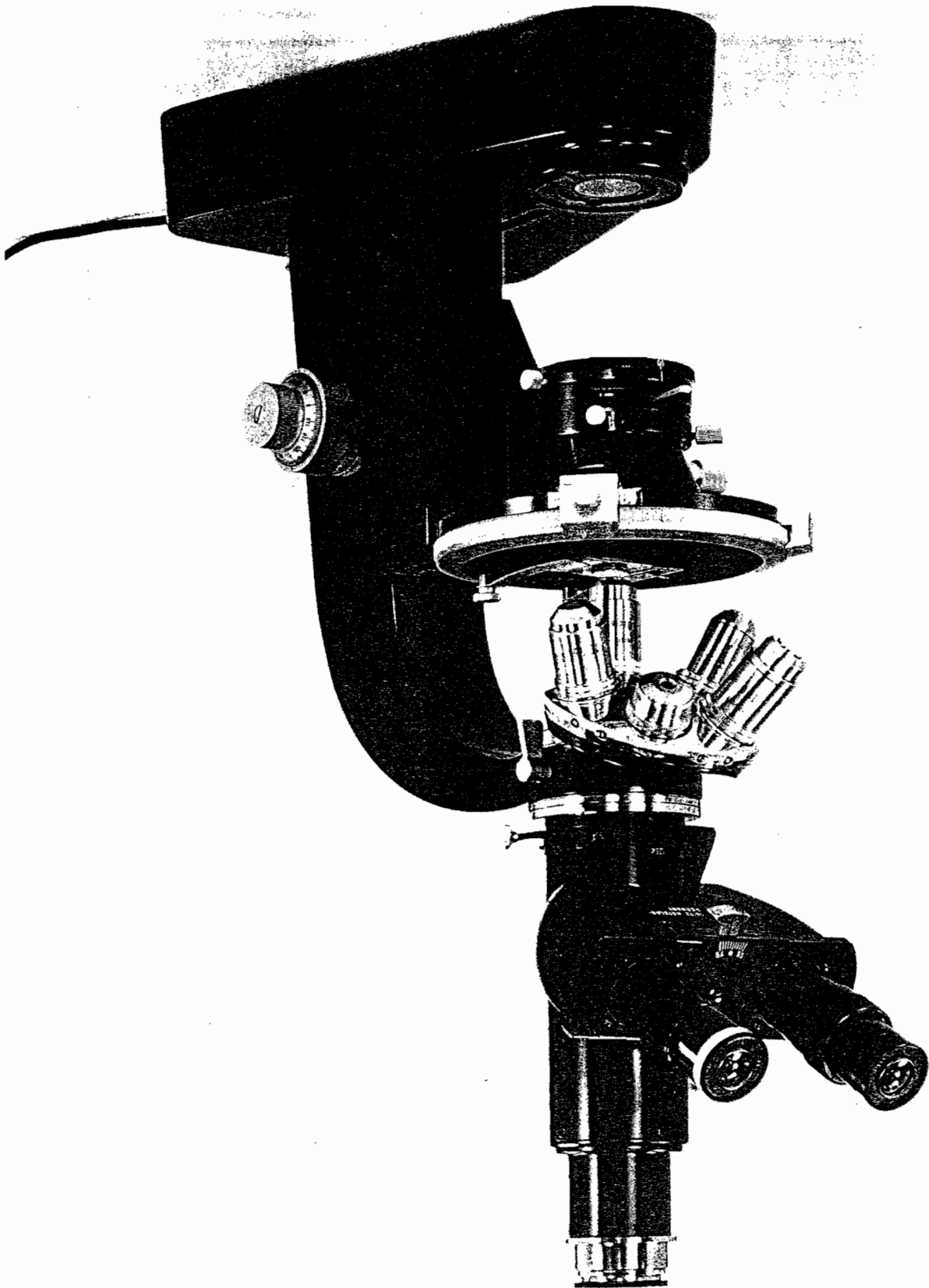


**BINOCLULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE
LABOLUX-POL D: EQUIPPED FOR TRANSMITTED LIGHT**

055 219	Modern stand, LABOLUX-POL D, made of non-corroding alloy, with dual knob, coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in swing-out filter analyser, bayonet mount for interchangeable body tubes and Mipolam pad. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser -.5. Built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb ---.31 and built-in field diaphragm for Koehler illumination	\$ 790.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 045	Quintuple revolving objective nosepiece on carrier with individual centering device and slot to accept compensators 7.35-	193.00
552 028	Inclined binocular observation tube S 20, 23.2mm ϕ	451.00
552 032	Rotating object stage No. 38, 130mm ϕ , with scales and verniers, reading to 0.1 μ	274.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90, on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 S 20 38/702FL as described above	\$2,036.00
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization, P Oil 100x/1.30, focal length 1.9mm, free working distance 0.10mm, with spring loaded mount	188.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Apl Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	LEITZ BINOCLULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 S20 38/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$2,888.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt lamps, 6 volt, 5 watt or 8 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
		\$2,966.00
552 038	Mahogany cabinet	\$ 142.00

Optional

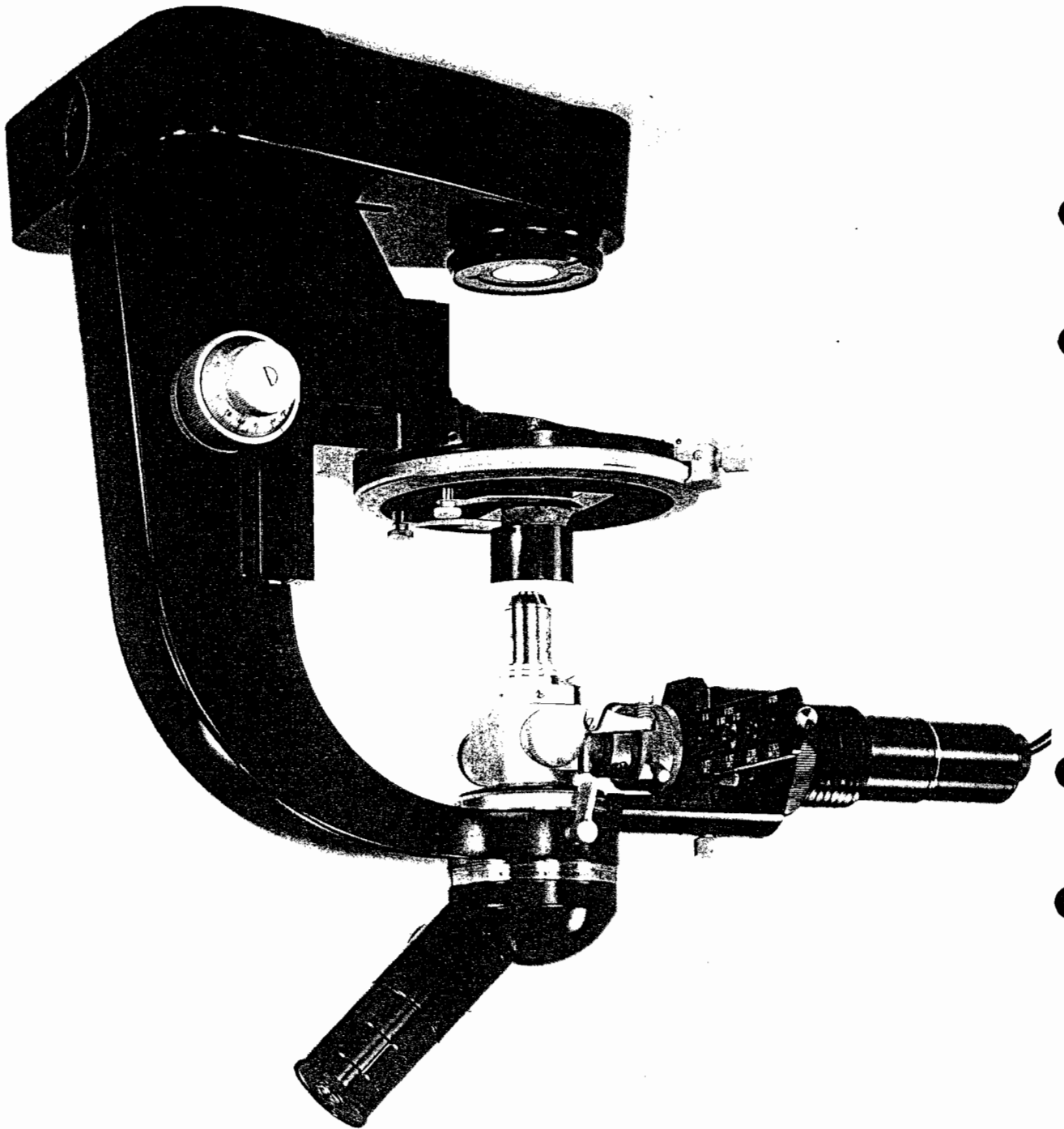
*Discontinued, limited supply still available.



**TRINOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE
LABOLUX-POL D: EQUIPPED FOR TRANSMITTED LIGHT**

055 219	Modern stand, LABOLUX-POL D, made of non-corroding alloy, with dual knob, coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in swing-out filter analyser, bayonet mount for interchangeable body tubes and Mipolam pad. Dove-tail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser --.5. Built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5; ground glass and green filter; including one spare bulb --.31 and built-in field diaphragm for Koehler illumination	\$ 790.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 045	Quintuple revolving objective nosepiece on carrier with individual centering device and slot to accept compensators 7.35-	193.00
552 037	Combination, inclined binocular observation and straight monocular photographic tube FS 22	558.00
552 032	Rotating object stage No. 38, 130mm ϕ , with scales and verniers reading to 0.1 μ	274.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90 $^{\circ}$ intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE LABOLUX POL D 7.35.5.31 FS22 38/702FL as described above	\$2,143.00
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization, P Oil 100x/1.30, focal length 1.9mm, free working distance 0.10mm, with spring loaded mount	188.00
559 001	Huygens eyepiece 30mm ϕ , single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm	45.00
519 910	Eyepiece reticle 10mm = 100 divisions and crossline	30.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
552 081 *	Interchangeable condenser top element No. 003P, free from polarization, Api Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	LEITZ TRINOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 FS22 38/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$3,140.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt lamps, 6 volt, 5 watt or 8 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
	\$3,218.00
552 038	Mahogany cabinet	\$ 142.00

*Discontinued, limited supply still available

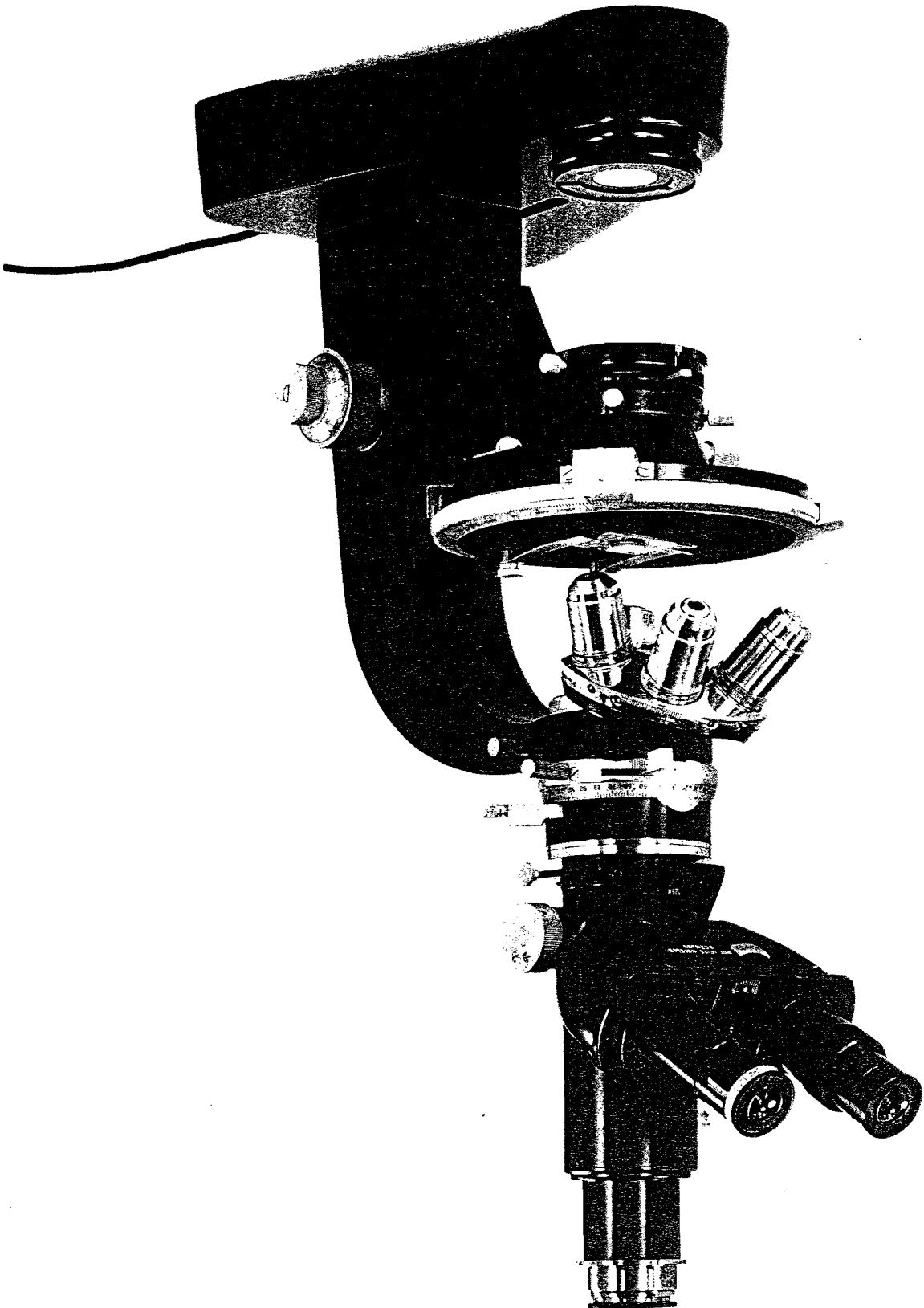


**MONOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE
EPILUX-POL D EQUIPPED FOR REFLECTED LIGHT**

055 223	Modern stand, EPILUX-POL D, made of non-corroding alloy, with dual knob, coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in swing-out filter analyser, bayonet mount for interchangeable body tubes and Mipolam pad. Dove-tail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser. .-.5	\$ 650.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
553 070	Vertical illuminator on carrier with objective centering clutch and five centering collars, detachable prism polarizer, slot to accept compensators and built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5, ground glass and green filter. Supplementary front collector on clamping holder with iris diaphragm, half stop for oblique illumination and centerable diaphragm on slide 7.55-.35	895.00
552 029	Inclined monocular observation tube P 11 30mm ϕ , with swing-out Bertrand lens and independently operated pinhole diaphragm	182.00
552 032	Rotating object stage No. 38, 130mm ϕ , with scales and verniers, reading to 0.1 μ . LEITZ POLARIZING MICROSCOPE EPILUX-POL D 7.55.5.35 P 11 38/- as described above	\$2,072.00
Optical Equipment E2d Mono		
559 051	Achromatic dry objective, free from polarization, P 6.3x/0.20, focal length 30mm, free working distance 21mm	\$ 79.00
559 010	Achromatic oil and water immersion objective, free from polarization, P Oil + We 12.5x/0.25, focal length 16mm, free working distance 0.26mm	114.00
559 009	Fluorite dry objective, free from polarization, (P) F1 45x/0.85, focal length 1.4mm, free working distance 0.33mm, with spring loaded mount	207.00
559 012	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 60x/0.95, focal length 3.4mm, free working distance 0.33mm, with spring loaded mount	224.00
559 014	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount	306.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
563 011	Stage micrometer on metal 1mm = 100 divisions	46.00
LEITZ MONOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE EPILUX-POL D 7.55.5.35 P 11 38/- COMPLETE WITH OPTICAL EQUIPMENT E2d MONO as described above		
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt lamps, 6 volt, 5 watt or 8 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
Optional		
552 038	Mahogany cabinet	\$ 142.00
563 035	Hand press with adjustable stop, for levelling specimens	74.00
Supplementary Equipment for Transmitted Light		
512 071	Collector lens	\$ 48.00
512 139	Field diaphragm	28.00
512 133	Low voltage lamp 6 volts, 2.5 amps with daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb -.-.31	74.00
Note:		
The EPILUX-POL D accepts the same tubes, condensers and objective carriers as listed for the LABOLUX-POL D Microscope. Objectives for transmitted light corrected for 170mm tube length.		

553 097	Interference line filter 12.5m μ , veril S 200 (400-700m μ) with graduated mount and diaphragm housing	\$ 430.00
553 099	Interference band filter 25m μ , veril B 200 (400-700m μ) with graduated mount and diaphragm housing	\$ 430.00
Interference Filter Attachment		
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	\$ 78.00
500 099	Fixed transformer for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	42.00
Transformers		
552 038	Mahogany cabinet	\$ 142.00
512 036	Flexible plastic protective dust cover	3.00
512 119	Mipolam pad	3.00
552 041	Plane and concave mirror in mount	\$ 16.00
512 061	Lamp socket	\$ 33.00
500 012	Bulb 6 volts, 15 watts	3.30
512 075	Daylight conversion filter CB 16.5	13.00
512 076	Ground glass filter	8.00
512 077	Green filter	11.00
513 176	Illumination centering disc	1.00

Miscellaneous Accessories and Replacement Parts



TRINOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF: EQUIPPED FOR TRANSMITTED LIGHT

055 231	Modern stand, DIALUX-POL DF, made of non-corroding alloy, with dual knob coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in filter analyser, rotatable 180°, centerable swing-out Bertrand lens for conoscopic observation, bayonet mount for interchangeable body tubes and Mipolam pad. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser --5-, built-in low voltage lamp 6 volts, 15 watts with illumination centering disc, daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb --.31 and built-in field diaphragm for Koehler illumination	\$1,485.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 045	Quintuple revolving objective nosepiece on carrier with individual centering device and slot to accept compensators 7.35-	193.00
552 036	Combination, inclined binocular observation and straight monocular photographic tube FS 21	602.00
552 031	Rotating object stage No. 37, 150mm diameter with scales and verniers, click stop at 45° intervals and locking device	393.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE DIALUX-POL DF 7.35.5.31 FS 21 37/702FL as described above	\$3,001.00
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization, P Oil 100x/1.30, focal length 1.9mm, free working distance 0.10mm, with spring loaded mount	188.00
559 001	Huygens eyepiece 30mm φ, single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm	45.00
519 910	Eyepiece reticle 10mm = 100 divisions and crossline	30.00
559 006	Huygens eyepiece 30mm φ, single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Api Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	LEITZ TRINOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF 7.35.5.31 FS 21 37/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$3,998.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt, 8 volt, 5 watt or 6 volt, 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
		<u>\$4,076.00</u>

*Discontinued, limited supply still available.

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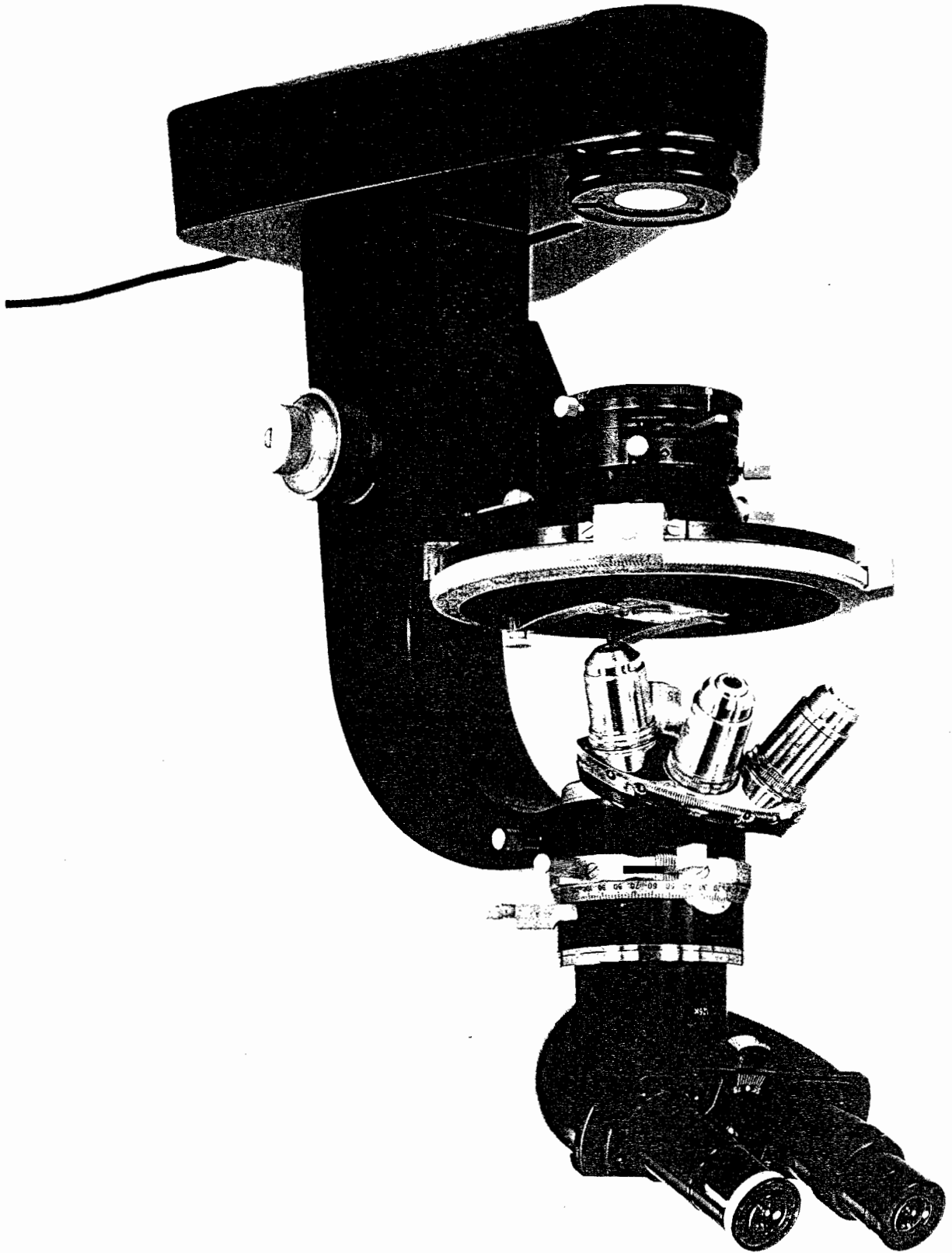
Note:

The DIALUX-POL Microscope can also be supplied with a prism polarizer and analyser. In this case the stand (No. 055 231) and condenser (No. 552 077) are replaced by the following:

552 234	Modern stand, DIALUX-POL DP, as described under No. 055 231, however, with prism analyser	\$2,005.00
552 017	Five lens condenser No. 500P, with swing-out upper element A. 0.85, aperture and field diaphragm and rotating calcite prism polarizer graduated at 5° intervals; on interchange carrier	1,048.00
552 038	Optional Mahogany cabinet	\$ 142.00

LEITZ RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF EQUIPPED FOR STRAIN MEASUREMENTS IN GLASS

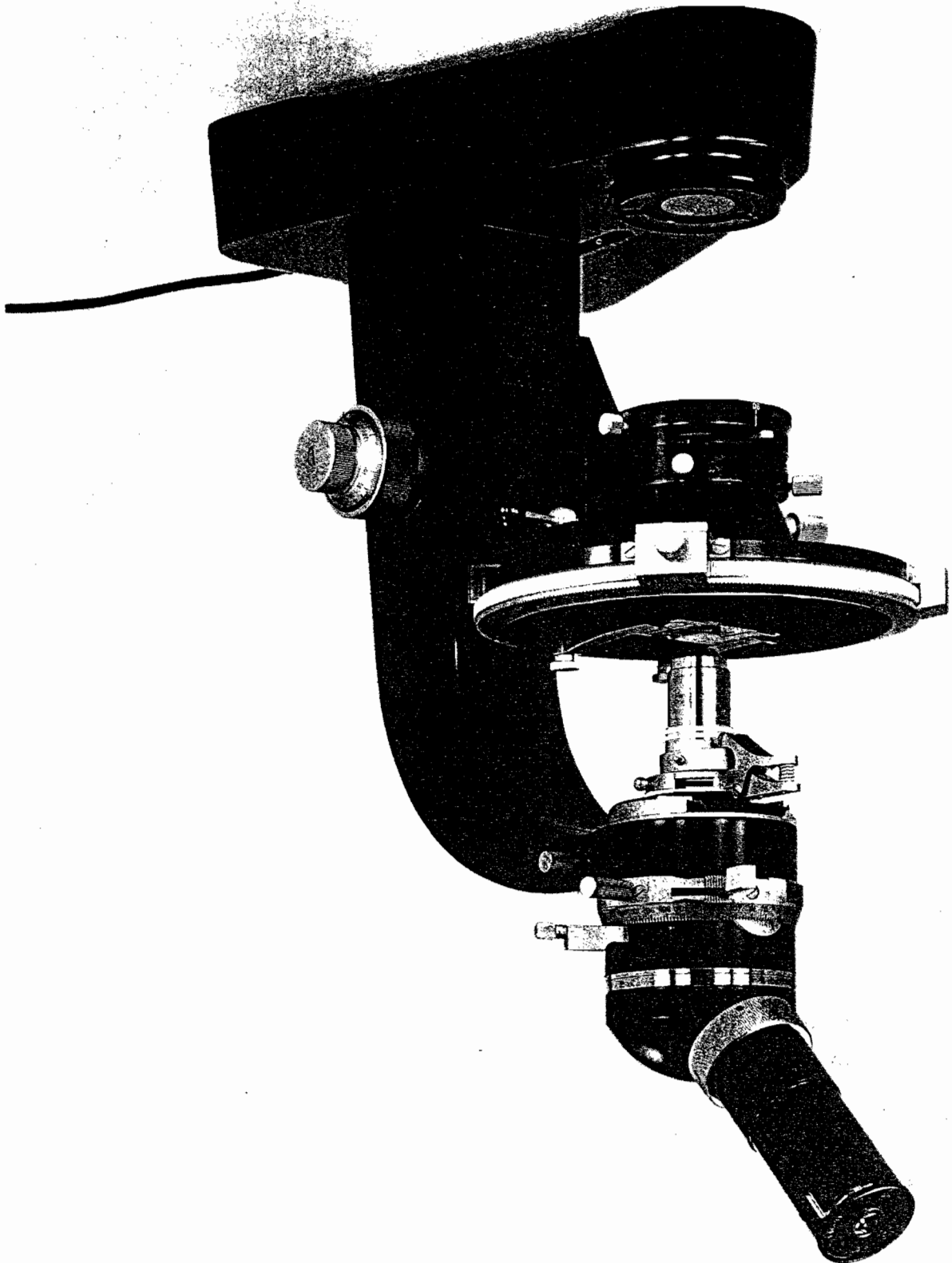
055 231	Modern stand, DIALUX-POL DF, made of non-corroding alloy, with dual knob coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in filter analyser, rotatable 180°, centerable swing-out Bertrand lens for microscopic observation, bayonet mount for interchangeable body tubes and Mipolam pad. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser --5--, built-in low voltage lamp 6 volts, 15 watts with illumination centering disc, daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb --.31 and built-in field diaphragm for Koehler illumination	\$1,485.00
512 036	Flexible plastic protective dust cover	3.00
552 048	Objective centering clutch on carrier with four centering collars and slot to accept compensators 7.74	118.00
552 036	Combination, inclined binocular observation and straight monocular photographic tube FS 21	602.00
552 031	Rotating object stage No. 37, 150mm diameter with scales and verniers, click stop at 45° intervals and locking device	393.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE DIALUX-POL DF 7.74.5.31 FS 21	\$2,858.00
	37/702FL as described above	
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 044	Achromatic objective, free from polarization, P 6x/0.18, focal length 23mm, free working distance 17mm	76.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm free working distance 5.3mm	87.00
559 036	Achromatic objective, free from polarization, P 25x/0.50, focal length 7.1mm, free working distance 0.72mm, with spring loaded mount	128.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
553 015	Wright universal eyepiece with field of view iris diaphragm, focusing eyelens; compensator slot, and flange index for the top analyser	218.00
553 001	Top analyser with 360° graduation reading to 1°	248.00
553 039	Half - shadow plate after Nakamura	115.00
553 040	Quarter wave plate	53.00
563 156	Green interference filter IL 546m μ	48.00
	LEITZ RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF 7.74.5.31 FS 21 37/702FL COMPLETE WITH OPTICAL EQUIPMENT AND ACCESSORIES FOR STRAIN MEASUREMENTS IN GLASS	\$4,036.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt lamps, 6 volt 5 watt or 8 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
		\$4,114.00



BINOCLAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF: EQUIPPED FOR TRANSMITTED LIGHT

055 231	Modern stand, DIALUX-POL DF, made of non-corroding alloy, with dual knob coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in filter analyzer, rotatable 180°, centerable swing-out Bertrand lens for conoscopic observation, bayonet mount for interchangeable body tubes and Mipolam pad. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser -5-, built-in low voltage lamp 6 volts, 15 watts with illumination centering disc, daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb -31 and built-in field diaphragm for Koehler illumination	\$1,485.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica Plate)	32.00
552 045	Quintuple revolving objective nosepiece on carrier with individual centering device and slot to accept compensators 7.35-	193.00
552 028	Inclined binocular observation tube S 20, 23.2mm ϕ .	451.00
552 031	Rotating object stage No. 37, 150mm diameter with scales and verniers, click stop at 45° intervals and locking device	393.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE DIALUX-POL DF 7.35.5.31 S 20 37/702FL as described above	\$2,850.00
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, F 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, F 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, F 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization, F Oil 100x/1.30, focal length 1.9mm, free working distance 0.10mm with spring loaded mount	188.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Api Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	LEITZ BINOCLAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF 7.35.5.31 S 20 37/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$3,702.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt, 8 volt, 5 watt or 6 volt, 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
	Optional	\$3,780.00
552 038	Mahogany cabinet	\$ 142.00

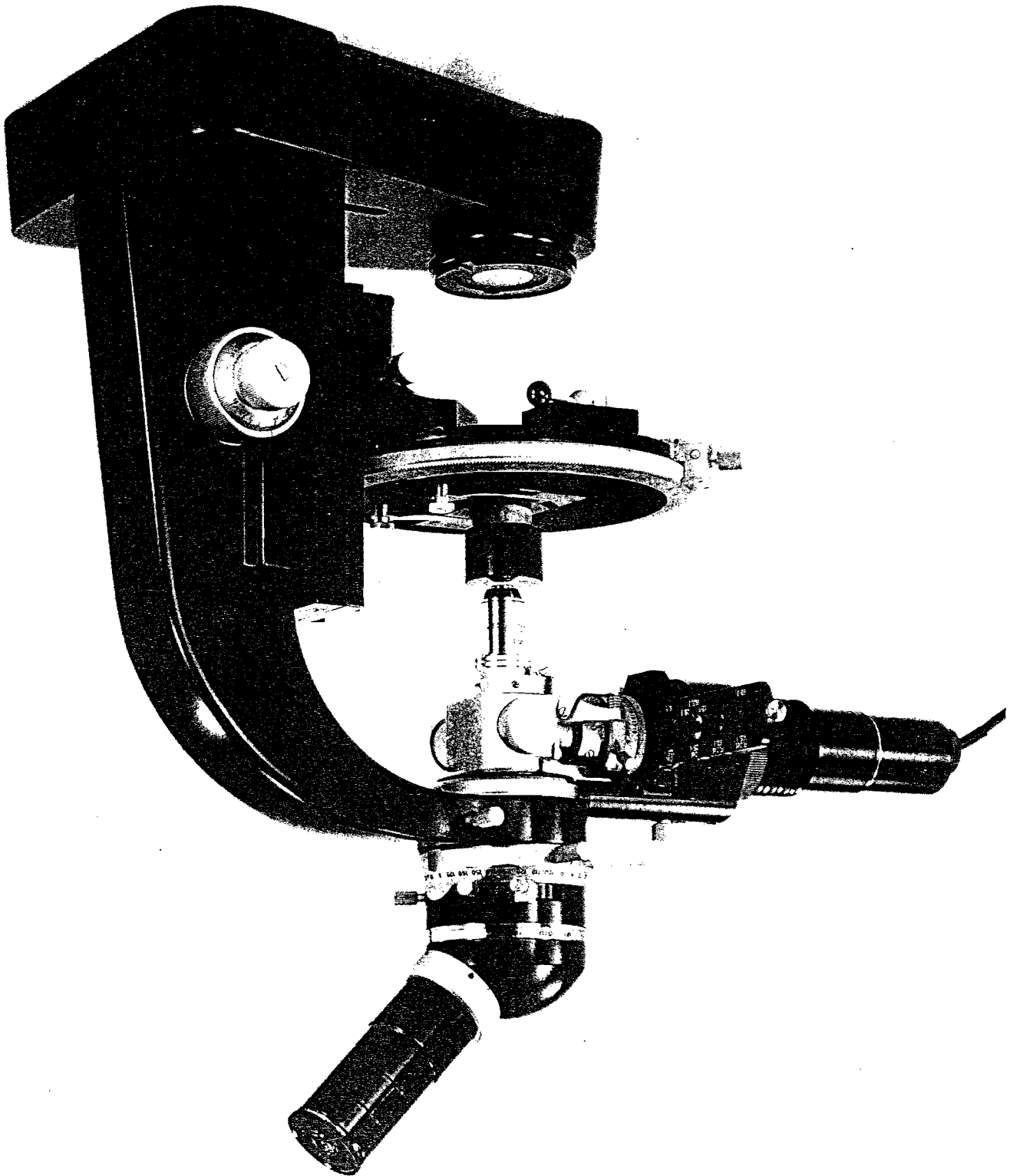
*Discontinued, limited supply still available.



MONOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF: EQUIPPED FOR TRANSMITTED LIGHT

055 231	Modern stand, DIALUX-POL DF, made of non-corroding alloy, with dual knob coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races. Built-in filter analyser, rotatable 180°, centerable swing-out Bertrand lens for microscopic observation, bayonet mount for interchangeable body tubes and Mipolam pad. Dove-tail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser --5-, built-in low voltage lamp 6 volts, 15 watts with illumination centering disc, daylight conversion filter CB 16.5, ground glass and green filter; including one spare bulb --.31 and built-in field diaphragm for Koehler illumination	\$1,485.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 048	Objective centering clutch on carrier with four centering collars and slot to accept compensators 7.74-	118.00
552 030	Inclined monocular observation tube P 10 30mm ϕ , with built-in iris diaphragm	144.00
552 031	Rotating object stage No. 37, 150mm diameter with scales and verniers, click stop at 45° intervals and locking device	393.00
552 077	Swing-out condenser No. 702FL, free from polarization, with lower element, aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	257.00
	LEITZ POLARIZING MICROSCOPE DIALUX-POL DF 7.74.5.31 P 10 37/702FL as described above	\$2,468.00
Optical Equipment		
559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm	\$ 61.00
559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm	87.00
559 038	Achromatic dry objective, free from polarization, P 50x/0.85, focal length 3.6mm, free working distance 0.36mm, with spring loaded mount	218.00
559 042	Achromatic oil immersion objective, free from polarization, P Oil 100x1.30, focal length 1.9mm, free working distance 0.10mm, with spring loaded mount	188.00
559 001	Huygens eyepiece 30mm ϕ , single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm	45.00
519 910	Eyepiece reticle 10mm = 100 divisions and crossline	30.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Apl Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	LEITZ MONOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL DF 7.74.5.31 P 10 37/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above	\$3,321.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt, 8 volt, 5 watt or 6 volt, 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
		\$3,399.00
552 038	Mahogany cabinet	\$ 142.00

*Discontinued, limited supply still available.



Continued on the next page.

055 248	Modern stand, DIALUX-POL SB DF, made of non-corroding alloy, with dual knob, coaxial coarse and fine adjustment (1 interval = 0.002mm); identical controls on either side of the stand for the vertical displacement of the stage along precision ball races (100mm travel). Built-in filter analyser, rotatable 180°, centerable swing-out Bertrand lens for conoscopic observation, bayonet mount for interchangeable body tubes and Mipolam pad	\$1,440.00
512 036	Flexible plastic protective dust cover	3.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
553 070	Vertical illuminator on carrier with objective centering clutch and five centering collars, detachable prism polarizer, slot to accept compensators and built-in low voltage lamp 6 volts, 15 watts with daylight conversion filter CB 16.5, ground glass and green filter. Supplementary front collector on clamping holder with iris diaphragm, half stop for oblique illumination and centerable diaphragm on slide 7.55-.35	895.00
552 030	Inclined monocular observation tube P 10 30mm ϕ , with built-in iris diaphragm	144.00
552 095	Rotating object stage No. 438, 130mm ϕ , with scales and verniers, click-stop at 45° intervals and locking device; on interchangeable carrier	286.00
	LEITZ POLARIZING MICROSCOPE DIALUX-POL SB DF 7.55-.35 P 10 438/- as described above	\$2,836.00
Optical Equipment E2d Mono		
559 051	Achromatic dry objective, free from polarization, P 6.3x/0.20, focal length 30mm, free working distance 21mm	\$ 79.00
559 010	Achromatic oil and water immersion objective, free from polarization, P Oil + We 12.5x/0.25, focal length 16mm, free working distance 0.26mm	114.00
559 009	Fluorite dry objective, free from polarization, (P) F1 45x/0.85, focal length 1.4mm, free working distance 0.33mm, with spring loaded mount	207.00
559 012	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 60x/0.95, focal length 3.4mm, free working distance 0.33mm, with spring loaded mount	224.00
559 014	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount	306.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	\$ 70.00
563 011	Stage micrometer on metal 1mm = 100 divisions	46.00
	LEITZ MONOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL SB DF 7.55-.35 P 10 438/- COMPLETE WITH OPTICAL EQUIPMENT E2D MONO as described above	\$3,882.00
500 124	Regulating transformer with voltmeter for 6 volt, 15 watt, 8 volt, 5 watt or 6 volt, 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	78.00
	Note:	\$3960.00
	The above microscope can also be supplied with a prism analyser. In this case the stand (No. 055 248) is replaced by the following:	
055 249	Modern stand, DIALUX-POL SB DF, as described under No. 055 248, however, with prism analyser	\$,1960.00

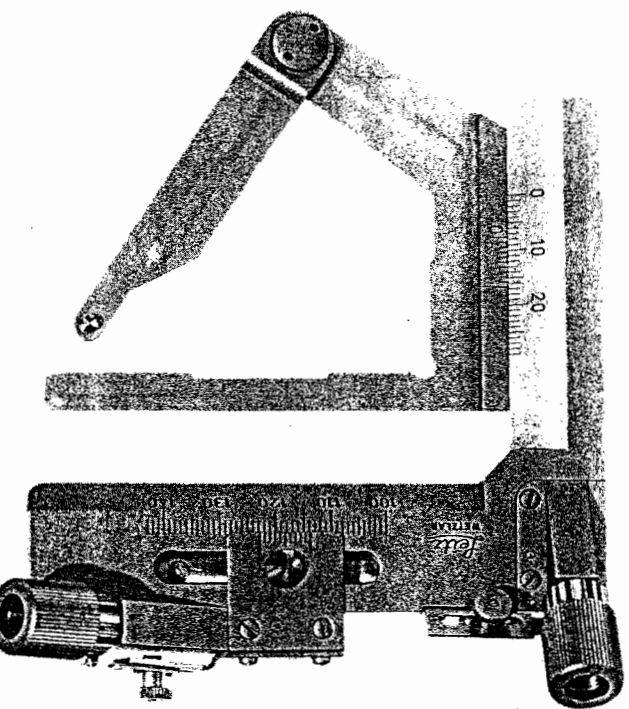
DIALUX-POL D MICROSCOPE

INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

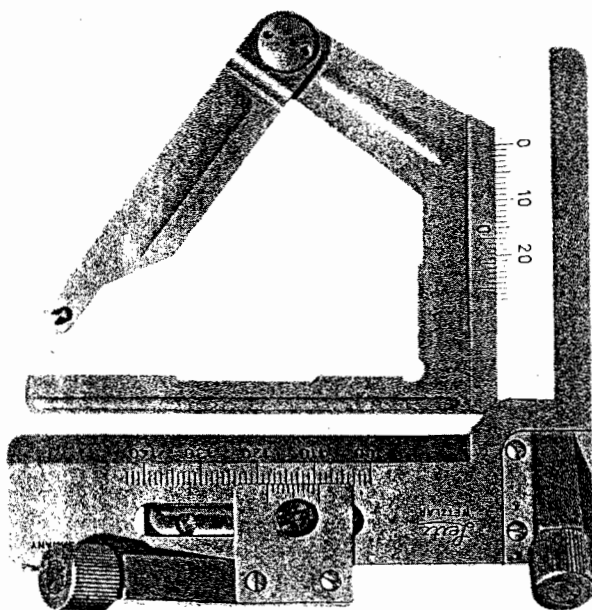
Tubes	
552 034	Interchangeable straight monocular photographic tube O 13 (30mm ϕ), with built-in iris diaphragm
\$ 120.00	
552 030	Interchangeable inclined monocular observation tube P 10 (30mm ϕ), with built-in iris diaphragm
144.00	
552 028	Interchangeable inclined binocular observation tube S 20, for standard diameter (23.2mm) eyepieces
451.00	
552 036	Combination inclined binocular observation and straight monocular photographic tube FS 21
602.00	
552 054	Combination inclined binocular observation and straight monocular photographic tube FSA-POL with automatic focusing compensation for the adjustment of the interpupillary distance
673.00	
Discussion Tube	
553 193	Discussion tube for the simultaneous observation by two people of the microscope image with built-in mechanical arrow pointer, quartz plate and bayonet mounts to accept the standard observation tubes (not included)
\$ 721.00	
054 385	Shock absorbing base
82.00	
Note:	
We recommend the monocular observation tube P 11 (catalog No. 552 029) in conjunction with the P 8x eyepiece (catalog No. 559 006).	
Attachable Mechanical Stages	
553 082	Attachable mechanical stage No. 42, with graduated vernier reading to 0.1mm; traversing area 34 x 20mm
\$ 212.00	
553 083	Attachable mechanical stage No. 40 for point counting with seven pairs of interchangeable pinton heads to advance the slide at intervals of 0.1mm, 0.2mm, 0.3mm, 0.4mm, 0.5mm, 1.0mm and 2.0mm; traversing area 34 x 20mm
\$ 378.00	
Drawing Attachment	
553 192	Drawing attachment with 80/20 prism, built-in quartz plate, adjustable lateral drawing tube, focusing device with built-in achromatic objective, eyepiece tube for the projection eyepiece (eyepiece not included), 45° mirror and bayonet mount for the observation tube
\$ 451.00	
519 051	PERIPLAN widefield eyepiece, single GF 12.5x, field of view 18mm (drawing area 14-23 cm)
59.00	
Note:	
The microscope light source must be equipped with a regulating transformer. A 60 watt desk lamp is also required to illuminate the drawing area.	
Spectral Lamp	
552 010	Housing with socket for sodium vapor lamp
\$ 99.00	
500 032	Sodium bulb Na 4 watt
25.00	
552 009	Sodium vapor lamp for LABOLUX-POL D or DIALUX-POL D Microscope, however, without power unit
\$ 124.00	
500 116	Power unit for sodium spectral lamp 4 watt, 220 volts, 60 cycles A.C.
138.00	
500 039	Step-up transformer for connection to 110 volts, 60 cycles A.C.
69.00	
\$ 331.00	

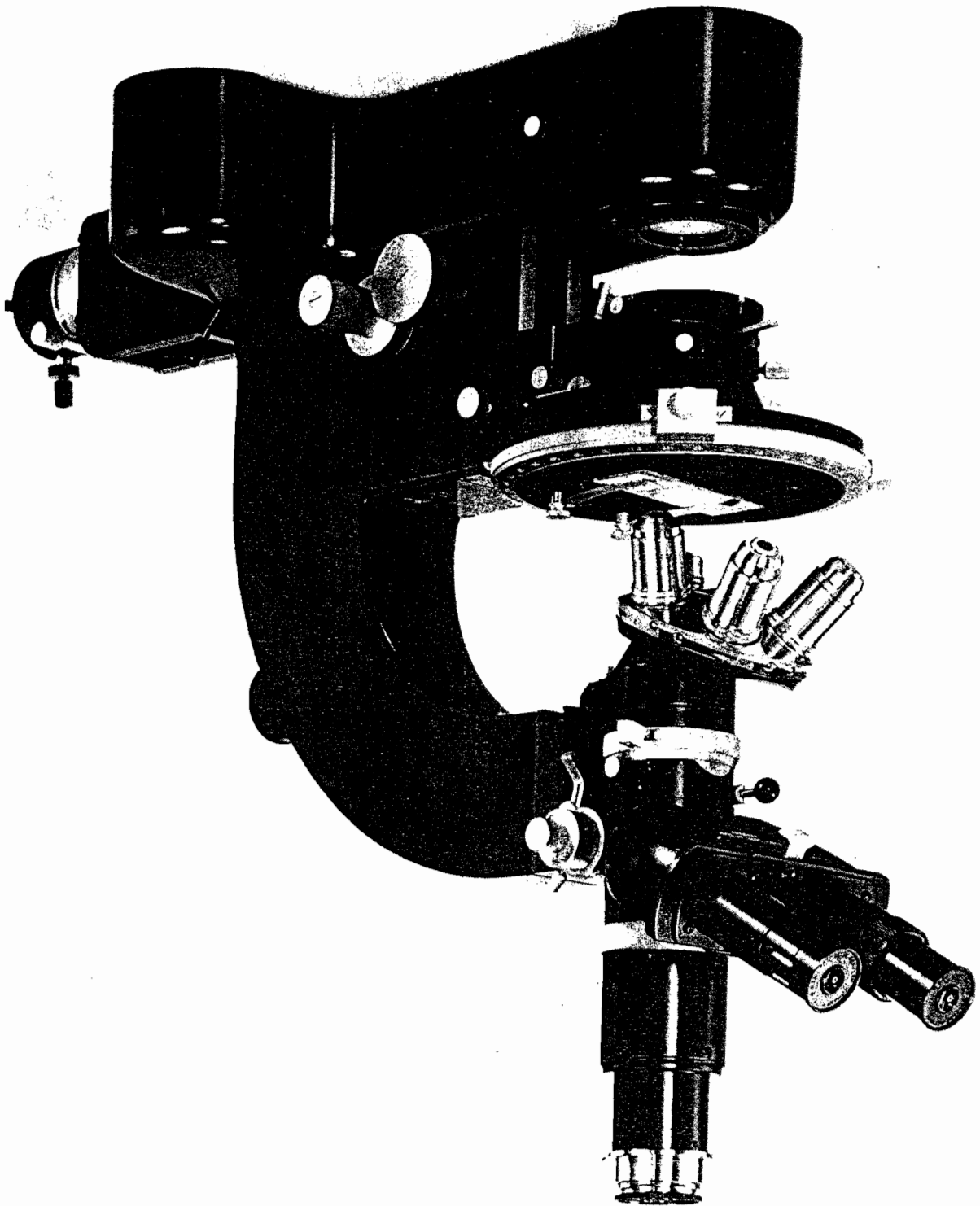
553 097	Interference line filter 12.5 μ , vert S 200 (400-700 μ) with graduated mount and diaphragm housing	\$ 430.00
553 099	Interference band filter 25 μ , vert B 200 (400-700 μ) with graduated mount and diaphragm housing	\$ 430.00
Transformers		
500 124	Regulating transformer with voltmeter for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	\$ 78.00
500 099	Fixed transformer for 6 volt 15 watt, 8 volt 5 watt or 6 volt 5 watt lamps; for connection to 110 volts, 60 cycles A.C.	\$ 42.00
Miscellaneous Accessories and Replacement Parts		
552 038	Mahogany cabinet	\$ 142.00
512 036	Flexible plastic protective dust cover	3.00
512 119	Mipolam pad	3.00
552 041	Plane and concave mirror in mount	\$ 16.00
512 061	Lamp socket	\$ 33.00
500 012	Bulb 6 volts, 15 watts	3.30
2 075	Daylight conversion filter CB 16.5	13.00
512 076	Ground glass filter	8.00
512 077	Green filter	11.00
513 176	Illumination centering disc	1.00
552 027	Arrangement for the synchronous rotation of the analyser and polarizer (can only be used if the microscope is equipped with the series 500 Pol condensers)	\$ 235.00

MECHANICAL STAGE #40



MECHANICAL STAGE #42

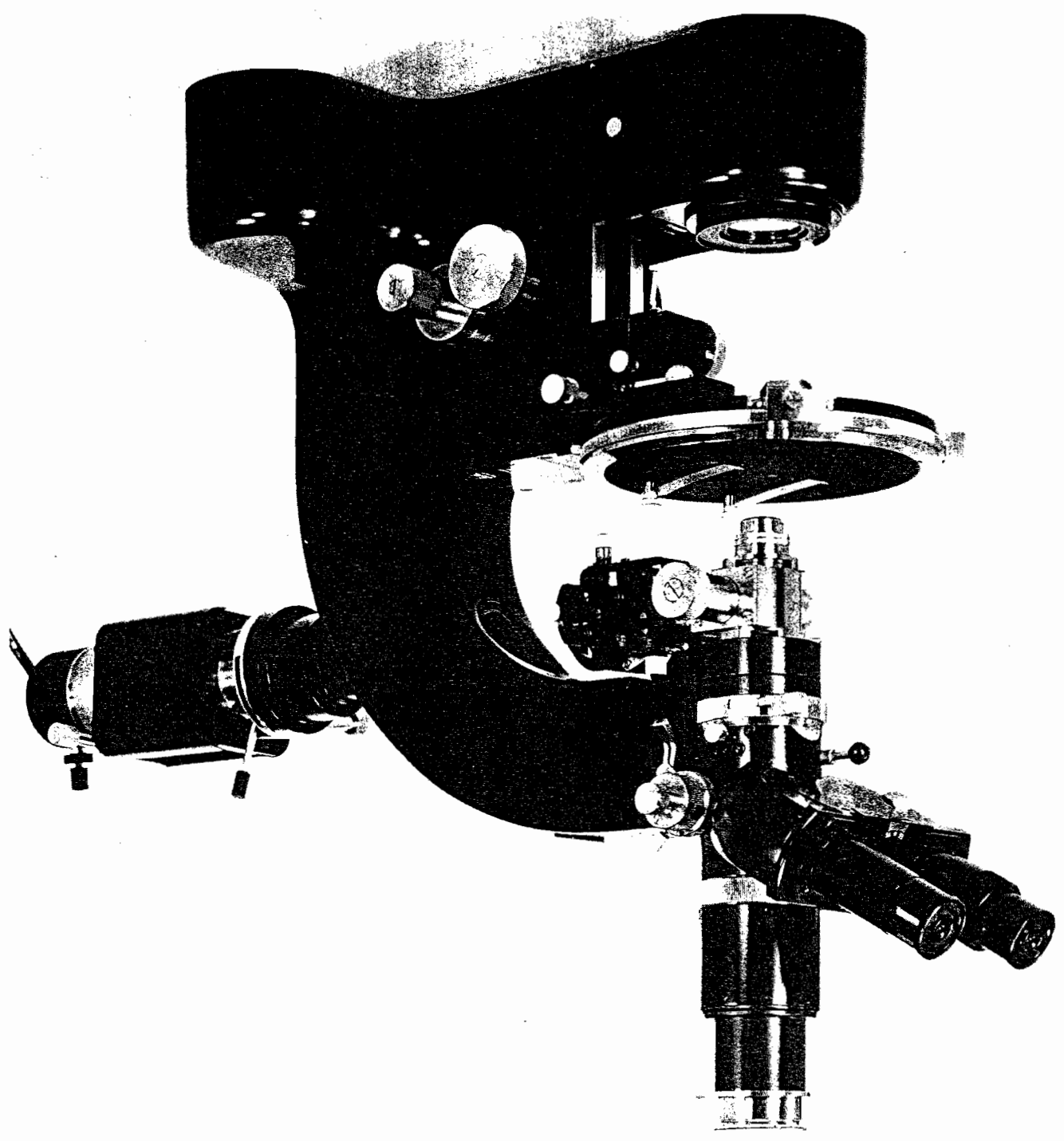




**LEITZ RESEARCH MICROSCOPE ORTHOLUX-POL EQUIPPED FOR:
TRANSMITTED LIGHT**

512 151	Large modern stand, ORTHOLUX, 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; including Mipolam pad and shipping container	\$1,060.00
552 016	Mahogany accessory case with fittings	94.00
512 035	Flexible plastic protective dust cover	4.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
552 046	Quintuple revolving objective nosepiece on carrier; with individual centering device and slot to accept compensator 18.35.	256.00
512 118	Dovetail carrier --8, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser	68.00
512 003	Built-in illuminating system, lower lamp 6 volts, 30 watts with filter CB 12, diffusion disc N and green filter; including one spare bulb	118.00
552 001	Combination, inclined binocular observation and straight monocular photographic tube FS 45; with built-in rotating analyzer, graduated and indexed to 1/10th degree, centerable and focusable Bertrand lens and pinhole diaphragm	1,045.00
552 042	Rotating object stage No. 237, 150mm ϕ , with scales and verniers and locking device; on interchange carrier	453.00
552 076	Swing-out condenser No. 702F, free from polarization, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	240.00
552 129	LEITZ RESEARCH POLARIZING MICROSCOPE ORTHOLUX-POL 18.35.8.1 FS 45 237/702F as described above	\$3,406.00
Optical Equipment		
559 058	Achromatic dry plano objective, free from polarization, NPL 6.3x/0.20 P, focal length 24mm, free working distance 2mm	\$ 213.00
559 059	Achromatic dry plano objective, free from polarization, NPL 16x/0.40 P, focal length 11mm, free working distance 0.50mm	218.00
559 060	Achromatic dry plano objective, free from polarization, NPL 25x/0.50 P, focal length 7mm, free working distance 0.38mm, with spring loaded mount	243.00
559 061	Achromatic dry plano objective, free from polarization, NPL 40x/0.65 P, focal length 4.5mm, free working distance 0.15mm, with spring loaded mount	288.00
559 062	Achromatic oil immersion plano objective, free from polarization, NPL Oil 100x/1.30 P, focal length 1.7mm, free working distance 0.26mm, with spring loaded mount	482.00
559 001	Huygens eyepiece 30mm ϕ , single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm	45.00
559 006	Huygens eyepiece 30mm ϕ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
519 910	Eyepiece reticle 10mm = 100 divisions and crossline	30.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Api Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
550 043	LEITZ RESEARCH POLARIZING MICROSCOPE ORTHOLUX-POL 18.35.8.1 FS 45 237/702F COMPLETE WITH OPTICAL EQUIPMENT as described above	\$5,293.00
500 101	Combination, regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts for connection to 110/120 volts, 60 cycles A.C.	130.00
		\$5,423.00

*Discontinued, limited supply still available.



LEITZ RESEARCH MICROSCOPE ORTHOLUX-POL EQUIPPED FOR:
REFLECTED LIGHT

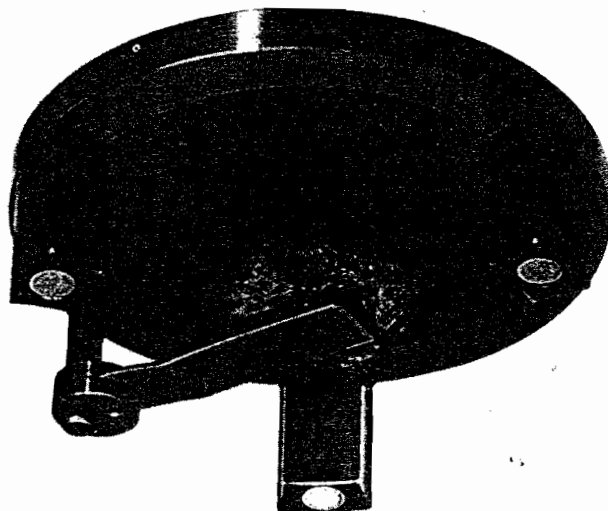
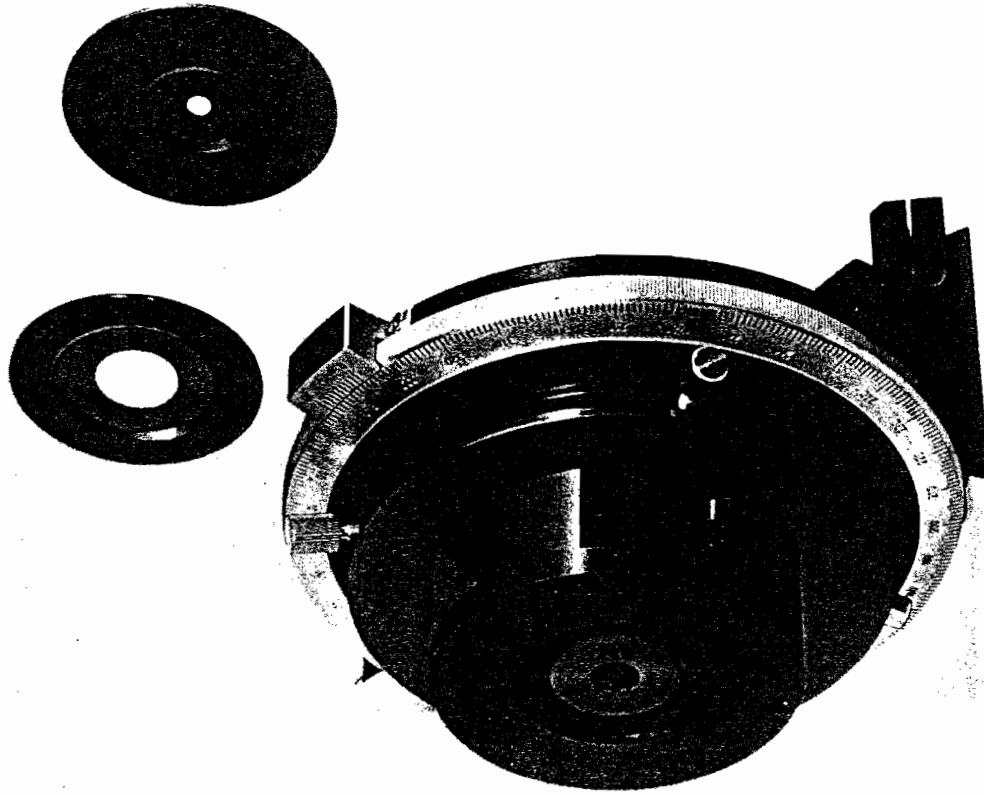
512 151	Large modern stand, ORTHOLUX, with built-in field diaphragm, dual coarse focusing controls and micrometer screw fine adjustment with graduated drum head (1 interval = 0.001mm). Made of non-corroding alloy and capable of supporting photomicrographic cameras independent of the focusing motion. Coveatall slide for the interchange of body tubes and objective carriers; including Mipolam pad and shipping container	\$1,060.00
552 016	Mahogany accessory case with fittings	94.00
512 035	Flexible plastic protective dust cover	4.00
553 030	First order red compensator (Gypsum plate)	36.00
553 035	Quarter wave compensator (Mica plate)	32.00
553 068	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, half stop for oblique illumination and centerable diaphragm on slide 12.55-	740.00
512 090	Built-in illuminating system, upper lamp 6 volts, 30 watts with adapter sleeve and collector lens, daylight conversion filter CB 12, ground glass and green filter; including one spare bulb -:-:5	150.00
552 001	Combination, inclined binocular observation and straight monocular photographic tube FS 45; with built-in rotating analyser, graduated and indexed to 1/10th degree, centerable and focusable Bertrand lens and pinhole diaphragm	1,045.00
552 042	Rotating object stage No. 237, 150mm ϕ , with scales and verniers and locking device; on interchangeable carrier	453.00
552 013	LEITZ POLARIZING MICROSCOPE ORTHOLUX-POL 12.55-.5 FS 45 237/- as described above	\$3,614.00
Optical Equipment EZE Bino		
559 051	Achromatic dry objective, free from polarization, F 6.3x/0.20, focal length 30mm, free working distance 21mm	\$ 79.00
559 010	Achromatic oil and water immersion objective, free from polarization, F Oil + We 12.5x/0.25, focal length 16mm, free working distance 0.26mm	114.00
559 009	Fluorite dry objective, free from polarization, (P) F1 45x/0.85, focal length 1.4mm, free working distance 0.33mm, with spring loaded mount	207.00
559 012	Fluorite oil immersion objective, free from polarization (P) F1 Oil 60x/0.95, focal length 3.4mm, free working distance 0.33mm, with spring loaded mount	224.00
559 014	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount	306.00
559 006	Huygens eyepiece 30mm ϕ , single F 8x with adjustable eyelens and fixed crossline, field of view 19mm	70.00
559 035	PERIPLAN widefield eyepieces, paired GF 10x, one with adjustable eyelens and fixed crosslines, field of view 18mm	144.00
563 011	Stage micrometer on metal 1mm = 100 divisions	46.00
563 035	Hand press with adjustable stop, for levelling specimens	74.00
553 027	Set of six metal object slides	19.00
550 039	LEITZ RESEARCH POLARIZING MICROSCOPE ORTHOLUX-POL 12.55-.5 FS 45 237/- COMPLETE WITH OPTICAL EQUIPMENT EZE BINO as described above	\$4,897.00
500 101	Combination, regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts for connection to 110/120 volts, 60 cycles A.C.	130.00
		<u>\$5,027.00</u>

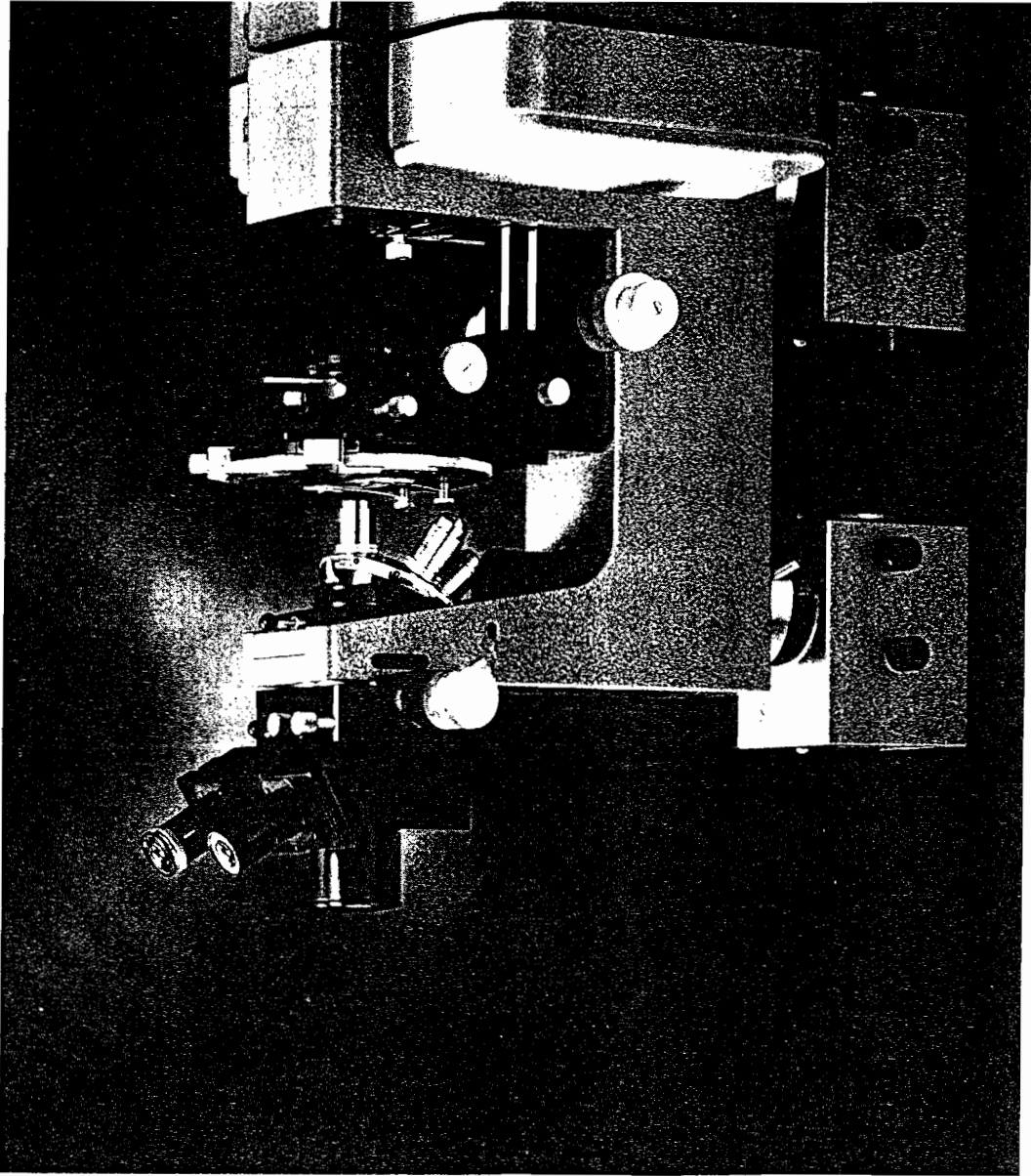
ORTHOLUX-POL MICROSCOPE

INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

512 118		Dove tail carrier --8-, for the interchange of condensers, with rack and pinion for the adjustment in the height of the condenser	\$ 68.00
Attachable Mechanical Stages			
553 082		Attachable mechanical stage No. 42, with graduated vernier reading to 0.1mm; traversing area 34 x 20mm	\$ 212.00
553 083		Attachable mechanical stage No. 40 for point-counting with seven 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 2.0mm; traversing area 34 x 20mm	378.00
Specimen Aligning Stage			
620 279		Specimen aligning stage for opaque specimens with three interchangeable aperture stops (5, 10 and 20mm) and three interchangeable magnets	\$ 330.00
Interference Filter Attachment			
553 097		Interference line filter 12.5 μ , veril S 200 (400-700 μ) with graduated mount and diaphragm housing	\$ 430.00
553 099		Interference band filter 25 μ , veril B 200 (400-700 μ) with graduated mount and diaphragm housing	430.00
Visible Light Illuminating System			
512 003		Built-in illuminating system, lower lamp 6 volts, 30 watts with daylight conversion filter CB 12, diffusion disc N and green filter; including one spare bulb	\$ 118.00
512 089		Adapter sleeve with collector lens	32.00
512 090		Built-in illuminating system, upper lamp 6 volts, 30 watts with adapter sleeve and collector lens, daylight conversion filter CB 12, diffusion disc N and green filter; including one spare bulb	150.00
500 101		Combination, regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts; for connection to 110/120 volts, 60 cycles A.C.	\$ 130.00
Spectral Lamp			
514 241		Housing with socket for sodium vapor lamp	\$ 135.00
500 032		Sodium bulb Na 4 watt	25.00
500 116		Power unit for sodium spectral lamp 4 watt, 220 volts, 60 cycles A.C.	138.00
500 039		Step-up transformer for connection to 110 volts, 60 cycles A.C.	69.00
Miscellaneous Accessories and Replacement Parts			
552 016		Mahogany accessory case with fittings	\$ 94.00
512 035		Flexible plastic protective dust cover	4.00
512 120		Mipolam pad	5.00
051 380		Filter holder 2 x 2" (fitting over the dust cover in the base of the stand)	\$ 11.00
512 125		Daylight conversion filter CB 12 (U shaped 34 x 55mm)	\$ 6.00
512 105		Diffusion disc N (U shaped 34 x 55mm)	4.00
512 114		Green filter (U shaped 34 x 55mm)	5.40
500 011		Bulb 6 volts, 30 watts	3.00
512 093		Lamp socket with connecting cable	28.00

\$ 367.00





ORTHOPLAN-POL MICROSCOPE

LEITZ UNIVERSAL RESEARCH POLARIZING MICROSCOPE, ORTHOPLAN-POL, EQUIPPED FOR: TRANSMITTED POLARIZED LIGHT WITH NPL-POL PLANO OBJECTIVES FOR MAXIMUM FLATNESS OF FIELD

✓512 180	Functional stand, ORTHOPLAN, in modern form unitized construction, with built-in to the base shock absorbers. The wide arc of the arm permits interchangeable use of many different object stages and allows for full vertical excursions for observations in transmitted or reflected light. Hand rests serve to support the observers arm during prolonged observations. Quick-change bayonet mounts for the reception of light sources for transmitted and reflected light. Built-in field diaphragm and swing-out collector lens for Koehler illumination. Dual coarse and fine focusing mechanism with graduations (1 interval = 0.001mm). Carrier with dovetail fittings for mechanical stages and substages. Dovetail for the reception of the object carrier. Precision 360° bayonet interchange fitting with push button release for the reception of microscope tubes	\$1,398.00
✓512 173	Flexible plastic protective dust cover	6.00
✓553 190	First order red compensator (Gypsum plate)	50.00
553 189	Quarter wave compensator (Mica plate)	44.00
✓552 162	Quintuple revolving objective nosepiece with intermediate optical system 1.25x, individual objective centering device and two slots set at 90° angles to accept 20 x 6mm compensators; on interchange carrier 40.35.-.	337.00
✓512 174	Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condensers --16.-.	84.00
514 233	Lamp housing, model 100, with bayonet mounting device, filter holder, reflector and adjustable two lens collector; lamp socket with 12 volt 60 watt low voltage bulb, heat absorbing filter, daylight conversion filter CB 12, diffusion disc N and green filter --.100	344.00
✓552 166	Combination, inclined binocular observation (23.2mm ϕ) and straight monocular photographic tube FSA 50 with automatic focusing compensation for the adjustment of the interpupillary distance. Built-in filter analyser, rotatable 360° with vernier reading to 0.1°; centerable and focusing Bertrand lens permits observation of interference figures.	1,240.00
✓552 167	Rotating object stage No. 837, 150mm ϕ , with scales and verniers reading to 0.1°, click stop at 45° intervals and locking device; on interchange carrier	465.00
552 076	Swing-out condenser No. 702F, free from polarization, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	240.00
	LEITZ UNIVERSAL RESEARCH POLARIZING MICROSCOPE	\$4,208.00

Continued on the next page.

Optical Equipment

559 058	Achromatic dry plano objective, free from polarization, NPL 6.3x/0.20 P, focal length 24mm, free working distance 2mm	\$ 213.00
559 059	Achromatic dry plano objective, free from polarization, NPL 16x/0.40 P, focal length 11mm, free working distance 0.50mm	218.00
559 060	Achromatic dry plano objective, free from polarization, NPL 25x/0.50 P, focal length 7mm, free working distance 0.38mm, with spring loaded mount	243.00
559 061	Achromatic dry plano objective, free from polarization, NPL 40x/0.65 P, focal length 4.5mm, free working distance 0.15mm, with spring loaded mount	288.00
559 062	Achromatic oil immersion plano objective, free from polarization, NPL Oil 100x/1.30 P, focal length 1.7mm, free working distance 0.26mm, with spring loaded mount	482.00
519 126	PERIPLAN widefield eyepiece, single GF 10xM with adjustable eyelens and mount for reticles, field of view 18mm	59.00
519 910	Eyepiece reticle 10mm = 100 divisions and crosslines, unmounted	30.00
559 070	PERIPLAN widefield eyepieces, paired GF 10x with adjustable eyelens, one with mounted crosslines, field of view 18mm	153.00
552 081*	Interchangeable condenser top element No. 003P, free from polarization, Api Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions, with photographic scale	34.00
500 119	EQUIPMENT FOR MAXIMUM FLATNESS OF FIELD LEITZ UNIVERSAL RESEARCH POLARIZING MICROSCOPE, ORTHOPLAN-POL 40.35.16.100 FSA 50 837/702F COMPLETE WITH OPTICAL Regulating transformer with ammeter 12 volts, 5 amps for connection to 110/120 volts, 60 cycles A.C.	140.00
		<u>\$6,188.00</u>

*Discontinued, limited supply still available.

ORTHOPLAN-POL MICROSCOPE

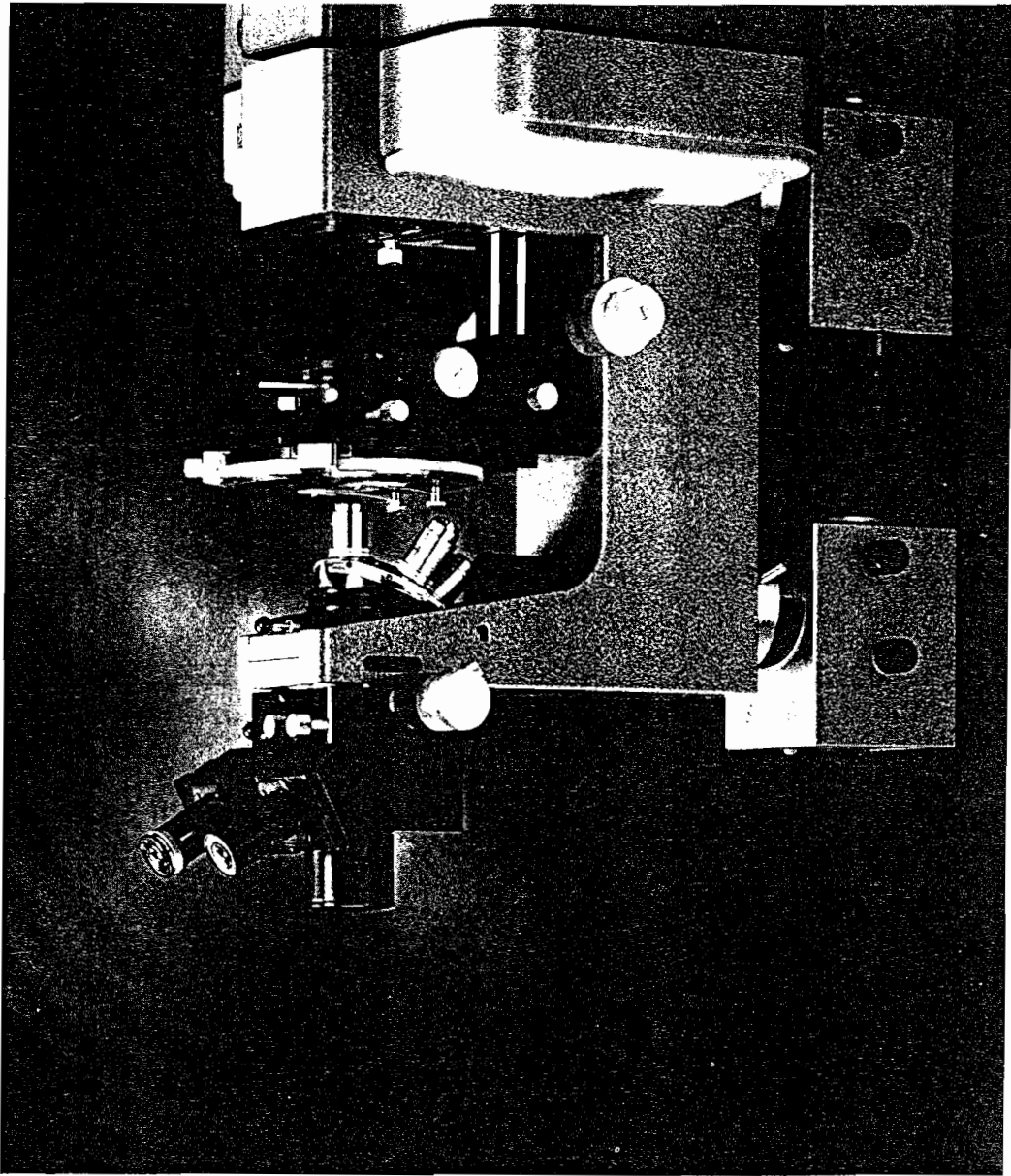
INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

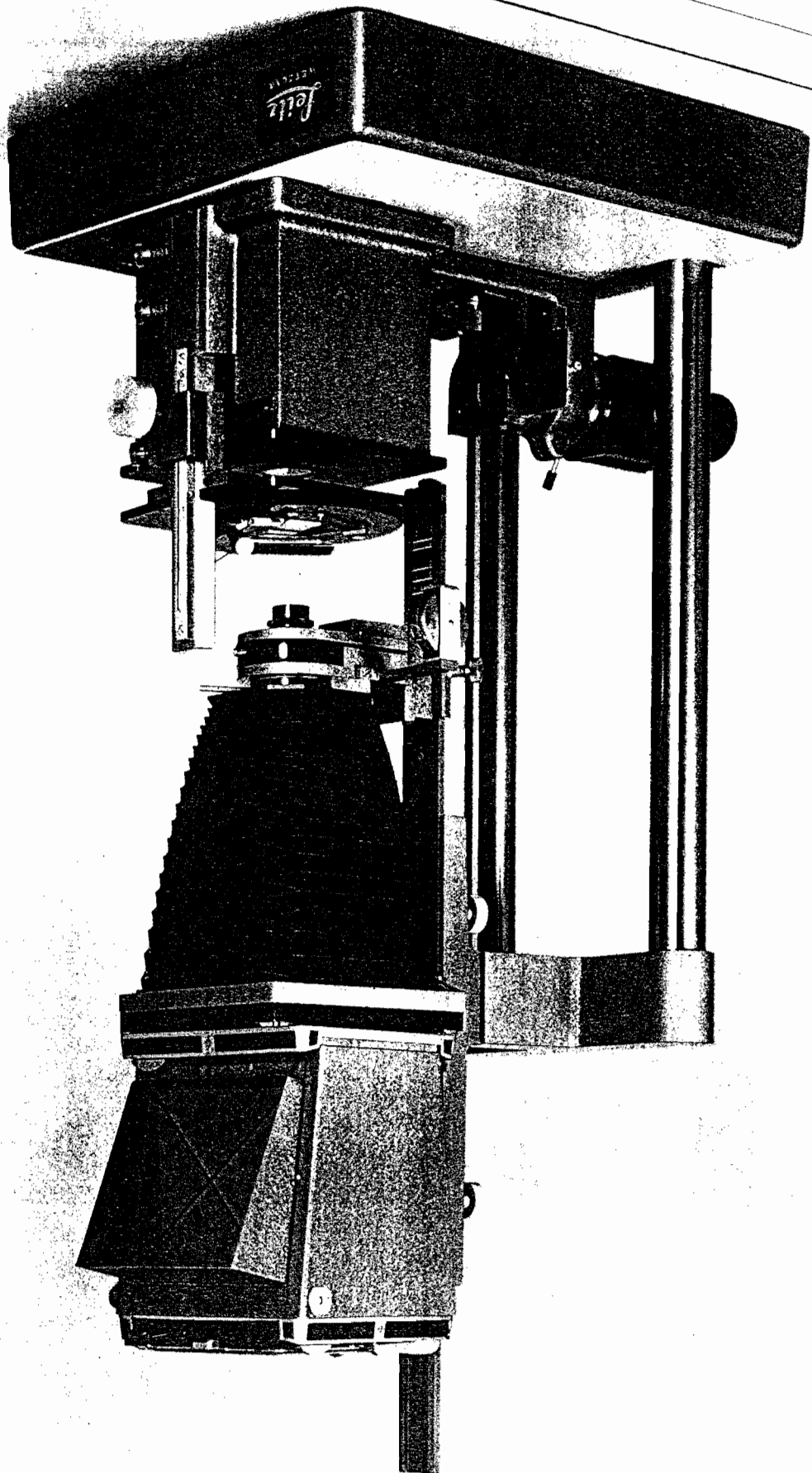
Equipment for Reflected Polarized Light

553 173	Polarized light vertical illuminator with plane glass plate and compensating prism on common axis, prism polarizer rotatable through 90°, objective changing clutch with five objective centering collars and slot to accept 20 x 6mm compensators; light entrance tube with field diaphragm, decentering aperture diaphragm and half stop for oblique illumination; on interchange carrier 42.55-	\$ 818.00
559 051	Achromatic dry objective, free from polarization, F 6.3x/0.20, focal length 30mm, free working distance 21mm	79.00
559 010	Achromatic oil and water immersion objective, free from polarization, F Oil + We 12.5x/0.25, focal length 16mm, free working distance 0.26mm	114.00
559 009	Fluorite dry objective, free from polarization, (F) F1 45x/0.85, focal length 4.4mm, free working distance 0.33mm	207.00
559 012	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 60x/0.95, focal length 3.4mm, free working distance 0.33mm, with spring loaded mount	224.00
559 014	Fluorite oil immersion objective, free from polarization, (P) F1 Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount	306.00
563 011	Stage micrometer on metal 1mm = 100 divisions	46.00
553 027	Set of six metal object slides, format 48 x 28mm	19.00
563 035	Hand press with adjustable stop for levelling specimens	74.00
<hr/>		
		\$1,887.00
Accessories for Differential Interference Contrast after Francon		
559 072	Poi Interference Contrast objective after FRANCON, 8x/0.15, with aperture diaphragm and tiltable SAVART double quartz plate, focal length 23mm, free working distance 2.6mm; permanently mounted on objective centering collar	\$ 173.00
559 073	Poi Interference Contrast objective after FRANCON, 16x/0.22, with aperture diaphragm and tiltable SAVART double quartz plate, focal length 12.3mm, free working distance 3mm; permanently mounted on objective centering collar	229.00
559 074	Poi Interference Contrast objective after FRANCON, 25x/0.20, with aperture diaphragm and tiltable SAVART double quartz plate, focal length 8.2mm, free working distance 3.2mm; permanently mounted on objective centering collar	229.00
Condenser Carrier		
512 174	Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of the condenser --16.	\$ 84.00
Attachable Mechanical Stages		
553 082	Attachable mechanical stage No. 42, with graduated vernier reading to 0.1mm; traversing area 34 x 20mm	\$ 212.00
553 083	Attachable mechanical stage No. 40 for point counting with seven 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 2.0mm; traversing area 34 x 20mm	378.00
620 279	Specimen Aligning Stage Specimen aligning stage for opaque specimens with three interchangeable aperture stops (5, 10 and 20mm) and three interchangeable magnets	\$ 330.00

Continued on the next page.

Item No.	Description	Price
553 097	Interference filter attachment	
	Interference line filter 12.5μ, veril S 200 (400-700mμ) with graduated mount and diaphragm housing	\$ 430.00
	Interference band filter 25μ, veril B 200 (400-700mμ) with graduated mount and diaphragm housing	430.00
Illumination Systems		
A) Lamp Housing No. 100 with 12 Volt, 60 Watt Bulb		
514 233	Lamp housing model No. 100, with bayonet mounting device, filter holder, reflector and adjustable two lens collector; lamp socket with 12 volt 60 watt low voltage bulb, heat absorbing filter, daylight conversion filter CB 12, diffusion disc N and green filter -100	\$ 344.00
500 119	Regulating transformer with ammeter 12 volts, 5 amps for connection to 110/120 volts, 60 cycles A.C.	140.00
514 027	Heat absorbing filter, unmounted	\$ 13.00
514 093	Daylight conversion filter CB 12, mounted	13.00
514 042	Diffusion disc N, mounted	13.00
542 131	Panchromatic green filter, mounted	13.00
500 010	Low voltage filament bulb 12 volts, 60 watts	7.00
512 326	Lamp socket BA 20 D for 12 volt, 60 watt bulb	38.00
B) Lamp Housing No. 100 with 12 Volt, 100 Watt Halogen Bulb		
514 234	Lamp housing model No. 100, with bayonet mounting device, filter holder, reflector and adjustable two lens collector; lamp socket with halogen filament bulb 12 volt 100 watts, heat absorbing filter, daylight conversion filter CB 12, diffusion disc N and green filters	\$ 333.00
500 122	Regulating transformer with ammeter 12 volt, 100 watts for connection to 110/120 volts, 60 cycles A.C.	140.00
514 027	Heat absorbing filter, unmounted	\$ 13.00
514 093	Daylight conversion filter CB 12, mounted	13.00
514 042	Diffusion disc N, mounted	13.00
542 131	Panchromatic green filter, mounted	13.00
500 974	Halogen filament bulb 12 volts, 100 watts	7.00
514 220	Lamp socket for 12 volt, 100 watt halogen bulb	26.00
(C) Sodium Vapor Lamp		
563 073	Lamp housing with bayonet mounting device, lamp socket and Na 4 watt bulb	\$ 156.00
500 116	Power unit for sodium spectral lamp 4 watt, 220 volts, 60 cycles A.C.	138.00
500 039	Step-down transformer for 110 volts, 60 cycles A.C.	69.00
		<u>\$ 363.00</u>
500 032	Na bulb 4 watt	25.00
Miscellaneous Accessories		
552 175	Mahogany accessory case with fittings	\$ 99.00
512 173	Flexible plastic protective dust cover	6.00

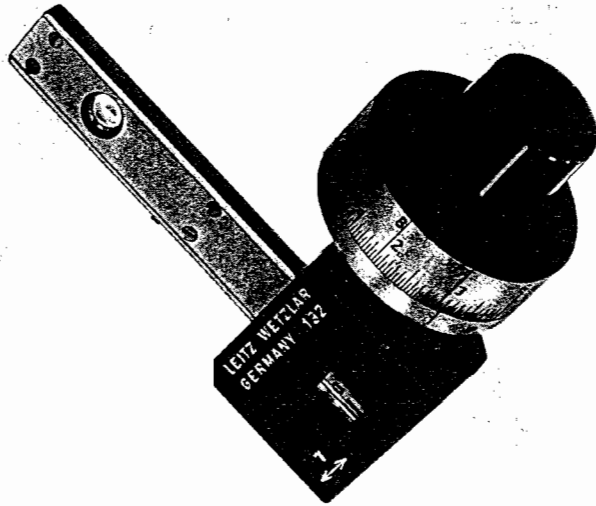




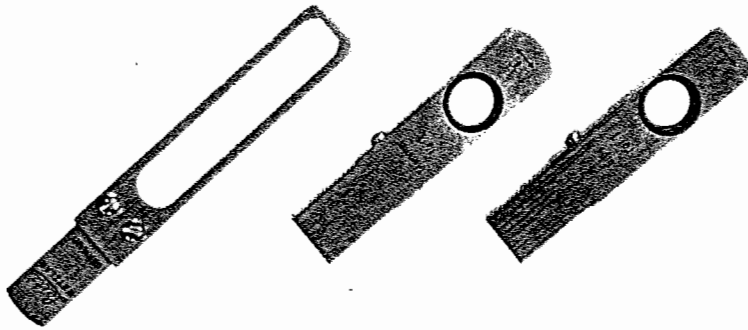
MACRO-DIA APPARATUS FOR POLARIZED LIGHT

542 048	Stand ARISTOPHOT consisting of large base plate with mipmapad, vertical camera carrier on twin columns with adjustable prismatic bar (63cm, 25" long) and protective dust cover	\$ 250.00
542 051	Camera bellows 4" x 5", extensible up to 60 cm, with two double film holders Graflex No. 1284, ground glass screen and focusing magnifier; bayonet locking device for light tight connection to the bellows support and shutter	505.00
542 075	Lower bellows support on rack and pinion carrier, vibration free mounting, time and instantaneous shutter with strobe contact, cable release and tape measure; upper and lower light excluding collars	190.00
542 052	Mirror reflex housing, rotatable, with frame to accept 4" x 5" film holders or POLAROID No. 545 film holder and swing-out mirror for focusing the image on the ground glass screen	405.00
542 114	Macro-Dia Pol apparatus with rotating object stage vertically adjustable by rack and pinion, lamp holder with swing-out condenser lens, stage inset 45mm aperture, polarizer on slide, slot to accept compensators and rotatable analyser with clamp mount	760.00
512 003	Low voltage lamp 6 volts, 30 watts with daylight conversion filter CB 12, diffusion disc N and green filter; including one spare bulb	118.00
500 101	Combination regulating transformer with ammeter 6 volts, 5 amps and dual fixed transformer 8 volts, 5 watts; for connection to 110/120 volts, 60 cycles A.C.	130.00
		<u>\$2,358.00</u>
542 116	First order red compensator in slide (Gypsum plate)	\$ 102.00
542 117	Quarter wave compensator in slide (Mica plate)	76.00
054 338	POLAROID land film holder, model No. 545, for 4 x 5" single sheet film	\$ 59.00
Adapter Rings to Clamp Analyser to the Macro Objectives		
542 118	Adapter ring for 24mm, 35mm, 42mm and 50mm objectives	\$ 6.00
542 119	Adapter ring for 80mm objectives	6.00
MACRO OBJECTIVES WITH BUILT-IN IRIS DIAPHRAGM		
549 011	Macro objective, SUMMAR 35mm f/4.5, with iris diaphragm	\$ 110.00
549 012	Macro objective, SUMMAR 42mm f/4.5, with iris diaphragm	110.00
549 013	Macro objective, SUMMAR 80mm f/4.5, with iris diaphragm	156.00
CONDENSER LENSES		
542 008	Condenser lens 35	\$ 18.00
542 006	Condenser lens 42 - 50	19.00
542 004	Condenser lens 80	35.00
3 111	Adapter ring with screw thread to use 24mm, 35mm, 42mm and 50mm macro objectives on the lower bellows support	\$ 4.00
543 109	Adapter ring with screw thread to use 80mm macro objectives on the lower bellows support	4.00
MISCELLANEOUS ACCESSORIES		
542 047	Set of fourteen stage insets with apertures 7mm to 80mm	\$ 54.00
542 174	Leatherette carrying case to accept macro objectives, condenser lenses and fourteen stage insets	79.00

1st to 4th order 553 094
to 10th order 553 095
to 30th order 553 096

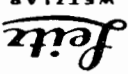




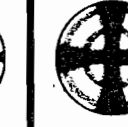


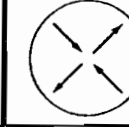
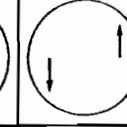






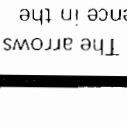
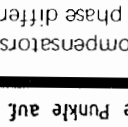
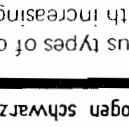
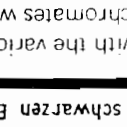
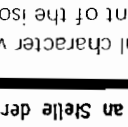


553 030 553 035 553 078



COMPENSATORS FOR THE LEITZ POLARIZING MICROSCOPES

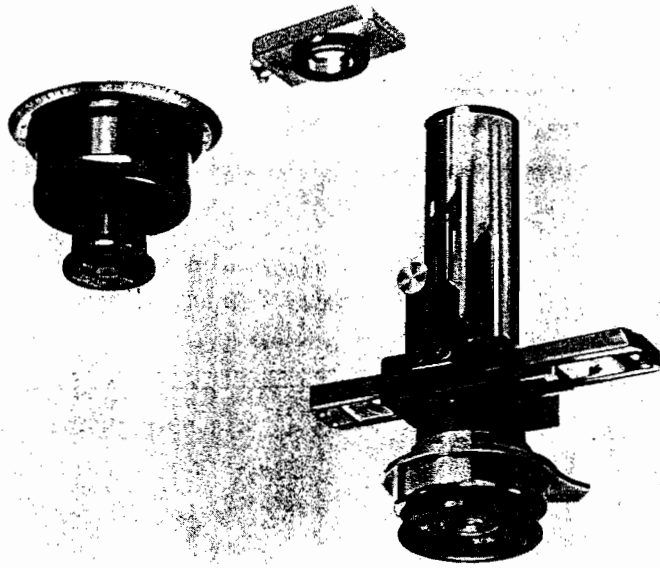
A selection of different types of compensators is offered for the determination of the character of birefringence and for measuring phase differences. Their use in the determination of the character of birefringence with the aid of the conoscopic interference figure is explained in the following table.

		+		-		+		-		 WEITZLAR	
Quartz or gypsum wedge											
Berek compensator											
Gypsum red 1st or 2nd order											
* Beim $\frac{1}{4}\lambda$ -Glimmerplättchen treten an Stelle der schwarzen Bogen schwarze Punkte auf.											

Determination of the absolute optical character with the various types of compensators. The arrows show the direction of the displacement of the isochromates with increasing phase difference in the compensator.

COMPENSATORS FOR SM-POL, LABOLUX-POL, DIALUX-POL AND ORTHOLUX-POL

553 030	First order red compensator (gypsum plate)	\$ 36.00
553 035	Quarter wave compensator (mica plate)	\$ 32.00
553 043	First order red compensator in subparallel position	50.00
553 036	Brace Kohler compensator with $\lambda/10$ plate	\$ 363.00
553 037	Brace Kohler compensator with $\lambda/20$ plate	363.00
553 042	Brace Kohler compensator with $\lambda/30$ plate	363.00
553 003	Mica compensator with quarter wave plate for $\lambda = 589m\mu$	\$ 333.00
553 034	Mica compensator with quarter wave plate for $\lambda = 540m\mu$	333.00
563 156	Green interference filter LL 546m μ	48.00
553 038	Quarter wave plate in subparallel position for $\lambda = 589m\mu$	\$ 49.00
553 040	Quarter wave plate in subparallel position for $\lambda = 540m\mu$	53.00
563 156	Green interference filter LL 546m μ	48.00
513 090	Quarter wave length plate, 32mm ϕ (for work in circular polarized light with the #702 condenser)	\$ 53.00
553 044	Quartz wedge I -- IV orders,	\$ 143.00
553 032	Johannsen quartz gypsum compensator (can only be used with objective clutch changer)	138.00



553 094	Tilting compensator I - IV orders	\$ 424.00
553 095	Tilting compensator X orders	453.00
553 096	Tilting compensator XXX orders	453.00
COMPENSATORS (20 X 60MM) FOR ORTHOPLAN-POL MICROSCOPE		
553 190	First order red compensators (gypsum plate)	\$ 50.00
553 189	Quarter wave compensator (mica plate)	44.00
553 195	First order red compensator in subparallel position	157.00
553 196	Quarter wave plate in subparallel position for $\lambda = 589\text{nm}$	\$ 138.00
553 197	Quarter wave plate in subparallel position for $\lambda = 546\text{nm}$	138.00
553 156	Green interference filter IL 546m μ	48.00
553 188	Quartz wedge I - IV orders	\$ 186.00
553 180	Tilting compensator I - IV orders	463.00
553 181	Tilting compensator X orders	482.00
553 182	Tilting compensator XXX orders	482.00
553 185	Brace Kohler compensator with $\lambda/10$ plate	\$ 363.00
553 186	Brace Kohler compensator with $\lambda/20$ plate	374.00
553 187	Brace Kohler compensator with $\lambda/30$ plate	396.00
WRIGHT EYEPICE AND ACCESSORIES		
553 015	Wright universal eyepiece with field of view iris diaphragm, focusing eyelens, compensator slot and flange with index for the top analyser	\$ 218.00
553 001	Top analyser with 360° graduation reading to 1°	248.00
553 079	Combination quartz wedge after Wright, with orientation scale	\$ 205.00
553 078	Quartz wedge I - IV order	186.00
553 080	Double quartz wedge after Wright	191.00
553 081	Quartz-gypsum compensator after Johannsen	138.00
553 039	Half shadow plate after Nakamura	115.00
553 033	Half shadow wedge after Mace de Lepinay	148.00
553 087	Soleil double plate	94.00

LEITZ UNIVERSAL ROTATING STAGES AND ACCESSORIES

ORTHO SCOPIC

553 005	Universal Rotating Stage UT 4 (four axes of rotation) on centering base	\$ 990.00
559 041	Centering objective	32.00
553 008	Universal Rotating Stage UT 4, however, without segments	\$1,022.00
553 004	Universal Rotating Stage UT 5 (five axes of rotation) on centering base	\$1,276.00
559 041	Centering objective	32.00
553 007	Universal Rotating Stage UT 5, however, without segments	\$1,308.00

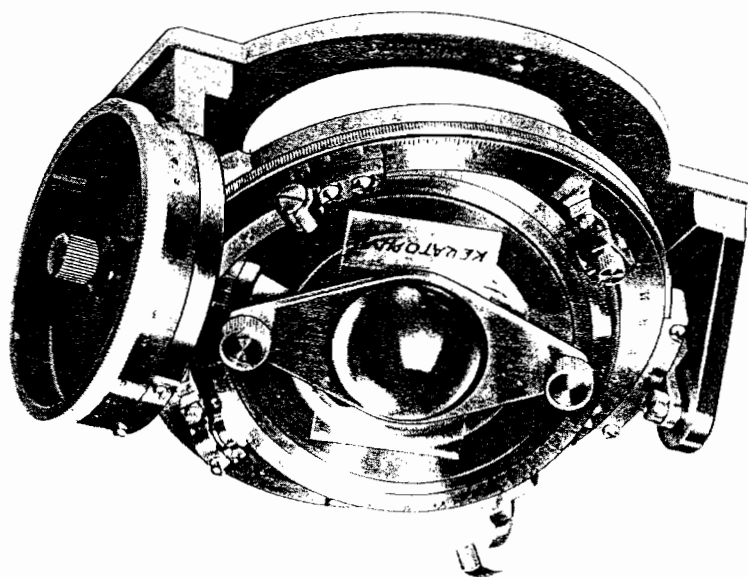
Note:

The universal rotating stages (UT 4 and UT 5) can be used on all LEITZ polarizing microscopes equipped with an objective changing clutch with the exception of the SM-POL microscope.

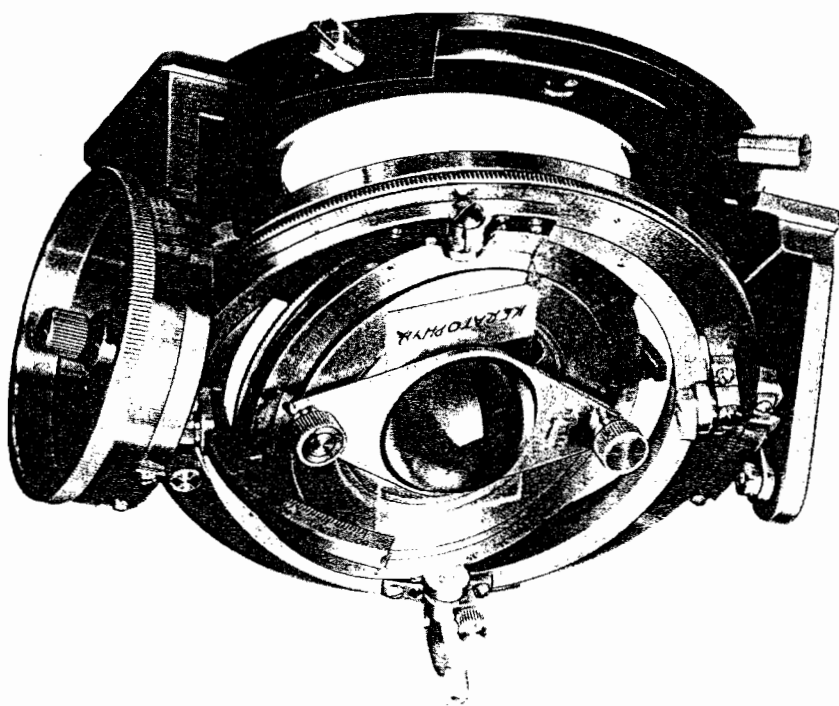
When used in conjunction with the ORTHOLUX-POL, the microscope must be equipped with a series No. 580 condenser and requires the following:

553 060	Intermediate adapter (required when using the universal stage in conjunction with the FS 45 tube, ORTHOLUX-POL)	\$ 11.00
For the analysis of specimen structures with the aid of the UT 4 or UT 5 rotating stages, the following is required:		
553 009	Schmidt parallel guiding slide	\$ 15.00
513 030	Cover glass thickness gauge with graduation, 1 interval = 1/100mm	\$ 42.00
553 012	Auxiliary stage clip for examination of thin sections without upper segment	7.00
553 092	Objective centering collar	14.00
Supplementary condenser for use in conjunction with the UM 20 and UM 30 objectives, in place of the normal swing-out condenser top element:		
553 139	Condenser top element, A. 0.35, for the pol condensers No. 702f and 702fL in conjunction with the UT 4 and UT 5 stages (Orthoscopic)	\$ 80.00
553 140	Condenser top element, A. 0.60, for the pol condensers No. 702f and 702fL in conjunction with the UT 4 and UT 5 stages (Conoscopic)	114.00
553 141	Lower condenser element in mount	16.00
553 006	Condenser top element for the pol condensers No. 500, 580 and 590 in conjunction with the UT 4 and UT 5 stages	\$ 51.00
553 024	Condenser top element for the pol condensers No. 50, 54, 58 and 59 in conjunction with the UT 4 stage	\$ 15.00
553 023	Condenser top element for the pol condensers No. 50, 54, 58 and 59 in conjunction with the UT 5 stage	15.00

553 005



553 004



ACCESSORIES FOR U STAGE CONOSCOPY	
553 059	Special condenser on dovetail slide with sieve to accept polarizer \$ 140.00
559 016	Special objective, UMK 32/0.60, with built-in iris diaphragm 176.00
553 092	Objective centering collar 14.00
553 061	Special accessories for U stage conoscopy complete as described above \$ 330.00
559 040	Special objective, UMK 50/0.60, with built-in iris diaphragm \$ 202.00
553 092	Objective centering collar 14.00
553 031	Eyepiece pinhole diaphragm 3.20
SUPPLEMENTARY EQUIPMENT FOR THE UNIVERSAL STAGES	
553 022	Waldmann hollow glass sphere with adapter ring and holder for use on the U stages, key for the vertical adjustment of closure caps, two wood rings as supports for the sphere, centering gauge and three closure caps \$ 295.00
553 025	Angle true stereographic net ruling with rotation device \$ 70.00
553 028	Single sheet angle true stereographic net ruling 1.40
553 026	Surface true net ruling with rotation device \$ 70.00
553 029	Single sheet surface true net ruling 1.40
553 013	Indicator model with uniaxial crystal \$ 22.00
553 014	Indicator model with biaxial crystal 26.00
553 073	Ermons circulation cell with special lower segment nD 1.554 \$ 117.00
553 053	Upper segment nD 1.554 51.00
EQUIPMENT FOR UNIVERSAL STAGE REFRACTOMETER	
553 016	Auxiliary arrangement INDEX comprising a lower segment, upper hemisphere with cavity and three plano-parallel cover plates, heating ring for the hemisphere with connecting cable \$ 360.00
500 092	Transformer 6-35 volts 0.2 amps; for connection to 110 volts, 60 cycles A.C. 110.00
	\$ 470.00
553 017	Special eyepiece index 8x (30mm ϕ) with helical focusing mount, crosslines and adjustable eyelens \$ 133.00
559 004	Special objective, UM 20/0.33, with built-in iris diaphragm 154.00
553 074	Illuminating stand with opal glass plate (for insertion into the foot of the microscope) 82.00
	When using a filament lamp as source of light one of the following filters must be placed on the INDEX eyepiece or the top analyzer:
553 019	Orange filter 580nm in mount \$ 11.00
553 018	Red filter 670nm in mount 11.00
553 021	Yellow-green filter 550nm in mount 11.00
553 020	Blue filter 480nm in mount 11.00

SEGMENTS FOR UNIVERSAL ROTATING STAGES

For UT 4 and UT 5 Universal Rotating Stages	553 053	\$ 51.00	553 062*	\$ 64.00	Upper segment nD 1.554
	553 049	38.00	553 049	38.00	Lower segment nD 1.554
For U Stage and U Stage Conoscopy	553 051	\$ 89.00	553 063	\$ 102.00	Paired segments nD 1.554
	553 054	\$ 51.00	553 064*	\$ 64.00	Upper segment nD 1.516
	553 048	38.00	553 048	38.00	Lower segment nD 1.516
	553 010	\$ 89.00	553 065	\$ 102.00	Paired segments nD 1.516
	553 055	\$ 51.00	553 066*	\$ 64.00	Upper segment nD 1.649
	553 050	38.00	553 050	38.00	Lower segment nD 1.649
For U Stage and U Stage Conoscopy	553 011	\$ 89.00	553 067	\$ 102.00	Paired segments nD 1.649

553 009 Schmidt parallel guiding slide \$ 15.00

*MODIFIED FOR SCHMIDT PARALLEL GUIDING SLIDE

For U Stage and U Stage Conoscopy	553 046	\$ 51.00	553 109*	\$ 64.00	Upper segment K nD 1.554
	553 049	38.00	553 049	38.00	Lower segment nD 1.554
For U Stage and U Stage Conoscopy with Schmidt Parallel Slide	553 056	\$ 89.00	553 112	\$ 102.00	Paired segments K nD 1.554
	553 045	\$ 51.00	553 108*	\$ 64.00	Upper segment K nD 1.516
	553 048	38.00	553 048	38.00	Lower segment nD 1.516
	553 057	\$ 89.00	553 111	\$ 102.00	Paired segments K nD 1.516
	553 047	\$ 51.00	553 110*	\$ 64.00	Upper segment K nD 1.649
	553 050	38.00	553 050	38.00	Lower segment nD 1.649
For U Stage and U Stage Conoscopy	553 058	\$ 89.00	553 113	\$ 102.00	Paired segments K nD 1.649

553 009 Schmidt parallel guiding slide \$ 15.00

*MODIFIED FOR SCHMIDT PARALLEL GUIDING SLIDE

SPECIAL OBJECTIVES FOR USE WITH THE UNIVERSAL ROTATING STAGES

559 002	Special objective, UM 5/0.10, with built-in iris diaphragm	90.00	\$
559 003	Special objective, UM 10/0.22, with built-in iris diaphragm	94.00	
559 004	Special objective, UM 20/0.33, with built-in iris diaphragm	154.00	
559 005	Special objective, UM 32/0.30, with built-in iris diaphragm	154.00	
559 016	Special objective, UMK 32/0.60, with built-in iris diaphragm	176.00	
559 040	Special objective, UMK 50/0.60, with built-in iris diaphragm	202.00	
559 041	Auxiliary centering objective	32.00	
553 092	Objective centering collar	14.00	

NOTE:

The values of this series of objectives will vary according to the application (transmitted or reflected light, with or without segment). Please refer to the table below:

OPTICAL DATA, UM OBJECTIVES

A) FOR TRANSMITTED LIGHT

Designation of objectives	Magnification/Aperture	Cover Glass Correction(2)	Type of(1) Eyepiece	Free Working Distance mm	CATALOG NUMBER	PRICE \$	REMARKS
Objectives with built-in iris diaphragm for use with Universal Rotating Stages	UM 5x/0.10	D(O)	HO	1.40	559 002	90.00	With Segment R = 13.5
	UM 10x/0.22	D(O)	HO	1.40	559 003	94.00	With Segment R = 13.5
For use with Segment nD=1.55	UM 20x/0.33	D(O)	PO	1.40	559 004	154.00	With Segment R = 13.5
	UM 32x/0.30	D(O)	PO	1.40	559 005	154.00	With Segment R = 13.5
For use without segment	UMK 50x/0.60	D(O)	PO	0.56	559 016	176.00	With Segment R = 6.06
	UMK 32x/0.60	D(O)	PO	0.41	559 040	202.00	With Segment R = 5.13
Objectives with built-in iris diaphragm for use with Universal Rotating Stages	UM 5x/0.10	DO	HO	14.0(3)	559 002	90.00	Magnifications and 3.2x/0.07
	UM 10x/0.22	DO	HO	14.0(3)	559 003	94.00	apertures without 6.5x/0.15
	UM 20x/0.33	DO	PO	14.0(3)	559 004	154.00	the use of a seg- 13x/0.22
	UM 32x/0.30	DO	PO	14.0(3)	559 005	154.00	apertures without 20x/0.20
	UM 32x/0.60	DO	PO	6.3(3)	559 016	176.00	the use of a seg- 20x/0.40
	UMK 50x/0.60	DO	PO	6.1(3)	559 040	202.00	apertures without 32x/0.40

B) FOR REFLECTED LIGHT

Designation of objectives	Magnification/Aperture	Cover Glass Correction(2)	Type of(1) Eyepiece	Free Working Distance mm	CATALOG NUMBER	PRICE \$	REMARKS
Objectives with built-in iris diaphragm for use with Universal Rotating Stages	UM 5x/0.10	DO	HO	11.9(3)	559 002	90.00	Magnifications and 4.6x/0.07
	UM 10x/0.22	DO	HO	14.2(3)	559 003	94.00	apertures without 8.5x/0.15
	UM 20x/0.33	DO	PO	14.8(3)	559 004	154.00	the use of a seg- 16x/0.22
	UM 32x/0.30	DO	PO	14.0(3)	559 005	154.00	apertures without 25x/0.20
	UMK 32x/0.60	DO	PO	6.5(3)	559 016	176.00	the use of a seg- 25x/0.40
	UMK 50x/0.60	DO	PO	6.5(3)	559 040	202.00	apertures without 40x/0.40

1) HO = Huygens eyepiece, PO = PERIPLAN eyepiece
 2) D = with cover glass 0.17 ± 0.05mm thick
 O = without cover glass
 DO = for use with or without cover glass

D1: cover glass thickness 0.17mm should be observed accurately to within ±0.01mm, or should be accurately set with the correction mount where it varies from these values.

3) These working distances are valid for examining specimen without cover glass.

