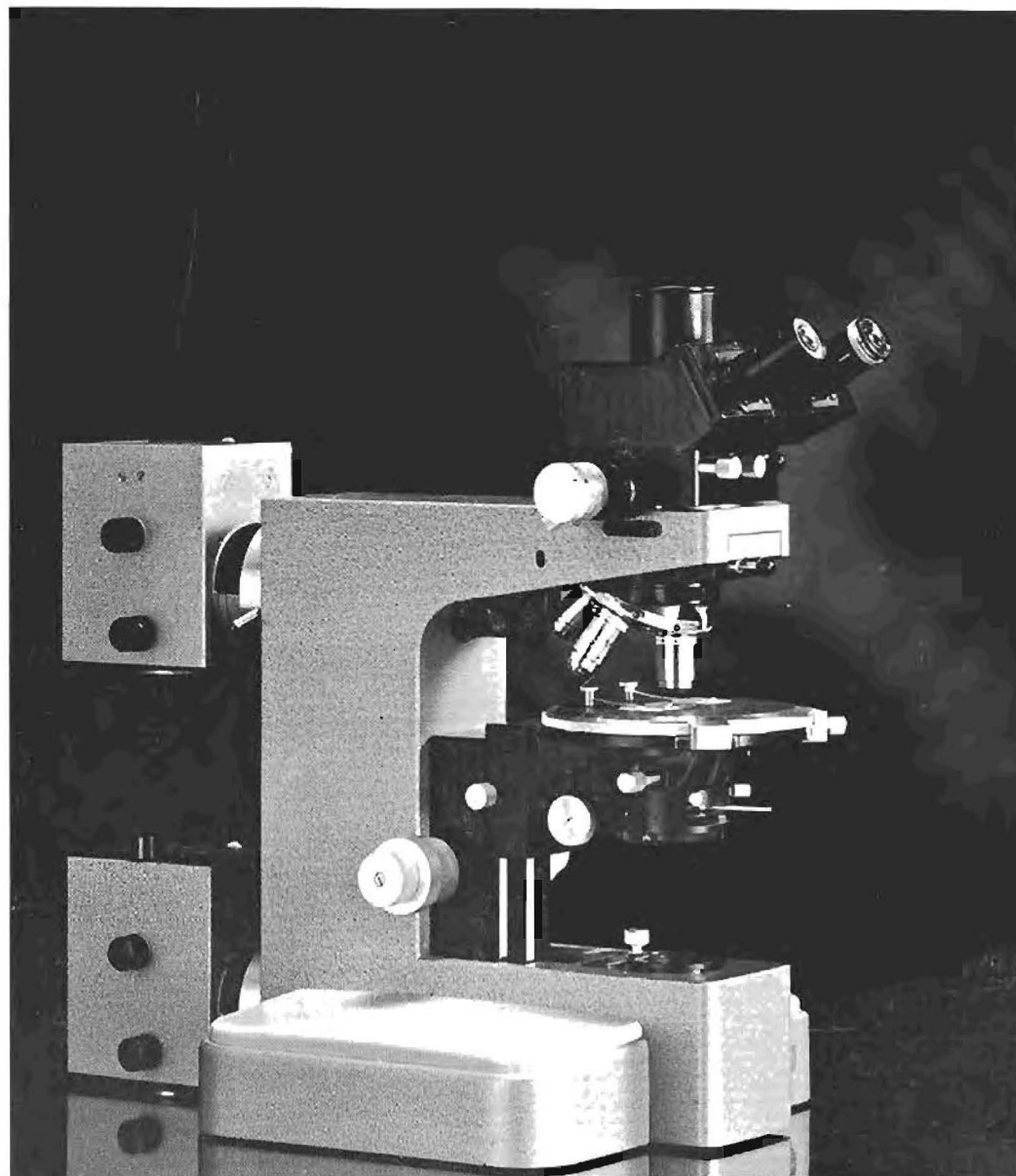


Leitz 1971 Polarizing Microscopes Catalog  
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**LEITZ**

**POLARIZING  
MICROSCOPES**

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## INTRODUCTION

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 analyser (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 analysers 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.

The type of microscope stand developed at the beginning of the twentieth century featured a horseshoe foot with inclinable curve limb; a novel micrometer screw on horizontal

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, the noted scientist on mineralogy and crystallography, 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-

ience 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. EPILUX-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

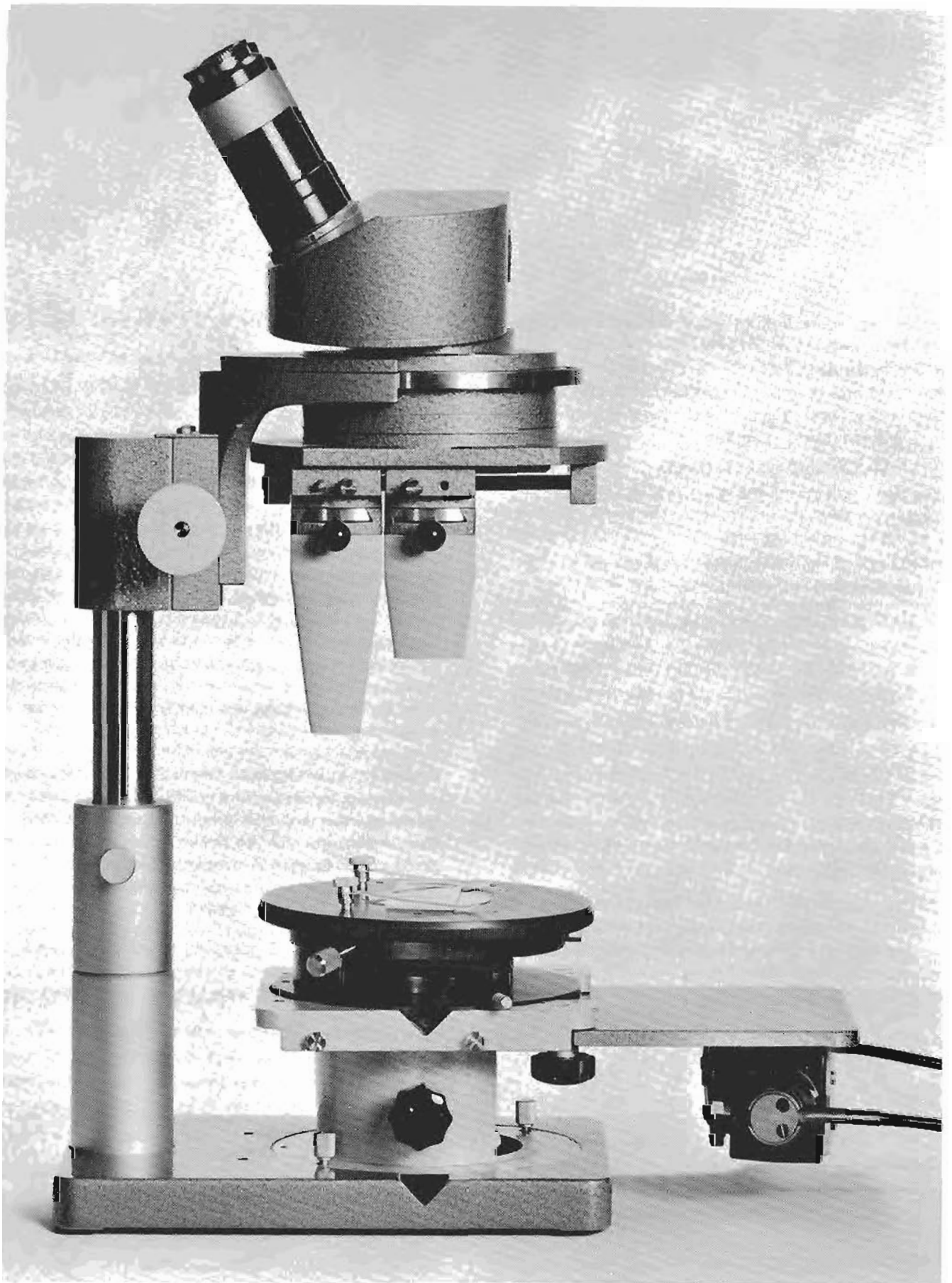
In addition to the standard microscope outfits described in this catalog, we would like to call your attention to the special accessories and attachments such as the MACRO-DIA Apparatus for photomicrography, Compensators (mica, Berek, Brace Kohler and tilting types; quartz wedges and Wright eyepiece), 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 $\phi$ 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 $\phi$ , inclined eyepiece tubes rotatable through 360 <sup>o</sup> with click stops at 90 <sup>o</sup> 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 <sup>o</sup> and slot to accept compensator . . . . .	283.00
512 036	Flexible plastic protective dust cover . . . . .	<u>3.00</u>
511 276	LEITZ STEREOSCOPIC – POL MICROSCOPE RS – POL as described above, however, without optical equipment . . . . .	\$1,223.00
 <b>Optical Equipment ST 12</b>		
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 $\phi$ . . . . .	100.00
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for reticles, field of view up to 16mm $\phi$ . . . . .	123.00
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm $\phi$ . . . . .	<u>114.00</u>
	LEITZ LARGE FIELD STEREOSCOPIC – POL MICROSCOPE RS – POL WITH OPTICAL EQUIPMENT ST 12 FOR MAGNIFICATIONS 6.3X TO 250X (TRANSMITTED LIGHT) . . . . .	\$1,824.00
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	Monla 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

**STEREOSCOPIC – POL MICROSCOPE, MODEL ES – POL,  
WITH DOVETAIL FITTING  
FOR PAIRED OBJECTIVE SLIDER**

511 270	Large field stereo body, ES-POL, with field of view up to 28mm $\phi$ , inclined eyepiece tubes rotatable through 360 <sup>o</sup> with click stops at 90 <sup>o</sup> 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 <sup>o</sup> and slot to accept compensators . . . . .	283.00
512 036	Flexible plastic protective dust cover . . . . .	<u>3.00</u>
511 275	LEITZ STEREOSCOPIC – 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 $\phi$ . . . . .	100.00
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for recticles, field of view up to 16mm $\phi$ . . . . .	123.00
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm $\phi$ - LEITZ LARGE FIELD STEREOSCOPIC – POL MICROSCOPE ES – POL WITH OPTICAL EQUIPMENT ST 12 FOR MAGNIFICATIONS 6.3X TO 250X (TRANSMITTED LIGHT) . . . . .	<u>114.00</u>
		\$1,709.00
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	Monla 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



# OPTICAL EQUIPMENT FOR STEREO MICROSCOPES ES & RS

Optical data for the RS and ES wide-field stereo microscopes							
Objectives/ Aperture		Eyepieces					Working distance mm
		W 6.3 x	W 10 x	W 16xM	W 25 x	W 32 x	
1/0.05	Magnif. Field mm	6.3 x 28	10 x 24	16 x 16	25 x 10	32 x 8	140
1.6/0.065	Magnif. Field mm	10 x 18	16 x 15	25 x 10	40 x 6	50 x 5	120
2.5/0.08	Magnif. Field mm	16 x 11	25 x 10	40 x 6.4	63 x 4	80 x 3	90
4/0.08	Magnif. Field mm	25 x 7	40 x 6	63 x 4	100 x 2.5	125 x 2	60
10/0.10	Magnif. Field mm	63 x 2.8	100 x 2.4	160 x 1.6	250 x 1	320 x 0.8	30

### Objectives

511 204	Paired achromatic stereo objectives, 1.6x/0.07 on slider, free working distance 120mm	\$ 82.00
511 207	Paired achromatic stereo objectives, 2.5x/0.08 on slider, free working distance 90mm	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

### Large Field Eyepieces

511 211	Paired large field eyepieces, W 6.3x, one with adjustable eyelens, field of view up to 28mm $\phi$	\$ 100.00
511 215	Paired large field eyepieces, W 10x, one with adjustable eyelens, field of view up to 24mm $\phi$	119.00
511 218	Paired large field eyepieces, W 16xM, one with adjustable eyelens and mount for reticles, field of view up to 16mm $\phi$	123.00
511 219	Paired large field eyepieces, W 16xM, both with adjustable eyelens and mount for reticles, field of view up to 16mm $\phi$	138.00
511 217	Single large field eyepiece, W 16xM, with adjustable eyelens and mount for reticles, field of view up to 16mm $\phi$	69.00
511 221	Paired large field eyepieces, W 25x, with fixed eyelens, field of view up to 10mm $\phi$	114.00
511 223	Paired large field eyepieces, W 32x, with fixed eyelens, field of view up to 8mm $\phi$	136.00
511 251	Paired eyecups, soft rubber	\$ 8.00

**EYEPIECE RETICLES  
FOR "M" EYEPIECES ONLY**

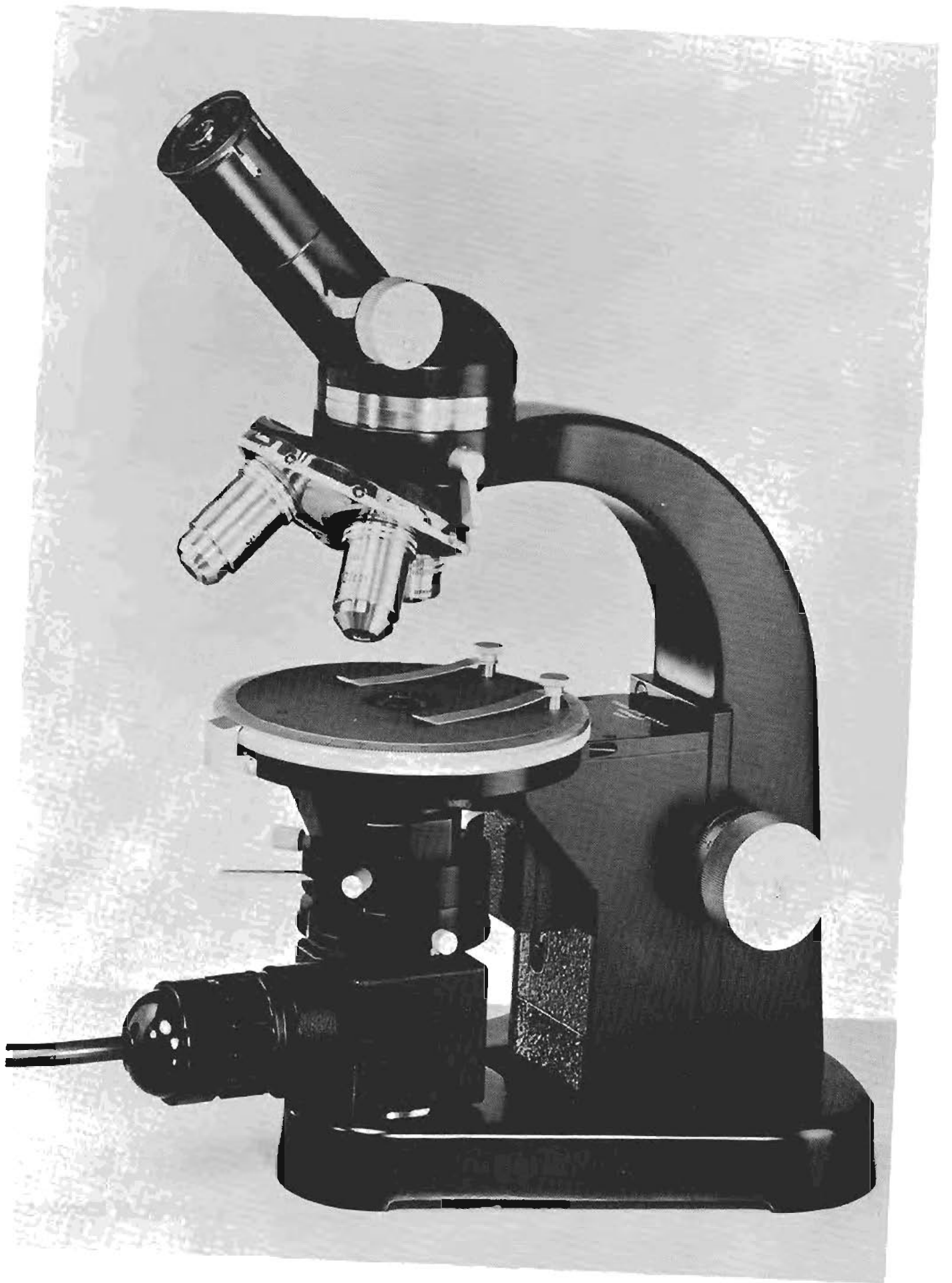
**For Stereoscopic Microscopes, Models ES, RS and FS**

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
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See page 10 for SM-POL M Microscope.



**STUDENT AND LABORATORY POLARIZING MICROSCOPE, SM – POL M  
MONOCULAR POLARIZING MICROSCOPE, SM – POL M, WITH QUADRUPLE  
REVOLVING OBJECTIVE NOSEPIECE**

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 quadruple revolving objective nosepiece with individual objective centering device and slot to accept compensators 0.34.-

Dovetail carrier 0.5.-, 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  $\phi$ ), 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. 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

552 132	LEITZ POLARIZING MICROSCOPE SM-POL M 0.34.5.- P 11 39/702F as described above . . . . .	\$ 860.00
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**Optical Equipment B1A Mono**

559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm . . . . .	\$ 61.00
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559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm . . . . .	87.00
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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
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559 006	Huygens eyepiece P 8x (30mm $\phi$ ) with adjustable eyelens and fixed crosslines, field of view 19mm . . . . .	<u>70.00</u>
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550 046	LEITZ MONOCULAR STUDENT AND LABORATORY POLARIZING MICROSCOPE SM-POL M 0.34.5.- P 11 39/702F COMPLETE WITH OPTICAL EQUIPMENT B1A MONO as described above . . . . .	\$1,296.00
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512 078	Plane and concave mirror with bayonet mounting device 0.12 . . . . .	<u>17.00</u>
		\$1,313.00

**Alternate Substage Illuminators**

514 096	Micro-dia lamp 15 watts, 110 volts A.C., with bayonet mounting device 0.13 . . .	\$ 29.00
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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. 0.22 . . . . .	\$ 66.00
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**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  $\phi$ ), 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. 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 interchangeable carrier

552 131	LEITZ POLARIZING MICROSCOPE SM-POL M 0.73.5.- P 11 39/702F as described above . . . . .	\$ 808.00
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**Optical Equipment B1A Mono**

559 037	Achromatic dry objective, free from polarization, P 3.5x/0.10, focal length 32mm, free working distance 22mm . . . . .	61.00
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559 045	Achromatic dry objective, free from polarization, P 10x/0.25, focal length 16mm, free working distance 5.3mm . . . . .	87.00
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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
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559 006	Huygens eyepiece P 8x (30mm $\phi$ ) with adjustable eyelens and fixed crosslines, field of view 19mm . . . . .	70.00
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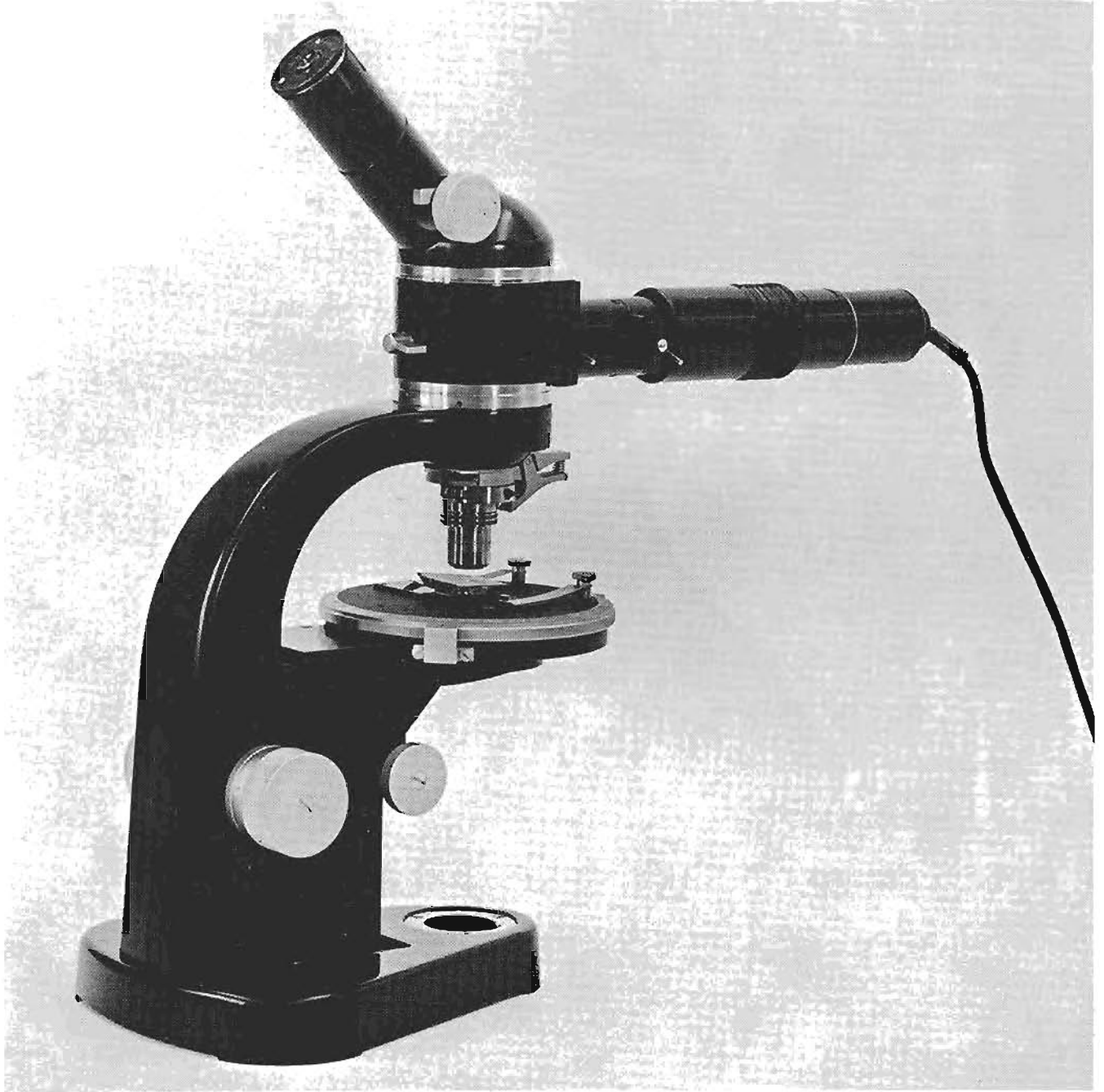
550 045	LEITZ MONOCULAR STUDENT AND LABORATORY POLARIZING MICROSCOPE SM-POL M 0.73.5.- P 11 39/702F COMPLETE WITH OPTICAL EQUIPMENT B1A MONO as described above . . . . .	\$1,244.00
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512 078	Plane and concave mirror with bayonet mounting device -.-.12 . . . . .	17.00
		\$1,261.00

**Alternate Substage Illuminators**

514 096	Micro-dia lamp 15 watts, 110 volts A.C., with bayonet mounting device -.-.13 . . .	\$ 29.00
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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
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# SM-POL MICROSCOPE

## INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

### Tubes

552 035	Interchangeable straight monocular photographic tube O 14 (30mm $\phi$ ), with swing-out Bertrand lens and pinhole diaphragm . . . . .	\$ 136.00
552 029	Interchangeable inclined monocular observation tube P 11 (30mm $\phi$ ), 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, P 6.3x/0.20, focal length 30mm, free working distance 21mm . . . . .	79.00
559 015	Achromatic dry objective, free from polarization, P 8x/0.18, focal length 23mm, free working distance 16mm . . . . .	79.00
559 008	Achromatic dry objective, free from polarization, P 16x/0.40, focal length 13mm, free working distance 3.3mm . . . . .	93.00
559 033	Achromatic dry objective, free from polarization, P 44x/0.65, focal length 4.5mm, free working distance 0.53mm . . . . .	128.00
		\$1,015.00

### Note:

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

**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 - 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.

**Substage Illuminators**

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

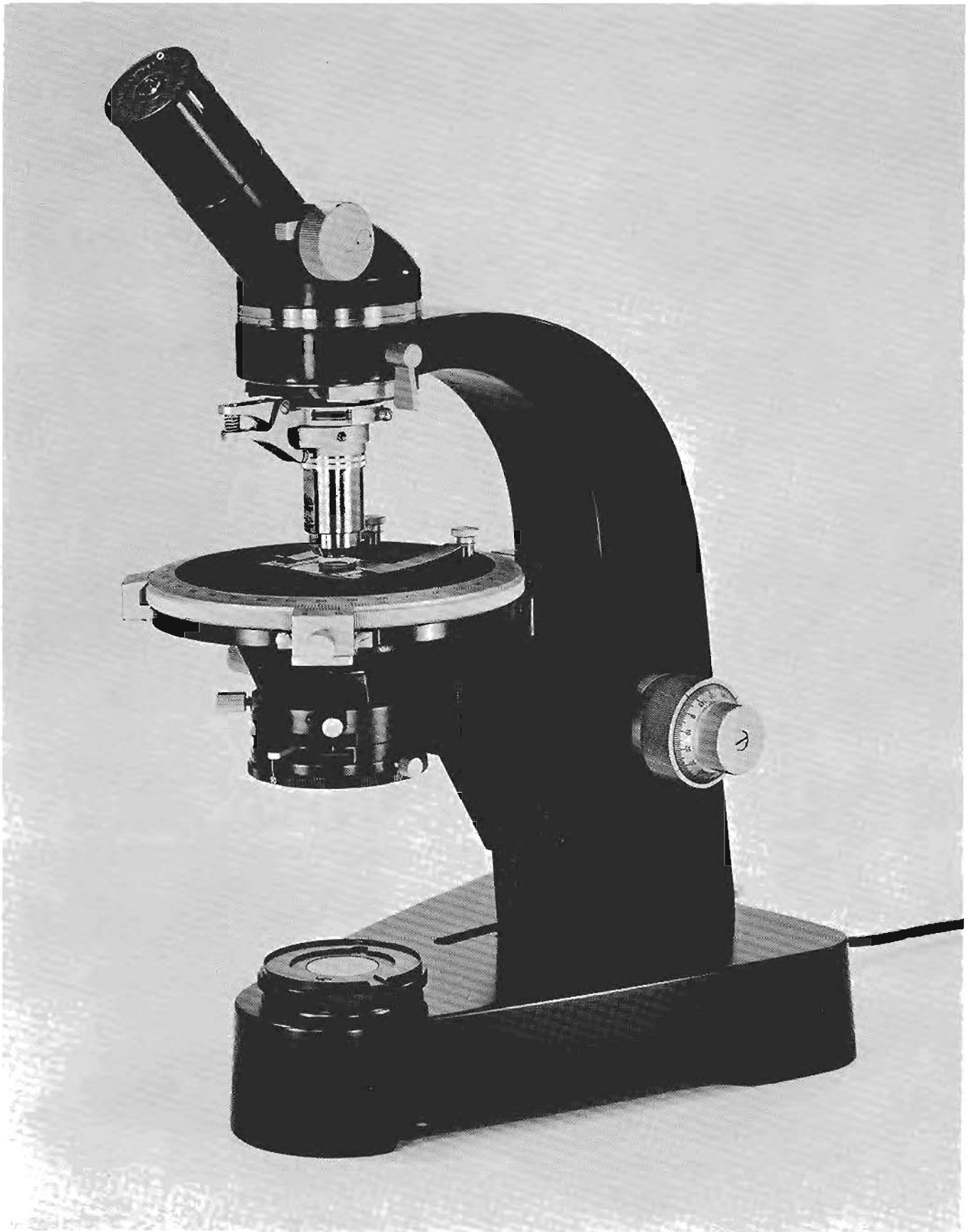
**Spectral Lamp**

514 090	Lamp housing, monla 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
		<u>\$ 330.00</u>

**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

See page 18 for LABOLUX-POL D 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 7.74.5. 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 7.74.5.31 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 $\phi$ , with swing-out Bertrand lens and independently operated pinhole diaphragm . . . . .	182.00
552 032	Rotating object stage No. 38, 130mm $\phi$ , with scales and verniers, reading to 0.1° . . . . .	274.00
552 077	Swing-out condenser No. 702F1, 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 7.74.5.31 P11 38/702FL as described above . . . . .	<u>\$1,692.00</u>

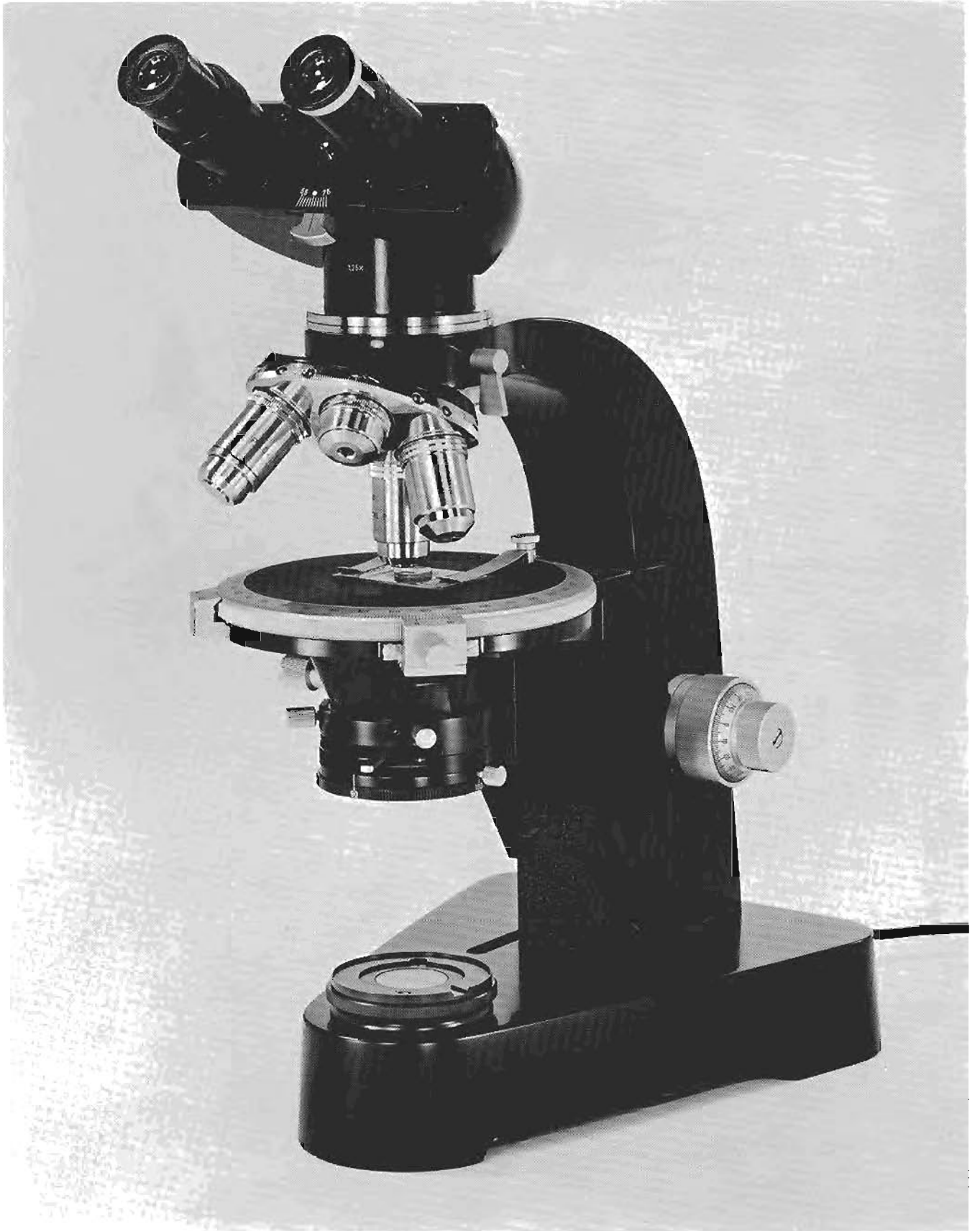
**Optical Equipment**

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 $\phi$ , 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 $\phi$ , 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 . . . . .	<u>34.00</u>
	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. . . . .	<u>78.00</u>
		<u>\$2,623.00</u>

**Optional**

552 038	Mahogany cabinet . . . . .	\$ 142.00
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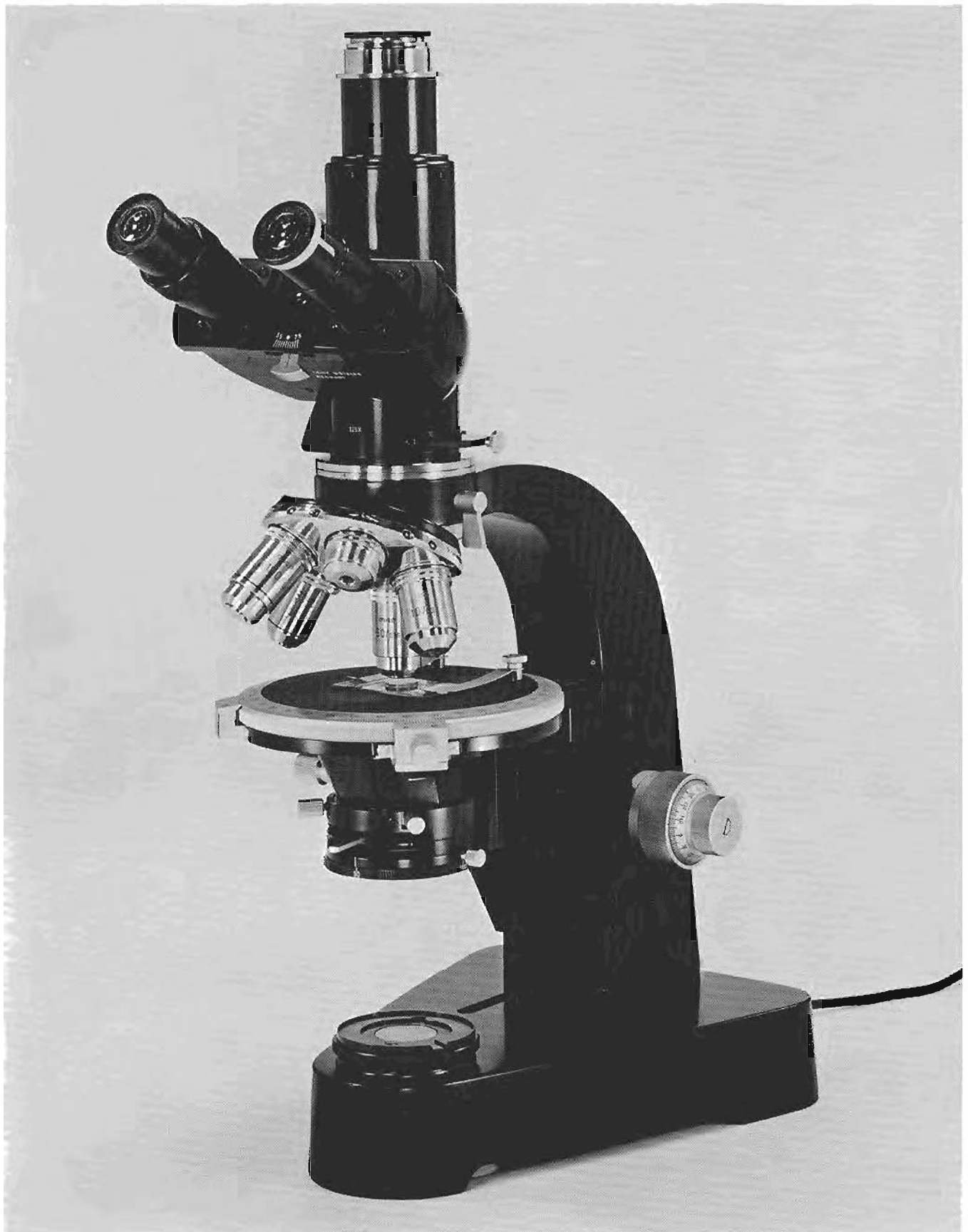
\*Discontinued, limited supply still available.



**BINOCULAR 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 7.35.5. 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 7.35.5.31 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 $\phi$	451.00
552 032	Rotating object stage No. 38, 130mm $\phi$ , with scales and verniers, reading to 0.1 $^{\circ}$	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
	<b>LEITZ POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 S 20 38/702FL as described above</b>	<b>\$2,036.00</b>
<b>Optical Equipment</b>		
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
	<b>LEITZ BINOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 S20 38/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above</b>	<b>\$2,888.00</b>
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
		<b>\$2,966.00</b>
<b>Optional</b>		
552 038	Mahogany cabinet	\$ 142.00

\*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. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser 7.35. 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 7.35.5.31 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 $\phi$ , with scales and verniers reading to 0.1°	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
	<b>LEITZ POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 FS22 38/702FL as described above</b>	<b>\$2,143.00</b>
<b>Optical Equipment</b>		
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 $\phi$ , 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 $\phi$ , 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, Apl Oil 1.25	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions with photographic scale	34.00
	<b>LEITZ TRINOCULAR LABORATORY AND RESEARCH POLARIZING MICROSCOPE LABOLUX-POL D 7.35.5.31 FS22 38/702FL COMPLETE WITH OPTICAL EQUIPMENT as described above</b>	<b>\$3,140.00</b>
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
		<b>\$3,218.00</b>
<b>Optional</b>		
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. Dovetail carrier for the interchange of condensers with rack and pinion for the adjustment in the height of condenser 7.55.5.35 . . . . .	\$ 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 7.55.5.35 . . . . .	895.00
552 029	Inclined monocular observation tube P 11 30mm $\phi$ , with swing-out Bertrand lens and independently operated pinhole diaphragm . . . . .	182.00
552 032	Rotating object stage No. 38, 130mm $\phi$ , with scales and verniers, reading to 0.1° . . . . .	274.00
	LEITZ POLARIZING MICROSCOPE EPILUX-POL D 7.55.5.35 P 11 38/- as described above . . . . .	<u>\$2,072.00</u>

**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 $\phi$ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm . . . . .	70.00
563 011	Stage micrometer on metal 1mm = 100 divisions . . . . .	<u>46.00</u>
	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 . . . . .	\$3,118.00
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. . . . .	<u>78.00</u>
		<u>\$3,196.00</u>

**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 7.55.5.31 . . . . .	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.

# LABOLUX-POL D MICROSCOPE

## INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

### Tubes

552 035	Interchangeable straight monocular photographic tube O 14 (30mm $\phi$ ), with swing-out Bertrand lens and pinhole diaphragm . . . . .	\$ 136.00
552 029	Interchangeable inclined monocular observation tube P 11 (30mm $\phi$ ), 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
552 037	Combination inclined binocular observation and straight monocular photographic tube FS 22 . . . . .	558.00
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 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 . . . . .	<del>378.00</del>

5-11-13  
998.00  
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 14-23cm) . . . . .	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.

### 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

**Interference Filter Attachment**

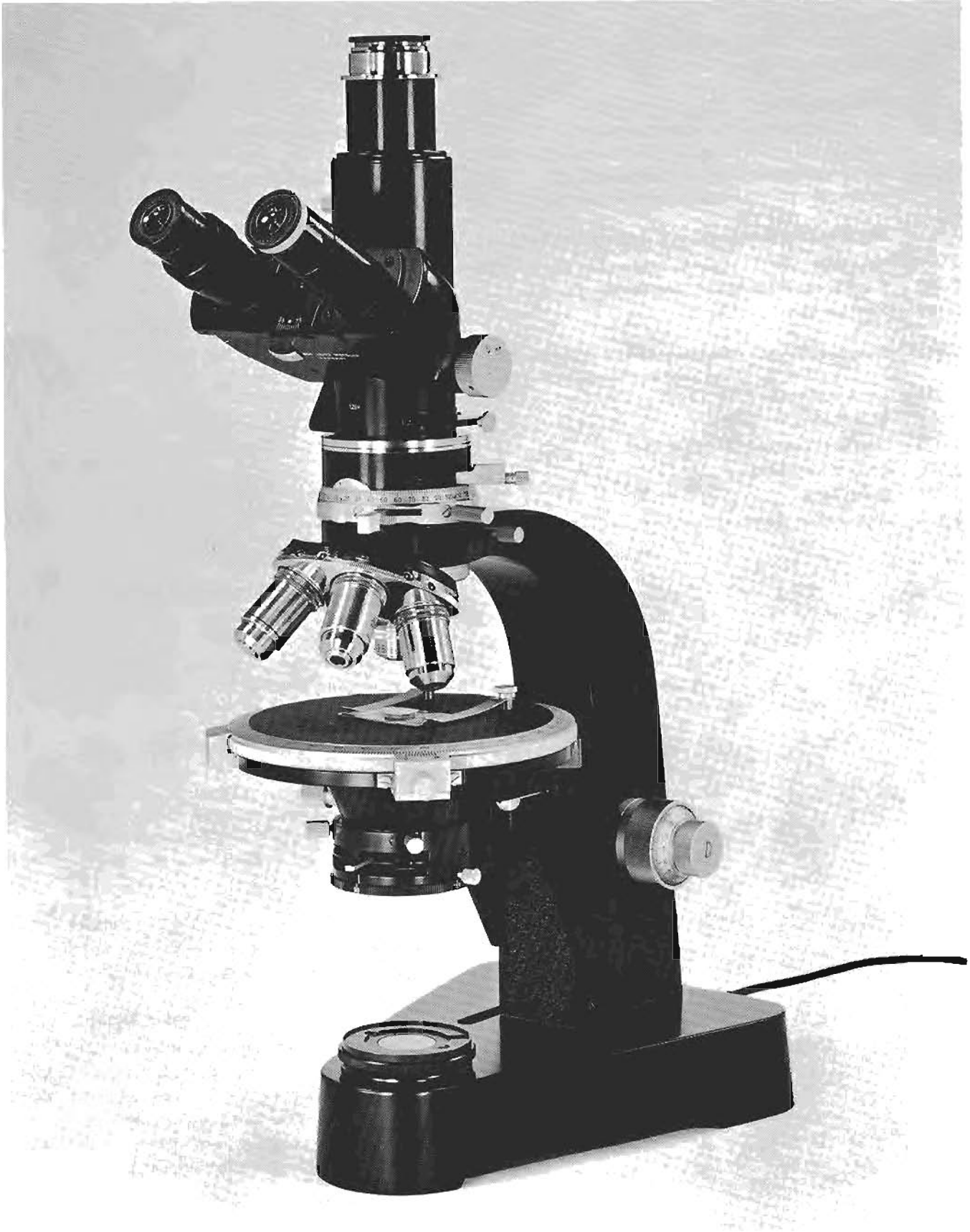
553 097	Interference line filter 12.5 $\mu$ , <u>veril</u> S 200 (400-700 $m\mu$ ) with graduated mount and diaphragm housing . . . . .	\$ 430.00
553 099	Interference band filter 25 $m\mu$ , <u>veril</u> B 200 (400-700 $m\mu$ ) with graduated mount and diaphragm housing . . . . .	430.00

**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
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



**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. 7021L, 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
<b>Optical Equipment</b>		
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, Apl 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
		\$4,076.00

\* Discontinued, limited supply still available.

Continued on the next page.

**Note:**

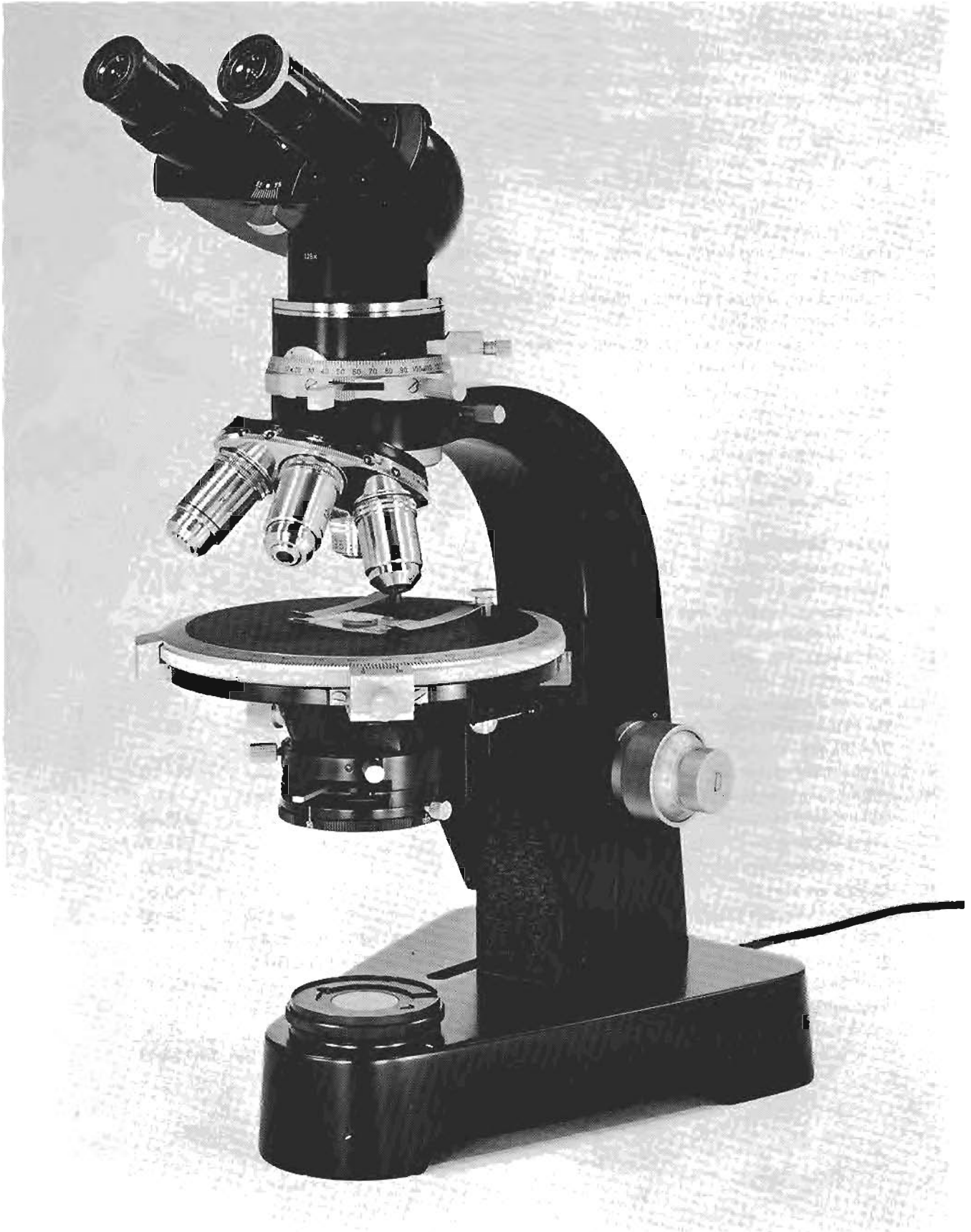
The DIALUX-POL Microscope can also be supplied with a prism polarizer and analyser. In this case the stand (No. 055 231) and condenser (No. 552 077) are replaced by the following:

055 234	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
<b>Optional</b>		
552 038	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 conoscopic observation, bayonet mount for interchangeable body tubes and Mipo-am 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 . . . . .	<u>257.00</u>
	LEITZ POLARIZING MICROSCOPE DIALUX-POL DF 7.74.5.31 FS 21 37/702FL as described above . . . . .	\$2,858.00
	<b>Optical Equipment</b>	
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 546mμ . . . . .	<u>48.00</u>
	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. . . . .	<u>78.00</u>
		\$4,114.00



**BINOCULAR 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 7.35.-, 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 7.35.31 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 $\phi$	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, 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 BINOCULAR 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
		\$3,780.00

**Optional**

552 038	Mahogany cabinet	\$ 142.00
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\*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 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 7.4.5.31, 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 7.4.5.31 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 7.74.5.31	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

**Optional**

552 038	Mahogany cabinet	\$ 142.00
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\*Discontinued, limited supply still available.



**MONOCULAR RESEARCH POLARIZING MICROSCOPE DIALUX-POL SB DF:  
EQUIPPED FOR REFLECTED LIGHT**

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 $\phi$ , with built-in iris diaphragm . . .	144.00
552 095	Rotating object stage No. 438, 130mm $\phi$ , with scales and verniers, click-stop at 45° intervals and locking device; on interchange carrier . . . . .	<u>286.00</u>
	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) FI 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) FI 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) FI Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount . . . . .	306.00
559 006	Huygens eyepiece 30mm $\phi$ , single P 8x with adjustable eyelens and fixed crossline, field of view 19mm . . . . .	\$ 70.00
563 011	Stage micrometer on metal 1mm = 100 divisions . . . . .	<u>46.00</u>
	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. . . . .	<u>78.00</u>
		\$3960.00

**Note:**

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 DP, as described under No. 055 248, however, with prism analyser . . . . .	\$,1960.00
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**Optional**

552 038	Mahogany cabinet	\$ 142.00
563 035	Hand press with adjustable stop, for leveling specimens	74.00

**Supplementary Equipment for Transmitted Light with Dialux-Pol SB**

512 071	Collector lens	\$ 48.00
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	74.00
552 042	Rotating object stage No. 237, 150mm $\phi$ , with scales and verniers and locking device, on interchange carrier	453.00
512 118	Dovetail carrier --B, for the interchange of condensers, with rack and pinion for the adjustment in the height of condenser	68.00
512 139	Field diaphragm	28.00

**Note:**

The DIALUX-POL SB accepts the same tubes, condensers and objective carriers as listed for the DIALUX-POL D Microscope. Objectives for transmitted light corrected for 170mm tube length.



# DIALUX-POL D MICROSCOPE

## INTERCHANGEABLE AND SUPPLEMENTARY EQUIPMENT

### Tubes

552 034	Interchangeable straight monocular photographic tube O 13 (30mm $\phi$ ), with built-in iris diaphragm . . . . .	\$ 120.00
552 030	Interchangeable inclined monocular observation tube P 10 (30mm $\phi$ ), 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 . . . . .	<del>\$ 212.00</del> <b>337.00</b>
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 . . . . .	<del>\$ 270.00</del> <b>580.00</b>

### Drawing Attachment

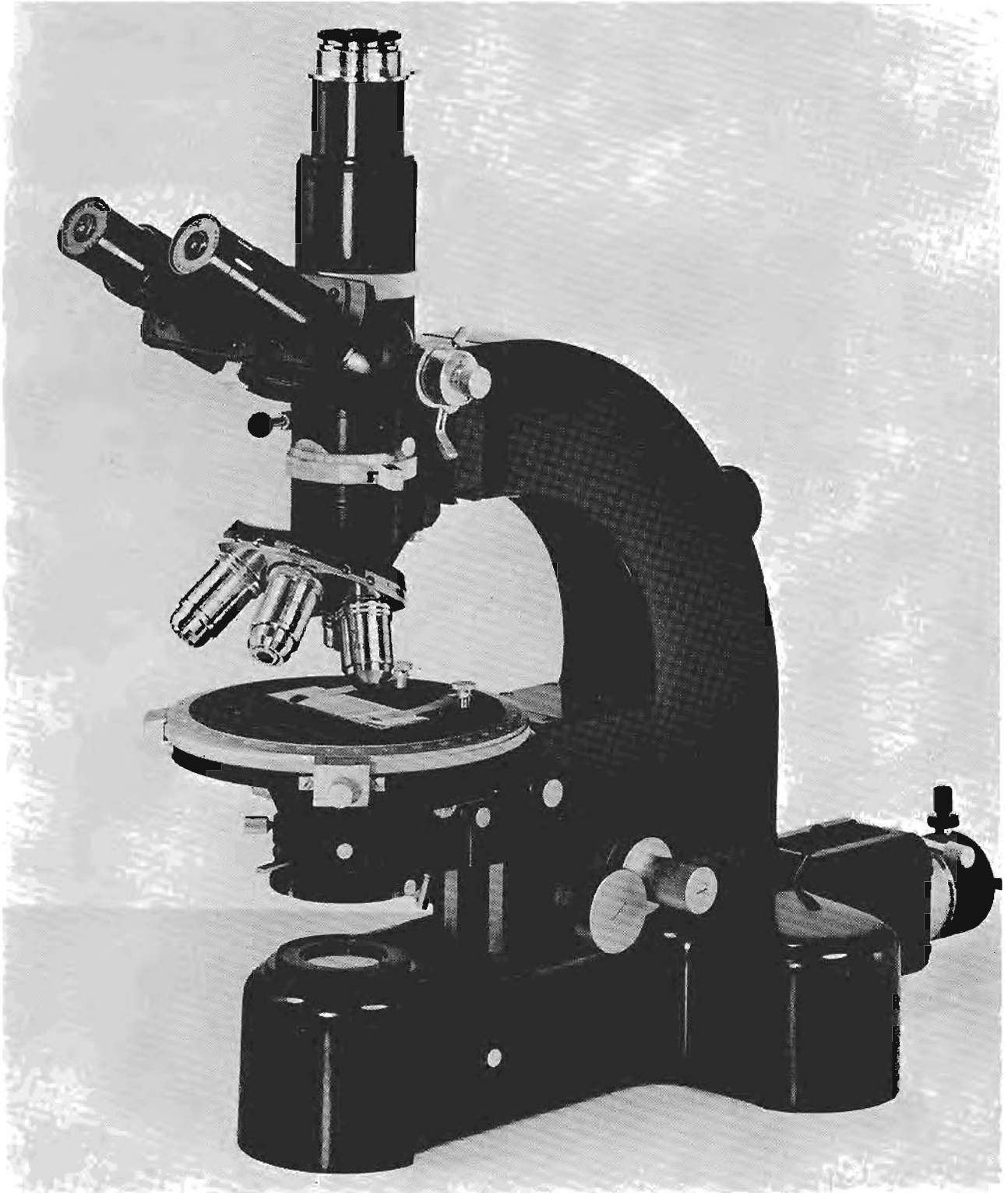
553 192	Drawing attachment with 80/20 prism, built-in quartz plate, adjustable lateral drawing tube, focusing device with built-in achromatic objective, eyepiece tube for the projection eyepiece (eyepiece not included), 45° mirror and bayonet mount for the observation tube . . . . .	\$ 451.00
519 051	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



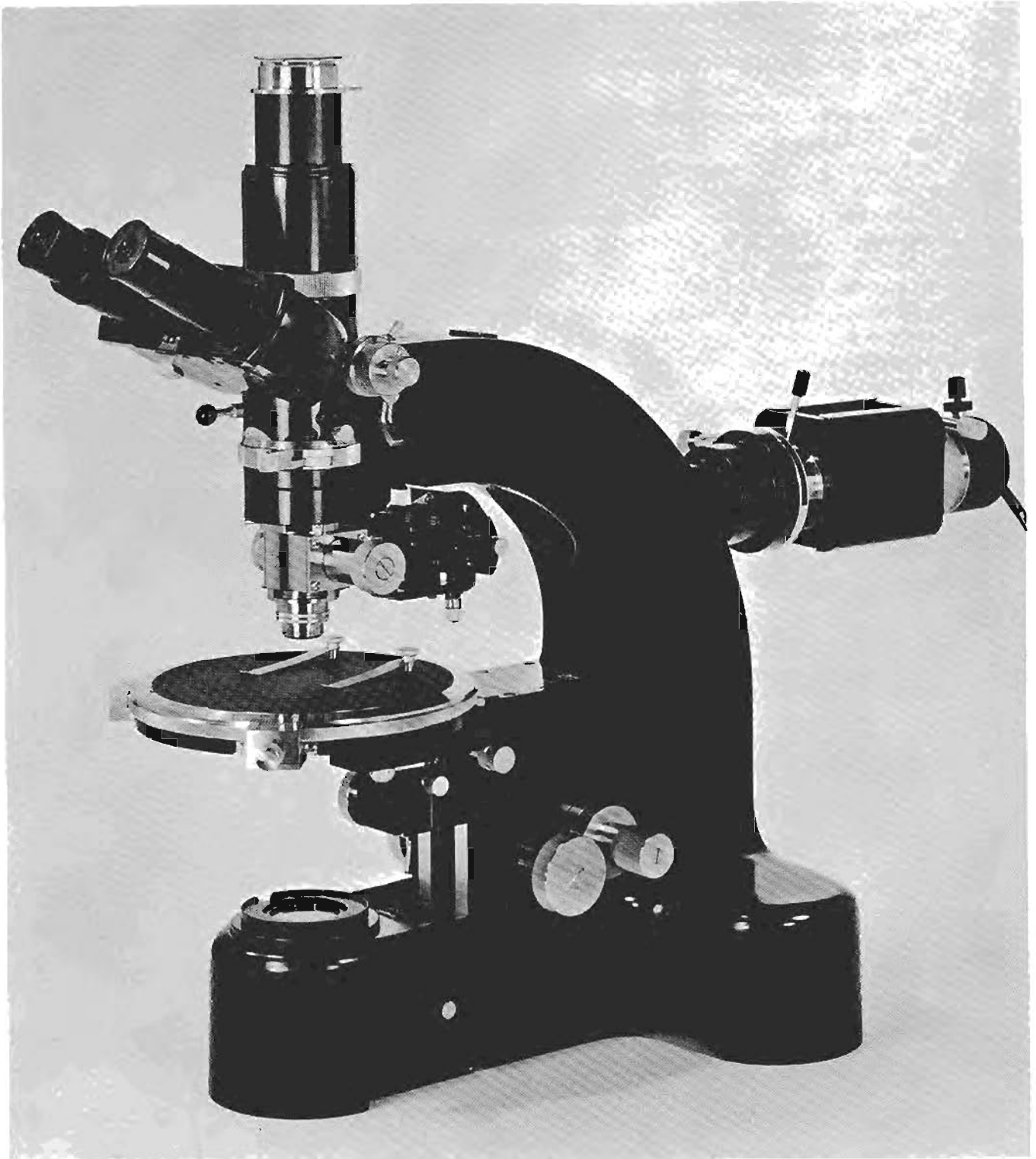
**LEITZ RESEARCH MICROSCOPE ORTHOLUX-POL EQUIPPED FOR:  
TRANSMITTED LIGHT**

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 --.1 . . . . .	118.00
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 $\phi$ , 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/1.30P, focal length 1.7mm, free working distance 0.26mm, with spring loaded mount . . . . .	482.00
559 001	Huygens eyepiece 30mm $\phi$ , single P 6.3x with adjustable eyelens and mount for reticles, field of view 21mm . . . . .	45.00
559 006	Huygens eyepiece 30mm $\phi$ , 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, Apl 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
		<u>\$5,423.00</u>

\*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. 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
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 12.55 . . . . .	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 $\phi$ , with scales and verniers and locking device; on interchange carrier . . . . .	453.00
552 013	LEITZ POLARIZING MICROSCOPE ORTHOLUX-POL 12.55.-.5 FS 45 237/- as described above . . . . .	\$3,614.00

**Optical Equipment E2E Bino**

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) FI 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) FI 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) FI Oil 105x/1.32, focal length 2.0mm, free working distance 0.27mm, with spring loaded mount . . . . .	306.00
559 006	Huygens eyepiece 30mm $\phi$ , 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
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 E2E 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

### Condenser Carrier

512 118 Dovetail 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 $\mu$ , veril S 200 (400-700m $\mu$ ) with graduated mount and diaphragm housing . . . . . \$ 430.00

553 099 Interference band filter 25m $\mu$ , veril B 200 (400-700m $\mu$ ) 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 --.1 . . . . . \$ 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 --.5 . . . . . 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

\$ 367.00

### 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

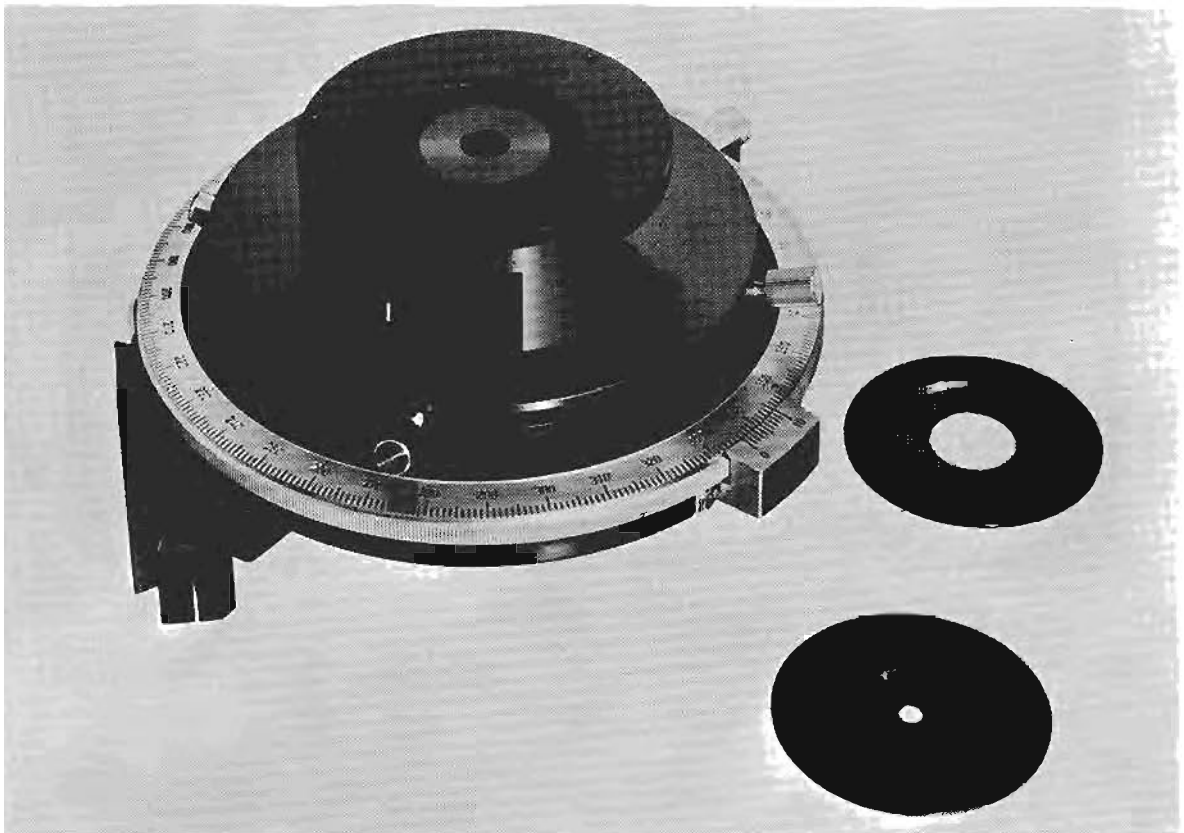
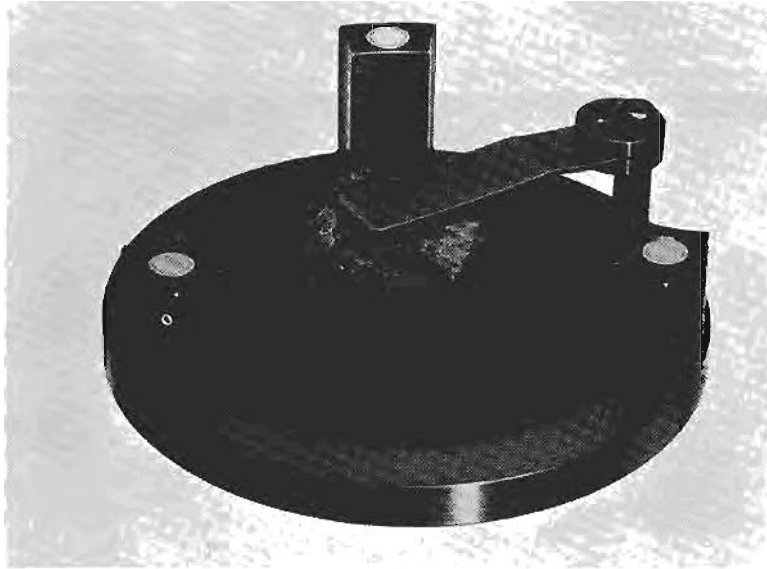
512 125 Daylight conversion filter CB 12 (U shaped 34 x 55mm) . . . . . \$ 6.00

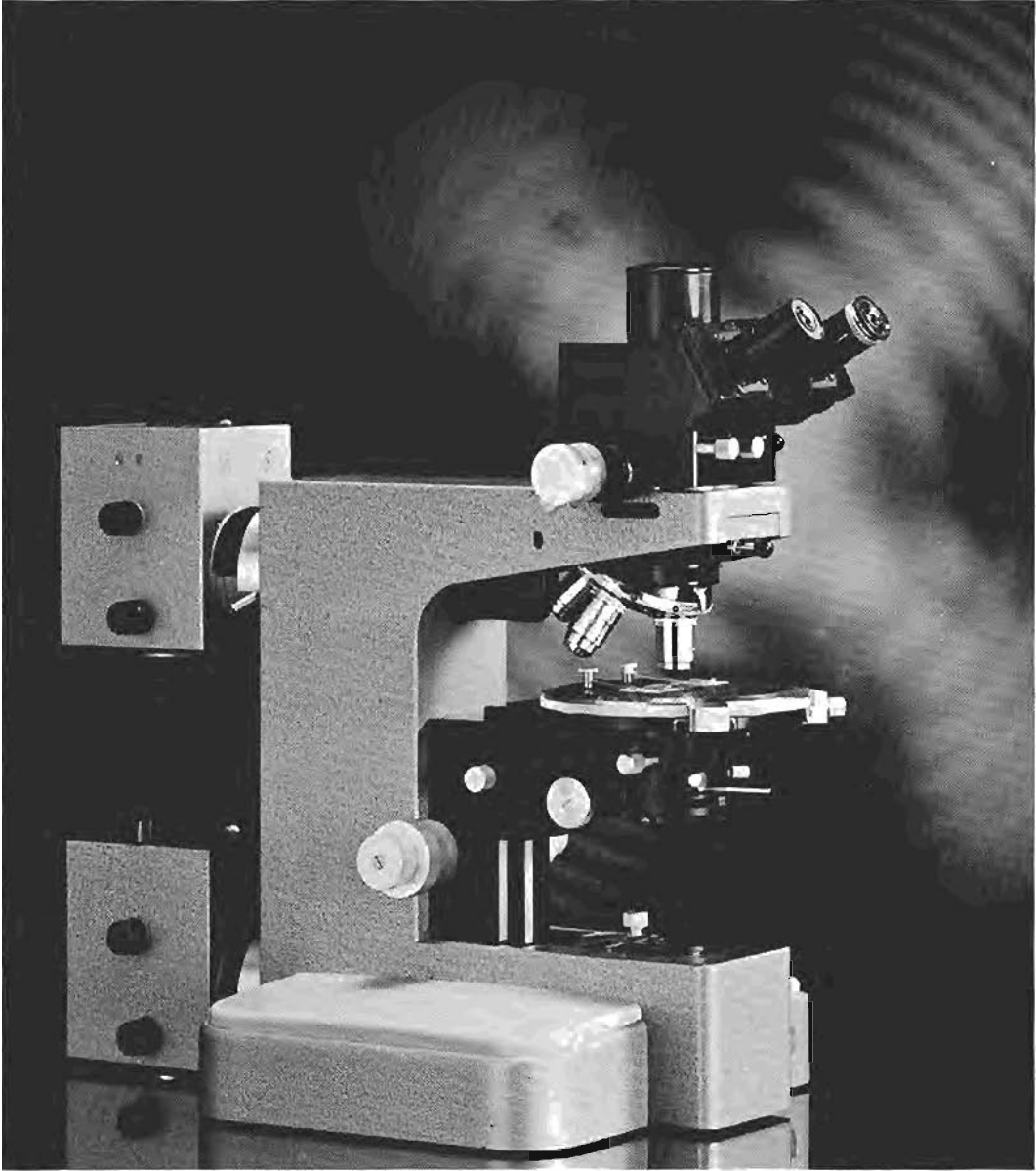
512 105 Diffusion disc N (U shaped 34 x 55mm) . . . . . 4.00

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







## 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-into 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 $\phi$ ) 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 $\phi$ , 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 ORTHOPLAN-POL 40.35.16.100 FSA 837/702F as described above . . . . .		\$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, Apl Oil 1.25 . . . . .	120.00
513 106	Stage micrometer on glass, 2mm = 200 divisions, with photographic scale . . . . .	34.00
	LEITZ UNIVERSAL RESEARCH POLARIZING MICROSCOPE, ORTHOPLAN-POL 40.35.16.100 FSA 50 837/702F COMPLETE WITH OPTICAL EQUIPMENT FOR MAXIMUM FLATNESS OF FIELD . . . . .	\$6,048.00
500 119	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, <u>prism polarizer</u> 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, 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) FI 45x/0.85, focal length 4.4mm, free working distance 0.33mm . . . . .	207.00
559 012	Fluorite oil immersion objective, free from polarization, (P) FI 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) FI 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
		<u>\$1,887.00</u>

#### Accessories for Differential Interference Contrast after Francon

559 072	Pol 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	Pol 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	Pol 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
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#### 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
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**Interference Filter Attachment**

553 097	Interference line filter 12.5 $\mu$ , <u>veril</u> S 200 (400-700 $\mu$ ) with graduated mount and diaphragm housing	\$ 430.00
553 099	Interference band filter 25 $\mu$ , <u>veril</u> B 200 (400-700 $\mu$ ) 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 No. 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**

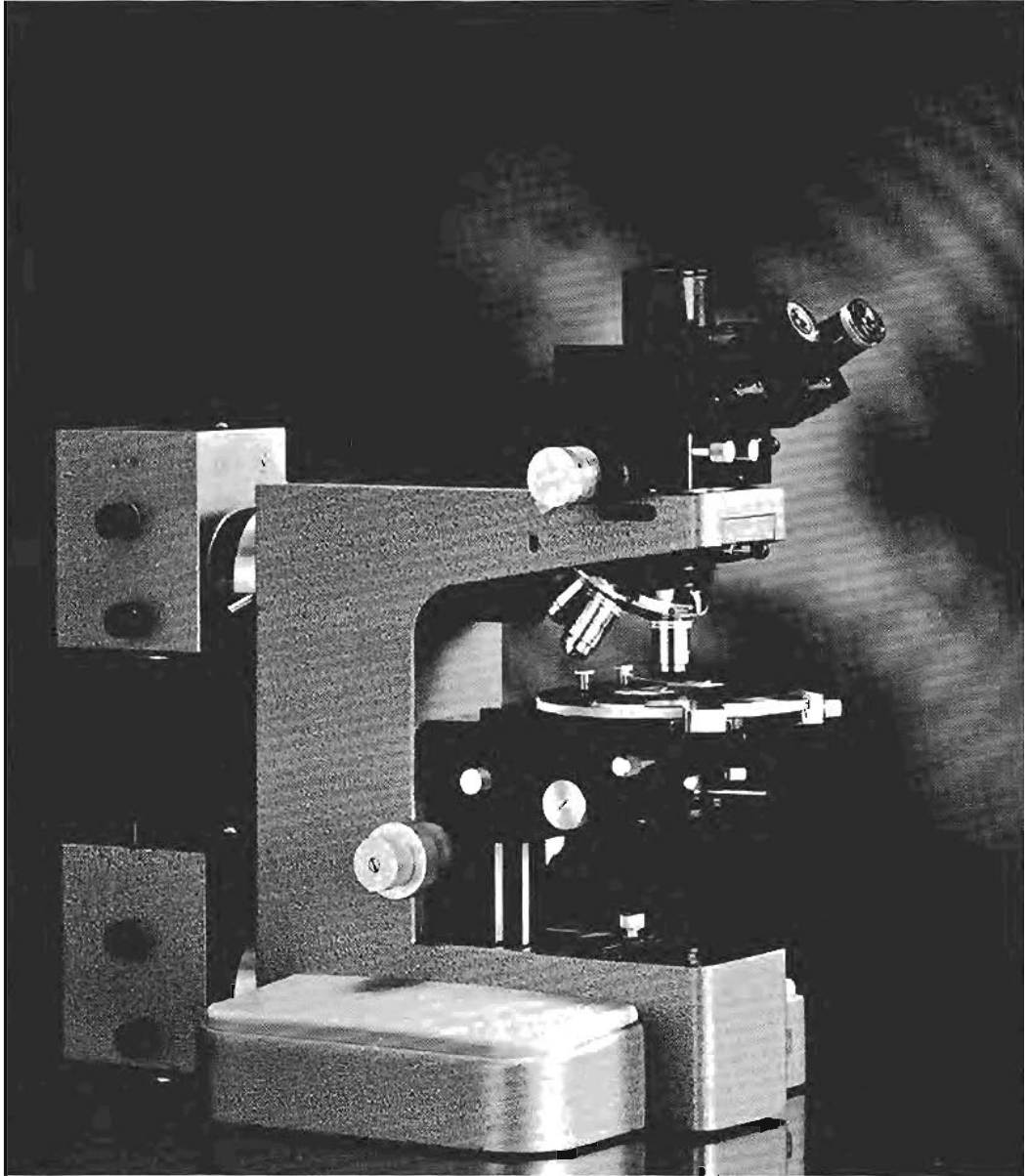
514 234	Lamp housing model No. 100, with bayonet mounting device, filter holder, reflector and adjustable two lens collector; lamp socket with halogen filament bulb 12 volt 100 watts, heat absorbing filter, daylight conversion filter CB 12, diffusion disc N and green filters	\$ 333.00
500 122	Regulating 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

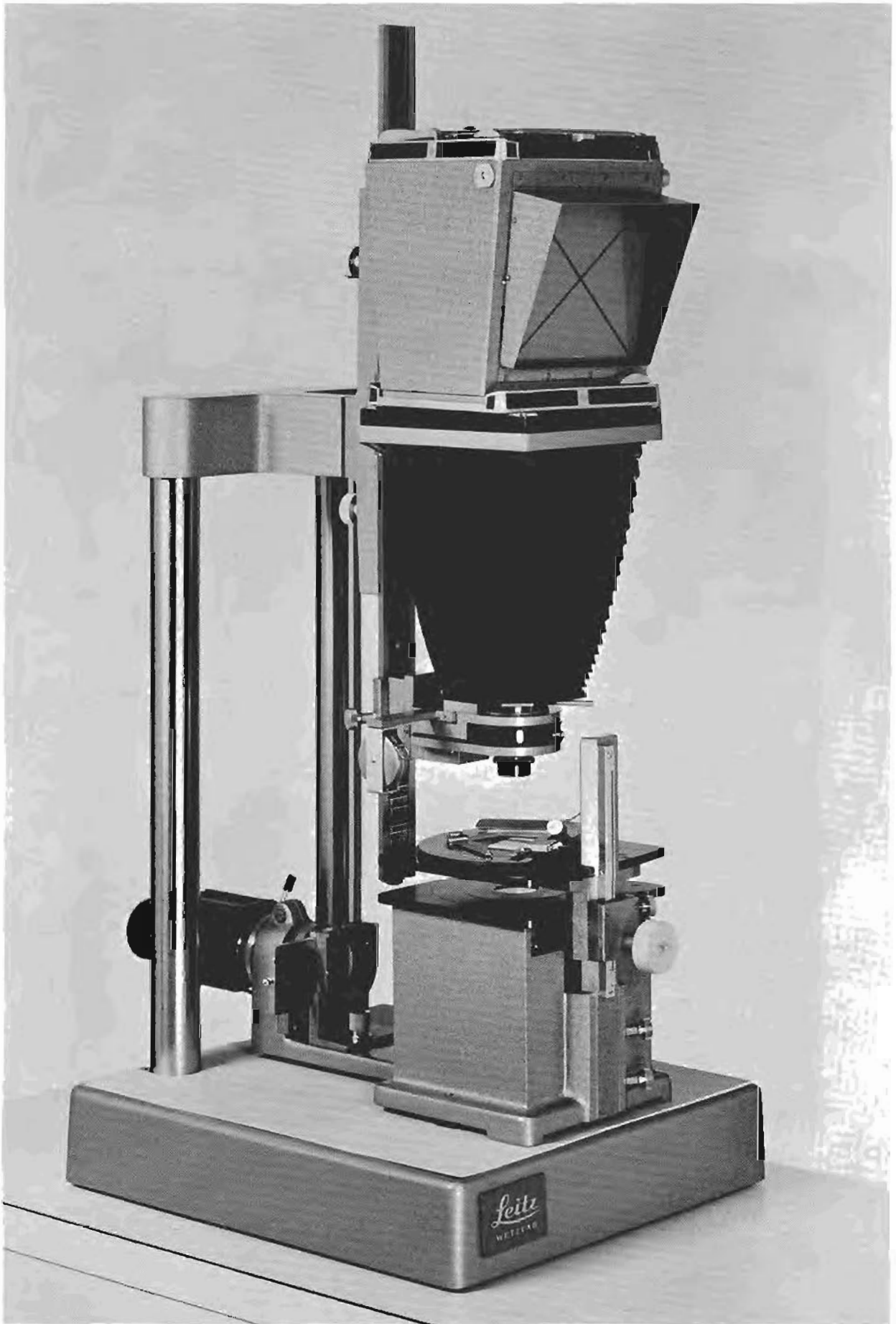
**C) Sodium Vapor Lamp**

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 mipolam pad, 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. . . . .	<u>130.00</u>
		\$2,358.00
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
	<b>Adapter Rings to Clamp Analyser to the Macro Objectives</b>	
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

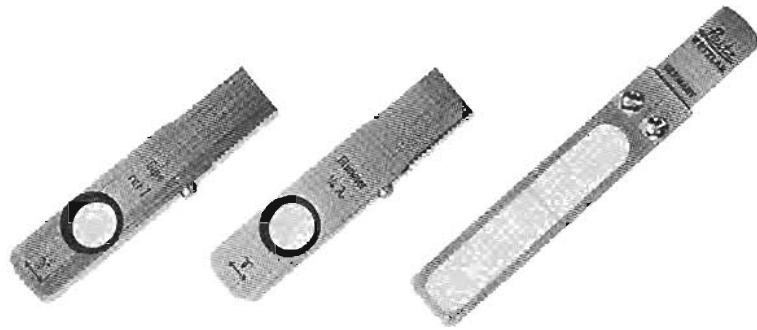
549 011	Macro objective, SUMMAR 35mm f/4.5, with iris diaphragm . . . . .	\$ 110.00
549 012	Macro objective, SUMMAR 42mm f/4.5, with iris diaphragm . . . . .	110.00
549 013	Macro objective, SUMMAR 80mm f/4.5, with iris diaphragm . . . . .	156.00

## CONDENSER LENSES

542 008	Condenser lens 35 . . . . .	\$ 18.00
542 006	Condenser lens 42 - 50 . . . . .	19.00
542 004	Condenser lens 80 . . . . .	35.00
543 111	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

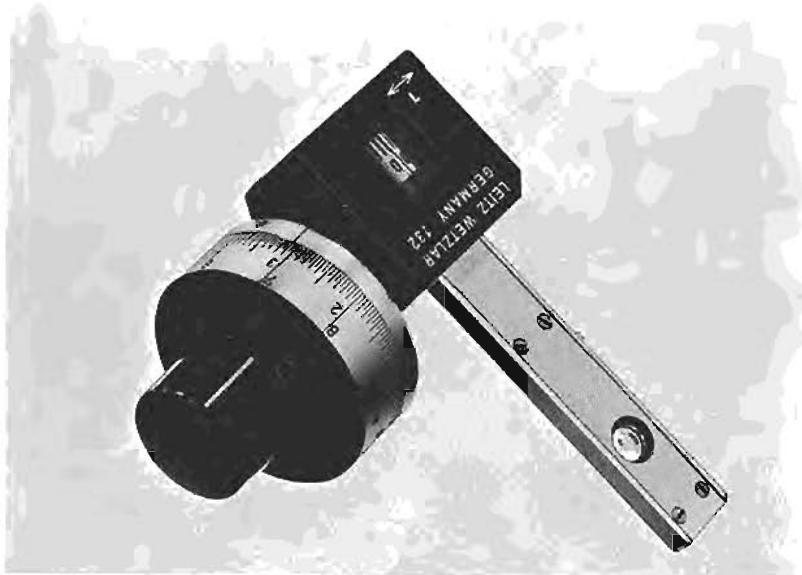
542 047	Set of fourteen stage insets with apertures 7mm to 80mm . . . . .	\$ 54.00
542 174	Leatherette carrying case to accept macro objectives, condenser lenses and fourteen stage insets . . . . .	79.00



553 030

553 035

553 078



1st to 4th order 553 094

to 10th order 553 095

to 30th order 553 096



# 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.

Leitz WEYTLAR	+		+		-	
Quarzkeil oder Gipskeil 						
Berek- Kompensator 						
Gips mit 10° * 						

Quartz or gypsum wedge  
 Berek compensator  
 Gypsum red 1st order  
 With the  $\lambda/4$  plate black dots appear in place of the black curves.

\* Beim  $1/4\lambda$ -Glimmerplättchen treten an Stelle der schwarzen Bögen 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 1L 546m $\mu$	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 1L 546m $\mu$	48.00
513 090	Quarter wave length plate, 32mm $\phi$ (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

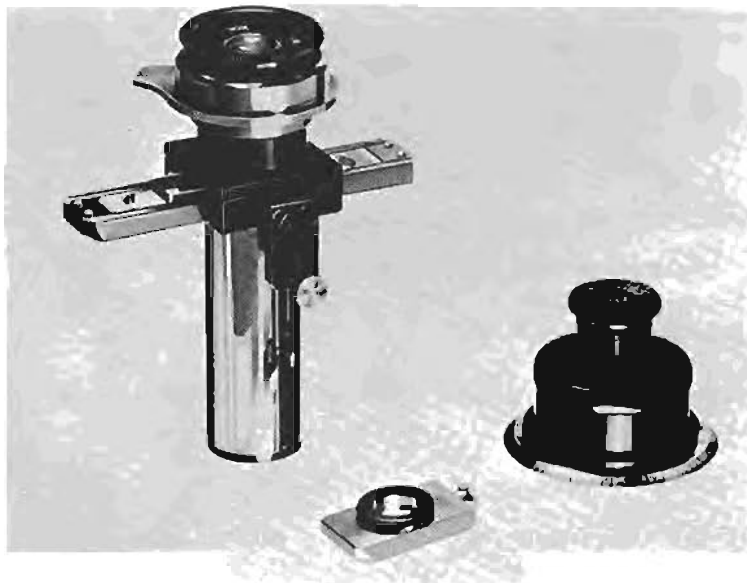
553 094	Tilting compensator I – IV orders	\$ 424.00
553 095	Tilting compensator X orders	453.00
553 096	Tilting compensator XXX orders	453.00

**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
563 156	Green interference filter IL 546m $\mu$	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 EYEPIECE 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:

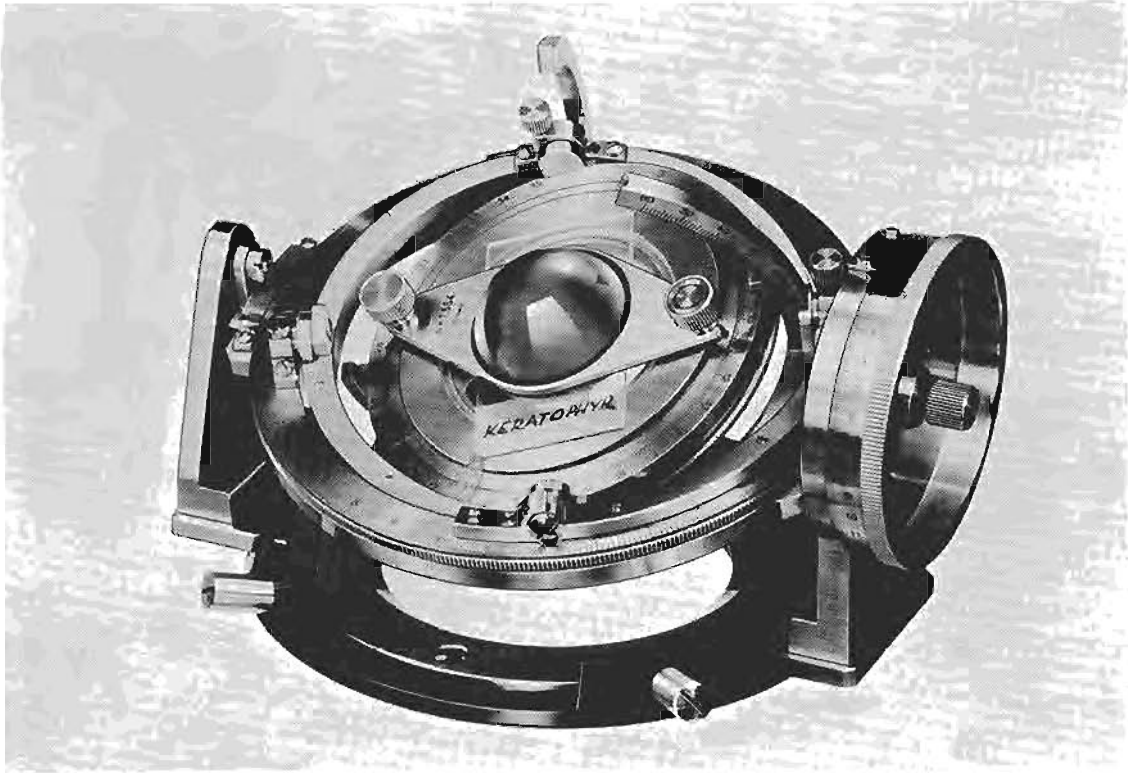
553 060	Intermediate adapter (required when using the universal stage in conjunction with the FS 45 tube, ORTHOLUX-POL) . . . . .	\$ 11.00
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For the analysis of specimen structures with the aid of the UT 4 or UT 5 rotating stages, the following is required:

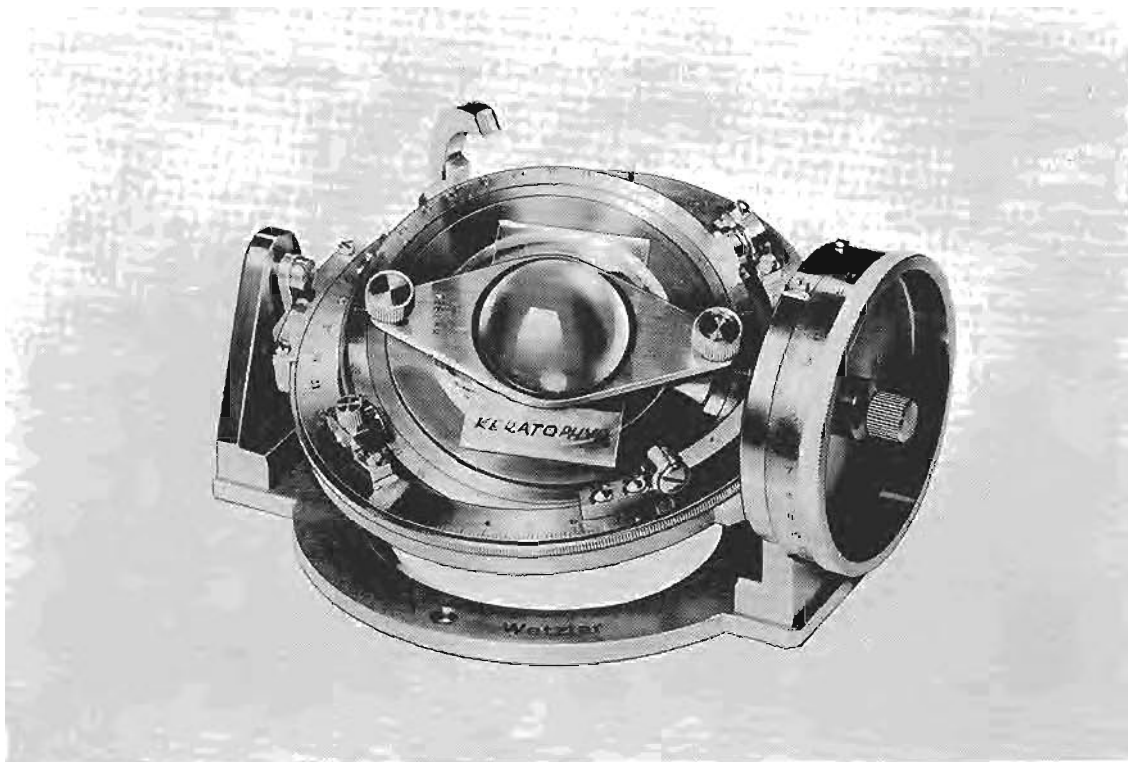
553 009	Schmidt parallel guiding slide . . . . .	\$ 15.00
513 030	Cover glass thickness gauge with graduation, 1 interval = 1/100mm . . . . .	\$ 42.00
553 012	Auxiliary stage clip for examination of thin sections without upper segment . . . . .	7.00
553 092	Objective centering collar . . . . .	14.00

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



553 004



553 005

**ACCESSORIES FOR U STAGE CONOSCOPY**

553 059	Special condenser on dovetail slide with sleeve 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 . . . . .	<u>14.00</u>
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	Indicatrix model with uniaxial crystal . . . . .	\$ 22.00
553 014	Indicatrix model with biaxial crystal . . . . .	26.00
553 073	Emmons 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. . . . .	<u>110.00</u>
		\$ 470.00
553 017	Special eyepiece index 8x (30mm $\phi$ ) 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 place on the INDEX eyepiece or the top analyser.	
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		For U Stages with Schmidt Parallel Slide	
Upper segment nD 1.554	553 053	\$ 51.00	553 062*	\$ 64.00
Lower segment nD 1.554	553 049	<u>38.00</u>	553 049	<u>38.00</u>
Paired segments nD 1.554	553 051	\$ 89.00	553 063	\$102.00
Upper segment nD 1.516	553 054	\$ 51.00	553 064*	\$ 64.00
Lower segment nD 1.516	553 048	<u>38.00</u>	553 048	<u>38.00</u>
Paired segments nD 1.516	553 010	\$ 89.00	553 065	\$102.00
Upper segment nD 1.649	553 055	\$ 51.00	563 066*	\$ 64.00
Lower segment nD 1.649	553 050	<u>38.00</u>	553 050	<u>38.00</u>
Paired segments nD 1.649	553 011	\$ 89.00	553 067	\$102.00

\*MODIFIED FOR SCHMIDT PARALLEL GUIDING SLIDE

553 009 Schmidt parallel guiding slide . . . . . \$ 15.00

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

\*MODIFIED FOR SCHMIDT PARALLEL GUIDING SLIDE

553 009 Schmidt parallel guiding slide . . . . . \$ 15.00

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

**B) FOR REFLECTED LIGHT**

Objectives with built-in iris diaphragm for use with Universal Rotating Stages without segment.	UM 5x/0.10	DO	HO	11.9 <sup>(3)</sup>	559 002	90.00	4.6x/0.07
	UM 10x/0.22	DO	HO	14.2 <sup>(3)</sup>	559 003	94.00	Magnifications and 8.5x/0.15
	UM 20x/0.33	DO	PO	14.8 <sup>(3)</sup>	559 004	154.00	apertures without 16x/0.22
	UM 32x/0.30	DO	PO	14.0 <sup>(3)</sup>	559 005	154.00	the use of a seg- 25x/0.20
	UMK 32x/0.60	DO	PO	6.5 <sup>(3)</sup>	559 016	176.00	ment, as follows: 25x/0.40
	UMK 50x/0.60	DO	PO	6.5 <sup>(3)</sup>	559 040	202.00	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

D!: 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.

**ATTACHABLE MICRO HARDNESS TESTERS FOR  
POLARIZING MICROSCOPES**

**A) For Ortholux-Pol Microscope**

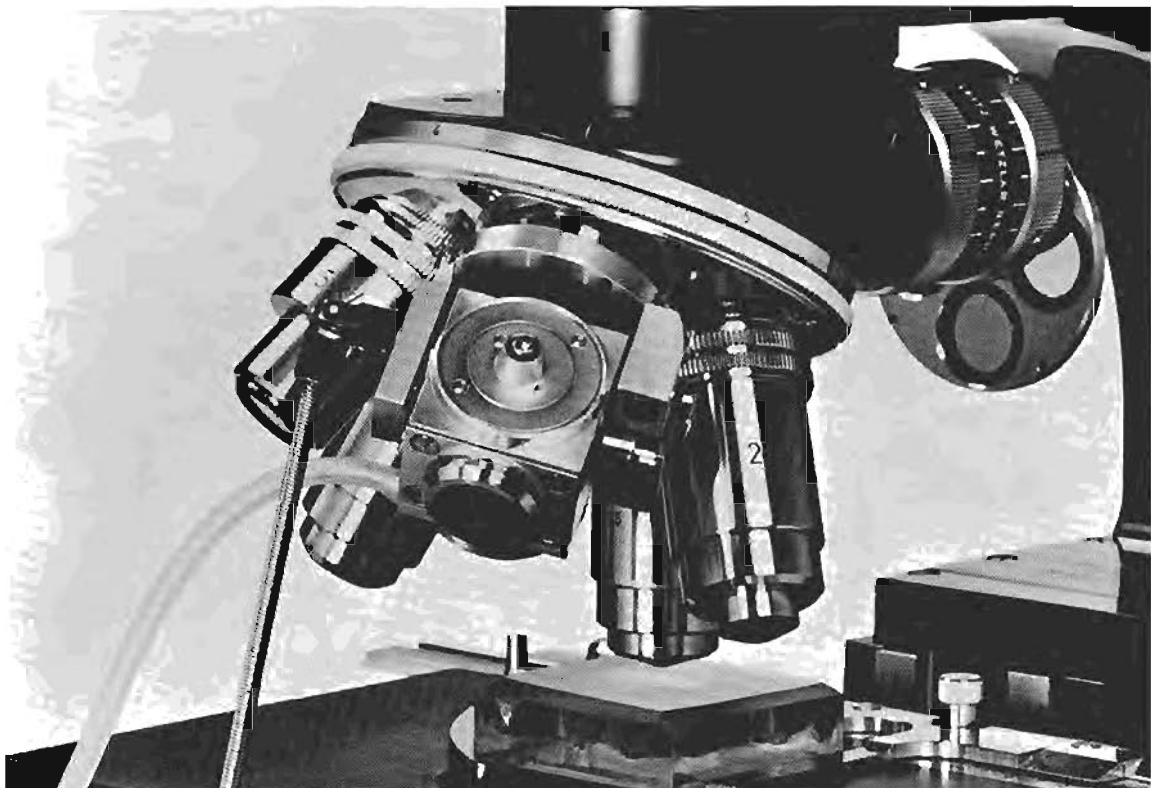
563 119	Automatic Micro Hardness Tester for the ORTHOLUX-POL microscope with strain free 50x observation objective and <u>Knoop</u> diamond in special rotatable mount; the diamond being mounted 90° to the objective. Set of weights 2, 5, 10, 25, 50, 100, 200 and 400 grams and precision measuring eyepiece with scale illumination . . . . .	\$3,025.00
563 096	Automatic Micro Hardness Tester for the ORTHOLUX-POL microscope as described above, however, with <u>Vickers</u> diamond . . . . .	3,025.00
563 131	Intermediate tube lens 215/230 P 1x L 2037 . . . . .	\$ 55.00

**B) For Orthoplan-Pol Microscope**

563 136	Automatic Micro Hardness Tester for the ORTHOPLAN-POL microscope with strain free 50x observation objective and <u>Knoop</u> diamond in special rotatable mount; the diamond being mounted 90° to the objective. Set of weights 2, 5, 10, 25, 50, 100, 200 and 400 grams and precision measuring eyepiece with scale illumination . . . . .	\$3,125 00
563 134	Automatic Micro Hardness Tester for the ORTHOPLAN-POL microscope as described above, however, with <u>Vickers</u> diamond . . . . .	3,125.00

**Supplementary Equipment and Replacement Parts**

563 121	Knoop diamond . . . . .	\$ 164.00
563 120	Vickers diamond . . . . .	164.00
563 122	Green filter VG 9 with holder . . . . .	\$ 12.00
553 167	Pair of centering keys . . . . .	8.00
500 077	Bulb 12 volt, 0.06 watts . . . . .	\$ 0.60
500 078	Bulb 6 volt, 0.024 watts . . . . .	0.60
500 079	Bulb W 1.8 D . . . . .	0.60





## OBJECTIVE CARRIERS FOR LEITZ POLARIZING MICROSCOPES

### 1) OBJECTIVE CARRIERS FOR TRANSMITTED LIGHT

#### A) For Labolux-Pol D and Dialux-Pol D Microscopes

552 045	Quintuple revolving objective nosepiece on interchange carrier with individual centering device and slot to accept compensators 7.35. — . . . . .	\$ 193.00
552 048	Objective changing clutch on interchange carrier with four centering collars and slot to accept compensators 7.74. — . . . . .	118.00
553 092	Objective centering collar . . . . .	14.00
553 142	Objective centering keys . . . . .	1.00

#### B) For Ortholux-Pol and Panphot-Pol Microscopes

552 046	Quintuple revolving objective nosepiece on interchange carrier with individual centering device and slot to accept compensators 18.35. — . . . . .	\$ 256.00
552 047	Objective changing clutch on interchange carrier with four centering collars and slot to accept compensators 18.74. — . . . . .	190.00
553 092	Objective centering collar . . . . .	14.00
553 142	Objective centering keys . . . . .	1.00

#### C) For Orthoplan-Pol Microscopes

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
552 159	Objective changing clutch with intermediate optical system 1.25x, four objective centering collars and two slots set at 90° angles to accept 20 x 6mm compensators; on interchange carrier 40.74. — . . . . .	227.00
553 092	Objective centering collar . . . . .	14.00
553 142	Objective centering keys . . . . .	1.00

### 2) OBJECTIVE CARRIERS FOR REFLECTED LIGHT

#### A) For SM-POL M Microscope

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 corrected 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 110/120 volts, 60 cycles A.C. . . . .	78.00

#### NOTE:

Due to the limited travel of the object stage, samples exceeding 10mm thickness including the slide cannot be used. Objectives up to 44x magnification.

Continued on the next page.

**B) For Labolux-Pol D, Epilux-Pol D,  
Dialux-Pol D and Dialux-Pol SB D Microscopes**

553 071	Vertical illuminator on interchange carrier with objective changing clutch and five objective centering collars, detachable rotating prism polarizer, slot to accept compensators, field iris diaphragm, adjustable collimator, half stop for oblique illumination and adjustable aperture diaphragm; built-in low voltage lamp 6 volt, 15 watts and daylight conversion filter CB 16.5, ground glass and green filters 7.58. — .35 (objectives corrected for 215mm tube length) . . . . .	\$ 854.00
553 075	Slider with central diaphragms . . . . .	41.00
553 070	Pol vertical illuminator complete as described above 7.55. — .35 . . . . .	\$ 895.00
553 072	Collector lens to use outside light source with pol vertical illuminator . . . . .	\$ 23.00
553 092	Objective centering collar . . . . .	14.00
553 142	Objective centering keys . . . . .	1.00
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

**C) For Ortholux-Pol Microscope**

553 068	Vertical illuminator on interchange carrier with objective changing clutch and five objective centering collars, compensating prism and plane glass plate on common axis, polarizing prism and slot to accept compensators. Supplementary front collector on clamping holder with iris diaphragm, half stop for oblique illumination and centerable diaphragm on slide 12.55. — . . . . .	\$ 740.00
553 092	Objective centering collar . . . . .	14.00
553 142	Objective centering keys . . . . .	1.00

**D) For Orthoplan-Pol Microscope**

553 173	Polarized light vertical illuminator with plane glass plate and compensating prism on common axis, <i>prism polarizer</i> 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
553 172	Polarized light vertical illuminator with plane glass plate and compensating prism on common axis, <i>filter polarizer</i> 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 41.55. — — . . . . .	\$ 627.00
553 179	Objective centering collar . . . . .	\$ 16.00

**E) For Panphot-Pol Microscope**

553 069	Vertical illuminator on interchange carrier with light collecting tube, objective changing clutch and five objective centering collars, compensating prism and plane glass plate on common axis, polarizing prism and slot to accept compensators. Supplementary front collector on clamping holder with iris diaphragm, half stop for oblique illumination and centerable diaphragm on slide 12.56. — — . . . . .	\$ 748.00
553 092	Objective centering collar . . . . .	\$ 14.00
553 142	Objective centering keys . . . . .	1.00

**SUPPLEMENTARY ACCESSORIES**

563 035	Hand press with adjustable stop for levelling specimens . . . . .	\$ 74.00
553 027	Set of six metal object slides, format 48 x 28mm . . . . .	19.00

# OPTICAL EQUIPMENT FOR LEITZ POLARIZING MICROSCOPES

OBJECTIVES FOR TRANSMITTED LIGHT, FREE FROM POLARIZATION,  
CORRECTED FOR 170MM TUBE LENGTH

TYPE OF OBJECTIVE	Magnification/ Aperture	Focal Length mm	Free Working Distance mm	Type of Eyepiece	Cover Glass Correction	Catalog Number	PRICE \$
ACHROMATIC DRY OB- JECTIVES 37MM ADJUSTMENT LENGTH	P 3.5x/0.10	32	22	H	DO	559 037	61.00
	P 6x/0.18	23	17	H	DO	559 044	76.00
	P 10x/0.25	16	5.3	H	DO	559 045	87.00
	P 25x/0.50	7.1	0.72	P	D	559 036	128.00
	P 40x/0.65	4.5	0.47	P	D	559 063*	108.00
	P 50x/0.85	3.6	0.36	P	D <sup>1</sup>	559 038	218.00
P 63x/0.85	2.9	0.24	P	D <sup>1</sup>	559 043	150.00	
ACHROMATIC IMMERSION OBJECTIVES 37MM ADJUSTMENT LENGTH	P OIL 100x/1.30	1.9	0.10	P	D	559 042	188.00
FLUORITE IMMERSION OBJECTIVES 37MM ADJUSTMENT LENGTH	(P) FL OIL 95x/1.32	2.0	0.12	P	D	559 039	298.00
ACHROMATIC PLANO OB- JECTIVES  PL P SERIES	(65.6mm) PI(P) 1x/0.04 with iris and condenser	33	30	P	DO	559 065	302.00
	PI P 2.5x/0.08	56	11	P	DO	559 071	133.00
ACHROMATIC PLANO OBJECTIVES  NPL P SERIES  45MM ADJUSTMENT LENGTH	NPL P 6.3x/0.20	24	2.0	P	DO	559 058	213.00
	NPL P 16x/0.40	11	0.50	P	D	559 059	218.00
	NPL P 25x/0.50	7	0.38	P	D	559 060	243.00
	NPL P 40x/0.65	4.5	0.15	P	D	559 061	288.00
	NPL P OIL 100x/1.30	1.7	0.26	P	D	559 062	482.00

## NOTE:

All LEITZ objectives for transmitted polarized light are corrected for a tube length of 170mm. These objectives are supplied with adjustment lengths of 37mm and 45mm measured from the objective shoulder to the specimen surface. To achieve parfocality when combining objectives with 37mm and 45mm adjustment lengths on the same objective carrier, it is required that all objectives with 37mm adjustment length be equipped with the following:

559 064 Intermediate adapter with negative lens, free from polarization . . . . . \$ 19.00

\*Discontinued, limited supply still available.

## OBJECTIVES FOR REFLECTED LIGHT - FREE FROM POLARIZATION

CORRECTED FOR 215MM TUBE LENGTH

TYPE OF OBJECTIVE	MAGNIFICATION/ APERTURE	Focal Length mm	Free Working Distance mm	Type of Eyepiece	Cover Glass Correction	CATALOG NUMBER	PRICE \$
ACHROMATIC DRY OBJECTIVES	P 6.3x/0.20	30	21	P	DO	559 051	79.00
	P 8x/0.18	23	16	H	DO	559 015	79.00
	P 16x/0.40	13	3.3	H	DO	559 008	93.00
	P 44x/0.65	4.5	0.53	P	O	559 033	128.00
ACHROMATIC IMMERSION OBJECTIVES	P Oil + W 12.5x/0.25	16	0.26	H	DO	559 010	114.00
	P Oil + W 25x/0.65	8.1	0.38	P	DO	559 011	156.00
FLUORITE DRY OBJECTIVE	(P) FI 45x/0.85	4.4	0.33	P	O	559 009	207.00
FLUORITE IMMERSION OBJECTIVES	(P) FI Oil 60x/0.95	3.4	0.33	P	DO	559 012	224.00
	(P) FI Oil 80x/1.30	2.5	0.33	P	DO	559 013	288.00
	(P) FI Oil 105x/1.32	2.0	0.27	P	DO	559 014	306.00

## LOW REFLECTION OBJECTIVES — FREE FROM POLARIZATION

CORRECTED FOR 215MM TUBE LENGTH

TYPE OF OBJECTIVE	MAGNIFICATION/ APERTURE	Focal Length mm	Free Working Distance mm	Type of Eyepiece	Cover Glass Correction	CATALOG NUMBER	PRICE \$
ACHROMATIC OIL IMMERSION OB- JECTIVES OIL N = 1.515	Oil 8x/0.18 P	22.9	0.25	H	DO	559 075	133.00
	Oil 16x/0.40 P	13.2	0.25	H	DO	559 076	150.00
ACHROMATIC IMMERS- SION OBJECTIVES -METHYLENE IODIDE N = 1.74	Meth. Jod 8x/0.18 P	22.9	0.10	H	DO	559 077	133.00
	Meth. Jod 16x/0.40 P	13.2	0.10	H	DO	559 078	150.00

D: with coverglass D = 0.17 (coverglass thickness should be observed to within  $\pm$  0.05mm)

O: without coverglass, DO: can be used with or without coverglass

D1: coverglass thickness 0.17mm should be observed accurately to within  $\pm$  0.01mm, or should be accurately set with the correction mount where it varies from this value.

H: use HUYGENS eyepieces

P: use PERIPLAN or widefield eyepieces

## EYEPIECES FOR LEITZ POLARIZING MICROSCOPES

TYPE	MAGNIFICATION	Diameter mm	Field of View	CATALOG NUMBER			
				Single	Price \$	Pair	Price \$
Huygens	P 6.3xM	30	21	559 001	45.00		
Huygens	P 8x <sup>⊕</sup>	30	19	559 006	70.00		
PERIPLAN	P 10xM	23.2	14	519 170	59.00	519 035	118.00
Huygens	H 6.3x <sup>⊕</sup>	23.2	18	559 049	60.00	559 050	82.00
PERIPLAN	GF 10x <sup>⊕</sup>	23.2	18	559 034	94.00	559 035	144.00
PERIPLAN	GF 10xM <sup>⊕</sup>	23.2	18			559 070	153.00
PERIPLAN	GF 10xMM	23.2	14			519 281	118.00
PERIPLAN	GF 10xM	23.2	18	519 126	59.00	519 127	109.00

⊕ = Adjustable eyelens and fixed crosslines (eyepiece reticles cannot be used with these eyepieces)

M = Adjustable eyelens and mount to accept eyepiece reticles

552 053 Reducing adapter to use 23.2mm  $\phi$  eyepieces with wide diameter (30mm) tube . . . \$ 10.00

### EYEPIECE RETICLES

#### For Polarizing Microscopes

519 910 Eyepiece micrometer, 10mm = 100 divisions and crosslines (for 30mm  $\phi$  eyepieces) \$ 30.00  
 519 908 Eyepiece micrometer, 8mm = 80 divisions and crosslines (for 30mm  $\phi$  eyepieces) . . . 30.00  
 519 922 Eyepiece point counting reticle, 10 point, for PERIPLAN GF 10xM eyepiece . . . \$ 34.00  
 519 921 Eyepiece point counting reticle, 20 point (Blaschke method), for PERIPLAN 10xM eyepiece . . . . . 34.00  
 519 929 Eyepiece point counting reticle, 20 point (Blaschke method), for PERIPLAN GF 10xM eyepiece . . . . . 34.00

### STAGE MICROMETERS

513 106 Stage micrometer on glass 2mm = 200 divisions with photographic scale . . . . . 34.00  
 513 107 Stage micrometer on glass with scale ruled on glass 1mm = 100 divisions . . . . . 44.00  
 563 011 Stage micrometer on metal 1mm = 100 divisions . . . . . \$ 46.00

## CONDENSERS FOR LEITZ POLARIZING MICROSCOPES

### FOR SM-POL M MICROSCOPES

552 078	Condenser base free from polarization, A. 0.25, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate and centering mount; on interchange carrier #700F . . . . .	\$ 170.00
552 079	Interchangeable condenser top element #002P, free from polarization, Achr. 0.90 . . . . .	<u>70.00</u>
552 076	Swing-out condenser #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
513 090	Quarter wave length plate in mount, 32mm $\phi$ . . . . .	\$ 53.00
552 081	Interchangeable condenser top element #003P, free from polarization, Apl Oil 1.25 . . . . .	120.00
552 128	Interchangeable condenser top element #004P, free from polarization, Oil 1.33 . . . . .	140.00

### FOR LABDLUX-POL D, DIALUX-POL D AND DIALUX-POL SB D MICROSCOPES

552 078	Condenser base free from polarization, A. 0.25, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate and centering mount; on interchange carrier #700F . . . . .	\$ 170.00
552 080	Lower condenser element, free from polarization, in mount LP . . . . .	17.00
552 079	Interchangeable condenser top element #002P, free from polarization, Achr. 0.90 . . . . .	<u>70.00</u>
552 077	Swing-out condenser #702FI, 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
513 090	Quarter wave length plate in mount, 32mm $\phi$ . . . . .	\$ 53.00
552 081 *	Interchangeable condenser top element #003P, free from polarization, Apl Oil 1.25 . . . . .	120.00
552 128	Interchangeable condenser top element #004P, free from polarization, Oil 1.33 . . . . .	140.00
552 017	Five lens condenser #500P, with swing-out upper element A. 0.85, aperture and field diaphragm and rotating <i>calcite prism polarizer</i> graduated at 5° intervals; on interchange carrier . . . . .	\$1,048.00
552 019	Five lens condenser #500Pz, with swing-out upper element A. 0.85, aperture and field diaphragm, rotating <i>calcite prism polarizer</i> graduated at 5° intervals and exit facilities for the ordinary ray; on interchange carrier (required when using the high intensity xenon lamp) . . . . .	1,170.00
552 025	Condenser top element N.A. 1.32 . . . . .	\$ 57.00

### FOR ORTHOLUX-POL MICROSCOPE

552 078	Condenser base free from polarization, A. 0.25, with aperture diaphragm, rotating filter polarizer indexed at 90° intervals, slot to accept quarter wave length plate and centering mount; on interchange carrier #700F . . . . .	\$ 170.00
552 079	Interchangeable condenser top element #002P, free from polarization, Achr. 0.90 . . . . .	<u>70.00</u>
552 076	Swing-out condenser #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
513 090	Quarter wave length plate in mount, 32mm $\phi$ . . . . .	\$ 53.00
552 081	Interchangeable condenser top element #003P, free from polarization, Apl Oil 1.25 . . . . .	120.00
552 128	Interchangeable condenser top element #004P, free from polarization, Oil 1.33 . . . . .	140.00

\*Discontinued, limited supply still available.

552 020	Five lens condenser #580F, with swing-out upper element A. 0.85, aperture and field diaphragm and rotating <i>filter polarizer</i> graduated at 5° intervals; on interchange carrier (required when using the universal stages with the ORTHOLUX microscope)	\$ 530.00
552 021	Five lens condenser #580P, with swing-out upper element A. 0.85, aperture and field diaphragm and rotating <i>calcite prism polarizer</i> graduated at 5° intervals; on interchange carrier	\$1,048.00
552 022	Five lens condenser #580Pz, with swing-out upper element A. 0.85, aperture and field diaphragm, rotating <i>calcite prism polarizer</i> in rotating mount graduated at 5° intervals and exit facilities for the ordinary ray; on interchange carrier (required when using the high intensity xenon lamp)	1,170.00
552 025	Condenser top element N.A. 1.32	\$ 57.00

**FOR ORTHOPLAN-POL MICROSCOPE**

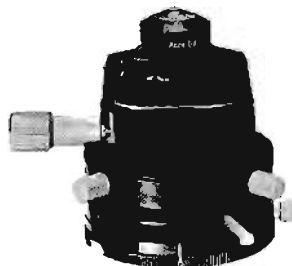
552 078	Condenser base free from polarization, A. 0.25, with aperture diaphragm, rotating <i>filter polarizer</i> indexed at 90° intervals, slot to accept quarter wave length plate and centering mount; on interchange carrier #700F	\$ 170.00
552 079	Interchangeable condenser top element #002P, free from polarization, Achr. 0.90	70.00
552 076	Swing-out condenser #702F, free from polarization, with aperture diaphragm, rotating <i>filter polarizer</i> 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
552 169	Condenser base free from polarization, A. 0.25, with aperture diaphragm, rotating <i>prism polarizer</i> indexed at 90° intervals, slot to accept quarter wave length plate and centering mount; on interchange carrier #700P	\$ 850.00
552 079	Interchangeable condenser top element #002P, free from polarization, Achr. 0.90	70.00
552 170	Swing-out condenser #702P, free from polarization, with aperture diaphragm, rotating <i>prism polarizer</i> indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; on interchange carrier	\$ 920.00
552 178	Swing-out condenser #702Fv free from polarization, with aperture diaphragm, rotating <i>filter polarizer</i> indexed at 90° intervals, slot to accept quarter wave length plate, centering mount and interchangeable top element Achr. 0.90; with pre-polarizer; on interchange carrier	\$ 360.00
513 090	Quarter wave length plate in mount, 32mm $\phi$	\$ 53.00
552 081*	Interchangeable condenser top element #003P, free from polarization, Apl Oil 1.25	120.00
552 128	Interchangeable condenser top element #004P, free from polarization, Oil 1.33	140.00

**FOR PANPHOT-POL MICROSCOPE**

552 024	Five lens condenser #590P, 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
552 023	Five lens condenser #590Pz, with swing-out upper element A. 0.85, aperture and field diaphragm, rotating calcite prism polarizer graduated at 5° intervals and exit facilities for the ordinary ray; on interchange carrier (required when using the high intensity xenon lamp)	1,170.00
552 025	Condenser top element N.A. 1.32	\$ 57.00



POL CONDENSER SERIES 500



POL CONDENSER SERIES 700



CORRECTION POL CONDENSER



\*Discontinued, limited supply still available.

**TRANSMITTED LIGHT, SMITH INTERFERENCE CONTRAST SYSTEM**

**FOR LABOLUX-POL, DIALUX-POL, ORTHOLUX-POL, AND PANPHOT-POL**

Interference contrast condenser S, with aperture diaphragm, centering mount and interchange carrier, rotating polarizer indexed at 90° intervals, revolving disc with three beam splitting prisms for the special objectives 25/0.50, 40/0.65, and oil 100/1.30. The condenser has in one position, an additional light ring for the objectives Phaco NPL 10/0.25 and Phaco NPL 16/0.40.

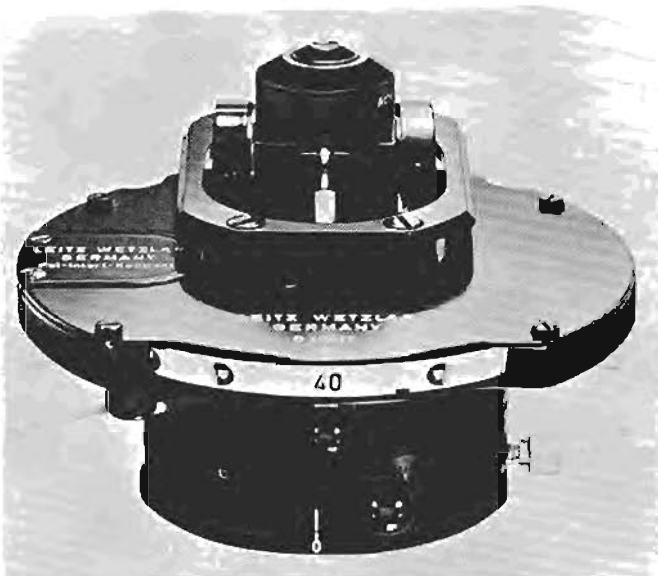
Quintuple centering revolving nosepiece, with slide changer and objective:

25/0.50, interference contrast S with built-in Wollaston prism

40/0.65, interference contrast S with built-in Wollaston prism

Oil 100/1.30, interference contrast S with built-in Wollaston prism

553 206	Complete equipment for LABOLUX-POL and DIALUX-POL . . . . .	\$2,682.00
553 207	Complete equipment for ORTHOLUX-POL and PANPHOT-POL . . . . .	2,750.00

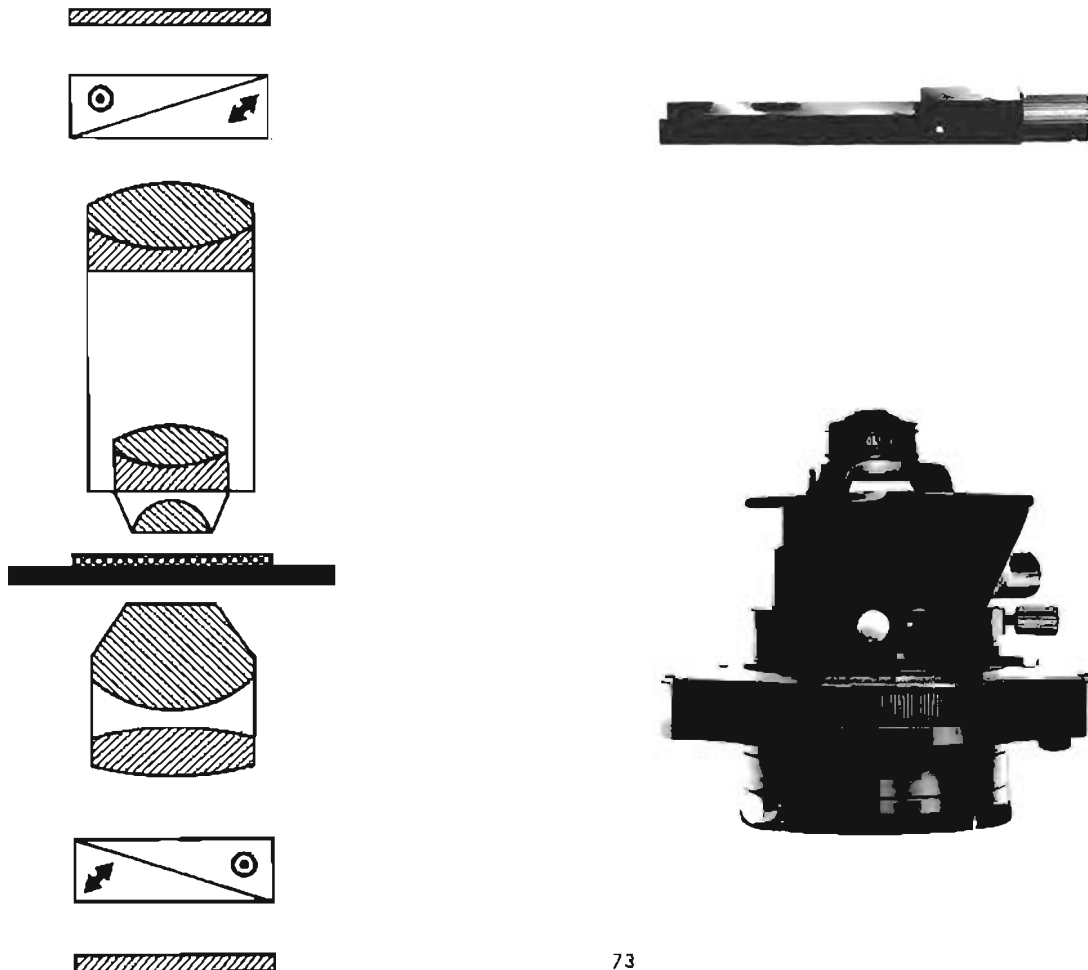




**TRANSMITTED LIGHT, NOMARSKI INTERFERENCE CONTRAST SYSTEM  
FOR ORTHOPLAN MICROSCOPE**

903 285	Interference Contrast Condenser (NOMARSKI SYSTEM) with aperture diaphragm, swing-out mount for upper element, centering mount and interchange carrier. Rotating filter polarizer indexed at 90° intervals and revolving disc with three auxiliary prisms for the NPL 16x/0.40P, NPL 40x/0.65 P and NPL Oil 100x/1.30 P objectives and O position for brightfield. Slider with adjustable beam combining prism fitting the compensator slot of the ORTHOPLAN quintuple centering nosepiece . . . . .	\$1,185.00
552 081*	Interchangeable condenser top element #003P, free from polarization Apl Oil 1.25	120.00
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 6 mm compensators; on interchange carrier 40.35.- for ORTHOPLAN microscope . . .	337.00
		<u>\$1,642.00</u>
559 059	Achromatic dry plano objective, free from polarization, NPL 16x/0.40 P, focal length 11mm, free working distance 0.50mm . . . . .	218.00
559 061	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
513 169	Filter analyser in slide (not required for ORTHOPLAN-POL)	69.00
512 014	Simple rotating stage (accessory to stage 660)	36.00

\*Discontinued, limited supply still available.



## REFLECTED LIGHT

### FRANCON DIFFERENTIAL INTERFERENCE CONTRAST POL OBJECTIVES

#### CORRECTED FOR 215MM TUBE LENGTH

TYPE OF EYEPIECE	MAGNIFICATION/ APERTURE	Focal Length mm	Free Working Distance mm	Type of Eyepiece	Cover Glass Correction	CATALOG NUMBER	PRICE \$
ACHROMATIC OBJECTIVES FOR ORTHOLUX-POL DIALUX-POL LABOLUX-POL	8x/0.15	23	2.6	H	DO	559 066	171.00
	16x/0.22	12	3	P	DO	559 067	227.00
	25x/0.20	8.2	3.2	P	DO	559 068	227.00
ACHROMATIC OBJECTIVES FOR ORTHOPLAN-POL	8x/0.15	23	2.6	H	DO	559 072	173.00
	16x/0.22	12.3	3	P	DO	559 073	229.00
	25x/0.20	8.2	3.2	P	DO	559 074	229.00

#### INTERFERENCE CONTRAST – EQUIPMENT R (SMITH) FOR METALLOPLAN OR ORTHOPLAN

563 153	Vertical illuminator with infinity corrected 1x tube lens, quintuple revolving nosepiece and adjustable aperture and field diaphragms, on interchange carrier BF 38 144.	\$ 480.00
553 235	Polarizer for interference	524.00
513 169	Analyser in slider	69.00
559 081	Objective NPL 10x/0.20 P	180.00
553 239	Intermediate adapter with Wollaston prism for NPL 10x	198.00
559 082	Objective NPL 20x/0.40 P	310.00
553 240	Intermediate adapter with Wollaston prism for NPL 20x	198.00
559 085	Objective NPL 50x/0.85 P	370.00
553 241	Intermediate adapter with Wollaston prism for NPL 50x	264.00
		\$2,593.00

#### OPTIONAL

559 087	Objective NPL Oil 125x/1.32 P	\$ 520.00
553 242	Intermediate adapter with Wollaston prism for NPL 125x	264.00

#### THE FOLLOWING EYEPIECES ARE RECOMMENDED:

519 142	Paired widefield eyepieces PERIPLAN GF 10x	\$ 100.00
513 256	Pair of adapters (23.2mm)	32.00

**TRANSMITTED LIGHT INTERFERENCE ATTACHMENT JAMIN-LEBEDEFF**

**A) For Orthoplan-Pol Microscope**

553 156 Transmitted light interference attachment, JAMIN-LEBEDEFF, with quintuple revolving nosepiece with individual objective centering device; three permanently attached, strain free, achromatic objectives 16x/0.35, 40x/0.65 and Oil 100x/1.20. Interference-Pol condenser with interchangeable top element Achr. 0.90 (#002 P) and attachable rotating stage with three crystal beam splitters which can be tilted to cover the entire range of interference colors . . . . . \$3,322.00

**B) For Ortholux-Pol Microscope**

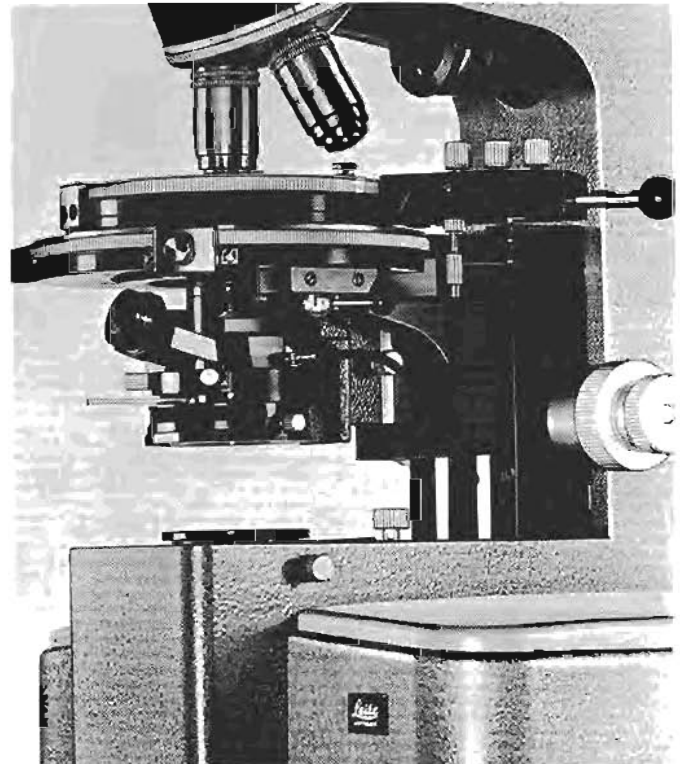
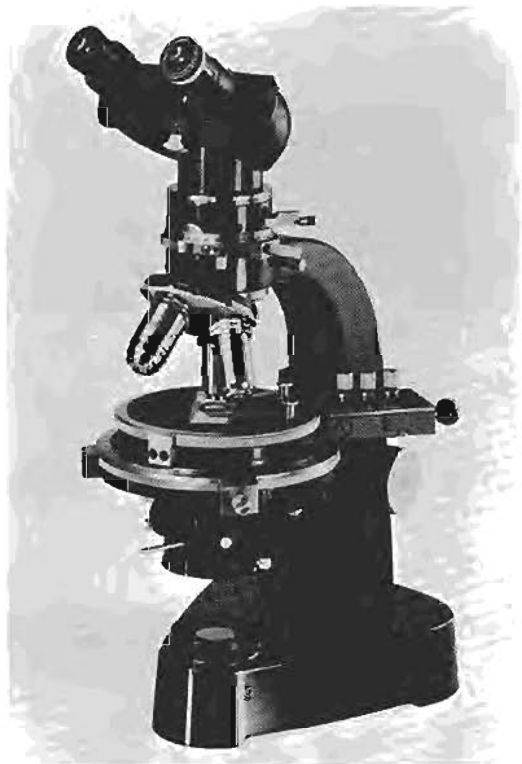
553 155 Transmitted light interference attachment, JAMIN-LEBEDEFF, with quintuple revolving nosepiece with individual objective centering device and intermediate adapter; three permanently attached, strain free, achromatic objectives 16x/0.35, 40x/0.65 and Oil 100x/1.20. Interference-Pol condenser with interchangeable top element Achr. 0.90 (#002 P) and attachable rotating stage with three crystal beam splitters which can be tilted to cover the entire range of interference colors . . . . . \$3,358.00

**C) For Dialux-Pol and Labolux-Pol Microscopes**

553 154 Transmitted light interference attachment, JAMIN-LEBEDEFF, with quintuple revolving nosepiece with individual objective centering device; three permanently attached, strain free, achromatic objectives 16x/0.35, 40x/0.65 and Oil 100x/1.20. Interference-Pol condenser with interchangeable top element Achr. 0.90 (#002 P) and attachable rotating stage with three crystal beam splitters which can be tilted to cover the entire range of interference colors . . . . . \$3,262.00

**D) For Panphot-Pol Microscope**

553 164 Transmitted light interference attachment, JAMIN-LEBEDEFF, with quintuple revolving nosepiece with individual objective centering device; three permanently attached, strain free achromatic objectives 16x/0.35, 40x/0.65 and Oil 100x/1.20. Interference-Pol condenser with interchangeable top element Achr. 0.90 (#002 P) and attachable rotating stage with three crystal beam splitters which can be tilted to cover the entire range of interference colors . . . . . \$3,347.00



## OPTICAL DATA — POL INTERFERENCE OBJECTIVES

TYPE OF OBJECTIVE	MAGNIFICATION/ APERTURE	FOCAL LENGTH	FREE WORKING DISTANCE	Type of Eyepiece	Cover Glass Correction
ACHROMATIC POL INTER-FERENCE OBJECTIVES 45MM ADJUSTMENT LENGTH	POL-INTERF. 16x/0.35	11mm	5.3mm	P	DO
	POL-INTERF. 40x/0.65	4.7mm	0.70mm	P	D
	POL-INTERF. OIL 100x/1.20	1.7mm	0.16mm	P	D

### SUPPLEMENTARY EQUIPMENT

552 081*	Interchangeable condenser top element #003 P, free from polarization, Apl Oil 1.25	\$	120.00
552 128	Interchangeable condenser top element #004 P, free from polarization, Oil 1.33		140.00
553 002	Berek rotary compensator, 4 orders (only available with the JAMIN-LEBEDEFF interference Attachment)	\$	238.00
553 003	Mica compensator with quarter wave plate for $\lambda = 589m\mu$		333.00

### RECTIFIED POL CONDENSER AND RECOMMENDED OPTICAL EQUIPMENT

553 171	Five lens condenser with swing-out upper element A 0.85, aperture and field diaphragm, rectified polarizer in rotating mount graduated at 5° intervals, 1/2 $\lambda$ plate and green interference filter 546mm, on interchange carrier	\$	696.00
559 054	Achromatic dry objective, free from polarization, P 10x/0.25 (45mm adjustment length), free working distance 0.53mm		88.00
559 055	Achromatic dry objective, free from polarization, P 25x/0.50 (45mm adjustment length), free working distance 0.38mm, with spring loaded mount		135.00
559 056	Achromatic dry objective, free from polarization, P 40x/0.65 (45mm adjustment length), free working distance 0.15mm, with spring loaded mount		160.00
559 057	Achromatic oil immersion objective, free from polarization, P Oil 100x/1.32 (45mm adjustment length), free working distance 0.26mm, with spring loaded mount		187.00
552 025	Condenser top element N.A. 1.32 (required for 100x/1.32 objective)		57.00
			\$1,323.00

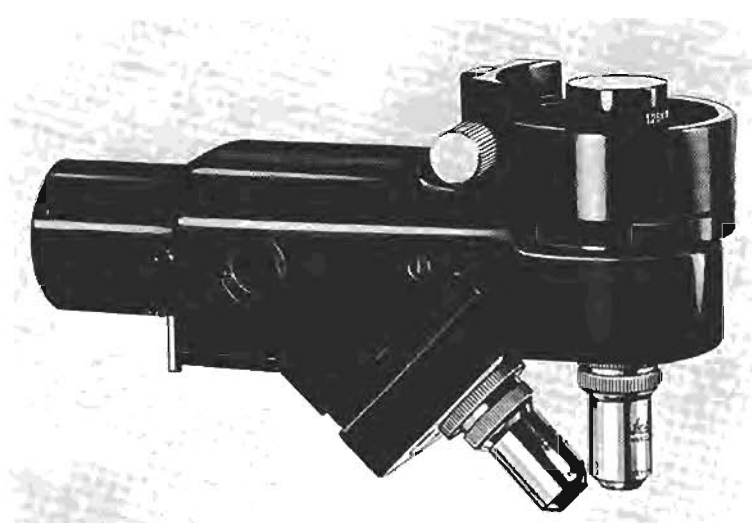
\*Discontinued, limited supply still available.

**45° INCIDENT LIGHT ILLUMINATORS**

513 251	45° Incident Light Illuminator with deflecting mirror and two standard society objective threads; on interchange carrier for the ORTHOPLAN-POL microscope . . .	\$ 892.00
513 246	45° Incident Light Illuminator with deflecting mirror and two standard society objective threads, on interchange carrier for the ORTHOLUX microscope . . . . .	908.00
513 253	45° Incident Light Illuminator with deflecting mirror and two standard society objective threads; on interchange carrier for the DIALUX-POL D microscope . . . . .	980.00
513 173	Filter polarizer in mount . . . . .	\$ 73.00
513 262	Incident light single lens condenser system A, 0.18 . . . . .	\$ 28.00
513 263	Incident light two lens condenser system A, 0.27 . . . . .	34.00

**Recommended Objectives (two each are required)**

559 002	Special objective UM 1, 32:1, with built-in iris diaphragm . . . . .	\$ 90.00
559 003	Special objective UM 2, 6.4:1, with built-in iris diaphragm . . . . .	94.00
559 004	Special objective UM 3, 13:1, with built-in iris diaphragm . . . . .	154.00
559 005	Special objective UM 4, 19.5:1, with built-in iris diaphragm . . . . .	154.00



## LEITZ POL PROJECTION ATTACHMENTS

### POLARIZING ATTACHMENTS FOR THE PRADO-UNIVERSAL PROJECTOR

#### A) Horizontal

553 116	Horizontal polarizing attachment with clamping bracket, slide bars and support. Polarizer and analyser with arrangement for synchronous rotation. Rotating object stage, slot to accept compensators and lens focusing mount . . . . .	\$ 390.00
31,635	PRADO-Universal projector with low voltage halogen lamp 24 volts, 250 watts, two path blower, voltage selector 100-240 volt, supply-line cord, illuminating system with reflector and aspherical condenser, heat absorption filter; WITHOUT front assembly, field condenser, slide changer or projection lens . . . . .	<u>174.00</u>
	LEITZ HORIZONTAL POLARIZING ATTACHMENT WITH THE PRADO-UNIVERSAL PROJECTOR, COMPLETE AS DESCRIBED ABOVE, HOWEVER WITHOUT PROJECTION LENS . . . . .	\$ 564.00
553 134	Carrying case (for pol attachment only) . . . . .	\$ 73.00

**Note:**

The above can also be converted for vertical projection. In this case, the following items are required:

553 119	Mirror housing with clamping bracket, guide rails and projection mirror . . . . .	\$ 100.00
553 123	Heat vent . . . . .	23.00

#### B) Vertical

553 117	Vertical polarizing attachment with mirror housing and clamping bracket, guide rails, projection mirror and heat vent. Polarizer and analyser with arrangement for synchronous rotation. Rotating object stage, slot to accept compensators and lens focusing mount . . . . .	\$ 452.00
31,635	PRADO-Universal projector with low voltage halogen lamp 24 volts, 250 watts, two path blower, voltage selector 100-240 volt, supply-line cord, illuminating system with reflector and aspherical condenser, heat absorption filter; WITHOUT front assembly, field condenser, slide changer or projection lens . . . . .	<u>174.00</u>
	LEITZ VERTICAL POLARIZING ATTACHMENT WITH THE PRADO-UNIVERSAL PROJECTOR, COMPLETE AS DESCRIBED ABOVE, HOWEVER WITHOUT PROJECTION LENS . . . . .	\$ 626.00
553 169	Carrying case (for pol attachment only) . . . . .	\$ 73.00

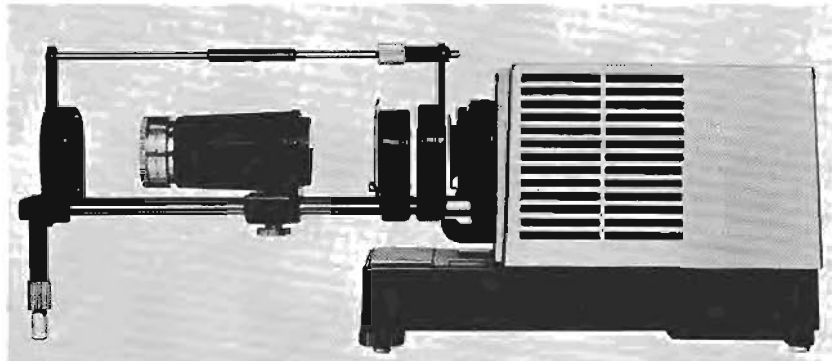
**Note:**

The above can also be converted for horizontal projection. In this case the following is required

553 118	Clamping bracket with guide rail and support . . . . .	\$ 61.00
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#### Projection Lenses

37,010	Projection lens, COLORPLAN 90mm f/2.5, without focusing mount . . . . .	\$ 51.00
37,020	Projection lens, HEKTOR 120mm f/2.5, without focusing mount . . . . .	75.00



### Supplementary Equipment

553 128	Two lens condenser and supplementary lens for projecting interference figures . . . .	\$ 129.00
553 129	Iris diaphragm (attachable to the lens mount) . . . . .	30.00
553 130	Rotating Berek compensator on clamping bracket . . . . .	244.00
553 132	First order red compensator in slide (Gypsum plate) . . . . .	55.00
553 133	Quarter wave compensator in slide (Mica plate) . . . . .	42.00
553 131	Set of sixteen mineralogical slides in case . . . . .	321.00
553 125	Mica plate in mount (interchangeable with calcite plate in Berek compensator) . . . .	32.00
553 124	Set of two mica plates, mounted . . . . .	61.00
553 126	Green filter $\lambda = 540m\mu$ . . . . .	23.00
553 127	Red filter $\lambda = 650m\mu$ . . . . .	23.00

### Prado-Universal Projector Equipped for 2 x 2" Slide Projection

31,620	PRADO-Universal projector for slides in 2 x 2" mounts, with low voltage halogen lamp 24 volt, 250 watt, two path blower, voltage selector 100-240 volt, supply-line cord, illuminating system with reflector and aspherical condenser, heat absorption filter; complete with front assembly, slide changer and 90mm COLORPLAN f/2.5 projection lens, appropriate focusing mount and field condenser . . . . .	\$ 249.00
31,621	PRADO-Universal projector as described under Catalog No. 31,620, however with 120mm HEKTOR f/2.5 projection lens . . . . .	273.00
31,622	PRADO-Universal projector as described under Catalog No. 31,620, however with 150mm ELMARON f/2.5 projection lens . . . . .	276.00

### Optional Accessories and Components for 2 x 2" Slide Projection

32,402	Front attachment only . . . . .	\$ 10.50
37,849	Manual slide changer for 2 x 2" slides . . . . .	\$ 6.00
37,868	Film strip carrier for 24 x 36mm with mask 16 x 24mm . . . . .	18.00
37,041	Projection lens, ELMARON 35mm f/2.8, without focusing mount . . . . .	\$ 96.00
37,051	Projection lens, ELMARON 50mm f/2.8, without focusing mount . . . . .	52.50
37,010	Projection lens, COLORPLAN 90mm f/2.5, without focusing mount . . . . .	51.00
37,020	Projection lens, HEKTOR 120mm f/2.5, without focusing mount . . . . .	75.00
37,030	Projection lens, ELMARON 150mm f/2.8, without focusing mount . . . . .	72.00
37,119	Focusing mount for 35 or 50mm projection lenses . . . . .	\$ 6.00
37,120	Focusing mount for 90 or 120mm projection lenses . . . . .	6.00
37,121	Focusing mount for 150mm projection lens . . . . .	12.00
37,216	Field condenser for use with 35 and 50mm projection lenses . . . . .	\$ 12.00
37,215	Field condenser for use with 90 and 120mm projection lenses . . . . .	12.00
37,214	Field condenser for use with 150mm projection lens . . . . .	12.00
37,656	Supply-line cord . . . . .	\$ 4.50
37,723	Halogen low voltage lamp 24 volt, 250 watt . . . . .	\$ 9.90
37,942	Carrying case for the PRADO-Universal projector with lenses up to 150mm (not for use with micro or pol projection attachments) . . . . .	\$ 43.50

### SUGGESTED OBJECTIVES AND EYEPIECES

559 015	Achromatic objective, free from polarization, P 8/0.18, free working distance 16mm	79.00
559 010	Achromatic oil and water immersion objective, free from polarization P Oil - Water 12.5x/0.25, free working distance 0.26mm	114.00
559 008	Achromatic objective, free from polarization, P 16/0.40, free working distance 3.3mm	93.00
559 011	Achromatic oil and water immersion objectives, free from polarization P Oil and W 26/0.65, free working distance 0.38mm	156.00
559 033	Achromatic dry objective, free from polarization, P 44/0.65, free working distance 0.53mm, with spring loaded mount	128.00
559 012	Fluorite oil immersion objective, free from polarization, P FI Oil 60/0.95, free working distance 0.33mm	224.00
559 013	Fluorite oil immersion objective, free from polarization, (P) FI Oil 80/1.30, free working distance 0.33mm	288.00
559 014	Fluorite oil immersion objective, free from polarization P FI Oil 105x/1.32, free working distance 0.27mm	306.00
519 127	Highly corrected, widefield, periplanatic eyepieces, paired, GF 10xM field of view 18.0mm, one with adjustable eyelens	109.00
519 910	Eyepiece micrometer with crosslines 10mm = 100 parts, unmounted	30.00
559 050	Huygens eyepieces, paired H 6.3x, one with adjustable eyelens and crosslines, field of view 18mm	82.00
563 011	Stage micrometer on metal, 1mm = 100 parts	46.00
513 123	Magnifier for centering	44.00

### ACCESSORIES FOR REFLECTION MEASUREMENTS

620 279	Specimen aligning stage with holder, inserts 5-10 and 20mm diameter free aperture, and reticle	330.00
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**Note:**

This aligning stage (#620 279) is designed for specimen 18mm in height and 60mm diameter. For larger objects the handpress 563 035 (\$70.00) should be ordered.

620 257	Illumination changing slide with filter polarizer	560.00
553 165	Vertical illuminator on bracket with five objective changing rings for ORTHOLUX Microscope with MPV	218.00
620 355	Reflection STANDARD approximately 4%	36.00
620 314	Reflection STANDARD approximately 9%	116.00
620 313	Reflection STANDARD approximately 17%	286.00

### INTERFERENCE BAND FILTERS IN SLIDER HALF WIDTH APPROXIMATELY 20nm TRANSPARENCY APPROXIMATELY 60%

620 192	Interference band filter 436nm	76.00
620 193	Interference band filter 546nm	76.00
620 194	Interference band filter 589nm	76.00
620 198	Interference band filter 500nm	76.00
620 199	Interference band filter 644nm	76.00

LEITZ ORTHOLUX MICROSCOPE WITH MICROSCOPE PHOTOMETER AS DESCRIBED ABOVE	\$15,118.00
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**OPTIONAL**

For reflectivity measurements on coal, we offer the following measuring device instead of KNOTT device #062 372 and Illuminator #620 370:

062 371	KNOTT light measuring device type MFLK, BN 5001T for measurements in the spectral range of 400-620mm consisting of photomultiplier head type SKV 315V, Photomultiplier type 6094A (S11 Cathode) high stability power supply 200 . .2500 V/5ma type NSHM, voltage cable, signal cable unit as described above without reading instrument . . . . .	2,968.00
620 334	Lamp Housing #100 with Halogen bulb 12V 100W . . . . .	314.00

**Note:**

If the microscope is to be used for measuring isotropic objects only, tube FS 45 #552 001 (\$1,045.00) can be replaced by tube FS #512 088 (\$400.00) (combination inclined binocular observation and straight monocular photographic tube).

**Note:**

Specifications for other light sources, as well as monochromator and/or filters, are available upon request.

**Note:**

The Microscope Photometer MPV can also be supplied with our research microscope ORTHOPLAN-POL.

**JELLEY MICRO REFRACTOMETER, MODEL II**

640 001	Jelley Micro Refractometer, model II, with light screening device, index and millimeter scale . . . . .	\$ 183.00
640 005	Glass prism on slide, refractive index 1.333 to 1.92 . . . . .	29.00
640 003	Highly refractive glass prism on slide, refractive index 1.116 to 2.35 . . . . .	32.00
640 002	Jelley Micro Refractometer as described above . . . . .	\$ 244.00
640 008	Micro-Dia lamp 15 watt, 110 volts A.C. . . . .	22.00
640 006	Jelley Micro Refractometer, model II, complete with prisms and illumination system as described above . . . . .	\$ 266.00

**Supplementary Prisms**

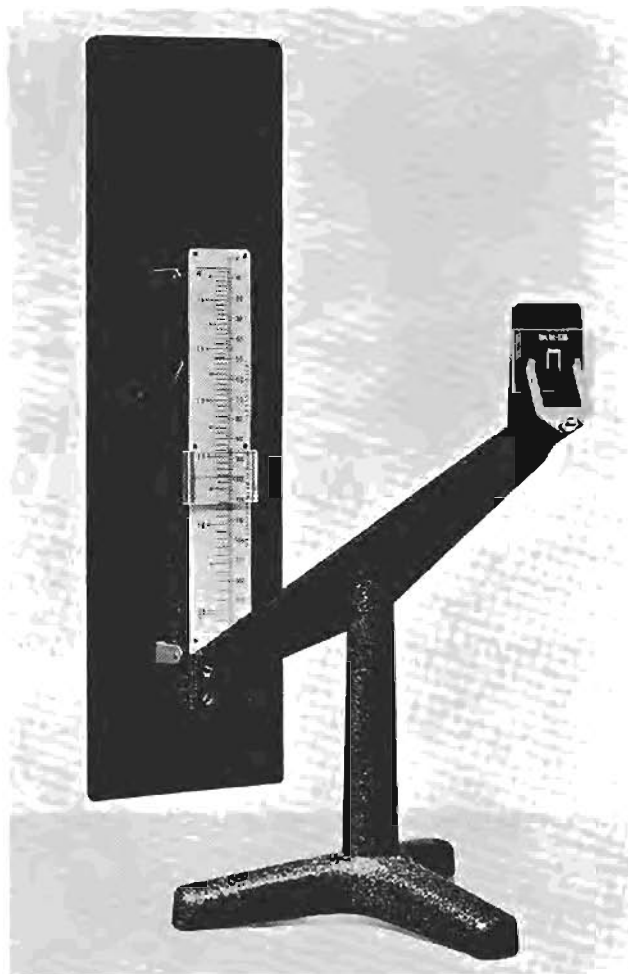
640 004	Highly refractive glass prism with plain glass plate and holder, refractive index 1.116 to 2.35 . . . . .	\$ 32.00
640 010	Z prism for the determination of the dry mass of sugar solutions . . . . .	50.00

**Spectral Lamp**

640 015	Lamp housing with socket and sodium bulb Na 4 watt . . . . .	\$ 61.00
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
		\$ 268.00

**Replacement Bulbs**

640 009	Bulb 15 watt, 110 volts A.C. . . . .	\$ 1.00
500 032	Sodium bulb Na 4 watt . . . . .	25.00



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