

SERIES ONE-FIFTY DUAL VIEWING MICROSCOPES

STAND	STAGE AND CONDENSER	NOSEPIECE OBJECTIVES	EYEPIECES
DN150 Dual Viewing Body In-Base Illuminator and Stand	<p>SA Simple Stage Rack & Pinion Focusable Substage with N.A. 1.25 Condenser and Iris Diaphragm</p> <p>GA Graduated Mechanical Stage onto Simple Stage Rack & Pinion Focusable Substage with N.A. 1.25 Condenser and Iris Diaphragm</p>	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 10px;">HYPHEN</div> <p>H</p> Triple Nosepiece #1019 10X Objective #1116 45X Objective #1079 100X Objective <p>Q</p> Quadruple Nosepiece # 130 4X Objective #1019 10X Objective #1116 45X Objective #1079 100X Objective	<p>W</p> Built-in 10X Wide Field Eyepieces

Catalog Number	Unit Net Consumer Price	
	Quantity 1-4	Quantity 5 or more
DN150GA-QW	\$742.00	\$667.80
DN150GA-HW	697.00	627.30
DN150SA-HW	606.00	545.40

*Any combination of five or more Binocular and Monocular Series 150: Models 150M, 150B, DN150, N151MP qualifies for 10% quantity discount.

All prices listed are unit net consumer price. Prices, deliveries and terms of sale are subject to change without notice. Applicable taxes are in addition to prices stated. Orders are subject to final acceptance by the Sales Office at Buffalo with the understanding that prices and terms prevailing at time of delivery will apply. The equipment supplied may not agree in all details with our descriptions or illustrations because instruments are subject to modification and improvement.



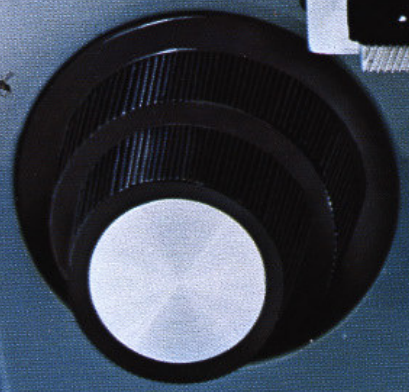
SCIENTIFIC INSTRUMENT DIVISION
 BUFFALO, NEW YORK 14215

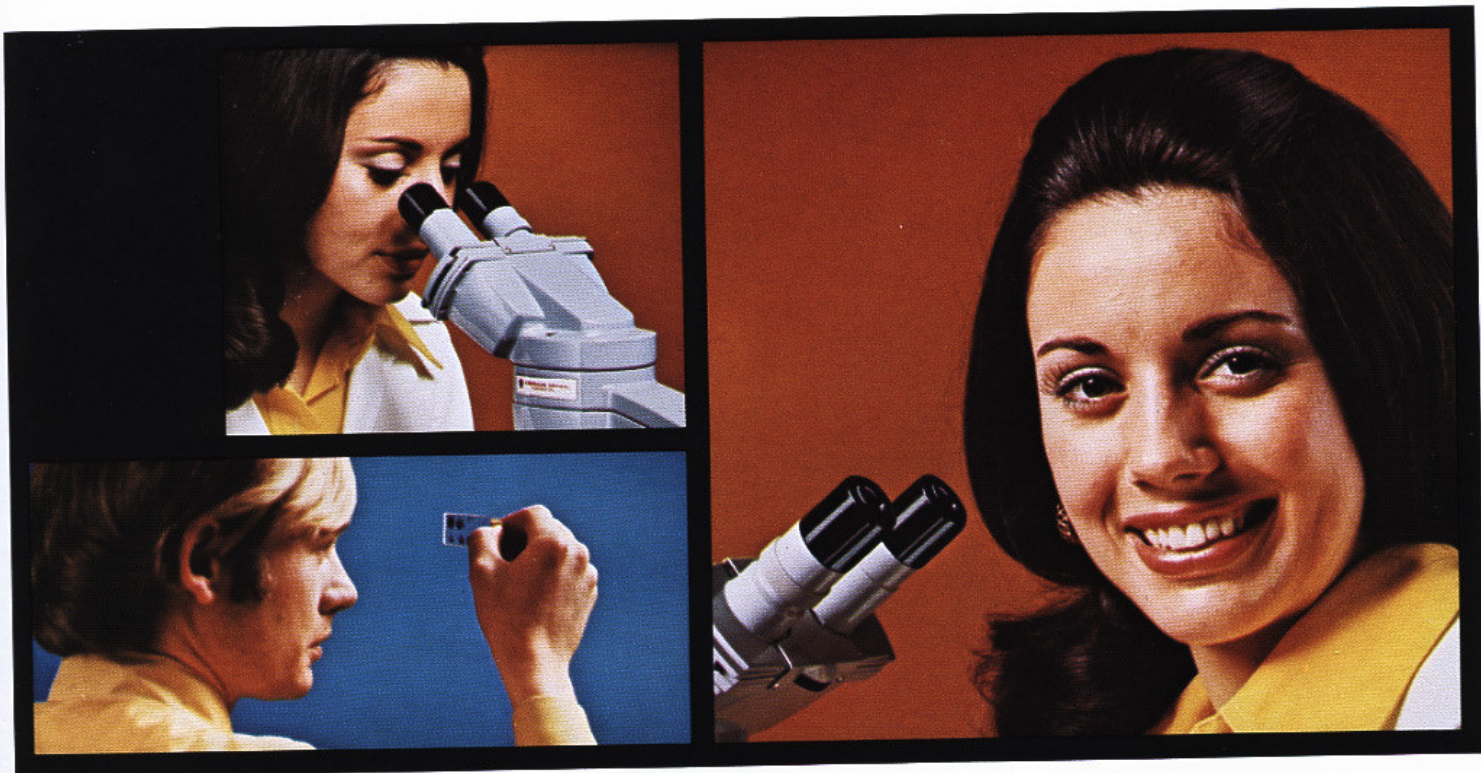
 **AMERICAN OPTICAL
CORPORATION**

900935

One-Fifty

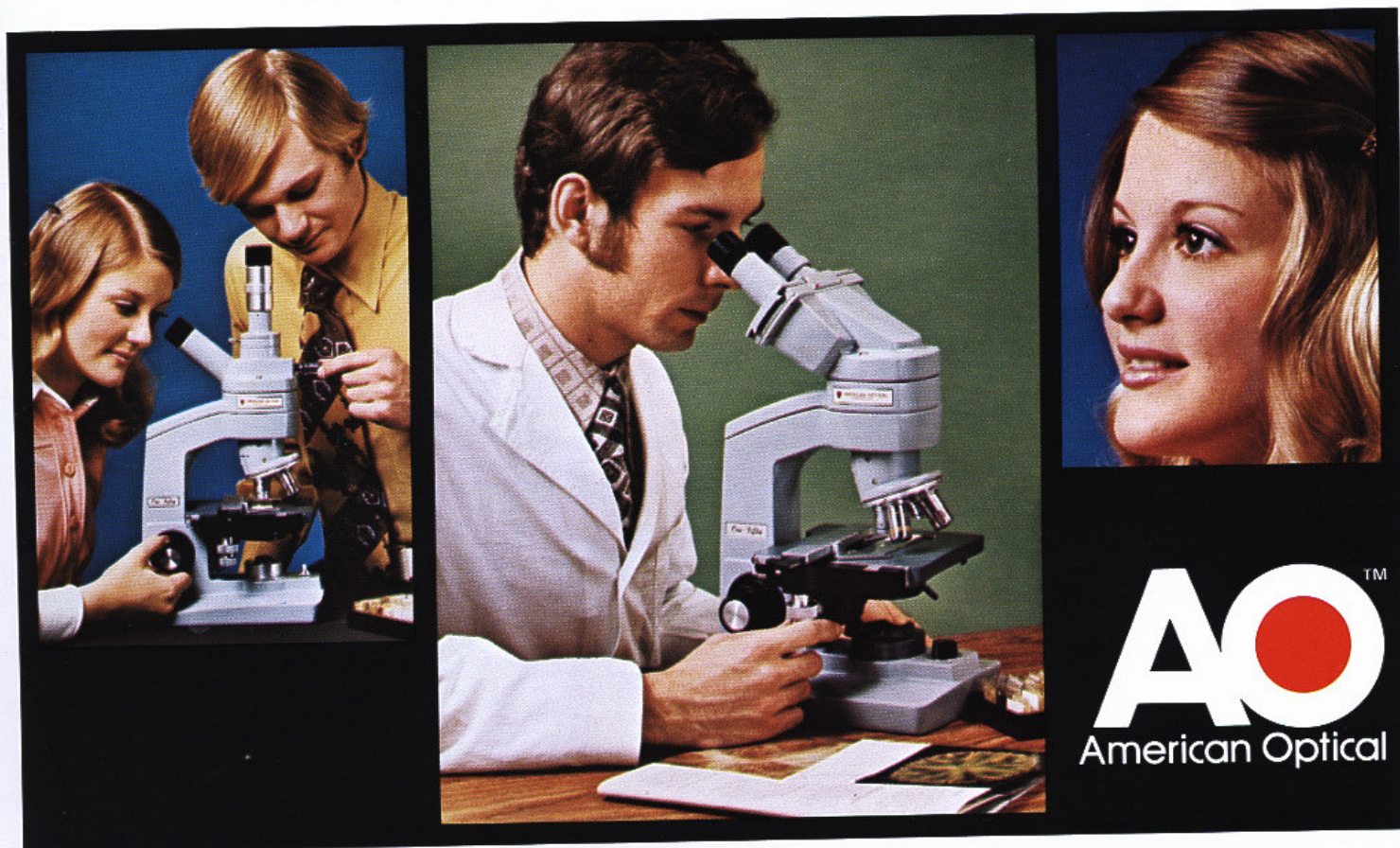
25
U.S.A.
MADE IN
CHINA





The AO Series
One-Fifty
MICROSCOPE

Gives everything you would expect
from a standard laboratory/medical
student microscope...*and more.*



AOTM
American Optical

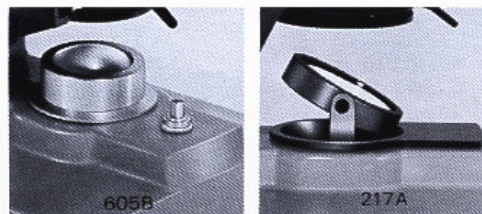
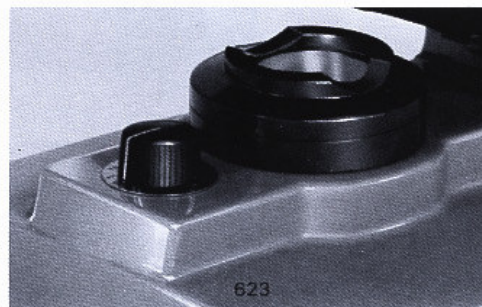
Initial economy *plus* all these important features make it an instrument worthy of your consideration.

- Advanced infinity corrected optics for outstanding optical performance
- Continuously variable in-base illuminator with built-in transformer
- Reversible binocular or monocular bodies
- Dual Viewing models with built-in illuminated pointer
- Wide Field eyepieces with conventional pointer
- Ultrapositive focusing...fast, responsive and precise
- Fixed stage stability...vibration-free
- Focusable nosepiece with three or four objectives
- Choice of three stages...simple, Micro-Glide and graduated mechanical
- Wide sturdy base...all metal construction
- Traditional AO craftsmanship and quality backed by 130 years of continuous service.



New, controllable intensity illumination

High intensity, low voltage illuminator "L" (623) features an in-base transformer and regulator to effectively present the best compatible light intensity through condensers, specimen, objective, binocular body and eyepieces. The conveniently located control knob governs a wide, continuous range of brightness to eliminate image washout of lightly stained specimens and insufficient illumination of highly stained or dense specimens.



Its 10 watt 6 volt Tungsten-Halogen lamp assures greater operating efficiency, truer color rendition and exceptionally longer lamp life without premature blackening.

Two models of the inexpensive in-base illuminators are also available. "N" (605B) for binocular models and "U" (614A) for monocular models. A 15W, 115V tungsten lamp provides adequate intensity for all routine bright field work.

Plano-Concave Mirror and fork assembly (217A) may be specified and is interchangeable with above illuminators.

New, Ultrapositive Focusing

The most exact, trouble-free focusing system ever developed for this class of instrument... a cam-lever-gear mechanism provides a precise movement which gives you rapid, smooth coarse/fine focusing action. It responds to the touch without lag or override and accurately retains focus.

The smallest, lightest, most easily moved component of the microscope, the nosepiece, is focused to the specimen. Action is virtually frictionless; years of dependable service are assured.

Since all working parts of the focusing mechanism are sealed, completely enclosed within the microscope arm, regular cleaning or lubrication is unnecessary.

Slide and Objective Protection

With the unique AO variable Autofocus stop and spring-loaded nosepiece, you cannot break costly slides or damage objectives while focusing. If objective is accidentally focused down on slide, the nosepiece "gives."

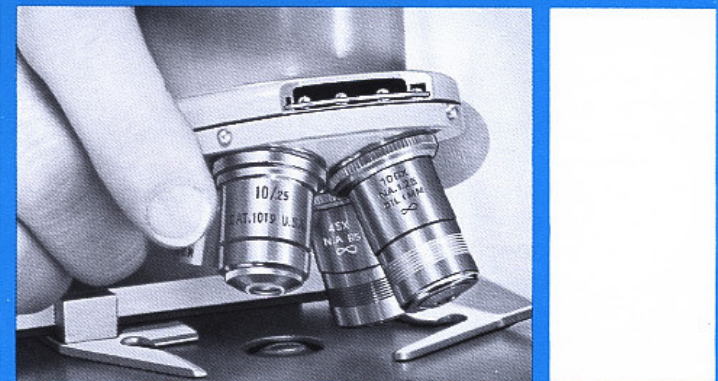
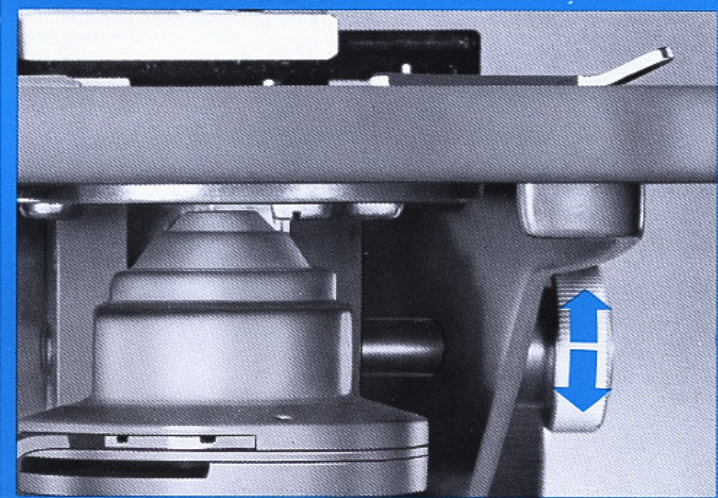
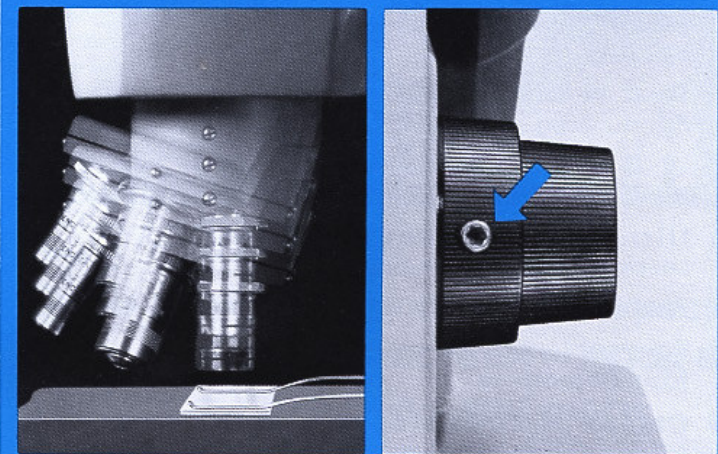
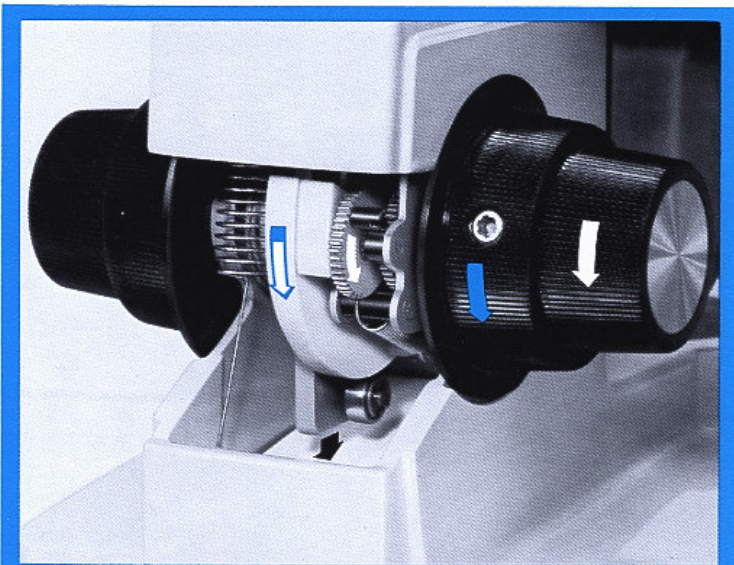
The Autofocus stop has been a proven benefit on AO microscopes for many years. It saves time, eliminates "searching" for proper focus with the coarse adjustment. You simply turn coarse knob to Autofocus stop position, and you are then in focus with just a touch of the fine adjustment. Autofocus stop is preset to accommodate standard 1.25mm slides ± 0.75 mm. But it can be easily reset for thicker chambers or slides.

Focusable Substage

All Series One Fifty models have stages with a rack and pinion focusable substage, N.A. 1.25 Abbe condenser and iris diaphragm. An auxiliary swing-in condenser is used with combinations of a 4X scanning objective and mirror.

Ball Bearing Nosepiece Construction

Binocular and Dual Viewing Monocular Series One Fifty microscopes are equipped with triple or quadruple revolving nosepieces. Ball-bearing action provides the easiest possible rotation. Hardened steel ball and detent clip assure proper click-stop centration of each objective on the optical axis.



Wide Field Eyepieces, with Pointers

10X W.F. eyepieces with pointer are supplied as standard. Such eyepieces offer the benefit of wider field of view and higher eye-relief than optionally available 10X Huygenian and 15X W.F. eyepieces.

Eyepieces of monocular models are locked-in for security. 20mm diam. micrometer discs may be inserted into 10X W.F. (138A) for accurate measurement of specimen detail.

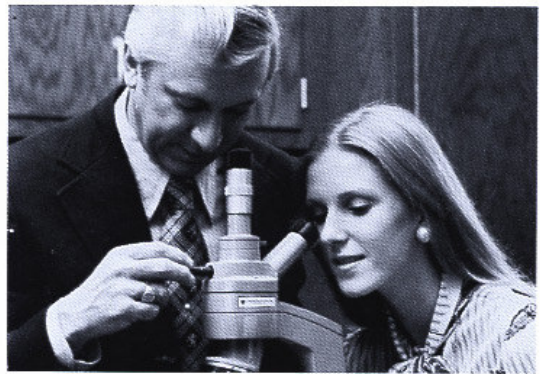
Your Choice of Reversible Binocular or Monocular Bodies... Plus Dual Viewing Option

Series One Fifty bodies offer the ideal inclination angle for best viewing comfort. Each type is easily reversible to suit individual preferences. Binocular bodies feature constant tube length at all interpupillary settings—a distinct advantage in maintaining precise parfocality and magnification. Accidental pressure on eyepieces cannot alter interpupillary settings.



Dual Viewing Observation for Teaching and Consultation

Allows two persons to view the same superb image simultaneously. Invaluable for Intermediate and Advanced Biology Course Work. Also a vital tool for medical technology instruction. The most important feature of this instrument is its illuminated/movable pointer which can be projected anywhere in the field to indicate specific detail for both viewers. Universal pointer movement is controlled by a lever at the base of the vertical tube, and its wiring is enclosed in the microscope base and arm. (Dual Viewing Body is not available with binocular models.)



Advanced Infinity Corrected Achromatic and Planachromatic Objectives

The key to the high optical performance of the Series One Fifty is the selection of advanced achromatic and planachromatic objectives. They are infinity corrected, achieving flatness of field, color correction and superior definition. All are parfocal, par-centered, and color banded for quick recognition.



Choice of Three Stages

Choice of simple rectangular stage with slide clips; rectangular stage with built-on coaxial controlled mechanical stage...graduated for precise relocation of specimen; or circular Micro-Glide stage (with slide clips).

The simple stage is pre-tapped to accept attachable mechanical stage at a later date.

All stages are securely attached to the stand to eliminate vertical movement or vibration affecting specimen focus.



The AO Series
One-Fifty
MICROSCOPE



L150BGA-QW

U150MGA-QW

AO Series One-Fifty Binocular Models

- 10X Wide Field Eyepieces, one with Built-in Pointer
- Inclined, Reversible Binocular Body; constant tube length; focusable eyetube for balancing eye-refraction differences
- Focusable triple or quadruple nosepiece
- Infinity Corrected Objectives 4X, 10X, 45X and 100X
- Choice of Simple, Micro-Glide or Graduated Mechanical Stages
- Rack-and-Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm
- Choice of Hi-Intensity Tungsten Halogen In-Base Illuminator with built-in variable transformer or simple In-Base Illuminator; each with Blue Filter
- Low-positioned, coaxial coarse/fine focusing control knobs actuate nosepiece and objectives
- Variable Auto-focus stop

AO Series One-Fifty Monocular Models

- 10X Wide Field Eyepiece, with Built-in Pointer
- Inclined, Reversible Monocular Body
- Focusable triple or quadruple nosepiece
- Infinity Corrected Objectives 4X, 10X, 45X and 100X
- Choice of Simple, Micro-Glide or Graduated Mechanical Stages
- Rack-and-Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm
- In-Base Illuminator with Blue Filter
- Low-positioned, coaxial coarse/fine focusing control knobs
- Variable Auto-focus stop



DN150GA-HW

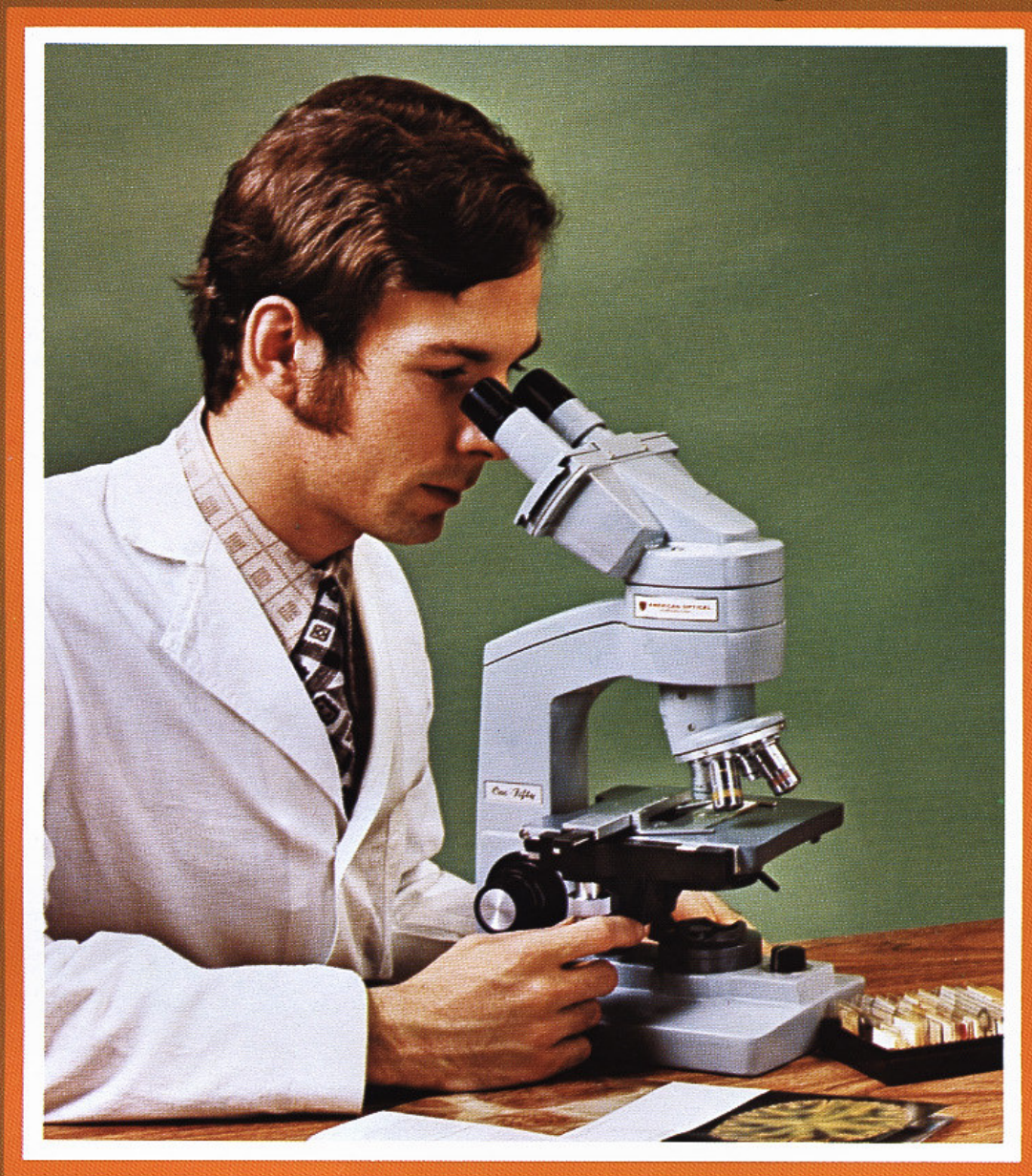
AO Series One-Fifty Dual Viewing Microscopes



- Built-in 10X Wide Field Eyepieces
- Dual Viewing Body with Illuminated/Movable Pointer, Vertical and Inclined Eyetubes
- Focusable triple or quadruple nosepiece
- Infinity Corrected Objectives 4X, 10X, 45X and 100X
- Choice of Simple, Micro-Glide or Graduated Mechanical Stages
- Rack-and-Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm
- In-Base Illuminator with Blue Filter
- Low-positioned, coaxial coarse/fine focusing control knobs
- Variable Auto-focus stop

Price List insert gives complete information on all available models. Convenient ordering code and listings of accessories will help you make the best selection.

The AO Series
One-Fifty
MICROSCOPE



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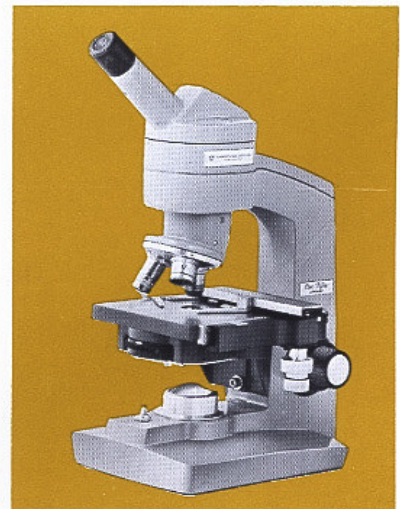
SCIENTIFIC INSTRUMENT DIVISION
BUFFALO, NEW YORK 14215

Add life to your biology programs



with the
**AO Phase Contrast
Teaching Microscope**

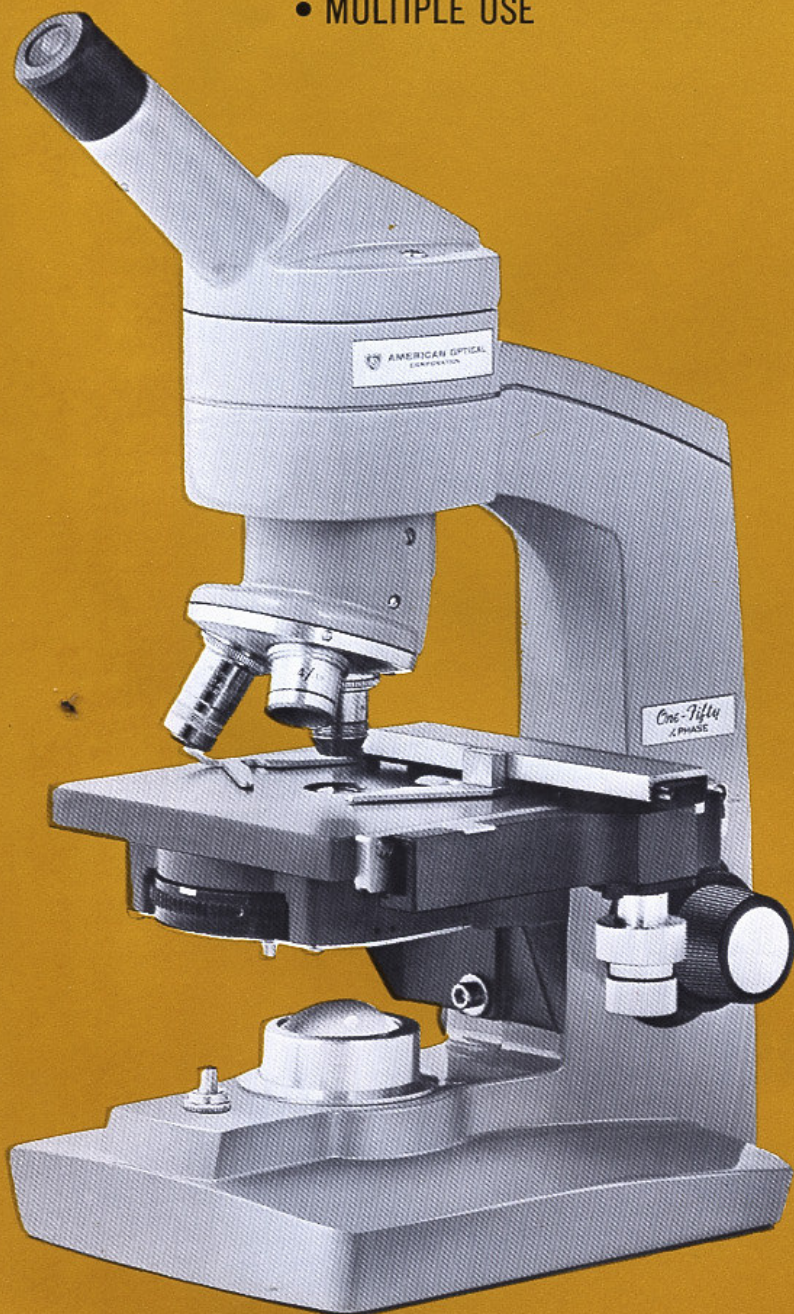
Model N151MP



AO Phase Contrast Teaching Microscope

for examination of living specimens and conventional stained materials with Phase Contrast, Darkfield and Brightfield.

- LOW COST
- EASY TO OPERATE
- MULTIPLE USE



10X High Eyepoint Wide Field Eyepiece

Inclined Reversible Monocular Body

Advanced infinity corrected optical system

assures superb color correction and definition.

Triple Rotatable Nosepiece

with precise click-stop centration of each objective on optical axis.

includes 4X scanning, 10X phase and 45X phase objectives all parfocal.

requiring virtually no focus readjustments when changing from one to the other.

all are color coded for easy identification.

Graduated Mechanical Stage

with precision low positioned coaxial controls.

Pre-Centered Substage Condenser N.A. 1.25

with controlled illumination through entire magnification range.

Color Coded Condenser Turret

contains four apertures including two for phase, one darkfield and one brightfield.

Phase annuli are built into the Green and Yellow apertures. They are pre-centered and aligned; require no further adjustments.

A swing-in green filter is easily moved into the light path for use with phase contrast material when the specimen dictates.

The white aperture has a blue filter built-in to closely approximate daylight illumination when viewing stained slides.

Coaxial Coarse and Fine Focusing

Convenient, low positioned adjustment knobs move only the nosepiece; stage and body remain fixed for maximum stability. Nosepiece focusing mechanism is gravity-loaded...there is no positive downward pressure. If you accidentally focus down onto slide with either coarse or fine adjustment the nosepiece "gives"...and force exerted on the slide is insignificant...thus, it is impossible to damage objectives or break costly slides. A fine adjustment safety clutch and coarse adjustment positive stops protect the focusing mechanism against damage.

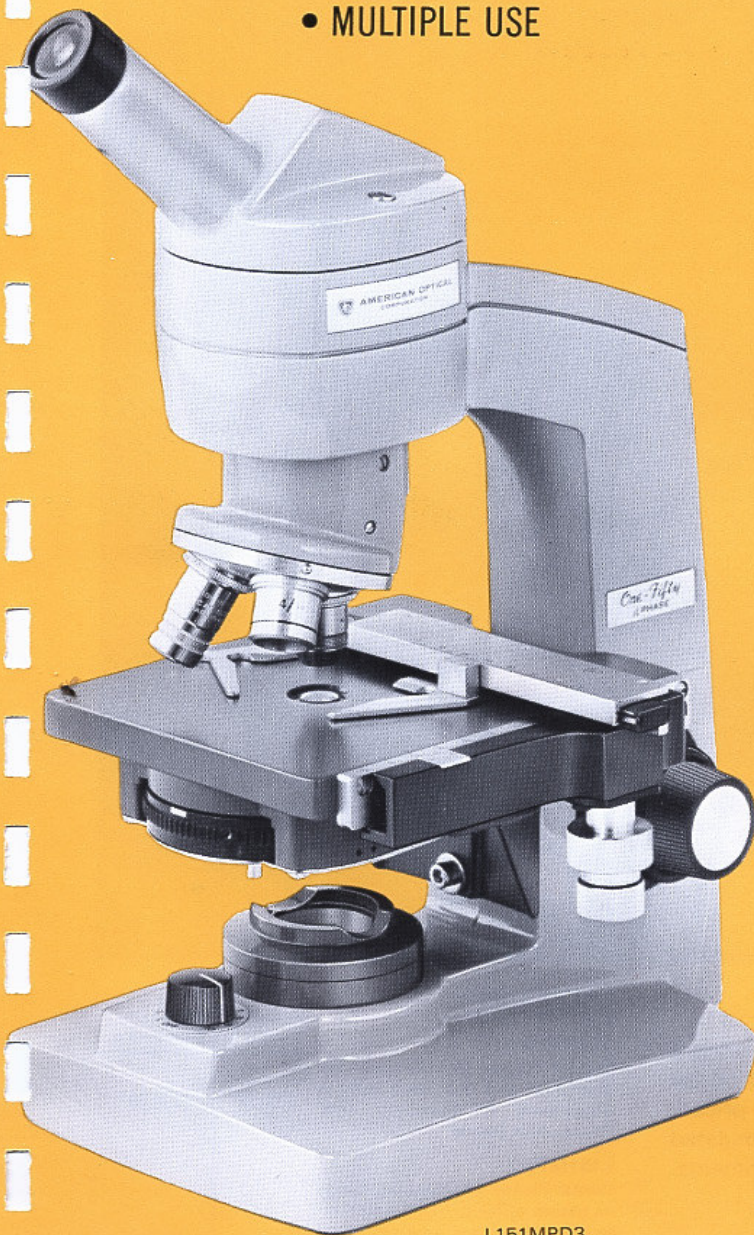
High Intensity Illumination

A special built-in 115V 60 cycle illuminator is designed to provide ample illumination for phase, darkfield and brightfield.

AO Phase Contrast Dental Plaque Microscope

Ideal for examination and demonstration of living specimens and conventional stained materials with Phase Contrast, Darkfield and Brightfield.

- LOW COST
- EASY TO OPERATE
- MULTIPLE USE



L151MPD3

AO[®] American Optical
SCIENTIFIC INSTRUMENT DIVISION
BUFFALO, NY 14215

15X High Eyepoint Wide Field Eyepiece

Inclined Reversible Monocular Body

Advanced infinity corrected optical system

- assures superb color correction and definition.

Triple Rotatable Nosepiece

- with precise click-stop centration of each objective on optical axis.
- includes 4X scanning, 10X phase and 45X phase objectives all parfocal; or 4X scanning, 45X phase objective and dust plug in third position.
- requires virtually no focus readjustments when changing from one objective to another.
- all are color coded for easy identification.

Graduated Mechanical Stage

- with precision low positioned coaxial controls.

Pre-Centered Substage Condenser N.A. 1.25

- with controlled illumination through entire magnification range.

Color Coded Condenser Turret

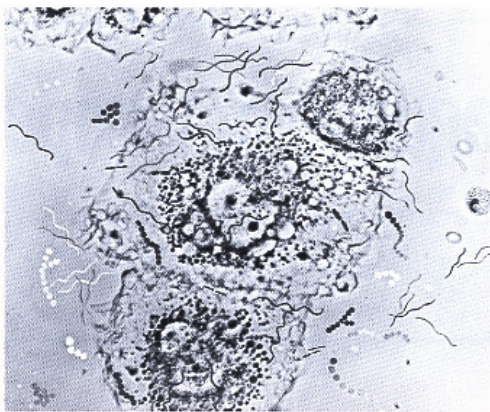
- contains four apertures including two for phase, one darkfield and one brightfield.
- Phase annuli are built into the Green and Yellow apertures. They are pre-centered and aligned; require no further adjustments.
- A swing-in green filter is easily moved into the light path for use with phase contrast material when the specimen dictates.
- The white aperture has a blue filter built-in to closely approximate daylight illumination when viewing stained slides.

Coaxial Coarse and Fine Focusing

- Convenient, low positioned adjustment knobs move only the nosepiece; stage and body remain fixed for maximum stability. Nosepiece focusing mechanism is gravity-loaded...there is no positive downward pressure. If you accidentally focus down onto slide with either coarse or fine adjustment the nosepiece "gives"...and force exerted on the slide is insignificant...thus, it is impossible to damage objectives or break costly slides. A fine adjustment safety clutch and coarse adjustment positive stops protect the focusing mechanism against damage.

High Intensity Illumination

- A built-in-base illuminator with variable transformer for 115V 60HZ is designed to provide ample illumination for phase, darkfield and brightfield.



Phase Contrast unstained

Why AO Phase Contrast?

Phase contrast is the most effective means to vividly show the presence and activity of living bacteria, protozoa, yeast, mold, other organisms and varied constituents withdrawn from peridental and plaque areas.

Merely suspend the material into a droplet of physiologic saline onto a microscope slide and apply a #1½ cover glass. No need to kill and stain...specimens and details are revealed in sharp clear contrast as never possible before under a conventional bright field microscope.



Operation is as simple as matching the color of the objective to the color coded position of the substage condenser turret.

Phase Contrast: for examination of living unstained and transparent specimens.

Darkfield: for many small living specimens. Ideal for detection and count.

Brightfield: for conventional stained specimen slides.

COLOR CODING IDENTIFIES TURRET APERTURE WITH CORRESPONDING OBJECTIVE:



+



Green indicates phase annulus to be used with 10X green objective.



+



Yellow indicates phase annulus to be used with 45X yellow objective.



+



White Δ indicates darkfield to be used with 4X, 10X and 45X objectives.



+



White indicates brightfield, may be used with 4X, 10X and 45X objectives.

The much needed application of phase contrast microscopy in dentistry coursework, preventive dentistry, dental hygiene and general dental practice is made possible with this easy to use, moderately priced, reliable phase contrast Dental Plaque Microscope specially formulated for your needs. Requires no adjustments or accessory attachments.

Catalog Number and Description

L151MPD3

Dental Plaque Microscope. As illustrated and described with 3 objectives: 4X scanning, 10X Phase, 45X Phase

Quantity	Price	
	1 thru 4	Quantity 5 or more
\$700.00		\$630.00

L151MPD2

Dental Plaque Microscope. Same as above without 10X Phase Objective, with dust plug in third nosepiece opening

593.00		533.70
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1630 Microscope Case

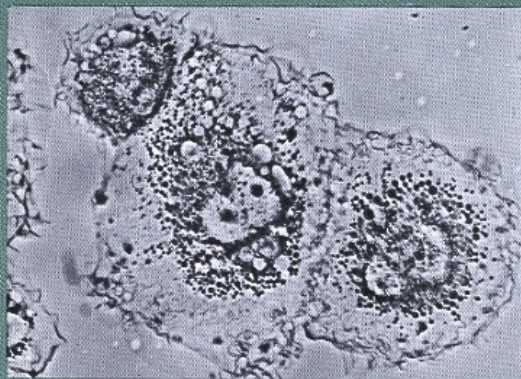
23.00		20.70
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For many years high instrument cost and complex set-up procedures prohibited the use of phase contrast microscopy in beginning and intermediate biology courses in the high school, college and university.

Here is a phase microscope in a nominal price range that allows living, unstained or transparent materials to be observed

with superb detail and contrast that was formerly possible only with expensive advanced laboratory instruments.

It is easy to use, requires no adjustments and no accessories to attach. The single instrument allows practical familiarization with phase contrast and darkfield techniques plus conventional brightfield.



Epithelial Cell, Phase Contrast unstained

Why Phase Contrast?

It eliminates the need and time involved to treat specimens with chemical stains. Possible distortion to the specimen that frequently occurs with such treatment is also eliminated. Further, the specimen is not killed. The natural behavior of organisms may be observed and studied more advantageously and cellular structure of transparent specimens are revealed in sharp, clear detail. Such specimens as cells, bacteria, protozoa, tissue, emulsions, plastics, fibers and crystals are revealed as never before under the conventional compound microscope.

The AO Phase Contrast Teaching Microscope opens a new world of enlightenment for the student and extends the area of teaching for the instructor.

Operation is as simple as matching the color of the objective to the color coded position of the substage condenser turret.

Phase Contrast: for examination of living unstained and transparent specimens.

Darkfield: for many small living specimens. Ideal for detection and counting of individual particles.

Brightfield: for conventional stained specimen slides.

COLOR CODING IDENTIFIES TURRET APERTURE WITH CORRESPONDING OBJECTIVE:



+



Green indicates phase annulus to be used with 10X green objective.



+



Yellow indicates phase annulus to be used with 45X yellow objective.



+



White Δ indicates darkfield to be used with 4X, 10X and 45X objectives.



+



White indicates brightfield, may be used with 4X, 10X and 45X objectives.

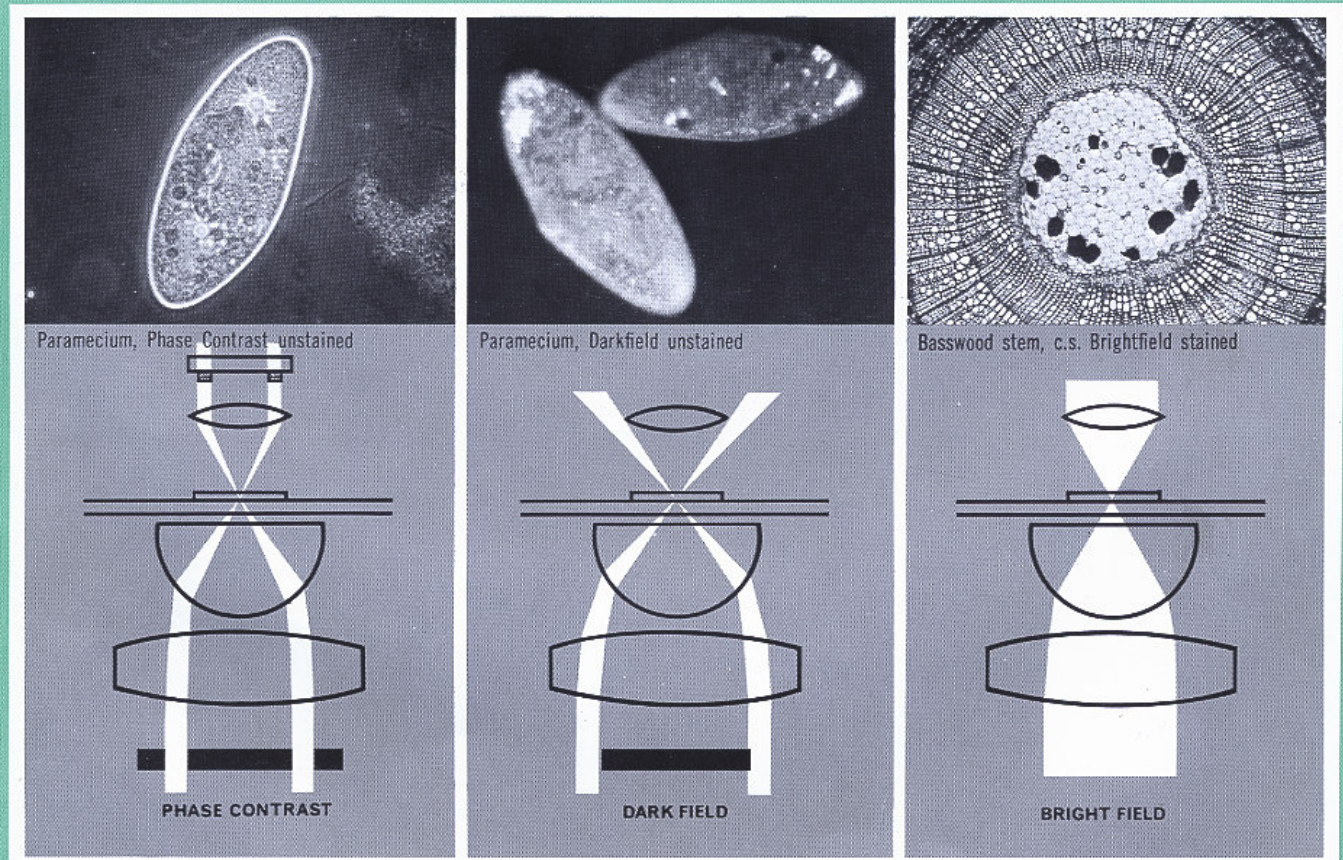
Brief Description of Phase Contrast

Phase contrast is produced by the combination of an annular diaphragm located below the condenser and a phase plate at the back focal plane of the objective. A hollow cone of light is directed through the specimen. Some of this light is diffracted by slight differences in optical path (refractive index X thickness) and is distributed over the whole aperture of the objective. The balance of the light passes directly through the specimen, as a cone of concentrated light, in a path that coincides with the "ring" of the phase plate. The phase plate alters the intensity and phase relationships of the diffracted and direct light so that when they

recombine to form an image, invisible specimen optical path differences are converted into visible light intensity differences.

Darkfield is produced by an opaque central stop in the substage condenser that controls illumination through the specimen. The cone of light produced is directed through the specimen and directed beyond the objective lens. Specimen structure shows up light against a dark background.

Brightfield allows all illumination to be directed through the specimen. Image is formed by the variance of light absorption within the specimen.



Catalog Number	Description	Price*	
		Quantity 1 thru 4	Quantity 5 or more
N151MP	Series One-Fifty Phase Contrast Teaching Microscope	\$626.00	\$563.40
1630	Microscope Case	23.00	20.70

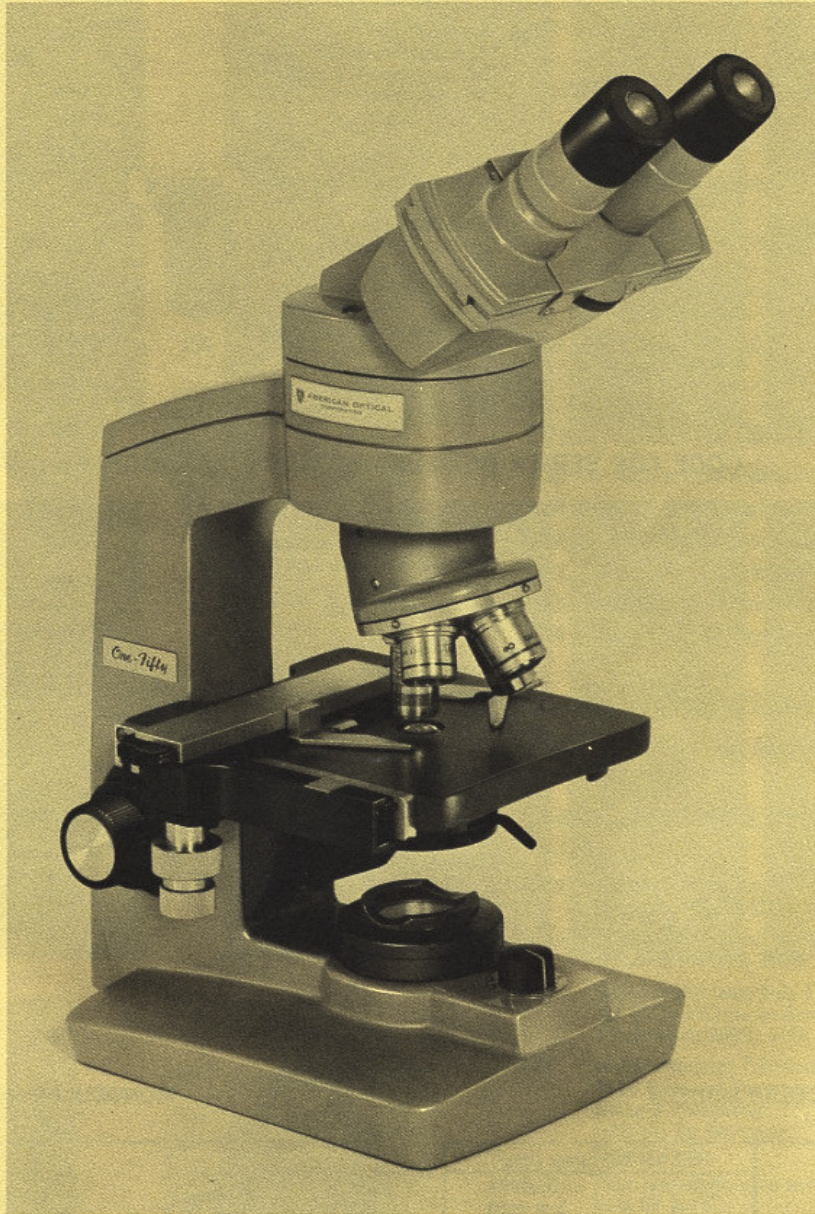
*Model N151MP may be grouped with Series One-Fifty microscopes in quantity of five or more to qualify for 10% maximum discount indicated in second column.

See SB 10 Phase Brochure for particulars on advanced AO Phase Contrast Microscopes.

PRICE LIST

AO SERIES ONE-FIFTY MICROSCOPES

Brochure SB150
Effective March 1, 1975



L150BGA-QW

AOTM
American Optical

CODE FOR SERIES ONE-FIFTY BINOCULAR MODELS

PREFIX	STAND	STAGE AND CONDENSER	NOSEPIECE OBJECTIVES	EYEPIECES
<p>L</p> <p>#623 High Intensity, Tungsten Halogen Low Voltage In-Base Illuminator, with built-in Blue Filter, In-Base Variable Transformer</p> <p>N</p> <p>#605B In-Base Illuminator with built-in Blue Filter</p>	<p>150B</p> <p>#77 Binocular Body</p>	<p>SA Simple Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p> <p>FA Micro-Glide Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p> <p>GA Graduated Mechanical Stage onto Simple Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p>	<p>H</p> <p>Triple Nosepiece #1019 10X Obj. #1116 45X Obj. #1079 100X Obj.</p> <p>Q</p> <p>Quadruple Nosepiece # 130 4X Obj. #1019 10X Obj. #1116 45X Obj. #1079 100X Obj.</p>	<p>W</p> <p>#138, 138A One each 10X Wide Field Eyepieces</p>

CODE FOR SERIES ONE-FIFTY MONOCULAR MODELS

<p>U</p> <p>#614A In-Base Illuminator with built-in Blue Filter</p>	<p>150M</p> <p>#76 Monocular Body</p>	<p>SA Simple Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p> <p>FA Micro-Glide Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p> <p>GA Graduated Mechanical Stage onto Simple Stage Rack and Pinion Focusable Substage with N.A. 1.25 Abbe Condenser and Iris Diaphragm</p>	<p>H</p> <p>Triple Nosepiece #1019 10X Obj. #1116 45X Obj. #1079 100X Obj.</p> <p>Q</p> <p>Quadruple Nosepiece # 130 4X Obj. #1019 10X Obj. #1116 45X Obj. #1079 100X Obj.</p>	<p>W</p> <p>#138 10X Wide Field Eyepiece</p>
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BINOCULAR MODELS

Catalog Number	Unit Net Consumer Price	
	Quantity 1-4	Quantity 5 or more
N150BGA-QW	\$1002.00	\$901.80
N150BGA-HW	957.00	861.30
L150BGA-QW	1069.00	962.10
L150BGA-HW	1024.00	921.60
L150BFA-QW	998.00	898.20
N150BFA-HW	886.00	797.40
N150BSA-QW	911.00	819.90

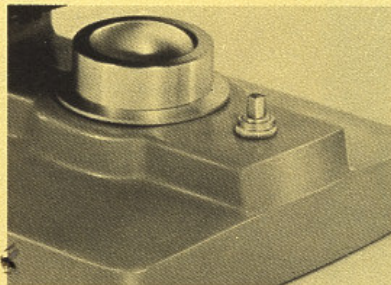
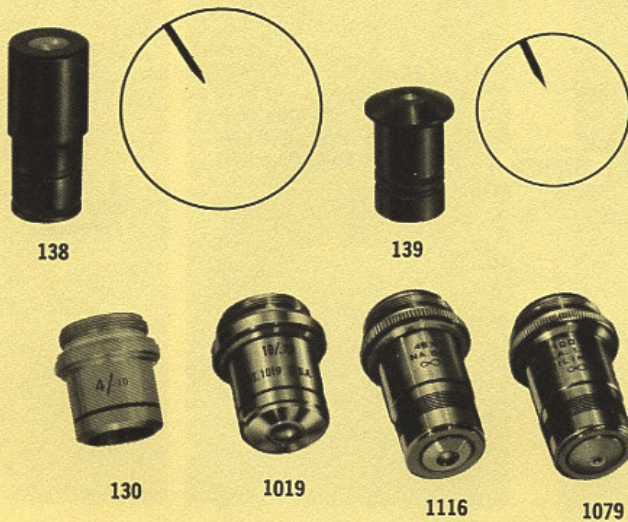
MONOCULAR MODELS

Catalog Number	Unit Net Consumer Price	
	Quantity 1-4	Quantity 5 or more
U150MGA-QW	\$701.00	\$639.90
U150MGA-HW	656.00	590.40
U150MFA-QW	630.00	567.00
U150MFA-HW	585.00	526.50
U150MSA-QW	610.00	549.00
U150MSA-HW	565.00	508.50

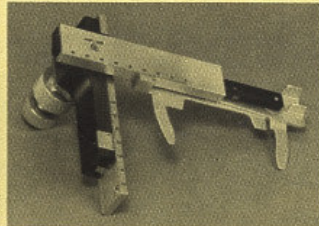
If mirror is desired instead of In-Base Illuminator: deduct #605B or #614A In-Base Illuminator and add #217A Mirror; also add #224 Auxiliary Swing-In Condenser to catalog outfits bearing suffix "-Q" to fully illuminate large field of view subtended by 4X objective.

If 10X Huygenian is desired instead of 10X Wide Field Eyepieces: deduct #138 or #138A and add #139 or #139A to catalog outfits.

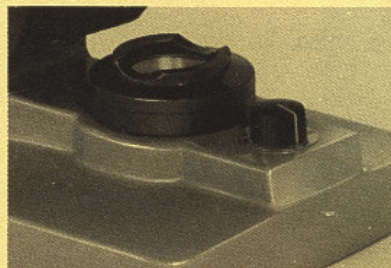
AO SERIES ONE-FIFTY ALTERNATE PARTS AND ACCESSORIES



614A



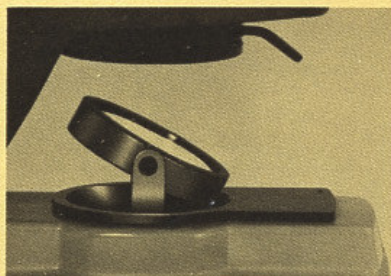
1534



623



1630



217A



224

Catalog Number and Description	Unit Net Consumer Price	
	Quantity 1-4	Quantity 5 or more
EYEPIECES		
138 10X Wide Field, single (with pointer)	\$ 28.00	\$ 25.20
138A 10X Wide Field, single (without pointer)	28.00	25.00
139 10X Huygenian, single (with pointer)	13.00	11.70
139A 10X Huygenian, single (without pointer)	13.00	11.70
1184 15X Wide Field, pair (without pointer)	70.00	63.00
INFINITY CORRECTED OBJECTIVES		
130 4X N.A. 0.10 Achromatic	29.00	26.10
1019 10X N.A. 0.25 Plan Achromatic	51.00	45.90
1116 45X N.A. 0.66 Achromatic	83.00	74.70
1079 100X N.A. 1.25 Achromatic	141.00	126.90
1023 40X N.A. 0.66 Plan Achromatic	118.00	106.20
1024 100X N.A. 1.25 Plan Achromatic	176.00	158.40
MECHANICAL STAGE ATTACHMENT		
1534 Mechanical Stage Attachment	91.00	81.90
IN-BASE ILLUMINATORS, MIRROR, FILTER		
605B In-Base Illuminator "N" for Binocular Models 150B	20.00	18.00
614A In-Base Illuminator "U" for Monocular Models 150M	13.00	11.70
611 Replacement lamp bulb 115V (15 S 11/102) for In-Base Illuminators 605B, 614A NET	.75	.75
623 In-Base Variable Transformer 115V 60Hz and Tungsten Halogen Illuminator "L", High Intensity for Binocular Models 150B	87.00	78.30
624 Replacement Halogen lamp bulb, 10W 6V for 623 NET	5.34	5.34
634 Replacement lamp bulb 2.5V (Mfg's. Designation #252) for Dual Viewing Body DN150 NET	5.39	5.39
217A Plano-Concave Mirror Assembly	13.00	11.70
224 Auxiliary Swing-In Condenser	14.00	12.60
406 Blue Filter	1.70	1.53
Illuminators and Mirror are interchangeable. In-Base Illuminators are U.L. Approved.		
CASE		
1630 Case	23.00	20.70