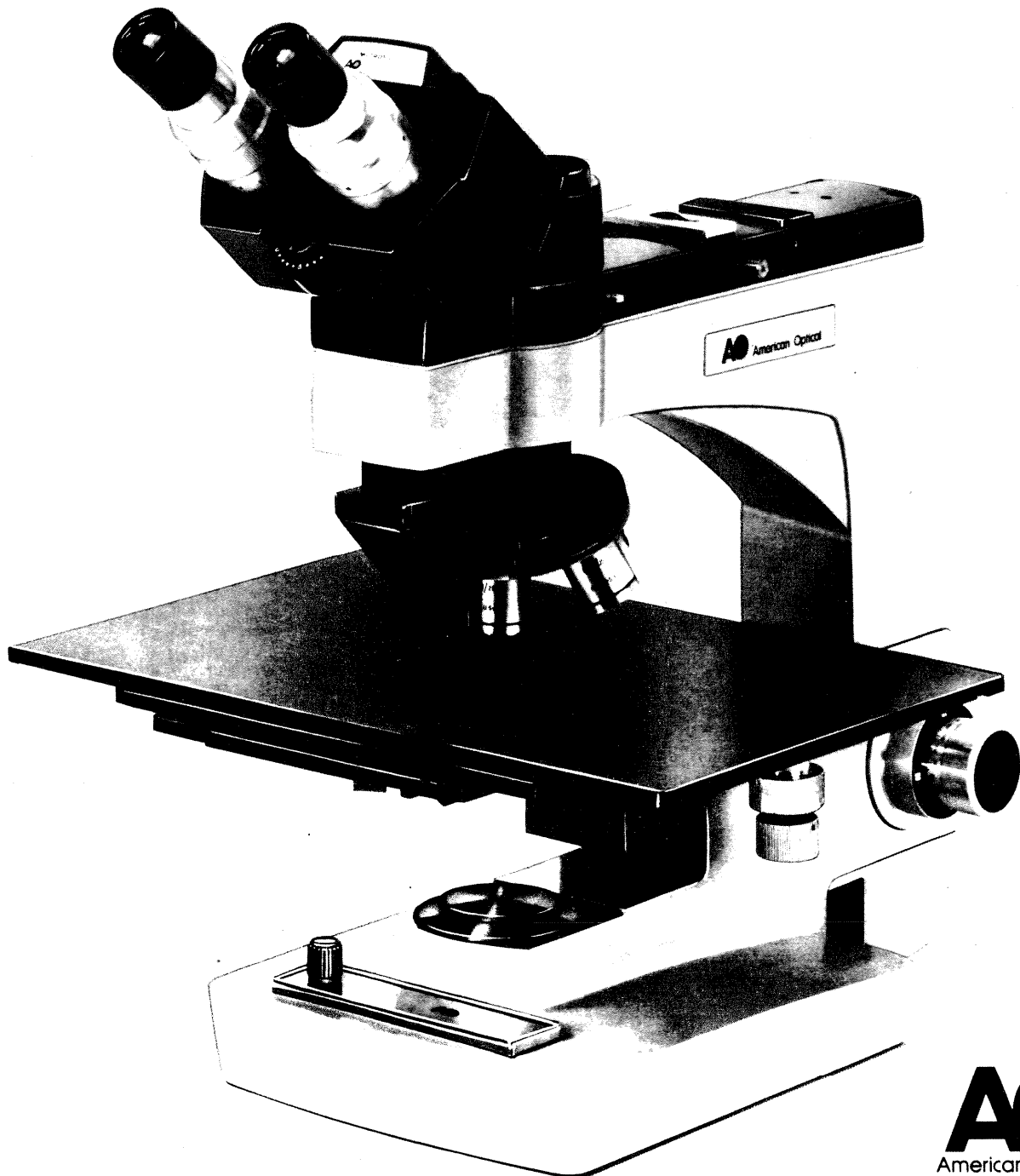


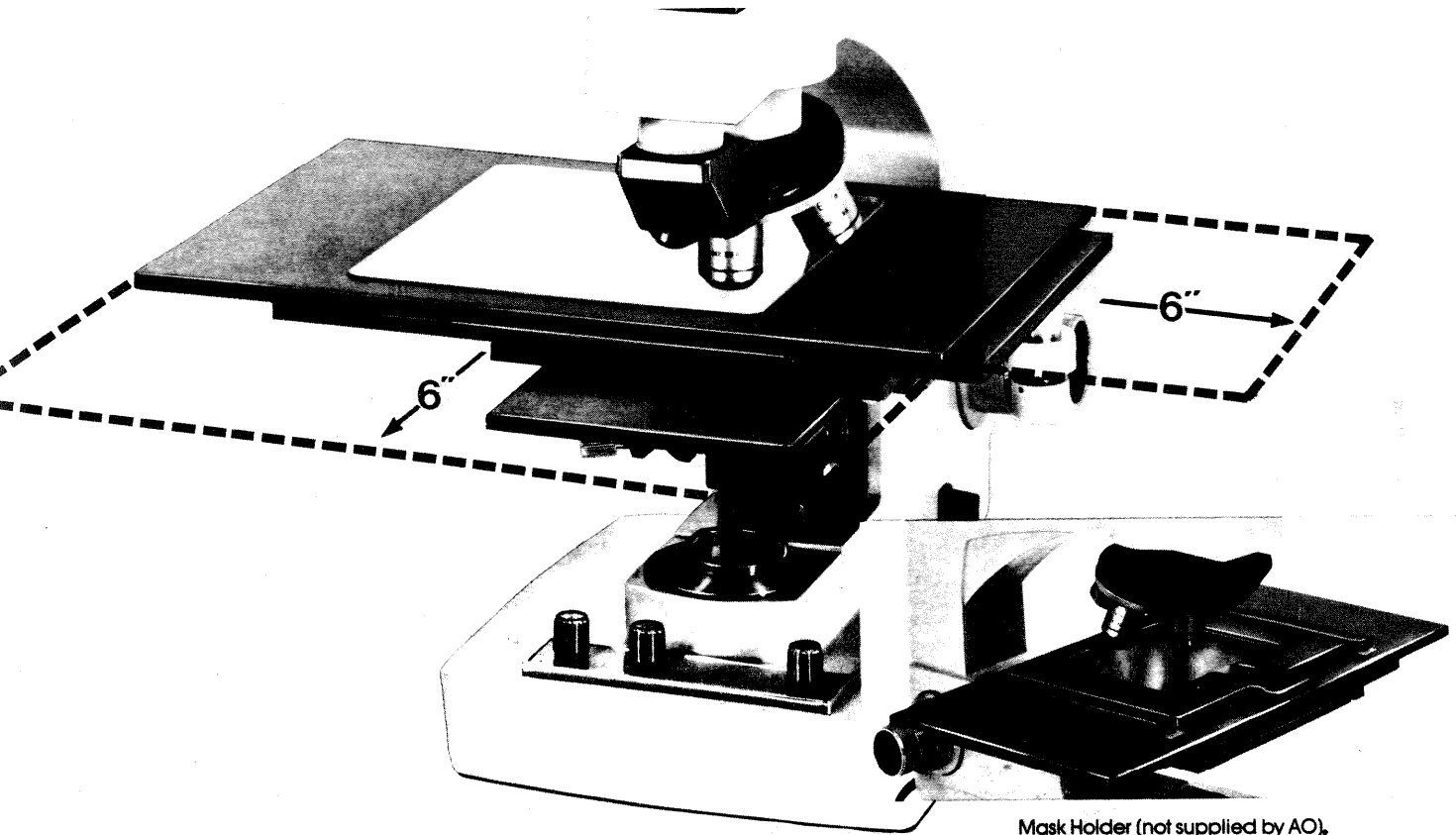
# AO Series 1860 INDUSTRIAL MICROSCOPE

Add convenience and efficiency to inspection and production of  
micro electronic masks and wafers.



# AO 1860 Industrial Microscope

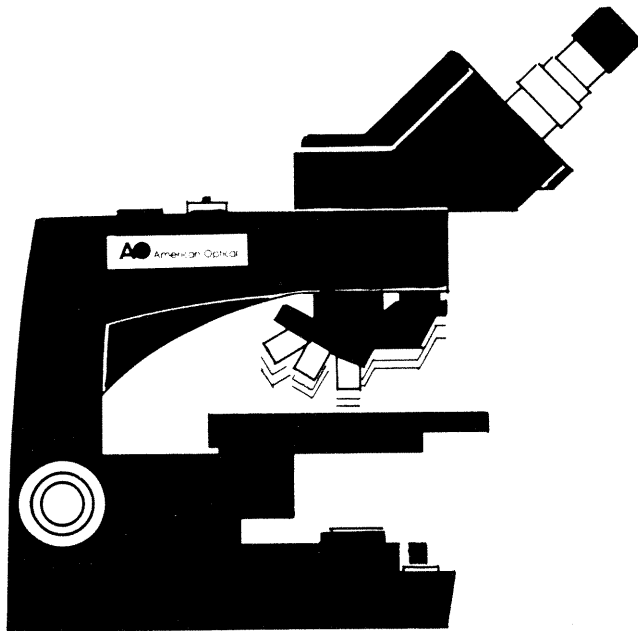
The AO 1860 Industrial Microscope was developed specifically to meet the present and future needs of the micro electronics industry. Precise mechanical and optical components were designed and integrated into a total instrument system that assures convenience and efficiency.



Mask Holder (not supplied by AO).

## EXCLUSIVE LARGE, FIXED-HEIGHT MECHANICAL STAGE

The stable, secure, fixed stage height allows use with microprobes, micromanipulators, and any other currently available stage hardware or accessories such as carousels, etc. A 6" x 6" X Y mechanical motion permits convenient inspection of all masks and wafers as large as 6" with either glass or solid stages.



## UNIQUE FOCUSING CONCEPT

Other microscopes of this type depend on vertical movement of the stage for focusing. The 1860 uses the time-proved AO focusing nosepiece principle which allows the stage base to be solidly attached to the stand. Height remains constant while the nosepiece is focused.

A variable auto focus stop prevents the objective from contacting the specimen and reduces the possibility of costly damage to the specimen or objective.

## BUILT-IN DUAL HALOGEN ILLUMINATION

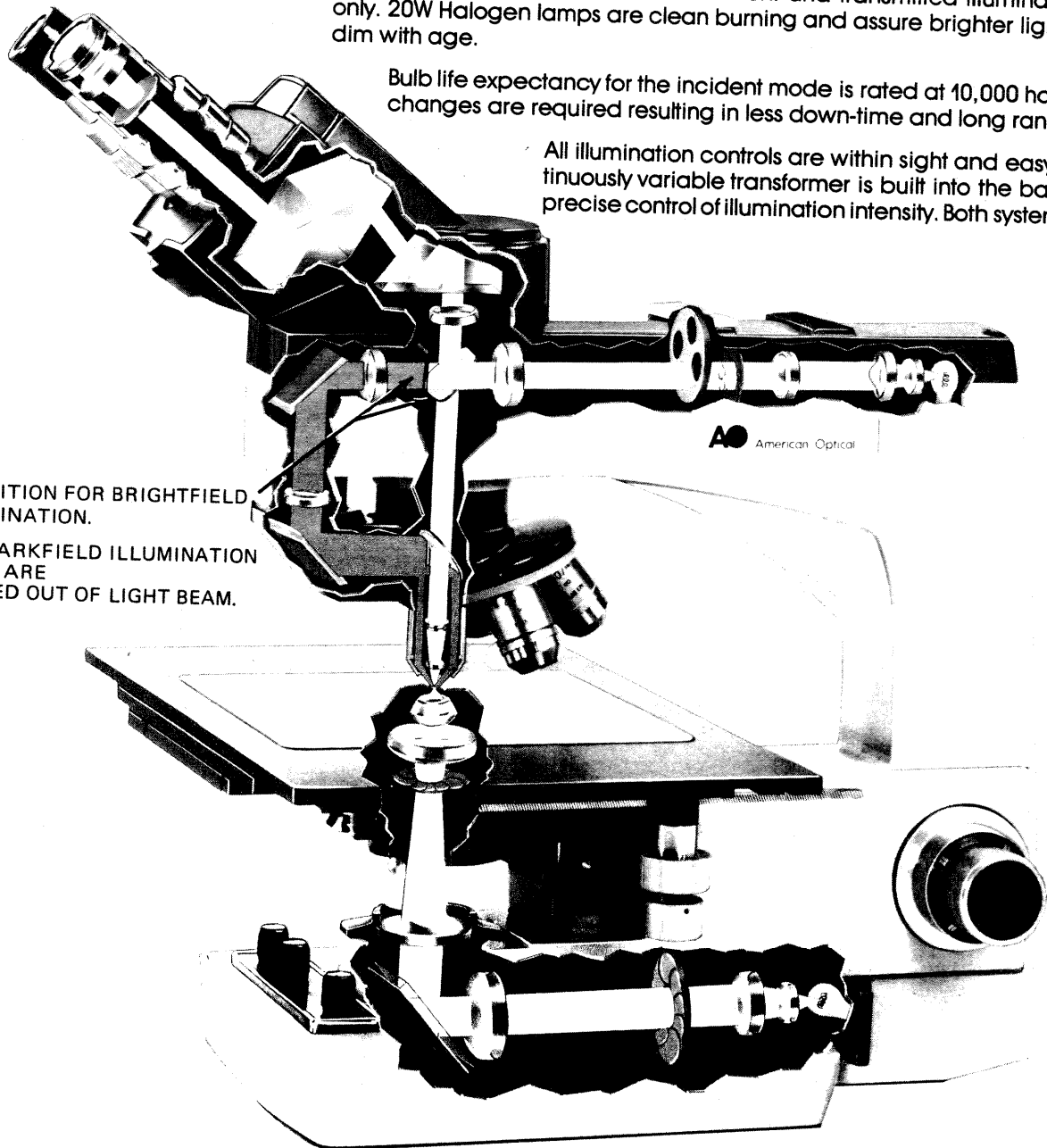
The microscope is available with incident and transmitted illumination or incident only. 20W Halogen lamps are clean burning and assure brighter light that does not dim with age.

Bulb life expectancy for the incident mode is rated at 10,000 hours. Fewer bulb changes are required resulting in less down-time and long range economy.

All illumination controls are within sight and easy reach. A continuously variable transformer is built into the base and permits precise control of illumination intensity. Both systems are UL listed.

IN POSITION FOR BRIGHTFIELD ILLUMINATION.

FOR DARKFIELD ILLUMINATION PARTS ARE PIVOTED OUT OF LIGHT BEAM.



## EXTRA WIDE FIELD

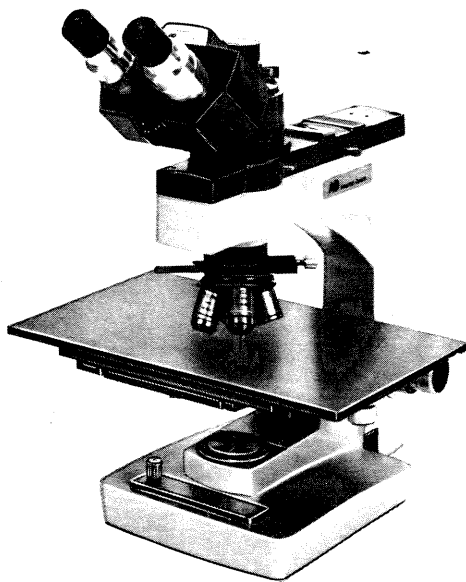
Standard 10X Wide Field Eyepieces offer a full 20 mm. field of view. High eyepoint design allows the person wearing eyeglasses to see the entire field comfortably.

## SUPERIOR IMAGE QUALITY

The Brightfield/Darkfield objectives are infinity corrected planachromatic, assuring crisp image focus from edge-to-edge. All are parcentered and parfocal to minimize refocusing when changing from one to another. Magnification range includes 6.5X, 10X, 20X and 40X.

Brightfield and Brightfield/Darkfield DIC objectives include 10X, 20X and 40X Strain-free Planachromats.

**AO**  
American Optical®



### ADDITIONAL VERSATILITY

The 1860 accepts a wide variety of optional accessories to expand the instrument's capabilities.

- Dual and Multi-Viewing attachments to allow two or more persons to view the same image at the same time.
- Cameras for documenting image on film.
- Differential Interference Contrast provides vivid contrast enhancement of reflecting opaque surface details for easy detection of surface irregularities, inclusions and faults.

### CHARACTERISTICS OF AO INFINITY CORRECTED OBJECTIVES & EYEPIECES

OBJECTIVES					EYEPIECES					
Catalog Number	Initial Magnification	Type	Numerical Aperture N.A.	Working Distance in MM	1. FIELD OF VIEW and 2. EYE RELIEF IN MM					
					5X Huygenian Cat. 133	10X Huygenian Cat. 177	10X Wide Field Cat. 180	15X Wide Field Cat. 184	20X Wide Field Cat. 157	
1861	6.5X	BF/DF achromat	.15	10.67	1. 2.9 2. 8.6	2.3 7.9	3.1 19.6	2.6 14.0	1.8 10.0	
1862	10X	BF/DF plan achromat	.25	6.40	1. 1.9 2. 8.6	1.5 7.9	2.0 19.6	1.7 14.0	1.2 10.0	
1863	20X	BF/DF plan achromat	.5	1.59	1. 0.95 2. 7.9	0.74 7.7	1.0 19.6	0.84 14.0	0.61 10.0	
1864	40X	BF/DF plan achromat	.66	.61	1. 0.48 2. 7.86	0.36 7.7	0.50 19.6	0.42 14.3	0.31 10.3	
3006	6.5X	BF achromat	.2	17.22	1. 2.9 2. 8.6	2.3 7.9	3.1 19.6	2.6 14.0	1.8 10.0	
2555	10X	BF, SF plan achromat	.25	9.20	1. 1.9 2. 8.6	1.5 7.9	2.0 19.6	1.7 14.0	1.2 10.0	
2556	20X	BF, SF plan achromat	.5	1.48	1. 0.95 2. 7.9	0.74 7.7	1.0 19.6	0.84 14.0	0.61 10.0	
2557	40X	BF, SF plan achromat	.66	.58	1. 0.48 2. 7.86	0.36 7.7	0.50 19.6	0.42 14.3	0.31 10.3	

NOTE: All working distances in air – specimen to lowest face, objective mount.  
Eye relief is distance from exit pupil (ideal position of eye) to top of eyepiece lens.

**AO**<sup>®</sup> American Optical  
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