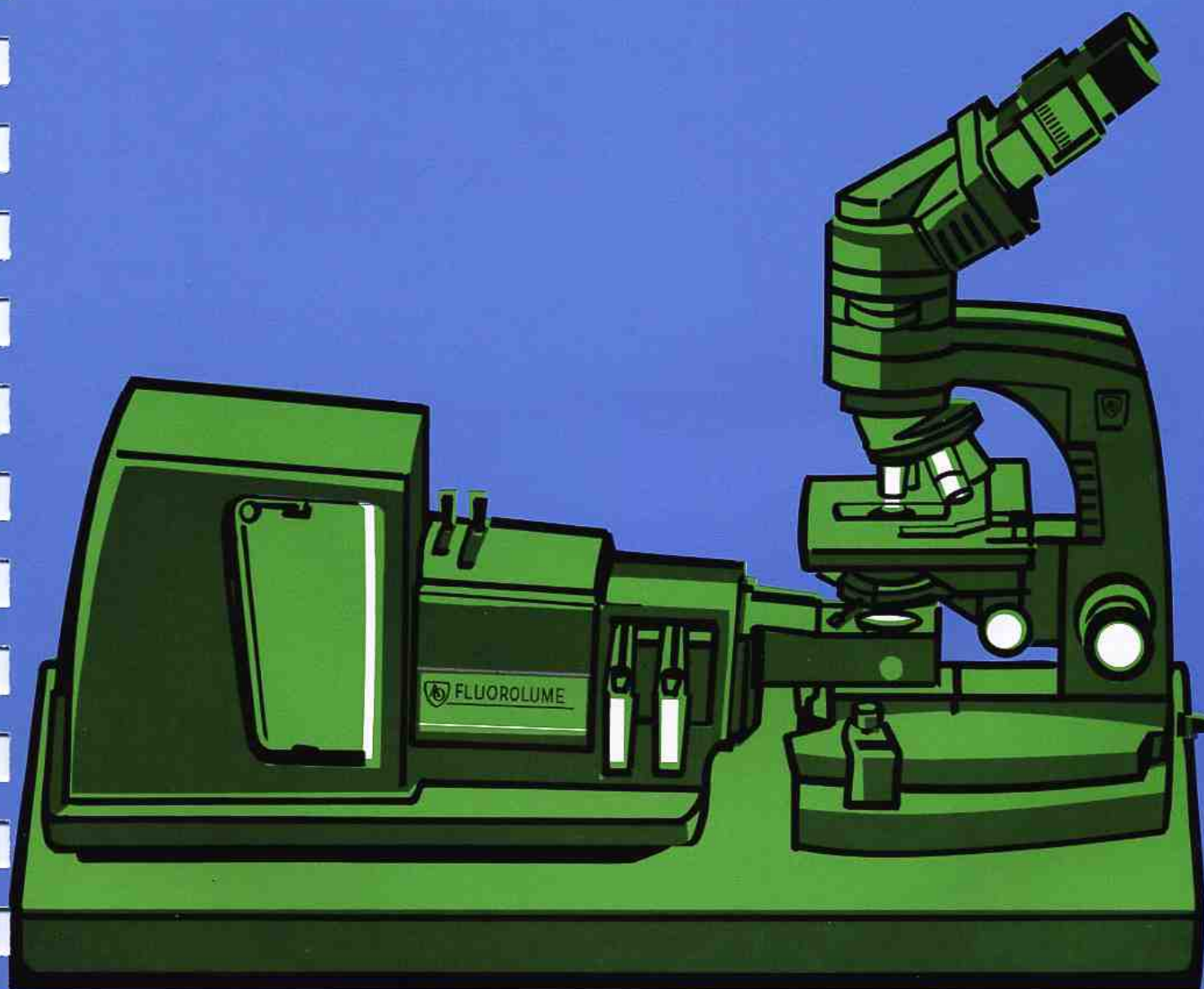


AO SERIES 10 FLUORESCENCE

MICROSCOPE and MODEL 645 ILLUMINATOR

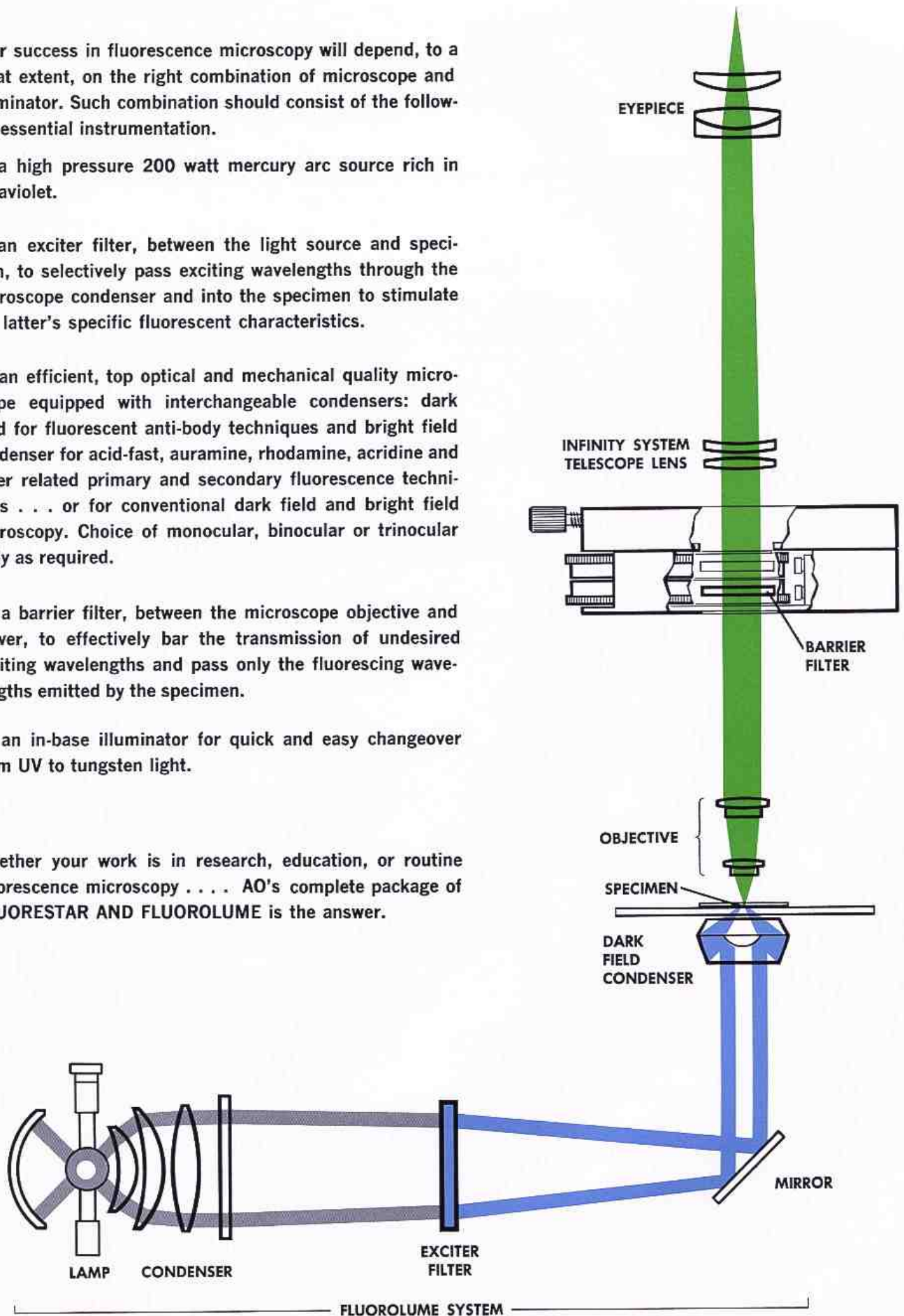


AO[®] American Optical
SCIENTIFIC INSTRUMENT DIVISION
BUFFALO, NY 14215

Your success in fluorescence microscopy will depend, to a great extent, on the right combination of microscope and illuminator. Such combination should consist of the following essential instrumentation.

- a high pressure 200 watt mercury arc source rich in ultraviolet.
- an exciter filter, between the light source and specimen, to selectively pass exciting wavelengths through the microscope condenser and into the specimen to stimulate the latter's specific fluorescent characteristics.
- an efficient, top optical and mechanical quality microscope equipped with interchangeable condensers: dark field for fluorescent anti-body techniques and bright field condenser for acid-fast, auramine, rhodamine, acridine and other related primary and secondary fluorescence techniques . . . or for conventional dark field and bright field microscopy. Choice of monocular, binocular or trinocular body as required.
- a barrier filter, between the microscope objective and viewer, to effectively bar the transmission of undesired exciting wavelengths and pass only the fluorescing wavelengths emitted by the specimen.
- an in-base illuminator for quick and easy changeover from UV to tungsten light.

Whether your work is in research, education, or routine fluorescence microscopy . . . AO's complete package of FLUORESTAR AND FLUOROLUME is the answer.



AO FLUORESTAR™

EYEPIECES

- 10X Wide Field
- High Eyepoints

FILTER TURRET

- Supplied with three most popular Barrier Filters OG1, EK2A, GG9 . . . others may be added into upper revolving turret for use individually or in combination with any of the basic three filters
- Clear apertures at "0" positions

QUADRUPLE NOSEPIECE

- Supplied with four objectives 10X, 20X, 45X and 100X infinity corrected achromatic objectives
- 50X or 100X oil immersion objectives, with iris diaphragm, are also available

UNGRADUATED MECHANICAL STAGE

- Graduated mechanical stage also available

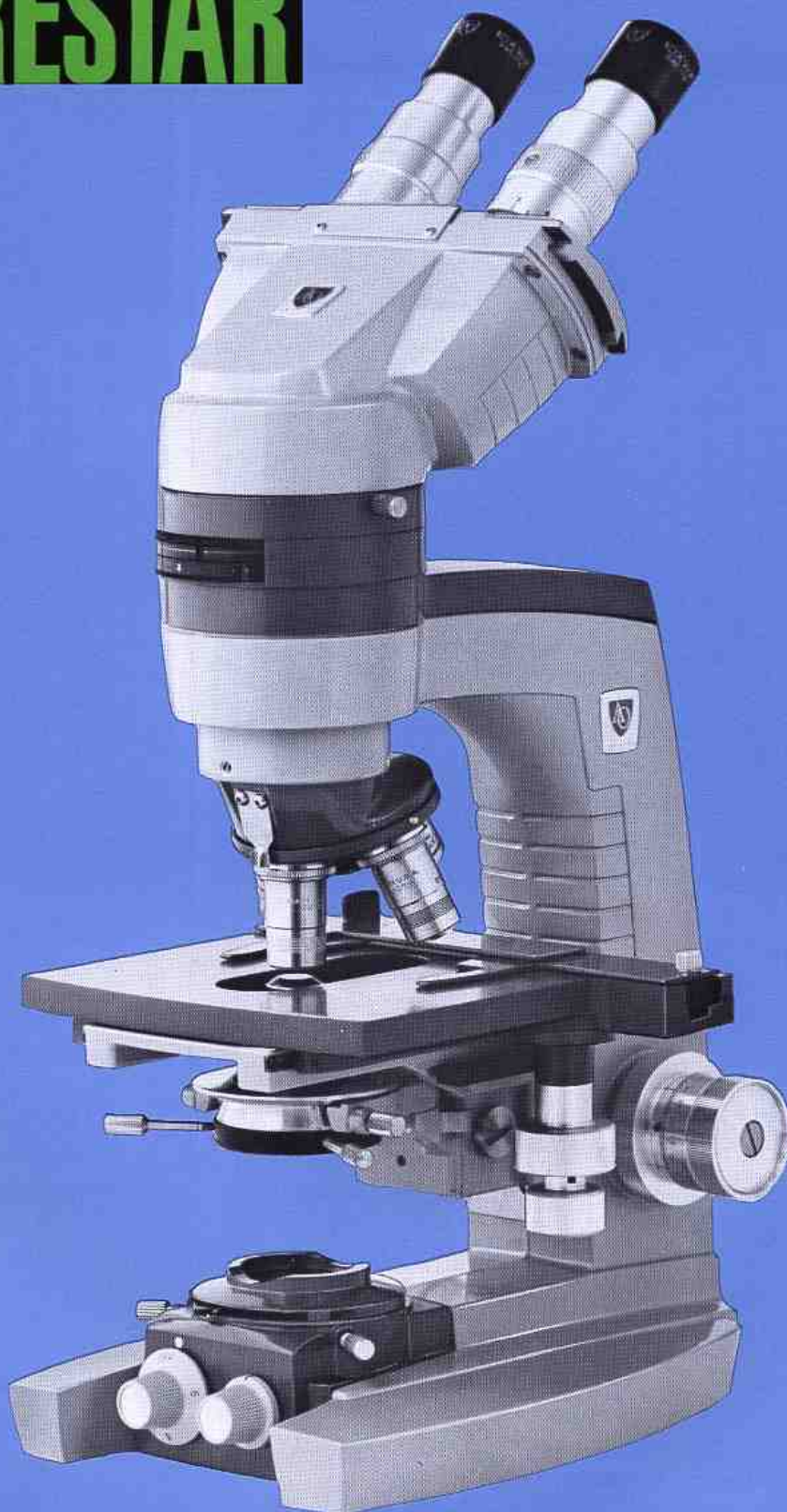
CONDENSERS

- Dark Field Condenser in centerable mount with funnel stop for 100X objective
also
- Abbe Aspheric Condenser N.A. 1.25 in fixed mount

IN-BASE ILLUMINATOR

- Includes In-Base continuously variable transformer.
- Ideal for quick and easy switchover to tungsten Halogen illumination.

All essential optical surfaces of the FLUORESTAR are AMERICOTE . . . to decrease internal reflection, increase light transmission and improve image contrast!!



**PLUS SUPERIOR
OPTICAL PERFORMANCE
with the AO
INFINITY-CORRECTED
SYSTEM**

The new infinity-corrected optical system gives you resolution and color correction never before possible. This means crisper, sharper visual images and markedly superior photomicrographs. Also, this new optical system makes possible a vastly improved method of focusing. Only the objective moves when you focus . . . body and stage remains motionless.

AO FLUORESTAR Microscopes



catalog no. H10BU-FDW

BODY: Inclined Binocular "B" #1042; also Double Turret Filter Holder and Barrier Filters, #1110

STAGE: Ungraduated, Mechanical #1063

FOCUSABLE NOSEPIECE: Quadruple Revolving #1074

INFINITY-CORRECTED OBJECTIVES: #1019 10X, #1022 20X, #1116 45X, #1079 100X

CONDENSERS: #214F Dark Field Condenser in centerable mount with funnel stop for 100X objective, also N.A. 1.25 Abbe aspheric Condenser #1084 in fixed mount with iris

SUBSTAGE EQUIPMENT: #1031 In Base Illuminator and transformer

EYEPIECES: 10X Wide Field, Pair #1176



Above model H10-BU-FDW with FLUOROLUME Model 645 and Height Adapter 636 complete



catalog no. H10TU-FDW

BODY: Inclined Trinocular "T" #1043; also Double Turret Filter Holder and Barrier Filters, #1110

STAGE: Ungraduated, Mechanical #1063

FOCUSABLE NOSEPIECE: Quadruple Revolving #1074

INFINITY-CORRECTED OBJECTIVES: #1019 10X, #1022 20X, #1116 45X, #1079 100X

CONDENSERS: #214F Dark Field Condenser in centerable mount with funnel stop for 100X objective, also N.A. 1.25 Abbe aspheric Condenser #1084 in fixed mount with iris

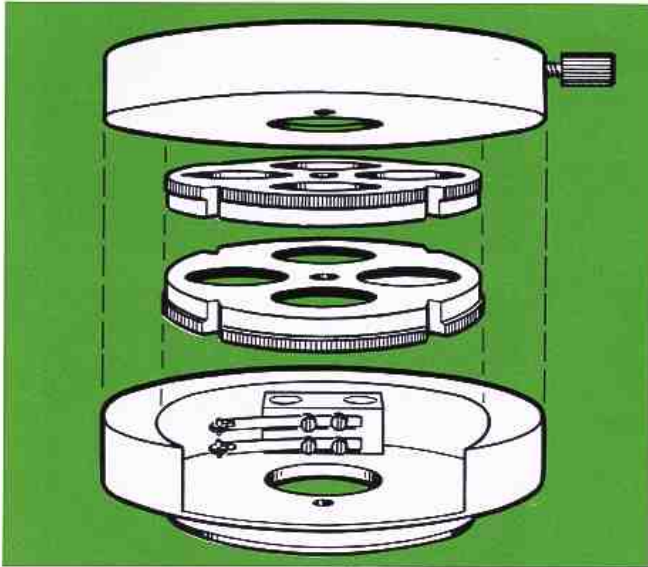
SUBSTAGE EQUIPMENT: #1031 In Base Illuminator and transformer

EYEPIECES: 10X Wide Field, Pair #1176



Above model H10-TU-FDW with FLUOROLUME Model 645 and Height Adapter 636 complete

Alternate Parts and Accessories



Double Turret Barrier Filter Assembly #1110

FLUORESTARS H10BU-FDW and H10TU-FDW include a Double Turret Filter Assembly which deserves special mention. #1110 is supplied with three of the most commonly used Barrier Filters: Schott OG1, EK2A and Schott GG9. These three filters are mounted in the lower rotatable disc which is indexed for easy positioning of the desired filter. . . a fourth position "O" is rotated quickly into the light path when filters are not needed, such as for conventional bright field or dark field microscopy.

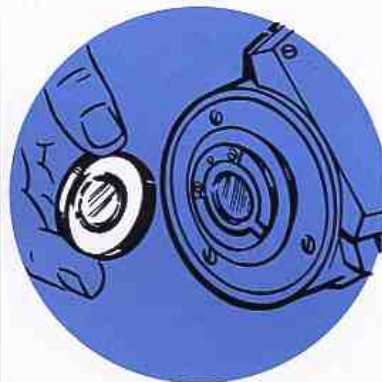
Other barrier filters having diameters of 18.6 or 20.6 mm may be inserted into the upper rotatable disc for use individually or in combination with barrier filters of the lower deck.

No special tools are needed to install or remove #1110 Turret from the FLUORESTAR. . . nor is it necessary to disassemble the turret for insertion or removal of filters.



1031

New, efficient continuously variable controlled illumination system provides superior performance with built-in-base transformer. 20 watt Tungsten Halogen Lamp.



Catalog # Description

Eyepieces — Wide Field

- 1176 10X Americote, pair
- 1184 15X Americote, pair

Objectives — Infinity corrected

- *1019 10X N.A. 0.25 Plan Achromat
- *1022 20X N.A. 0.50 Plan Achromat
- *1116 45X N.A. 0.66 Achromatic
- *1079 100X N.A. 1.25 Achromatic
- 1023 40X N.A. 0.66 Plan Achromat
- 1026 50X N.A. 0.85 Achromatic with Iris Diaphragm
- 1027 100X N.A. 1.25 Achromatic with Iris Diaphragm
- 1014 100X N.A. 1.25 Plan Achromat with Iris Diaphragm

*Supplied as standard unless otherwise specified.

Nosepieces

- 1074 Quadruple Nosepiece
- 1105 Quintuple Nosepiece

Bodies, Stages, Condensers

- 1041 Monocular Body "M"
- 1042 Binocular Body "B"
- 1043 Trinocular Body "T"
- 1063 Ungraduated Mechanical Stage "U"
- 1065 Graduated Mechanical Stage "G"
- 214F Dark Field Condenser

**K2172 Dark Field Cond. Wide Field Toric

**Recommended for applications requiring full dark field illumination of all objectives 10X thru 100X with 10X W.F. Eyepieces. Centerable mount included.

Barrier Filters

THE FOLLOWING INDIVIDUALLY MOUNTED BARRIER FILTERS ARE DESIGNED FOR ADAPTATION BENEATH MONOCULAR, BINOCULAR OR TRINOCULAR BODY OF SERIES 10 MICROSTAR (MAY BE SUBSTITUTED FOR #1110 TURRET)

1106 Barrier Filter (EK2A) 20.6 mm diam. in adapter mount. Colorless . . . transmits fluorescence of all colors

1108 Barrier Filter (EK15) 20.6 mm diam. in adapter mount. Orange color. Recommended for use with #695 Exciter Filter (see page 8).

1123 Barrier Filter (Schott GG9) 20mm diam. in adapter mount. Light yellow-green color.

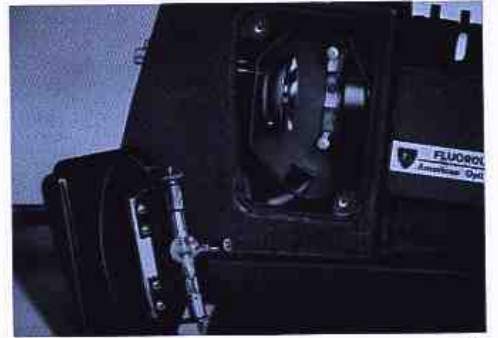
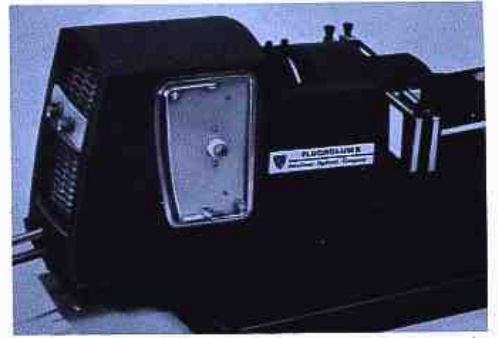
1124 Barrier Filter (Schott OG1) 20mm. diam. in adapter mount. Orange color.

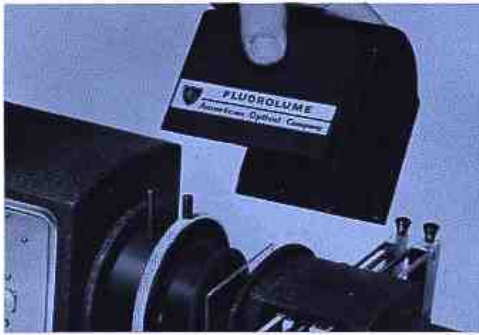
Efficiency and Convenience
for Fluorescence Microscopy

with the

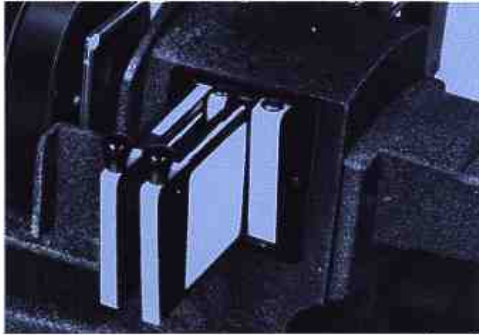
AO FLUOROLUME™

Model 645

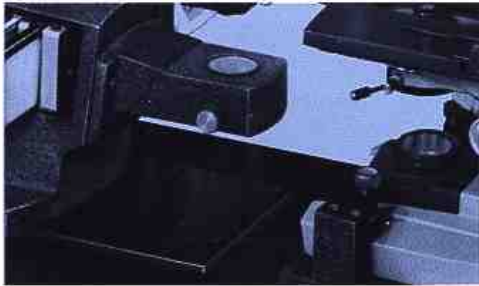




3.



4. 5.



6.



7.



8.

1. Light-Tight Housing:

Fan-cooled, cast-aluminum housing, eliminates all stray visible light and harmful UV radiation. Light path is completely enclosed from light source to microscope. You are assured of complete safety and full image contrast at all times.

2. Easy Lamp Adjustment and Replacement:

Convenient external adjustments permit unprecedented ease in centering lamp and reflector. Door mounted lamp allows quick replacement.

3. Maximum Light Intensity:

200 watt Mercury Arc Lamp coupled with reflector and high-speed glass condenser assures maximum concentration and transmission of light intensity. The focusable condensing system and field iris diaphragm also permit ideal Koehler illumination. Unique compartment with removable cover readily accepts 75mm x 75mm x 3mm heat-absorbing filter which is supplied with basic FLUOROLUME Model 645. Alternate filters or liquid cell may also be inserted if desired.

4. Convenient Filter Change:

Four slide carriers allow rapid interchange of 50mm square or round filters. Recommended exciter filters are supplied as standard equipment, together with opal glass for white light bright field observation and metal light excluder to minimize fading of fluorescent specimen.

5. Rapid Comparison:

A special white light dark field filter is also supplied. You can make instant comparisons between fluorescence dark field and white light dark field by alternately changing from this filter to the exciter filter mounted in opposite sides of the same filter holder slide.

6. Easy Illumination Change:

Illuminator rides on polished track . . . slides back to permit use of tungsten lamp of In-Base microscope illuminator . . . moves forward to positive stop and in perfect alignment for mercury arc illumination. This retractable feature also facilitates changing and cleaning the microscope condenser.

7. Simple Orientation:

Two external adjustment knobs, one on each side of mirror housing, are within easy reach for precise orientation of mirror to microscope. This adjustment is required only once . . . spring-loaded mirror will hold position.

8. Versatile Fluorescence Photomicrography:

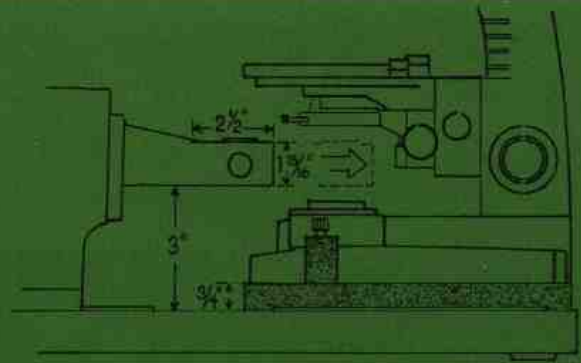
Sturdy base of Model 645 accepts upright post of AO Series 682 Photomicrographic Camera which allows a wide choice of accessory backs. Model 682G Camera is particularly well suited for fluorescence photomicrography because of the availability of high speed Polaroid films which reduce the length of UV exposure through the specimen thereby extending the fluorescent life of the specimen.

Add #1044 Vertical Tube to #1043 Trinocular Body for use with non-integral cameras such as #682.



Compact Power Supply

Reactance transformer and other power-pack components are engineered for long life and complete reliability. Convenient toggle switch, located under easy-access cap, allows specific voltage selection for use of either L1 or L2 type bulb. Push-button re-start switch assures quick reliable starts, even when lamp is still hot. This portable, fused power unit operates on 110-120 volt, 60 cycle AC current . . . includes 3-wire conductor with a built-in ground wire.



Height Adapter Plate #636, 646



636 Height Adapter, 3/4" high for use with Series 10 MICROSTAR.

646 Height Adapter, 1" high, required for use with Series 2, MICROSTAR and FLUORESTAR; also for other microscopes of similar dimensions.

BASIC PACKAGE

AO FLUOROLUME Model 645 Illuminator consists of:

200 watt mercury arc lamp; compact power supply for 115 volt, 60 cycle AC; accessory case with three exciter filters (Nos. 693, 695, 702); one heat-absorbing glass (No. 713); opal glass, white light dark field filter and aperture plate; metal light excluding slide; very low fluorescent immersion oil (Cargille's Type A) one ounce.

Please Note: #645 Basic Package does not include Height Adapter. Select from above right.

Filters — Exciter, Heat Absorbing and Neutral Density for AO Spencer FLUOROLUME Model 645

Catalog #	Description	Catalog #	Description
693*	Exciter Filter (Corning No. 5840) 2mm thick	730	Neutral Density Set (3) with Corning daylight glass, in case
649	200 watt Mercury Vapor Arc Lamp	743	Neutral Density Filter 75mm square. Transmission 50%
695*	Exciter Filter (Corning No. 5113) 2 mm thick	744	Neutral Density Filter 75mm square. Transmission 25%
702*	Exciter Filter (Schott No. BG-12) 3mm thick	745	Neutral Density Filter 75mm square. Transmission 5%
713*	Heat Absorbing Glass 75mm square, 3mm thick (must be used if liquid filter or water filled cell is not used)	6149*	Very Low Fluorescent Immersion Oil (Cargille's type A) 1 oz.

* Supplied with Model 645 FLUOROLUME Illuminator. See listing of Barrier Filters for MICROSTARS, page 5.

The equipment supplied may not agree in all details with the description or illustrations shown, as instruments are subject to modification and improvement.

PRICE LIST

For Series 10 Fluorestar & #645 Fluorolume

MARCH 1, 1975

Model 10 FLUORESTAR Microscopes may be grouped with all AO Series 10 and 20 Microscopes in quantity of five or more to qualify for 10% maximum discount.

Page #	Catalog #	Price
4	H10BU-FDW	\$1799.00
	H10BU-FDW W/645, 636	3101.00
	H10TU-FDW	1867.00
	H10TU-FDW W/645, 636	3169.00
5	1110	124.00
	1176	70.00
	1184	70.00
	1019	51.00
	1022	73.00
	1116	83.00
	1079	141.00
	1023	118.00
	1016	195.00
	1014	208.00
	1016	195.00
	1074	52.00
	1105	70.00
	1041	44.00
	1042	461.00
	*1043	529.00
	1044	18.00
	1063	207.00
	1031	219.00

Page #	Catalog #	Price
5	1036A	\$ 195.00
	1065	243.00
	214F	150.00
	K2172	292.00
	1106	9.00
	1108	9.00
	1123	9.00
	1124	9.00
8	636	30.00
	646	30.00
	645	1272.00
	693	9.00
	649	77.00
	695	9.00
	702	13.00
	713	10.00
	730	63.00
	743	12.00
	744	12.00
	745	22.00
	6149	1.80

*#1043 does not include #1044 Vertical Tube.
Add for non-integral camera.

The equipment supplied may not agree in all details with the descriptions or illustrations shown, as instruments are subject to modification and improvement.

AO American Optical
SCIENTIFIC INSTRUMENT DIVISION
BUFFALO, NY 14215