

# OLYMPUS®

## AHMT

Research Photomicrographic Microscope System



# The Top Class Photomicroscope NEW VANOX Incorporates Fully Automatic Photographic Equipment and Provides Greatly Enhanced Research Efficiency by Virture of its Ergonomic Design.

The NEW VANOX is a high-performance photomicroscope adopting an infinity-corrected optical system. Both observation and photography from low to high magnifications provide sharp, high-quality images for research in such fields as metallurgy, electronics, petrography, mineralogy, etc. Advanced design functions have greatly simplified operation. Various accessories of modular construction permit rapid interchange of components to suit most research requirements.

## Super widefield observation

LBM series objectives are infinity corrected and are designed for super widefield observation with an eyepiece field number up to 26.5.

## Excellent illumination system

Uniform haze free illumination, ranging from ultra low to high magnifications is possible without changeover.

## Motorized revolving nosepiece

The motorized nosepiece eliminates any worries that the operator might inadvertently contaminate the specimen when changing objective powers.

## Attachment for three cameras

Two 35mm cameras and one large-format camera can be mounted simultaneously. In addition, a TV camera can also be attached.

## Four built-in photographic eyepieces

Four photographic eyepieces with 2.5X, 3.3X, 4X, and 5X magnification are mounted on a turret permitting convenient change of photo magnifications.

## Rotatable mechanical stage

The rotatable mechanical stage allows positioning of the specimen details in reference to the photographic format.

## Uniform color temperature

The light intensity control system based on ND filter conversion maintains the same color temperature regardless of light intensity.

AHMT-513\*



AHMT-513-NE\*



Dimensions: 376(W) × 600(D) × 480(H)mm Weight: approx. 47 kg \* Large format photographic equipment is optional.





AHMT Standard Outfit

Module		AHMT 513
Microscope Stand	AHMT-F	○
Power Cord	UYCP	○
Mechanical Stage	AH2-SVRM	○
Brightfield Vertical Illuminator	AH2-MA	○
Halogen Bulb	JC12V100WHA-L (2pcs.)	○
35mm Camera Back	PM-C35AD (2pcs.)	○
Analyzer	AH2-AN45	○
Filters	20Y480-WS	○
	20LBT-WS	○
	20FF-WS	○
M S Plan Objectives	MSPL5X, 10X, 20X, 50X, 100X	○
Eyepieces	SWHK10X (2pcs.)	○

### Brightfield Vertical Illuminator

The illuminator, equipped with field diaphragm, aperture diaphragm and quintuple motorized nosepiece, is used in combination with MSPlan series objectives. It incorporates two types of contrast filters (orange and green), a light-balancing filter for tungsten-type film, and a polarizer. An additional feature is the swing-out half-mirror for unimpeded observations in transmitted light.



AHMT-NE Standard Outfit

Module		AHMT 513NE
Microscope Stand	AHMT-F	○
Power Cord	UYCP	○
Mechanical Stage	AH2-SVRM	○
Brightfield/Darkfield Vertical Illuminator	AH2-RLA	○
Halogen Bulb	JC12V100WHA-L (2pcs.)	○
35mm Camera Back	PM-C35AD (2pcs.)	○
Analyzer	BH2-NAN	○
Filters	20Y480-WS	○
	20LBT-WS	○
	20FF-WS	○
Neo S Plan Objectives	NEOSPL5X, 10X, 20X, 50X	○
Eyepieces	SWHK10X (2pcs.)	○

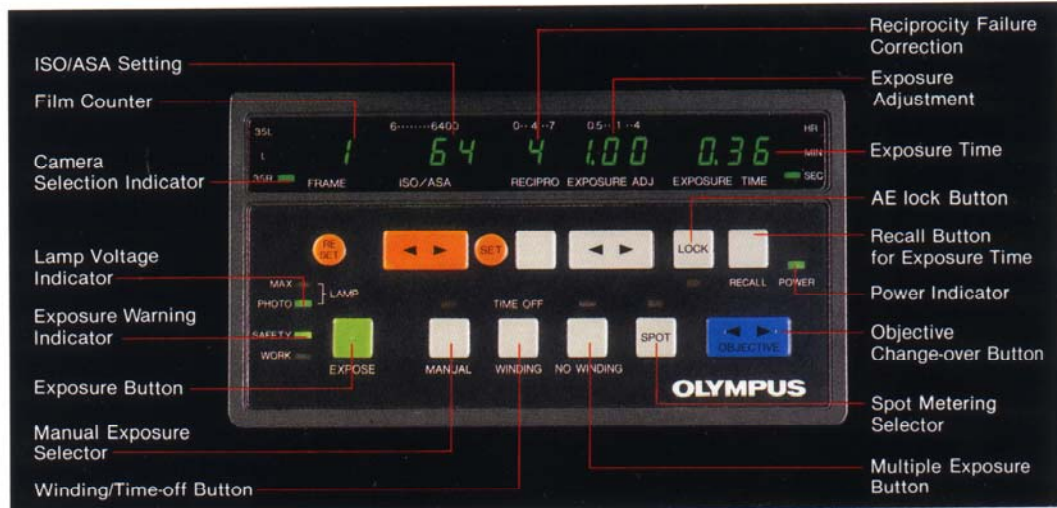
### Brightfield/Darkfield Vertical Illuminator

This vertical illuminator features switchover between brightfield and darkfield observation by simple lever operation. It is equipped with a quadruple nosepiece and is used in combination with Neo S Plan objectives. An ND filter with an automatic swing-in mechanism maintains uniform brightness when changing from darkfield to brightfield observation. Similar to the brightfield vertical illuminator, it incorporates three different filters and a polarizer, thus serving as a powerful tool for detecting minute scratches and surface irregularities, as well as contamination of the specimen surface difficult to detect in brightfield.



# Brilliant Photographs— The Result of Outstanding Performance

The NEW VANOX incorporates all photomicrographic functions, and the operation of taking photographs has been greatly simplified. Three different cameras can be mounted simultaneously, and the automatic exposure panel located on the microscope base front includes various functions such as 1% spot metering and 30% integrated metering, Auto-Exposure lock, exposure adjustment, multiple exposure, automatic compensation for film reciprocity failure, as well as manual exposure control. Film data for three cameras are stored and retained permanently.

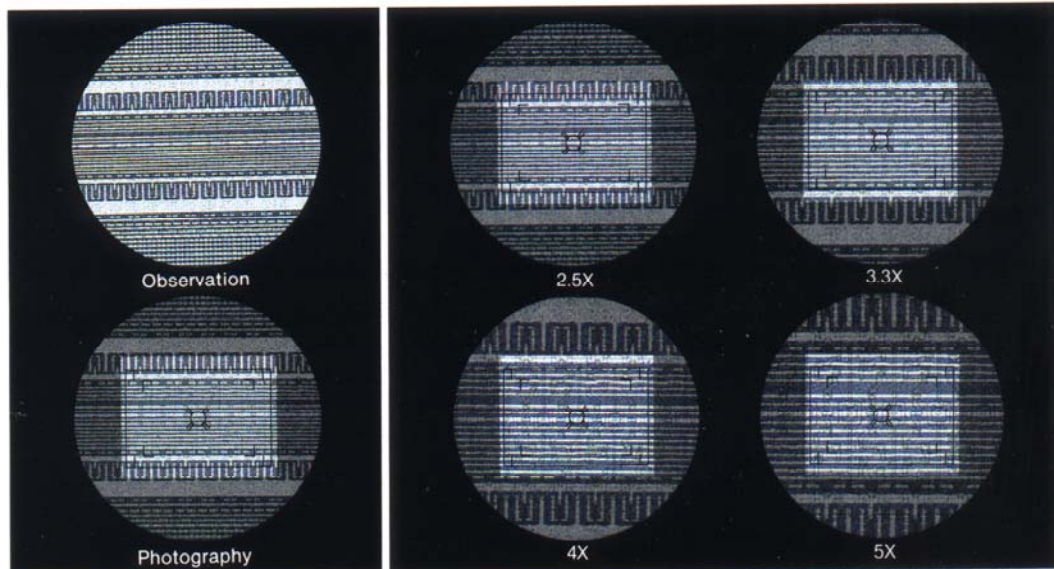


## Images can be Reproduced on Film Just as They are Seen through the Eyepieces

When changing the optical path from observation to photography, the finder frame comes into view, showing exactly the area projected on the film surface. What's more, the image can be focused with both eyes! The amount of light outside the finder frame has been reduced, making it easier to distinguish the area to be photographed.

## Four Built-in Photographic Eyepieces can be Selected by Simple Operation

Four different built-in photographic eyepieces are mounted on a turret and can be selected simply. This eliminates the bother of photo eyepiece change, and picture cropping is now easier than ever before.

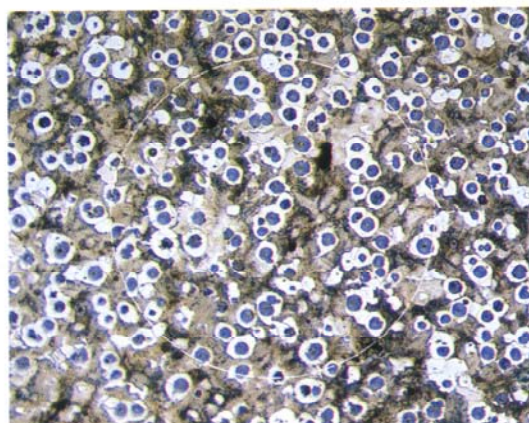


## Change-over from Integrated Metering to Spot Metering is also Performed by One-touch Operation

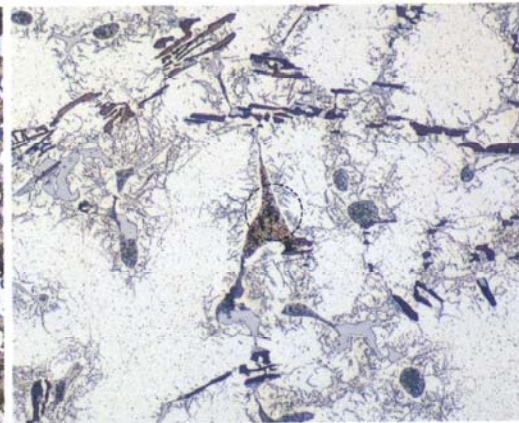
The measuring area can be changed by the touch of a button. Integrated metering covers 30% of a 35mm film, spot metering 1%. Integrated metering is suitable for uniform specimen distribution, whereas spot metering is indicated for scattered specimens with uneven distribution.

## Exposure Adjustment to Match Specimen Characteristics is Possible

Both wide-ranging and fine-tuned compensation is possible, covering the spectrum from brightfield and darkfield to polarized light.

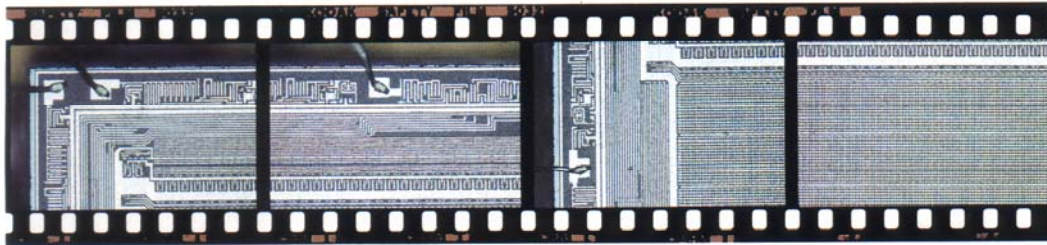


Average metering



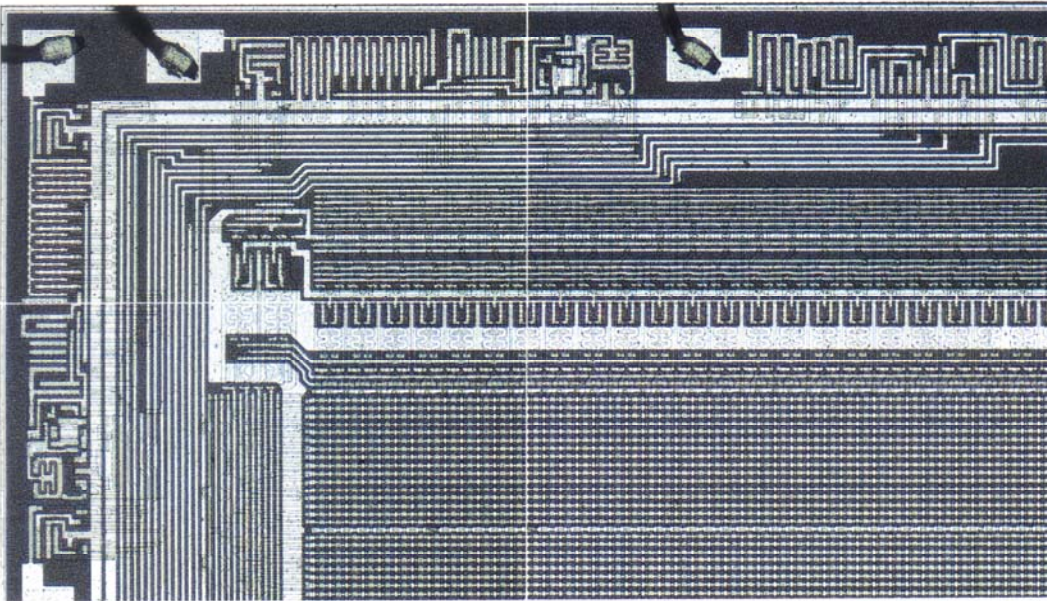
Spot metering



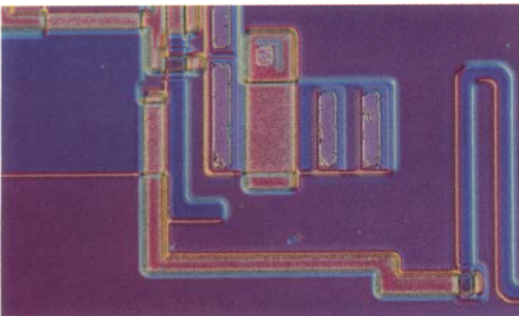


### Use of the AE (Automatic-exposure) Lock

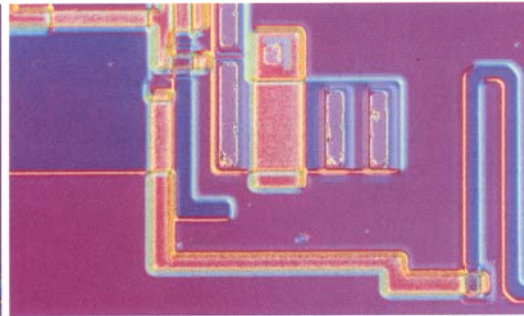
Exposure time can be stored by pressing the AE lock button. This feature is particularly useful for panorama photography. If during 1% spot metering you want to compose a picture with the specimen out of the measuring area, i.e. the center of the frame, you can freely do so by using the AE lock after metering.



Panorama photography



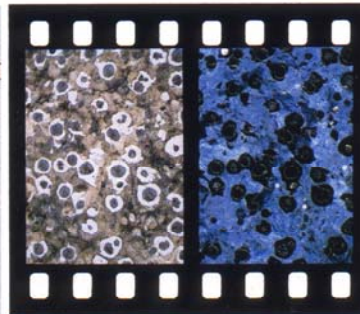
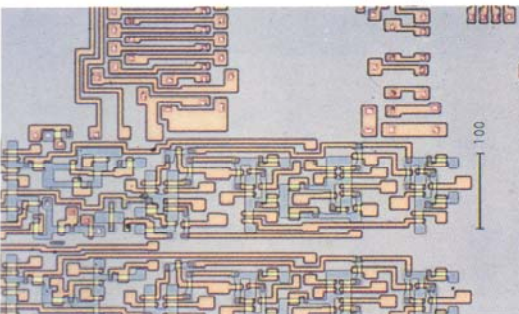
Reciprocity law failure



Reciprocity law failure, compensated

### Storing of Film Characteristics for Reciprocity Law Failure

The built-in microcomputer stores eight different kinds of basic film characteristics. When setting the characteristics of the film, compensation for long exposure is made automatically.



### Scales can be Superimposed on the Specimen Image

Five different types of scales matching the different objective magnifications are available.

### Half-frame Photography

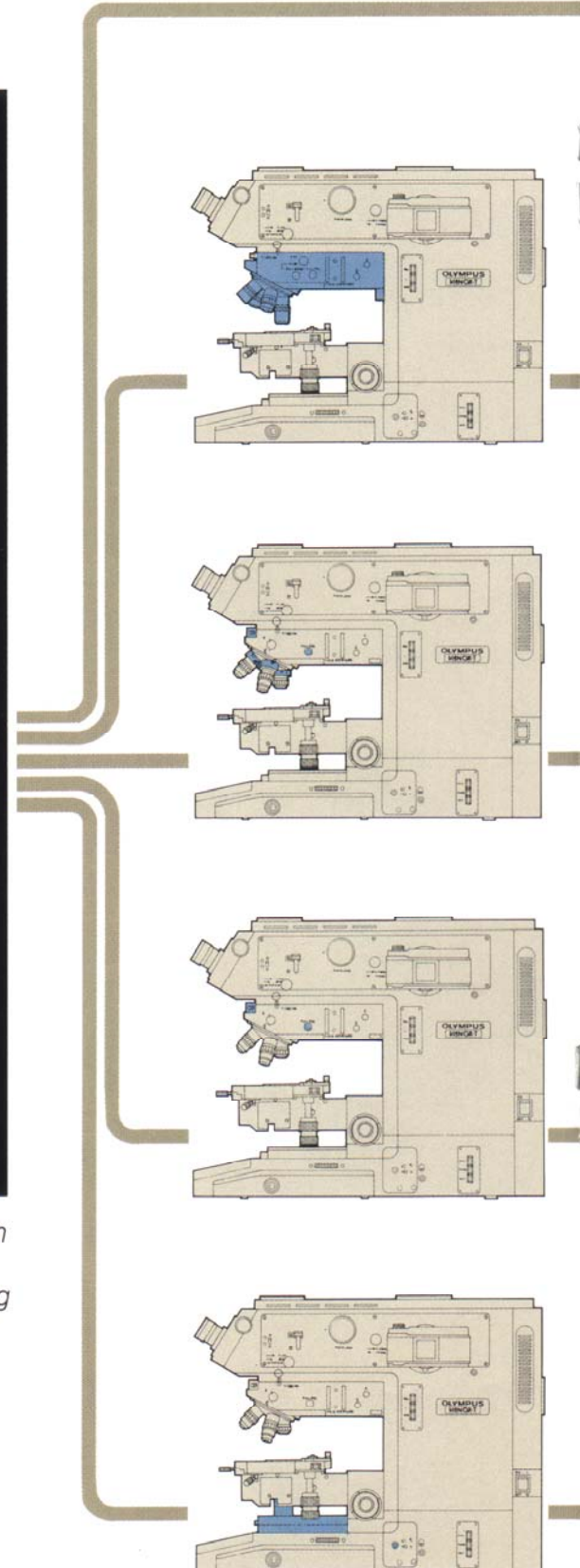
By using the slider AH2-SLH for half-frame photography, two half-frame photographs can be put on the same frame. This feature simplifies comparative examination of specimens.



# The NEW VANOX can be Adapted to a Host of Observations by Adding Simple Attachments

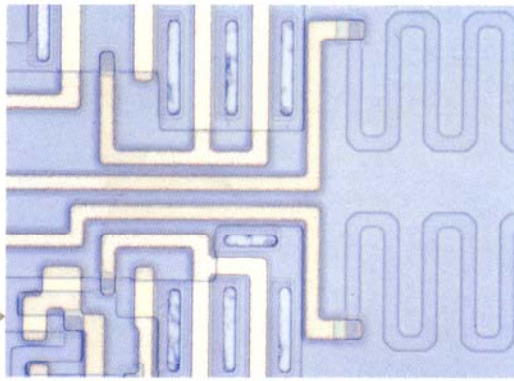


With its modular design the NEW VANOX provides for a host of observation methods, such as brightfield, darkfield, Nomarski differential interference contrast, fluorescence and polarized light observations by simply changing attachments.



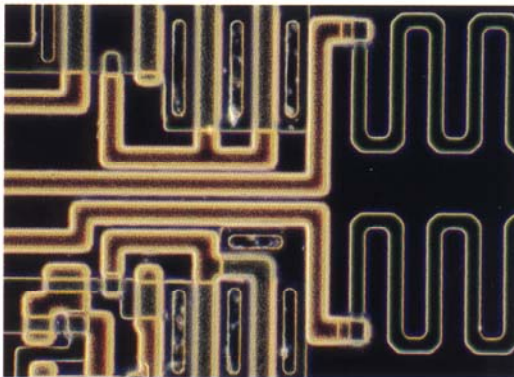
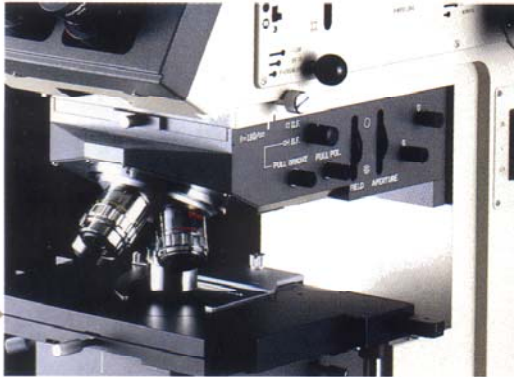


# ation Methods



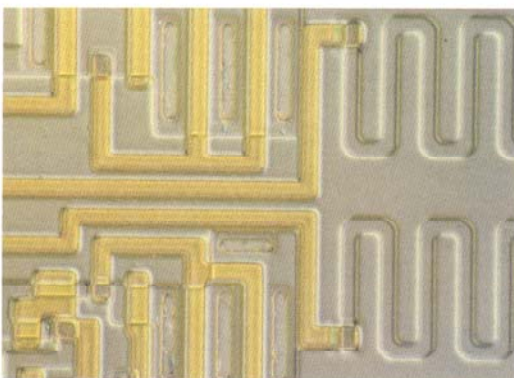
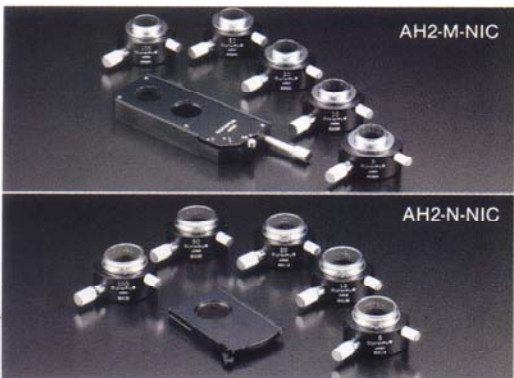
## Brightfield

This is the observation method most widely used with metallurgical microscopes.



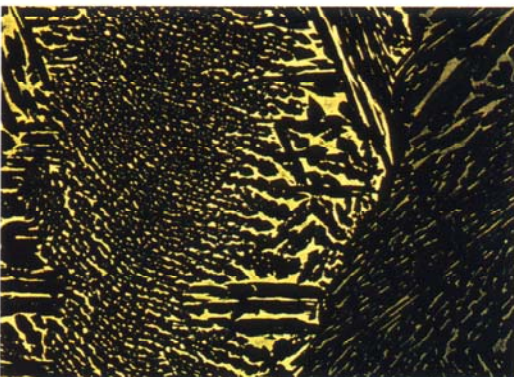
## Darkfield

A brightfield/darkfield vertical illuminator is used in conjunction with Neo S Plan objectives, serving as a powerful tool for detecting minute scratches and surface irregularities.



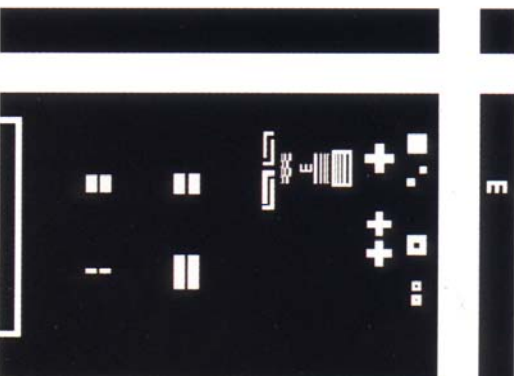
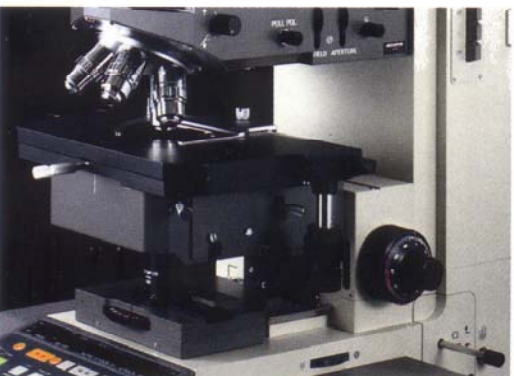
## Nomarski Differential Interference Contrast

Outfits for both brightfield and brightfield/darkfield vertical illuminators are available, allowing observation of relief-like images in interference colors. This contrast enhancement method is ideally suited for the observation and detection of minute scratches, stacking faults, crystal twinning and other surface irregularities.



## Polarized Light

Polarized light observation is carried out by simply attaching an analyzer. With the AH2-AN45 analyzer for brightfield illuminator, various types of compensators can be used for detection of weakly birefringent substances.

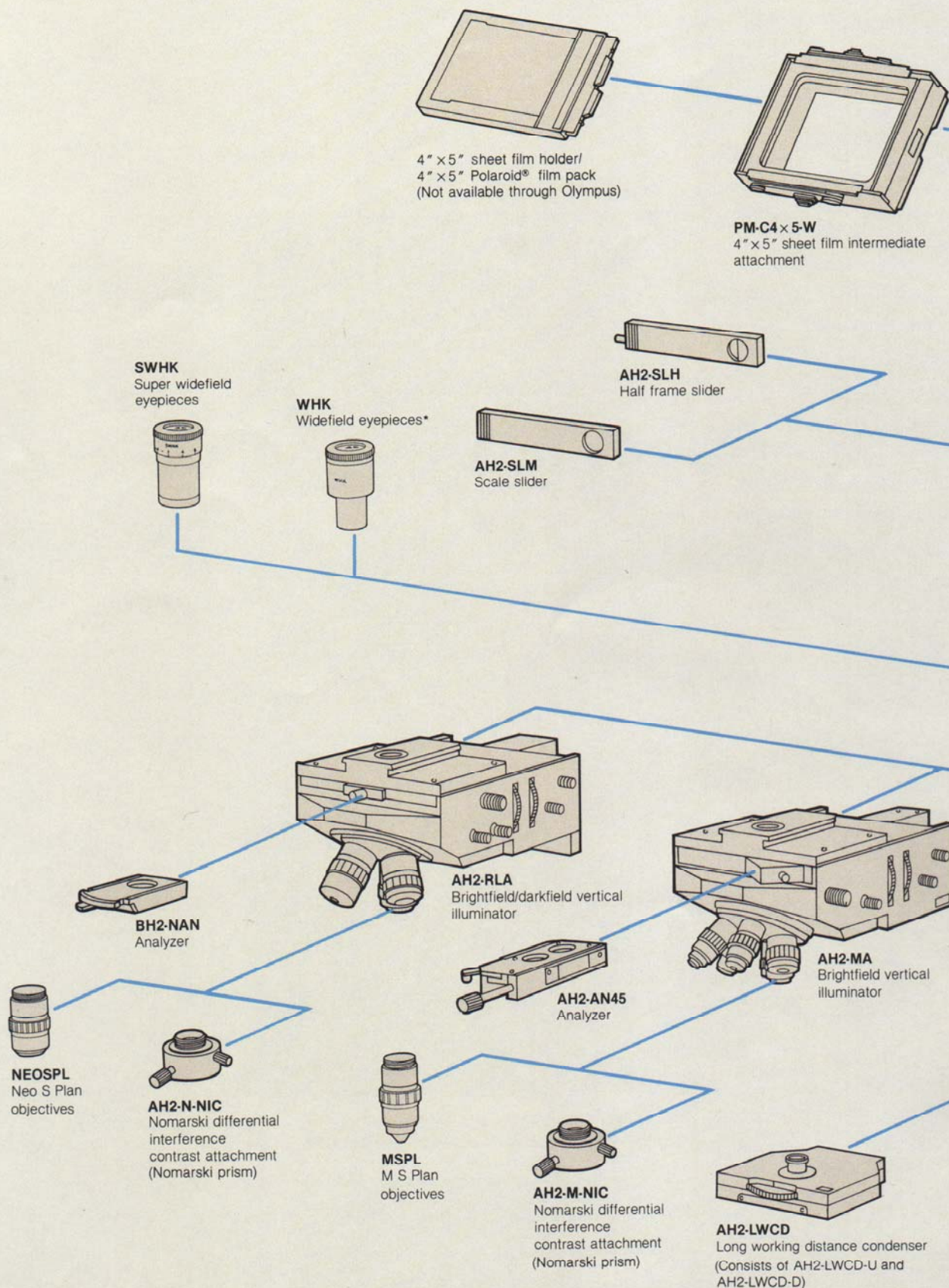


## Transmitted Light

An attachment for transmitted light observation is available. Switch-over between transmitted light and reflected light illumination is by one-touch operation.

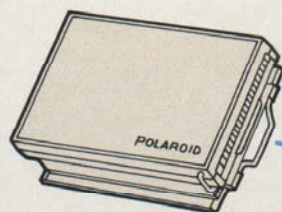


# AHMT System Diagram

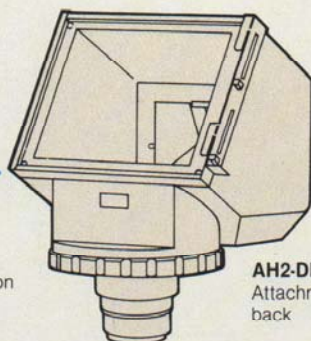


\*AA7496 adapters for widefield eyepieces are supplied with the microscope stand.





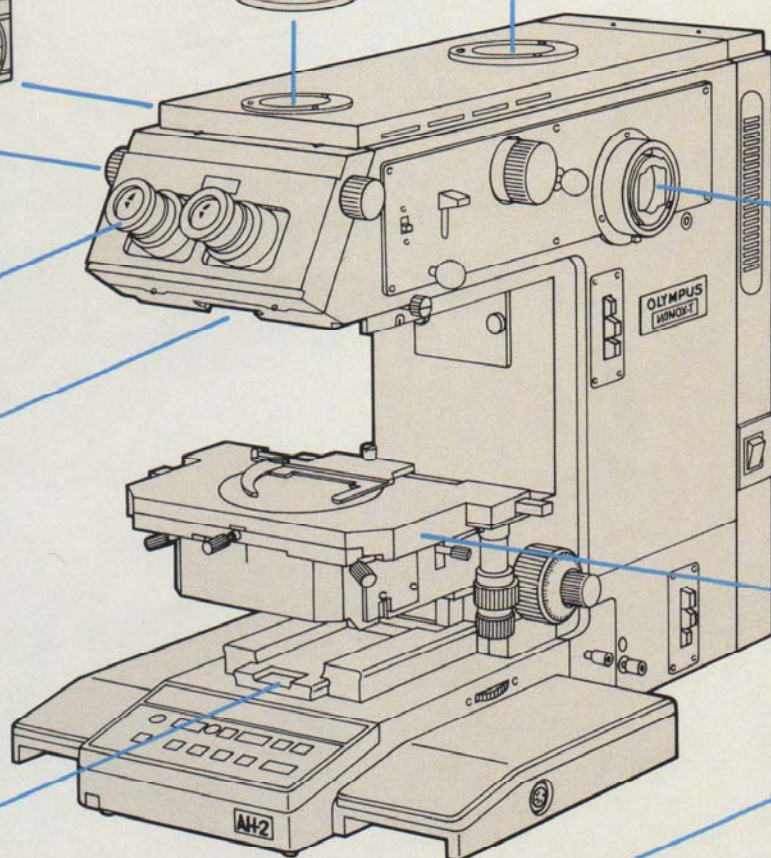
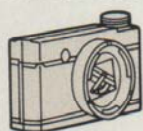
**PM-CP-W**  
3 1/4 x 4 1/4 Polaroid® camera back



**AH2-DL**  
Attachment for large format camera back

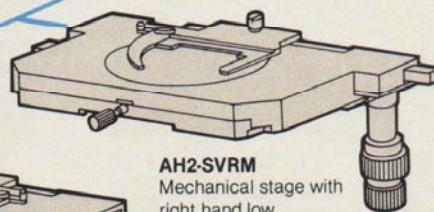
**AH2-ADF**  
Adapter for TV camera, projection screen and photomicrographic equipment

**PM-C35AD**  
35mm camera back

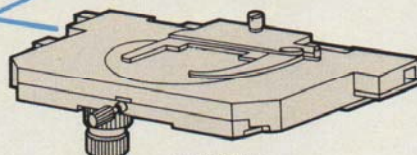


**PM-C35AD**  
35mm camera back

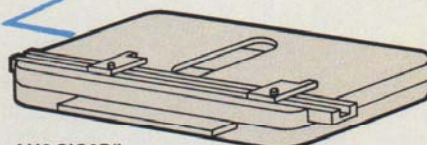
**AHMT-F**  
Microscope stand



**AH2-SVRM**  
Mechanical stage with right hand low drive control



**AH2-SVLM**  
Mechanical stage with left hand low drive control



**AH2-SIC6R/L**  
6" x 6" scanning mechanical stage with right or left hand control



**AH2-WHR**  
Wafer holder



**AH2-MH4/5/6**  
4" x 5" x 6" Mask holders



# Accessories

## Large, Six-by-six-inch Mechanical Stage AH2-SIC6

A large mechanical stage can accommodate both wafer holders and mask holders, a useful feature when examining large-size specimens such as IC wafers and photo masks. The stroke in the direction of both the X and Y axes is 150mm.

## Wafer Holder AH2-SIC-WH

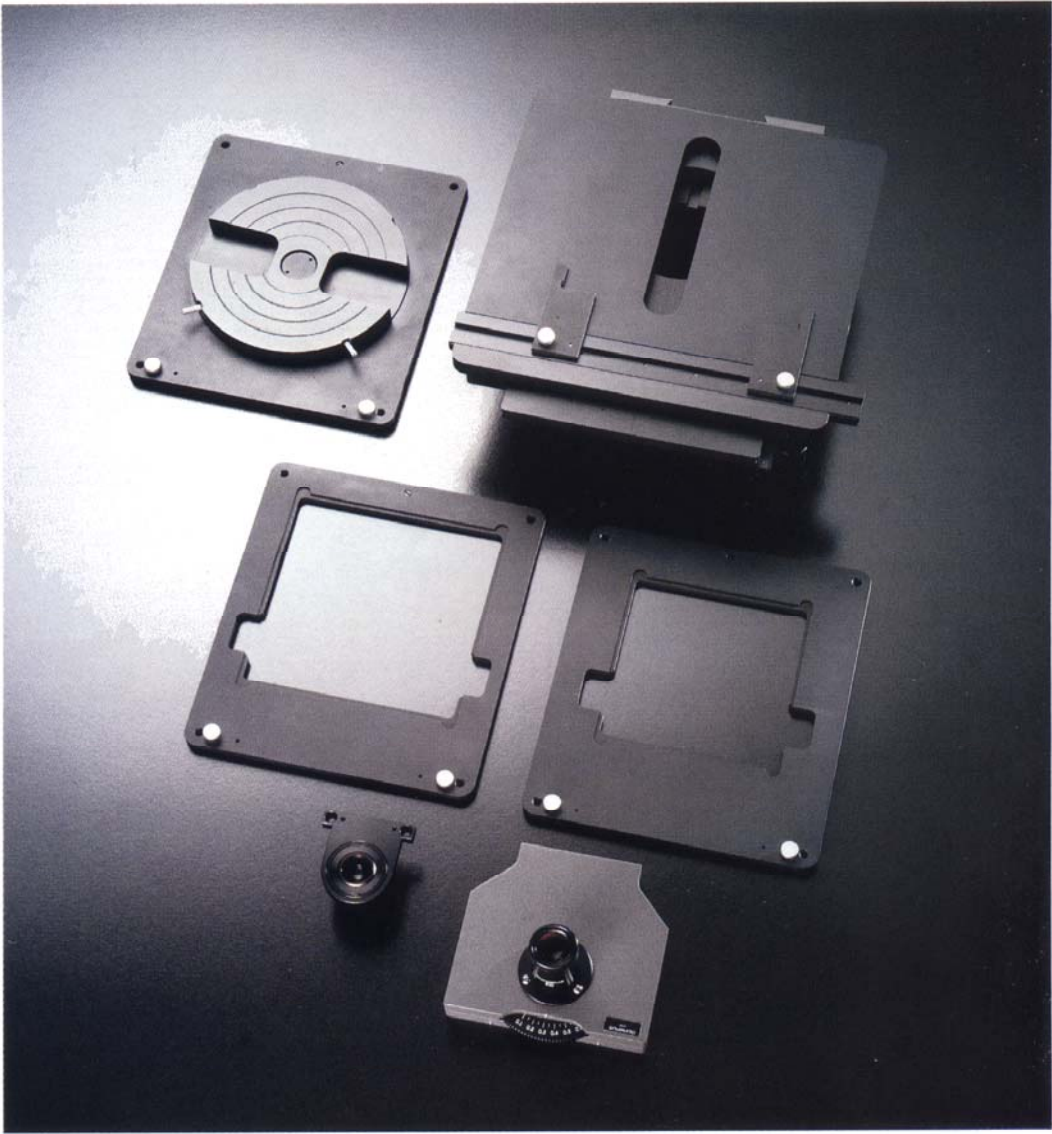
This holder can accommodate 3", 4", and 5" wafers.

## Mask Holders AH2-SIC-MH4/MH5/MH6

These mask holders are suitable for 4", 5" and 6" photo masks, respectively.

## Long Working-distance Condenser AH2-LWCD

A condenser for transmitted-light illumination (N.A. 0.6, W.D. 14.00mm)



## Nomarski Differential Interference Contrast Attachments

These attachments consist of two types: one for use with brightfield vertical illuminator and MS Plan objectives, the other for use with brightfield/darkfield vertical illuminator and Neo S Plan objectives.

AH2-M-NIC AH2-N-NIC Standard Outfits

Module		AH2-M-NIC			AH2-N-NIC		
		1	2	4	1	2	4
Nomarski Prism	AH2-NIC5-M, AH2-NIC10-M, AH2-NIC20-M, AH2-NIC50-M, AH2-NIC100-M	○	○	○			
Nomarski Prism	AH2-NIC5-N, AH2-NIC10-N, AH2-NIC20-N, AH2-NIC50-N, AH2-NIC100-N				○	○	○
M S Plan Objectives	MSPL 5X, 10X, 20X, 50X, 100X	○	○				
Nec S Plan Objectives	NEOSPL 5X, 10X, 20X, 50X, 100X				○	○	
Analyzer	AH2-AN45	○					
Analyzer	BH2-NAN				○		
Mounting tool	AA7213	○	○	○	○	○	○





M S Plan

#### M S Plan Objectives

Magnification	N.A.	W.D.(mm)
M S Plan 1.5X	0.04	2.00
M S Plan 2.5X	0.07	5.00
M S Plan 5X	0.13	21.10
M S Plan 10X	0.30	9.00
M S Plan 20X	0.46	3.00
M S Plan 50X	0.80	0.47
M S Plan 100X Dry	0.95	0.30
M S Plan Apo 50X	0.95	0.46



Neo S Plan

#### Neo S Plan Objectives

Magnification	N.A.	W.D.(mm)
Neo S Plan 5X	0.13	11.00
Neo S Plan 10X	0.30	6.50
Neo S Plan 20X	0.46	3.00
Neo S Plan 50X	0.80	0.50
Neo S Plan 100X Dry	0.90	0.30



LWD M S Plan



ULWD M S Plan



LWD Neo S Plan

#### LWD M S Plan Objectives

Magnification	N.A.	W.D.(mm)
LWD M S Plan 20X	0.40	7.00
LWD M S Plan 50X	0.60	3.00

#### ULWD M S Plan Objectives

Magnification	N.A.	W.D.(mm)
ULWD M S Plan 20X	0.40	11.00
ULWD M S Plan 50X	0.55	8.00

#### LWD Neo S Plan Objective

Magnification	N.A.	W.D.(mm)
LWD Neo S Plan 50X	0.60	3.00



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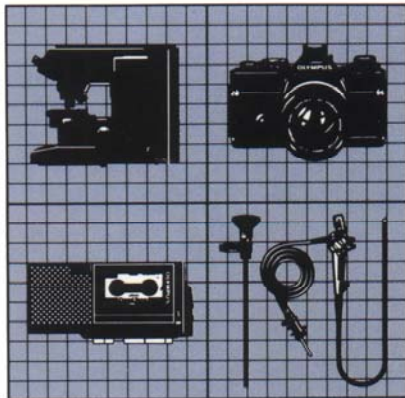
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