OLYMPUS®

VANOX

Universal Research Microscope


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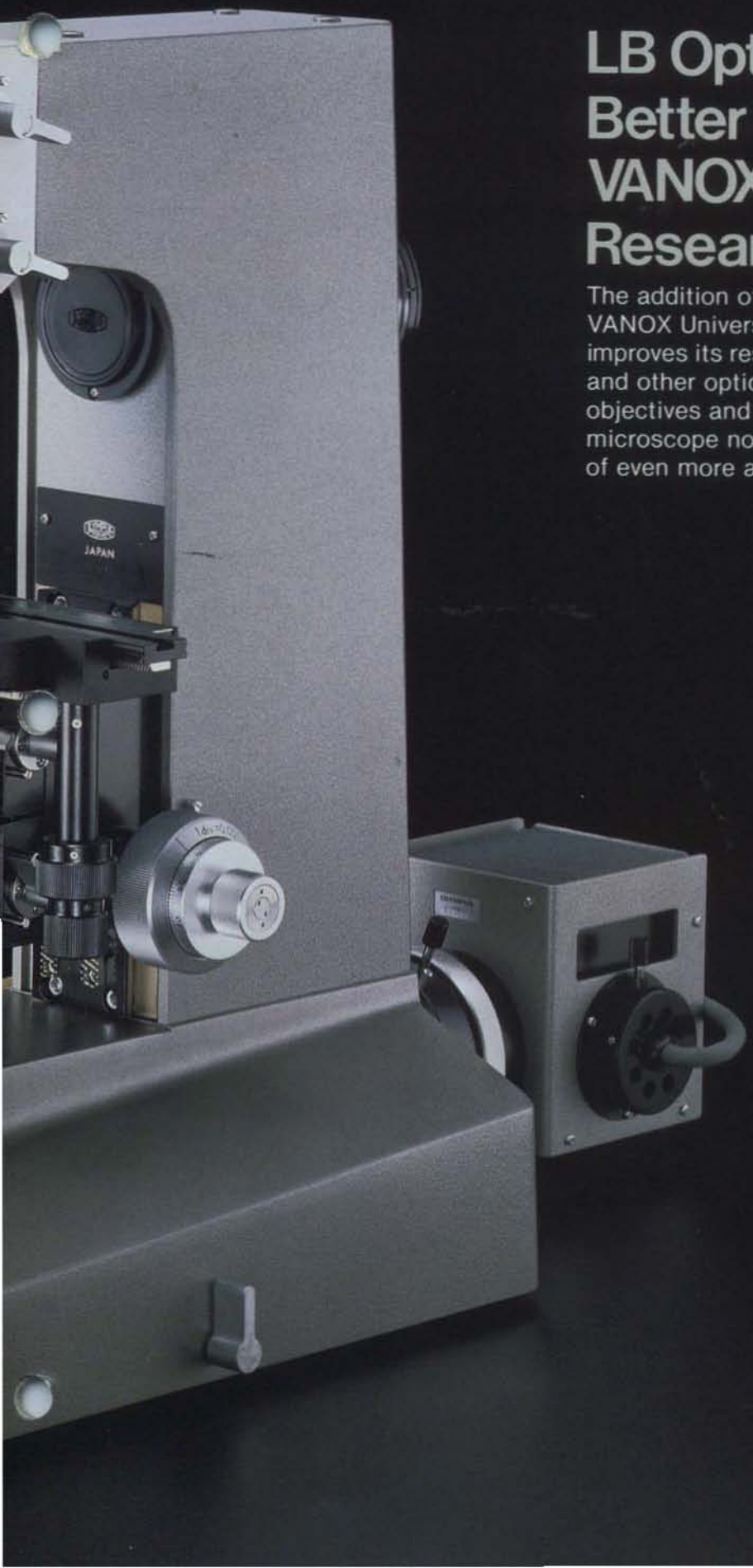


LB Optics Result in Better Performance – VANOX Universal Research Microscope

The addition of the LB series of objectives to the VANOX Universal Research Microscope further improves its resolving power, contrast, field flatness and other optical performance factors. With LB objectives and its traditional versatility, the VANOX microscope now meets the stringent requirements of even more advanced research work.

A Full Lineup of High Performance and Newly Formulated LB Objectives

Available in four series—S Plan Apochromat, S Plan Achromat, D Plan Achromat and D Achromat—the new Olympus LB objectives make it possible to select just the right objective combinations dictated by requirement and budget.

S Plan Apochromats are high-quality objectives, fully chromatically corrected, with high resolving power and high contrast and which feature a particularly large numerical aperture. They also have superior field flatness and may be used in super widefield microscopy. This series of objectives is ideal for top level research work.

The S Plan Achromat series of objectives offers great versatility as well as high performance. In addition to normal microscopy, these objectives are well suited to super widefield and differential interference contrast microscopy. The ideal objectives for various types of microscopy, the S Plan Achromat series makes for highly efficient research work.

The D Plan Achromat series does not feature the super widefield and differential interference contrast observation capabilities of the S Plan Achromat series and this makes it possible to offer them as low cost objectives which still retain excellent field flatness in normal observation (FN 20). Ideal for general research work or for photomicrography.

There is also the D Achromat series in which the emphasis has been placed squarely on economy.

S Plan Apochromat Objectives

S Plan Achromat Objectives

D Plan Achromat and D Achromat Objectives

No Cover Objectives

Features of LB Objectives

High Resolving Power

To improve the resolving power of an objective, the numerical aperture must be increased. On average, the numerical aperture in the upper range of the Olympus LB series of objectives is some 20% higher than before.

Excellent Contrast

High resolving power counts for nothing if contrast is poor. Multilayer lens coating and other design features of the Olympus LB series of objectives increase contrast considerably and yield even sharper and brighter images.

Superior Field Flatness

The Olympus LB Plan series objectives boast superior field flatness, resulting in a 100% effective field, for observation or photography. Field flatness is particularly outstanding in the S Plan Apochromat and S Plan Achromat series wich give a consistently sharp image from edge to edge, even in super widefield observation.

Extended Working Distance

In the LB series of objectives, Olympus has increased the working distance as much as possible to prevent oil from oil-immersion objectives fouling other objectives, and to facilitate the marking and manipulation of specimens.

Parfocality with Ultra-low Magnification Objectives

By designing the LB objective series with a 45mm parfocal distance, Olympus has realized parfocality with ultra-low magnification objectives and other objectives. Easier to use and no more troublesome refocusing!

Increased Field of View

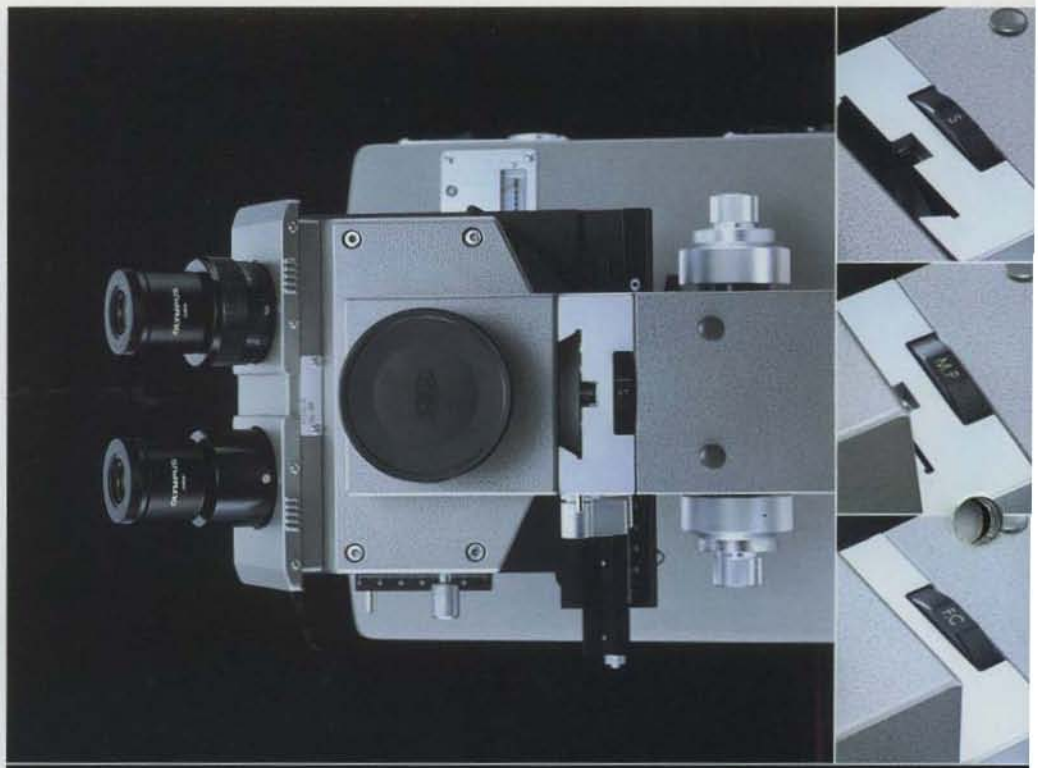
The standard WHK 10X eyepiece, which is corrected so that it matches the LB objective series perfectly, has a field number of 20—an increase of 23% compared with conventional eyepieces. Moreover, the high eyepoint design of the eyepiece eliminates the need to remove spectacles when observing, providing even greater ease of operation.

Features of the VANOX Microscope

Observation Tube Height Adjustable
The three-position selector turret makes it possible to adjust the height of the observation tubes for different microscopy methods, including fluorescence, phase contrast, polarized light and Nomarski DIC.

S: standard, biological microscopy
MP: metallurgical, polarizing and reflected light fluorescence
FC: transmitted light fluorescence and Nomarski DIC microscopy; for use with intermediate magnification changer

Focusing
Coaxial coarse and fine focus knobs. Coarse focus range, when set for standard biological observation, is up to 26.5mm while the fine focus range is 2.3mm, with 0.001mm divisions. A coarse focus stop means fast refocusing, even after adjusting the stage height and prevents accidental contact between objective and specimen.



Observation Tube
The AH-BI binocular obervation tube with photo tube is supplied as standard. Constant tube length adjustment means there is no loss of focus when the interpupillary distance is altered. With a suitable framing eyepiece it is thus possible to use the binocular eyepiece tubes to focus when photographing or framing. A three-way optical path selector makes it possible to select 100% of the light for observation, 80% for observation and 20% for photography, or 100% for photography.

Revolving Nosepiece
The revolving nosepiece has openings for five objectives and is tilted away from the observer. Optionally available is a sextuple revolving nosepiece.

Stage
The 170mm × 172mm stage rotates through 300 degrees and has a cross travel motion of 76mm × 52mm by means of the low positioned vertical coaxial specimen control knobs. The stage design allows the stage insert to be changed for different methods of microscopy, and inserts for biological, metallurgical and fluorescence microscopy are available.

Condensers
A NA 1.40 achromatic/aplanatic condenser is standard on the VANOX model and in conjunction with the reversible auxiliary lens provides ideal illumination from magnifications from 4X to 100X. Achromatic/aplanatic condensers are fitted with a slider for oblique illumination. A swing-out condenser is available for ultra-low magnification objectives.

Light Source
A 12V 100W halogen bulb provides all the illumination needed for any microscopic method. It also serves as the light source for reflected light illumination.

Transformer
The transformer is built into the base and can be adjusted from 0 to 12 volts. Ideally suited to nearly every microscopic method.

Phase Contrast Attachment AH-PC-LB

Phase contrast is one of the most common microscopic methods employed in the study of live material, permitting the internal structure of transparent matter to be observed under different degrees of contrast.

- The VANOX phase contrast attachment comprises a phase contrast turret condenser, phase contrast objectives and the CT-5 focusing telescope.
- The phase contrast turret condenser has a NA 1.40 and is of the achromatic/aplanatic design, with a graduated aperture diaphragm. There are individually centerable annular diaphragms for 10X, 20X, 40X and 100X objectives and it also incorporates a darkfield stop (NA 0.9/1.40) and an empty aperture for brightfield observation.
- The CT-5 centering telescope makes it possible to center the objective phase rings and condenser annular diaphragms simply and accurately.
- The phase contrast objectives which make up the attachment are available in two series: PC S Plan Achromat and PC D Achromat, both of which are available in either positive or negative contrasts. Using the PC S Plan series in conjunction with the super widefield attachment makes super widefield phase contrast microscopy possible.

Standard Outfits

	Module	AH-PC-LB							
		PA-1	PA-2	PB-1	PB-2	PB-3	PB-4	PB-5	PB-6
Phase Contrast Turret Condenser*	AH-PC-LB	○	○	○	○	○	○	○	○
Centering Telescope	CT-5	○	○	○	○	○	○	○	○
PC S Plan Achromat Objective Set	10X, 20X, 40X, 100X (oil), PL	○		○					
	10X, 20X, 40X, 100X (oil), NH	○			○				
PC D Achromat Objective Set	10X, 20X, 40X, 100X (oil), PL		○			○			
	10X, 20X, 40X, 100X (oil), PLL		○				○		
	10X, 20X, 40X, 100X (oil), NH		○					○	
	10X, 20X, 40X, 100X (oil), NM		○						○

IF550 interference filter included

Contrasts
PL = POSITIVE LOW *NH = NEGATIVE HIGH*
PLL = POSITIVE LOW-LOW *NM = NEGATIVE MEDIUM*

Differential Interference Contrast Attachment after Nomarski AH-NIC-LB

Differential interference contrast (DIC) microscopy makes it possible to observe unstained specimens and live cells under a variety of interference colors giving a relief-like image which is very sharp and clear. This method of microscopy has wide medical and biological applications such as in distinguishing spindle threads in the cell division process, bone membrane and nerve tissues.

- The VANOX differential interference contrast attachment comprises an intermediate attachment, a turret condenser, a centering telescope and phase contrast objectives.
- The DIC turret condenser has a NA 1.40 and is an achromat/aplanat with a graduated aperture diaphragm. It features Nomarski prisms for 10X, 20X, 40X and 100X objectives, annular diaphragms for 10X and 40X phase contrast objectives and an empty aperture for brightfield microscopy.
- Because standard S Plan Achromat objectives can be used with the DIC attachment, it is not necessary to purchase special DIC objectives. In addition, super widefield differential interference contrast microscopy is possible by using the DIC attachment in conjunction with the super widefield attachment.
- Merits of using differential interference in conjunction with phase contrast:
  1. *If focusing and positioning of the specimen is difficult in differential interference contrast, phase contrast helps.*
  2. *It is easy to compare the results obtained by the two methods without having to change the condenser.*

Standard Outfits

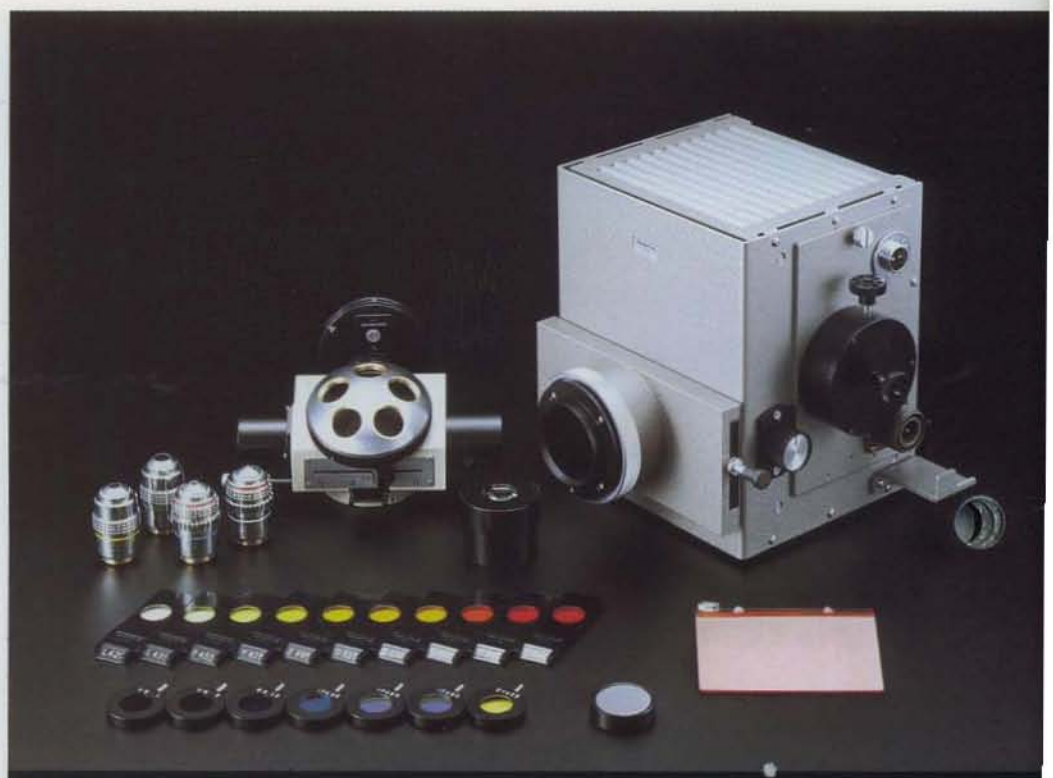
	Module	AH-NIC-LB
DIC Intermediate Attachment	BH2-NA	○
DIC Condenser*	AH-NC2	○
Phase Contrast Objective	PCSPL10XPL	○
	PCSPL40XPL	○
Centering Telescope	CT-5	○

* [illegible] interference filter included.

Reflected Light Fluorescence Attachment AH-RFL-LB

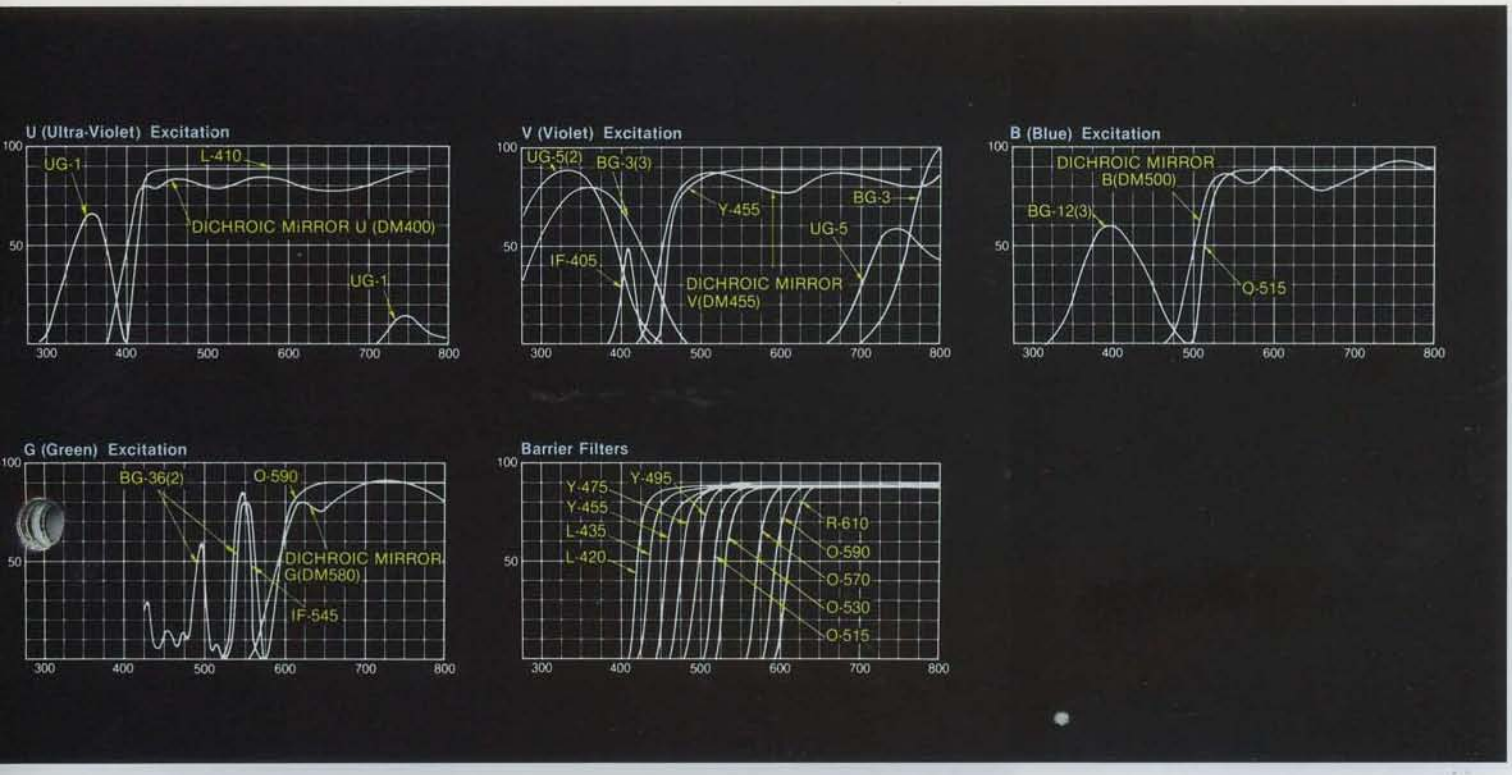
In reflected light fluorescence microscopy, the objective serves as its own condenser and this results in the following advantages not available with transmitted fluorescence microscopy: first, exciting light strikes only the field of observation, thus preventing fading a large area of the fluorescent specimen; second, a very bright and sharp fluorescence image is obtained because the numerical aperture of the objective lens may be used to its fullest advantage.

- The reflected light fluorescence illuminator features a quintuple revolving nosepiece, field diaphragm, aperture diaphragm, exciting filter turret, dichroic mirrors and matching barrier filters.
- The exciting filter turret incorporates four exciting filters for the U, V, B and G ranges, and four matching dichroic mirrors and barrier filters.
- With U and V excitation, UVFL non-fluorescing objectives are recommended. These are available in magnifications of 10X, 20X, 40X, 40X (oil) and 100X (oil). The UVFL series of objectives are semi-apochromats, corrected for greater sharpness while the higher than normal numerical apertures contribute both to greater sharpness and increased brightness of the fluorescent images.



Standard Outfits

	Module	AH-RFL-LB
Fluorescence Illuminator	AH-RFL-B-LB	○
Fluorescence Lamp Housing	AH-RFL-LH2	○
Power Supply	BHF-T-W	○
Power Cord	UYCP-R	○
Barrier Filter	20L-420-W	○
	20L-435-W	○
	20Y-455-W	○
	20Y-475-W	○
	20Y-495-W	○
	20O-515-W	○
	20O-530-W	○
	20O-570-W	○
	20O-590-W	○
	20R-610-W	○
Exciting Filter (2 pcs.)	20IF490-W32.5	○
Non-fluorescing Objective Set	UVFL10x, 20x, 40x, 100x	○



Carcino-embryonic antigens on the surface of GAC-3 stain the cells.

Transmitted Light Fluorescence Attachment AH-FL-2

Transmitted fluorescence microscopy is widely used in research and general work in the medical, biological, pharmacological and chemical fields.

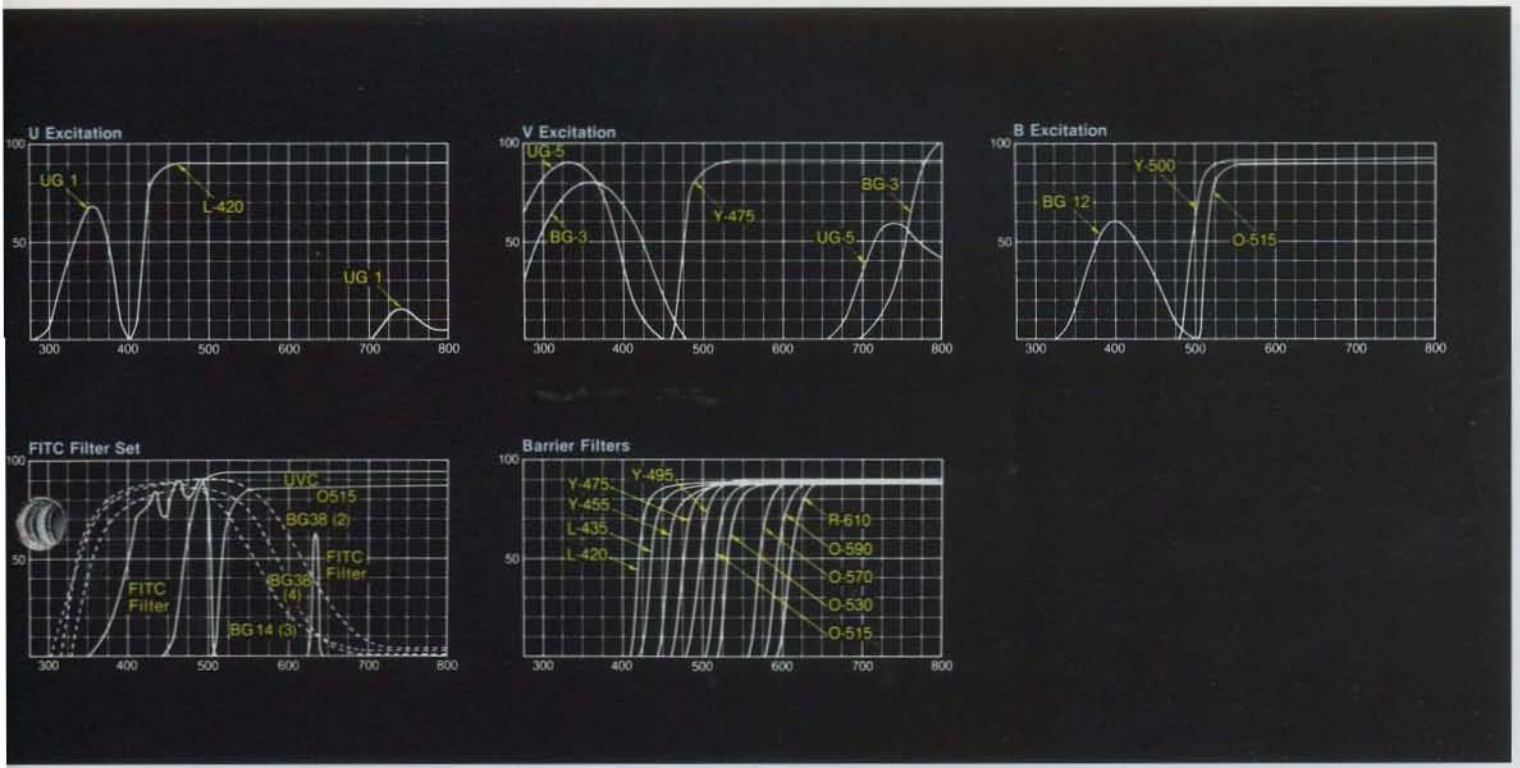
- The mirror housing features an optical path selector, making it possible to switch over from reflected light fluorescence to transmitted light fluorescence without having to change the light source.
- The light source is a DC super high-pressure mercury lamp which has a long life and provides stable, flicker-free excitation.
- Exciting and barrier filters are available for U, V and B wavelength excitation microscopy.

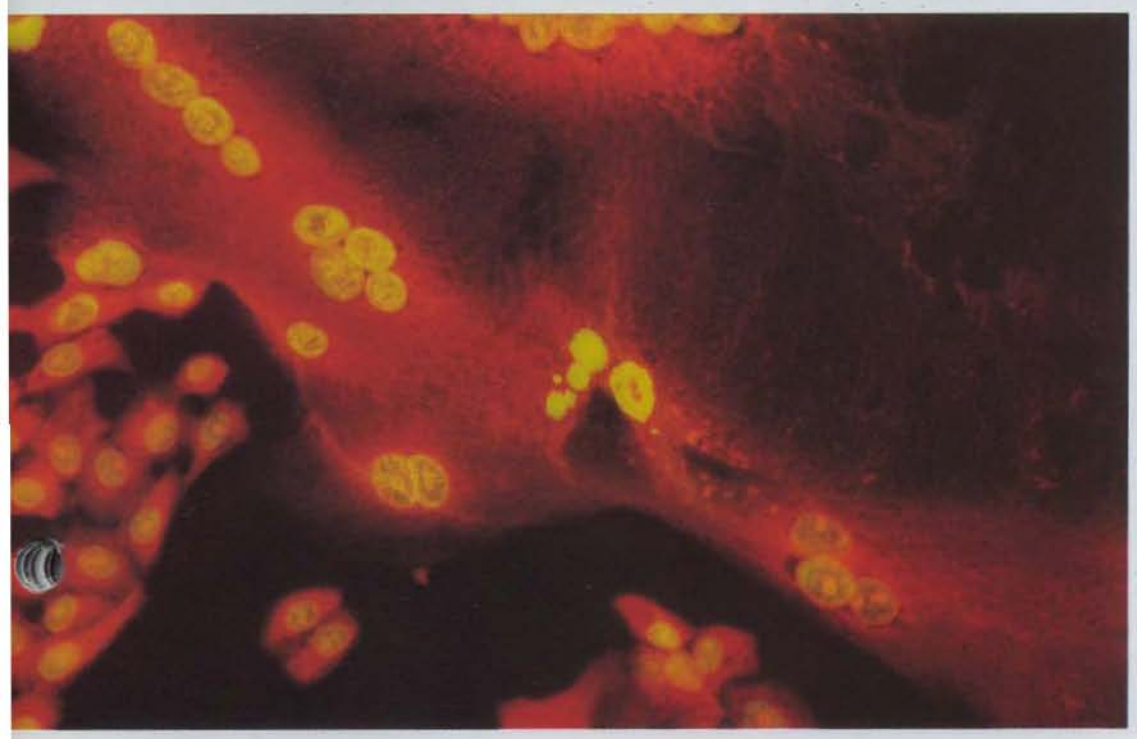
FITC Filter Set (Optional)

	Module	F-FITC	
		4	5
Barrier Filter Attachment	BH-FA	○	
Exciting Filter	40-FITC-W45	○	○
	43-BG14-3-W45	○	
	43-BG38-2-W45		○
	43-BG38-4-W45	○	
UV Cut-off Filter	43-UVC-W45		○
Barrier Filter	20-O515-W	○	

Standard Outfits

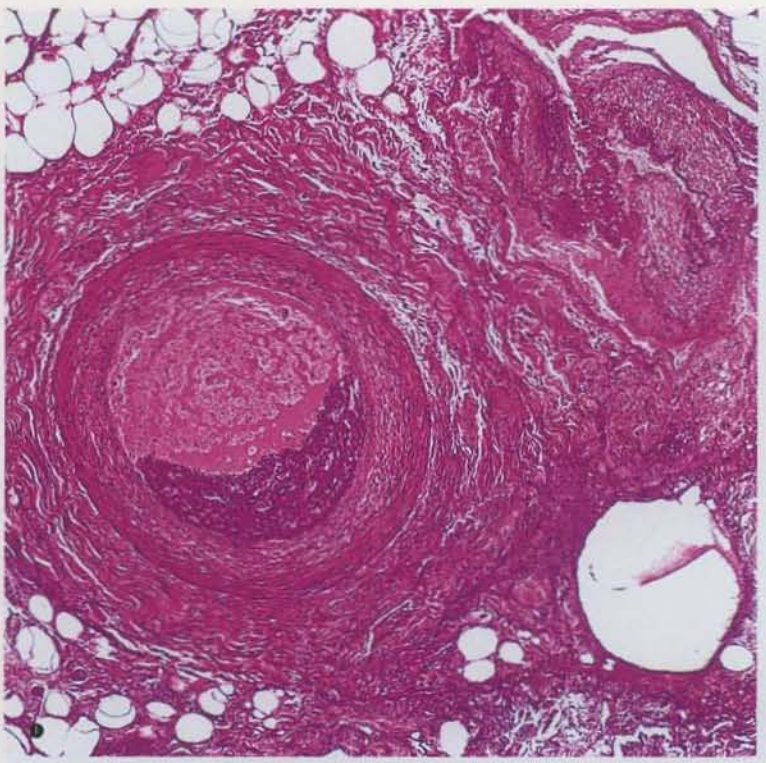
	Module	AH-FL-2
Fluorescence Illuminator	AH-FL-B2	○
Fluorescence Lamp Housing	AH-RFL-LH2	○
Barrier Filter Attachment	AH-FA	○
Darkfield Condenser	AH-DCW	○
Power Supply	BHF-T-W	○
Power Cord	UYCP-R	○
Exciting Filter	50-UG1	○
	50-BG12 (2 pcs.)	○
Green Filter	50-G533	○
Neutral Density Filter	50-ND25	○

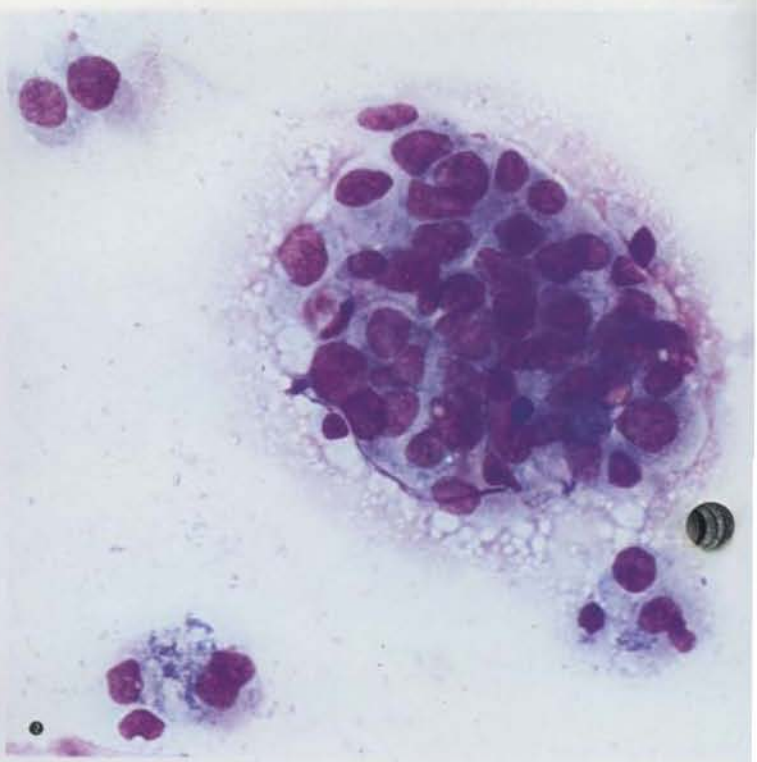


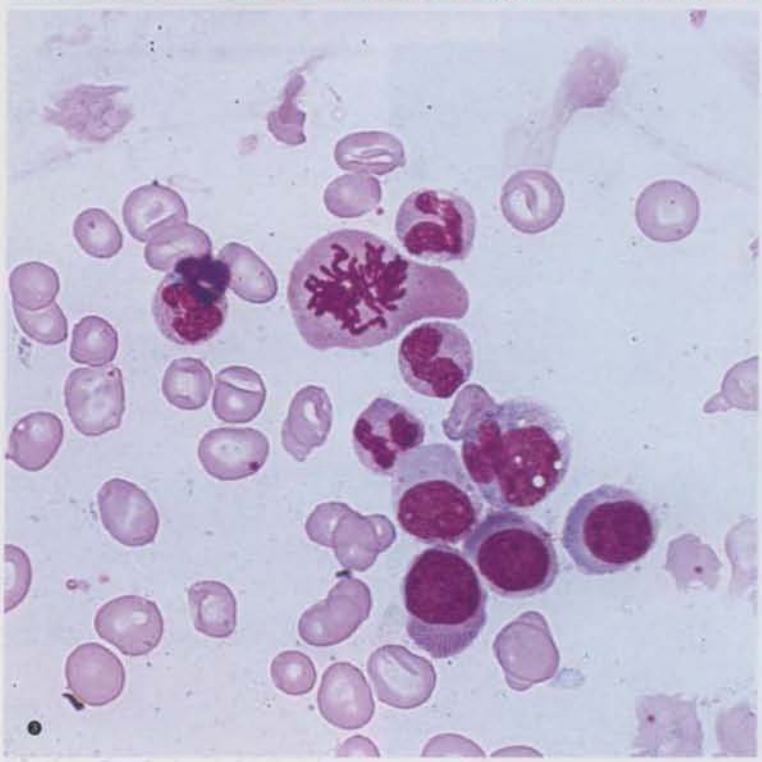


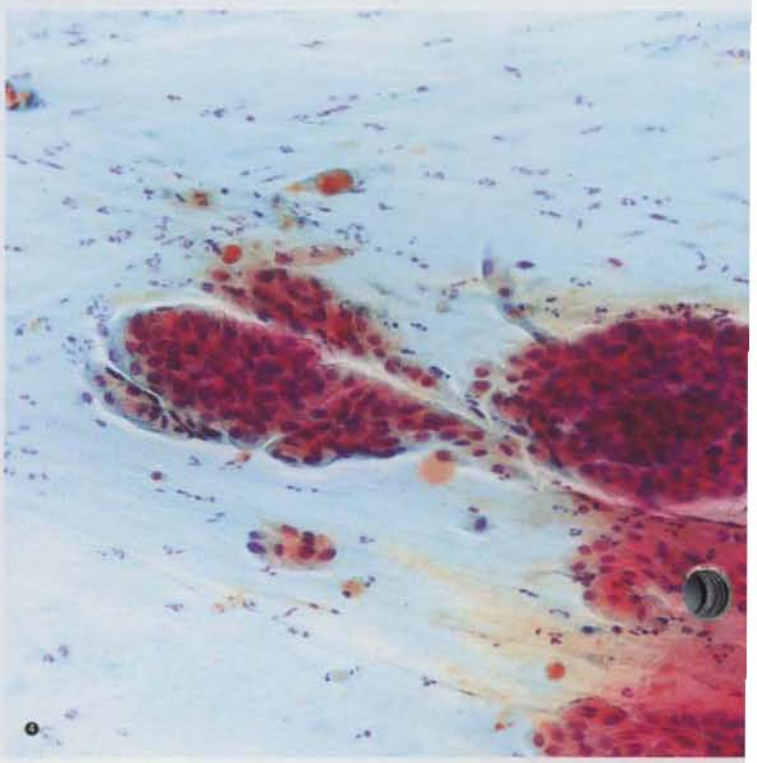
Vero cells infected with measles virus.

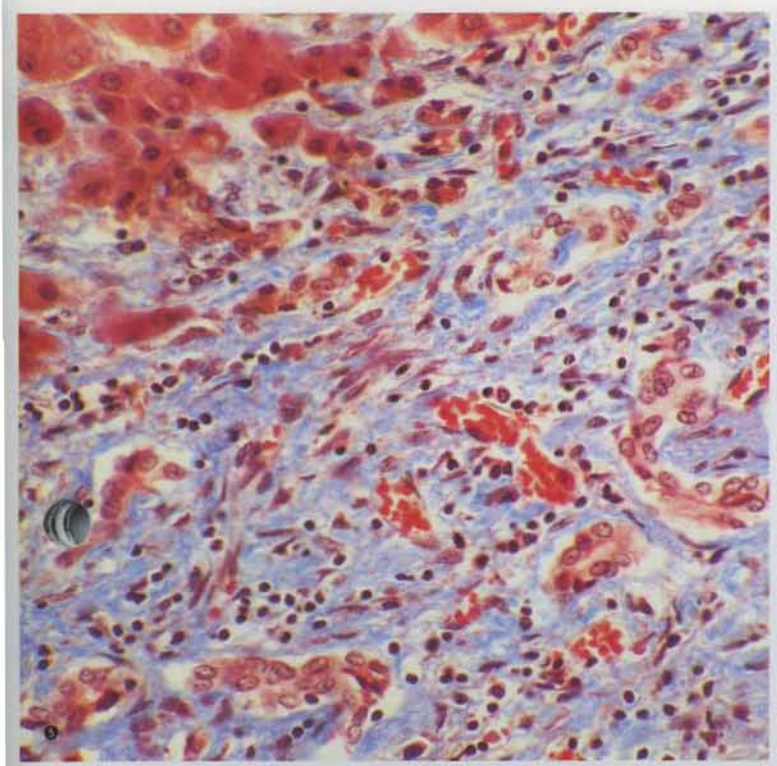
① *Thrombosis of the cystic artery (HE stain).*
S Plan 4X, NFK 3.3X.
② *Pancreatic carcinoma cells (Giemsa stain).*
S Plan 20X, NFK 3.3X.
③ *Megaloblastic anemia.*
S Plan 40X, NFK 3.3X.
④ *Cells of mammary carcinoma (Papanicolaou stain).*
S Plan 10X, NFK 3.3X.
⑤ *Hepatocirrhosis (Masson-Goldman stain).*
S Plan Apo 40X, NFK 2.5X.
⑥ *Adenocarcinoma in sputum.*
S Plan 40X, NFK 2.5X.
⑦ *Fetal lung fibroblasts (Nomarski).*
S Plan 10X, NFK 5.0X.
⑧ *Gastric mucosal carcinoma and biopsy of mucosal defect (HE stain).*
S Plan 2X, NFK 3.3X.

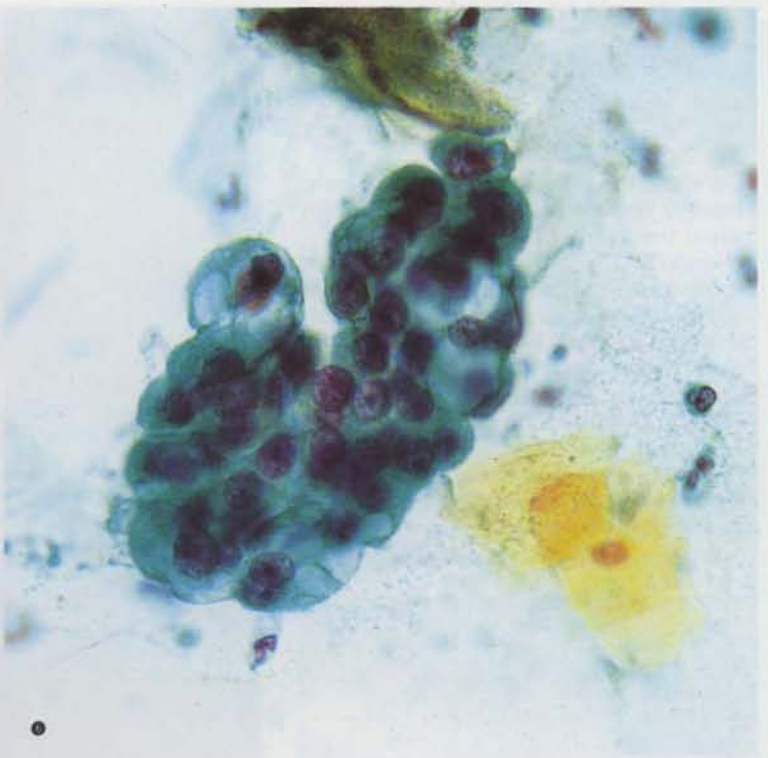


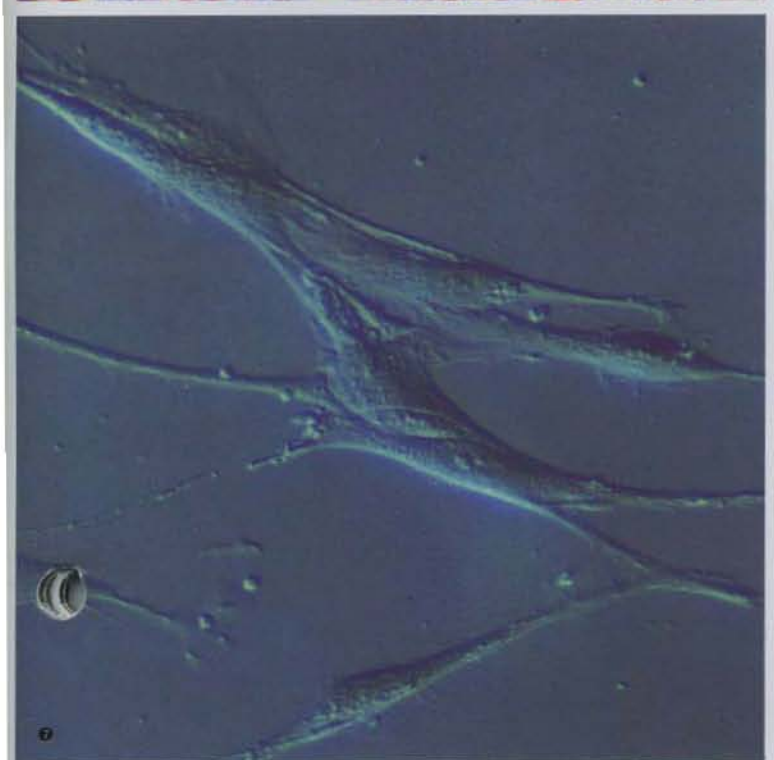


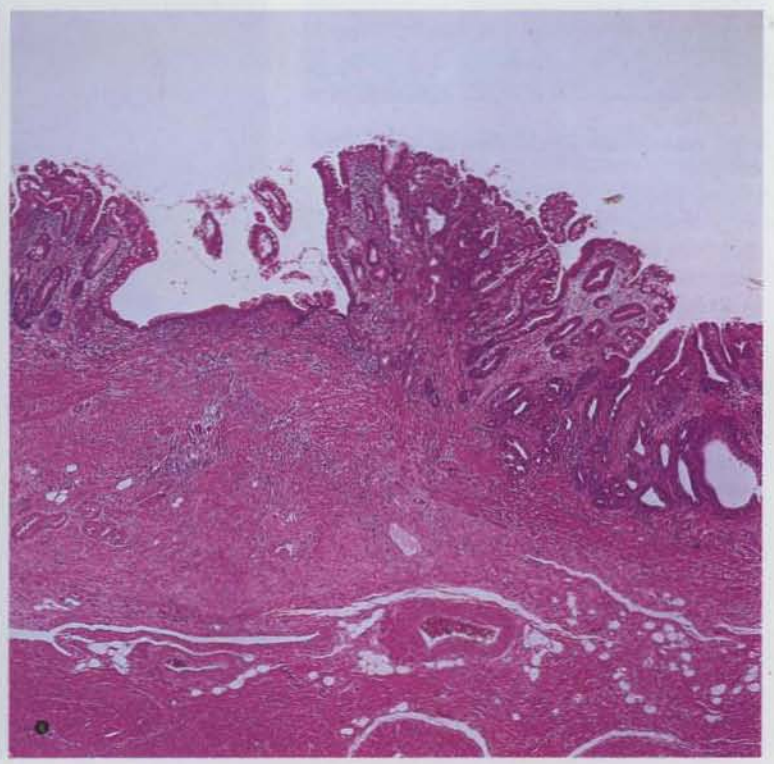












Other Attachments

Super Widefield Attachment AH-SW-LB

- The combination of the SWK 10X super widefield eyepiece and the AH-SW-TR super widefield trinocular tube gives a field nearly twice as wide as customary (FN 26.5).
- Constant tube length adjustment means there is no loss of focus and parfocality when the interpupillary distance is changed.
- A three-way optical path selector makes it possible to switch between 100% of the light for photography, 100% for observation, or 80% for photography and 20% for observation.
- Either S Plan Apochromat or S Plan Achromat objectives may be used with the attachment and in conjuntion with the super widefield condenser, which is standard, magnifications of 4X to 100X are possible in super widefield.

Standard Outfits

	Module	AH-SW-LB
Super Widefield Trinocular Tube	AH-SWTR	○
Super Widefield Condenser	AH-SWC	○
Super Widefield Eyepiece (2 pcs.)	SWK 10x	○

High Resolution Projection Screen AH-SPS

- Glare has been eliminated from this high resolving power screen which permits observation over long periods without eye-strain.
- The screen has an effective diameter of 155mm;
  screen magnification = objective power × NFK eyepiece power × 3

Projection Screen AH-MPS

- With the AH-MPS projection screen the emphasis is placed on economy. It has the same screen diameter and screen magnification as the AH-SPS.

Intermediate Attachment Magnification Changer BH2-CA
- Makes it possible to alter the total magnification of the system in three steps—1X, 1.25X and 1.5X—without having to change eyepiece or objective.

Dry Darkfield Condenser AH-DCD
- This dry type darkfield condenser has a NA of 0.8 to 0.92 and is suitable for objectives from 10X to 40X.

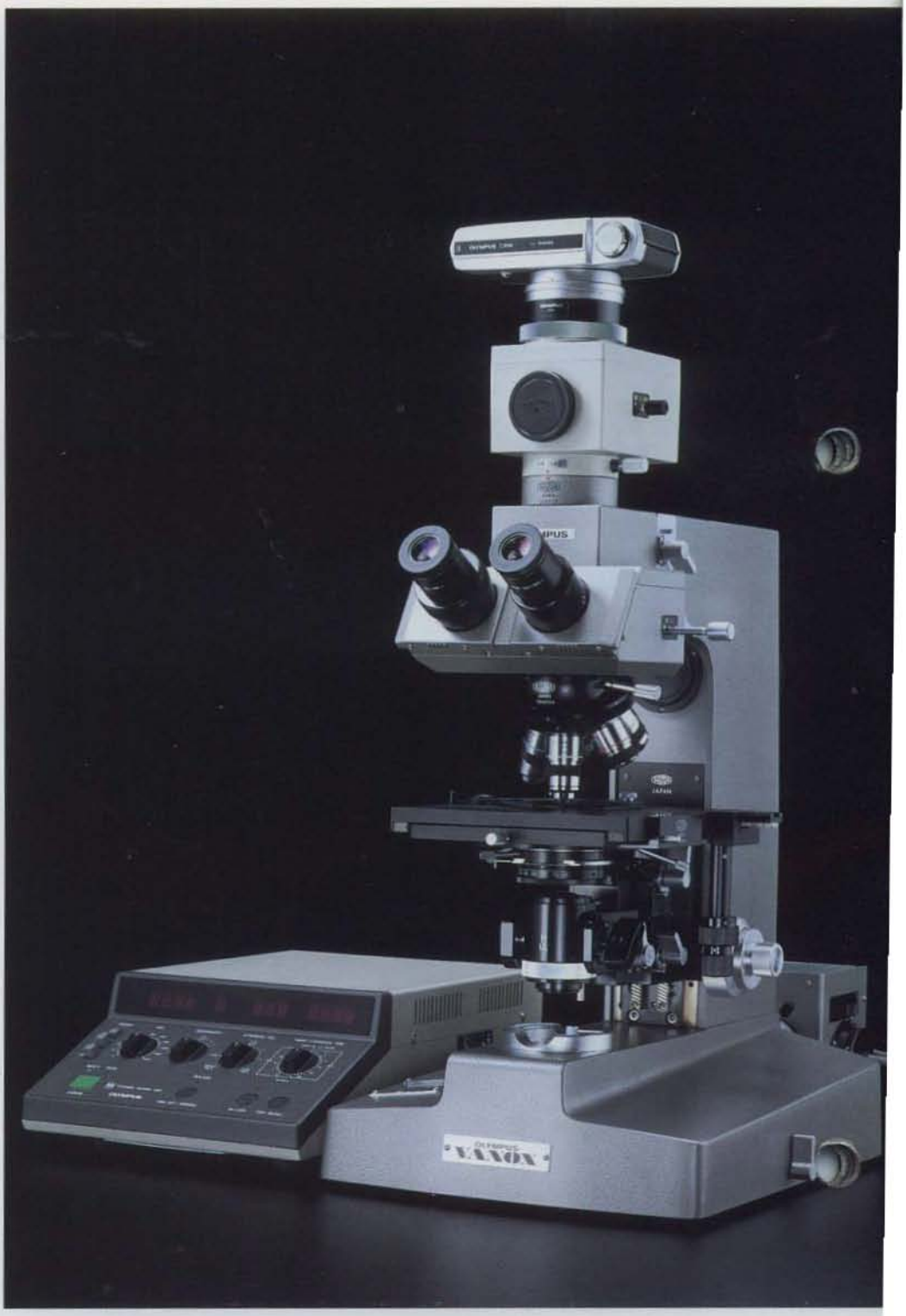
Darkfield Condenser AH-DCW
- A cardioid type oil immersion widefield darkfield condenser with a NA of 1.20 to 1.40, it is suitable for objectives of 10X to 100X. 100X objectives should have a built-in iris diaphragm.

Swing-out Condenser AH-SC-LB
- The top element of this NA 0.85 to 0.05 condenser can be swung out. Suitable for use with objectives from ultra-low magnifications (1X, 2X) through to 100X.

Photomicrographic and Cinemicrographic System Camera PM-10AD

The Model PM-10AD is a universal, fully modular multiformat camera system with automatic controls. A built-in microcomputer assures precision exposure and readout, reciprocity failure correction, compensation for varying film and specimen characteristics, and color temperature. Its versatility is further increased by manual override and time exposure capability to supplement the automatic exposure range. Availabe in a choice of 35mm, $3^1/_4'' \times 4^1/_4''$ Polaroid® and $4'' \times 5''$ formats, plus 16mm cine and 35mm time lapse.
The Model PM-10M Manual Photomicrographic System permits manual photography with 35mm and large-format cameras.

NFK Eyepieces For Photomicropgraphy
- A series of eyepieces specifically optimized for photography with a microscope.
- Deliver the full optical capabilities of the LB series objectives.
- Available in four magnifications: 2,5X, 3.3X, 5X and 6.7X.

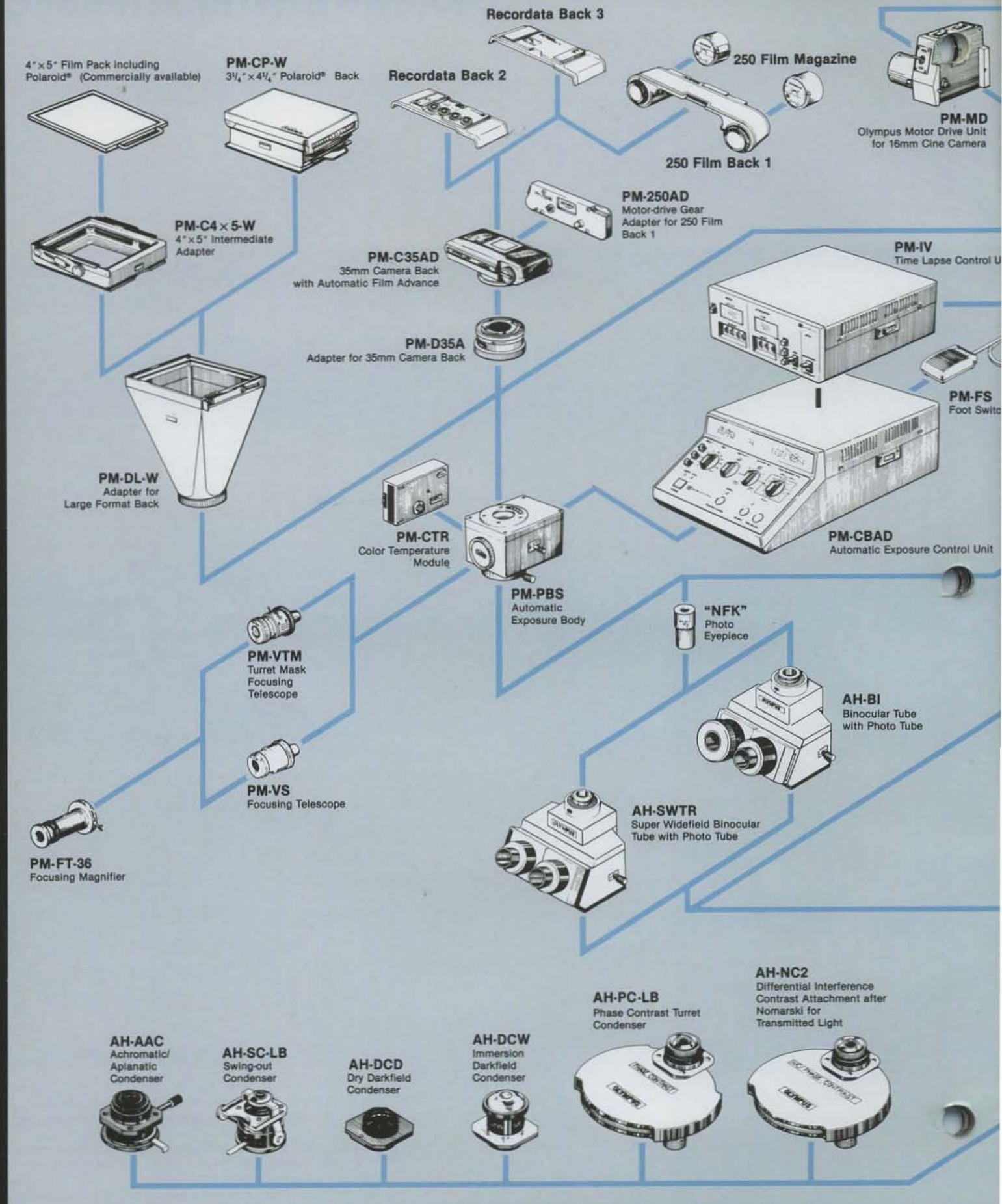


Standard Outfits

Module		Photomicrography			16mm Time Lapse Cine-micrography
		PM-10			
		35AD-1	L1AD-1	L2AD-1	
Automatic Exposure Body	PM-PBS	○	○	○	○
Automatic Exposure Control Unit	PM-CBAD	○	○	○	○
Power Cord (for PM-CBAD)	UYCP	○	○	○	○
Adapter for 35mm Camera Back	PM-D35A	○			
Adapter for Large Format Film Back	PM-DL-W		○	○	
35mm Camera Back	PM-C35AD	○			
4"×5" Intermediate Adapter	PM-C4×5-W		○		
3¼"×4¼" Polaroid® Back	PM-CP-W			○	
Focusing Telescope	PM-VS				○
Focusing Magnifier	PM-FT-36 Note; see below				○
Eyepiece Adapter for "FK" Eyepiece	PM-ADF				○
Color Temperature Module	PM-CTR Note; see below				○
Time Lapse Control Unit	PM-IV				○
Power Cord (for PM-IV)	UYCP				○
Power Cord (to connect PM-IV and Microscope stand)	UYCP 11				○
Motor Drive Unit for 16mm Cine Camera	PM-MD				○
Cine Adapter	PM-D0.4X				○
Color Temperature Compensation Filter	45LBD2	○	○	○	○
	45LBT	○	○	○	○
Neutral Density Filter	43ND6-W45	○	○	○	○
	43ND25-W45	○	○	○	○

N.B. *•When employing objectives with magnifications of 4X or lower, their considerable depth of focus makes accurate focusing through a normal eyepiece very difficult. This difficulty is solved by combined use of the focusing telescope (PM-VTM or PM-VS) or framing eyepiece and the focusing magnifier (FT-36).*
For precise framing of the area to be photographed, both of the focusing telescopes have format outlines indicating 35mm, 4"×5" and 3¼"×4¼" frame sizes (in addition to 120 roll film in the PM-VS). Four different framing eyepieces are available for each frame size.
•The color temperature module PM-CTR, an optional accessory, simplifies checking and adjustment of microscope illumination color temperature for optimal results.

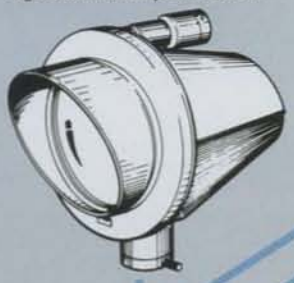
Diagram of the VANOX and PM-10AD System



Bo[illegible]mm Cine Camera
(A[illegible]e from Bolex and its
representatives)

PM-D0.4X
Cine Adapter

AH-SPS-W
High-resolution Projection Screen



AH-MPS-W
Projection Screen

BH-WP
Projection Prism

Analyzer

BH2-CA
Magnification Changer

AH-RE
Revolving
Nosepiece

AH-RFL-LH2
Fluorescence Lamp Housing

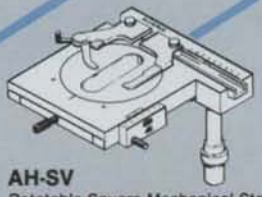
AH-FA
Barrier Filter Attachment

AH-RFL-B-LB
Vertical Illuminator
for Fluorescence

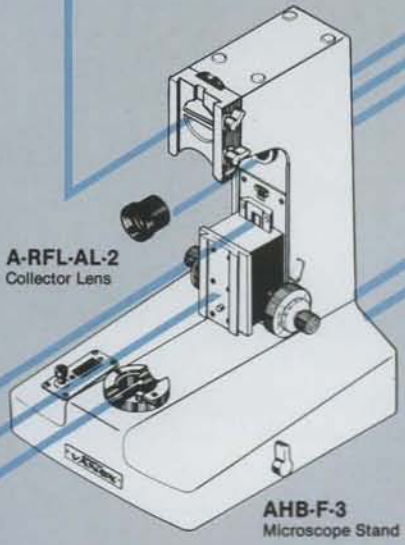
BH2-NA
Differential Interference Contrast
Attachment after Nomarski
for Transmitted Light

AH-LSH-3
Halogen Light Source for
Transmitted and Reflected Light

AH-FL-B2
Fluorescence
Illuminator



AH-SV
Rotatable Square Mechanical Stage
with Low Drive Controls



A-RFL-AL-2
Collector Lens

AHB-F-3
Microscope Stand

A-CH
Condenser Holder

A-AL
Auxiliary Lens System

Polarizer

"Polaroid" is a trademark registered by the Polaroid Corporation, Cambridge, Mass. U.S.A.

Data of LB Optics

Objective Series for Biological Use

S Plan Apochromatic Objectives

	Magnification	Numerical Aperture	Working Distance mm	Focal Length mm	Cover Glass Thickness mm	Remarks	Order Designation
S Plan Apo	4X, dry	0.16	9.83	36.71	—	S.W.	SPLAPO 4X
	10X, dry	0.40	2.03	18.34	0.17	S.W., Spring loaded.	SPLAPO 10X
	20X, dry	0.70	0.55	7.68	0.17	S.W., Spring-loaded.	SPLAPO 20X
	40X, dry	0.95	0.13	4.18	0.17	S.W., Correction collar (0.11—0.23), Spring-loaded.	SPLAPO 40X
	100X, oil	1.35	0.14	1.63	0.17	S.W., Iris diaphragm, Spring-loaded.	SPLAPO 100X

S Plan Fluorite Objectives

S Plan FL	1X, dry	0.04	2.2	137.86	—		SPLFL 1X
	2X, dry	0.08	5.5	73.42	—	S.W.	SPLFL 2X

S Plan Achromatic Objectives

S Plan	4X, dry	0.13	15.50	35.99	—	S.W.	SPL 4X
	10X, dry	0.30	7.50	18.98	0.17	S.W., D.I.C.	SPL 10X
	20X, dry	0.46	1.50	8.03	0.17	S.W., D.I.C., Spring-loaded.	SPL 20X
	40X, dry	0.70	0.50	4.13	0.17	S.W., D.I.C., Spring-loaded.	SPL 40X
	100X, oil	1.25	0.17	1.69	0.17	S.W., D.I.C., Spring-loaded.	SPL 100X

D Plan Achromatic Objectives

D Plan	4X, dry	0.1	7.03	34.23	—		DPL 4X
	10X, dry	0.25	7.40	17.50	0.17		DPL 10X
	20X, dry	0.4	0.83	8.99	0.17	Spring-loaded.	DPL 20X
	40X, dry	0.65	0.23	4.67	0.17	Spring-loaded.	DPL 40X
	100X, oil	1.25	0.17	1.75	0.17	Spring-loaded.	DPL 100X

D Achromatic Objectives

D Ach	4X, dry	0.10	18.23	30.03	—		DA 4X
	10X, dry	0.25	7.18	16.90	0.17		DA 10X
	20X, dry	0.40	1.63	8.63	0.17	Spring-loaded.	DA 20X
	40X, dry	0.65	0.60	4.58	0.17	Spring-loaded.	DA 40X
	60X, dry	0.80	0.23	3.14	0.17	Spring-loaded.	DA 60X
	100X, oil	1.30	0.20	1.90	0.17	Spring-loaded.	DA 100X
	100X, oil	1.30	0.20	1.90	0.17	Iris diaphragm, Spring-loaded.	IDA 100X
	100X, oil	1.20	0.07	1.90	0.17	Iris diaphragm, Spring-loaded.	SIDA 100X

Phase Contrast Objectives

S Plan	10X, dry	PL NH	0.30	7.50	18.98	0.17	S.W.	PCSPL 10XPL PCSPL 10XNH
	20X, dry	PL NH	0.46	1.50	8.03	0.17	S.W., Spring-loaded.	PCSPL 20XPL PCSPL 20XNH
	40X, dry	PL NH	0.70	0.50	4.13	0.17	S.W., Spring-loaded	PCSPL 40XPL PCSPL 40XNH
	100X, oil	PL NH	1.25	0.17	1.69	0.17	S.W., Spring-loaded	PCSPL 100XPL PCSPL 100XNH
D Ach	10X, dry	PL PLL NH NM	0.25	7.18	16.90	0.17		PCDA 10XPL PCDA 10XPLL PCDA 10XNH PCDA 10XNM
	20X, dry	PL PLL NH NM	0.40	1.63	8.63	0.17	Spring-loaded.	PCDA 20XPL PCDA 20XPLL PCDA 20XNH PCDA 20XNM
	40X, dry	PL PLL NH NM	0.65	0.60	4.58	0.17	Spring-loaded.	PCDA 40XPL PCDA 40XPLL PCDA 40XNH PCDA 40XNM
	100X, oil	PL PLL NH NM	1.30	0.20	1.90	0.17	Spring-loaded.	PCDA 100XPL PCDA 100XPLL PCDA 100XNH PCDA 100XNM

Non-fluorescing Objectives (for reflected light fluorescence)

UVFL	10X, dry	0.40	1.16	15.84	0.17	Spring-loaded.	UVFL 10X
	20X, dry	0.65	1.03	8.11	0.17	Spring-loaded.	UVFL 20X
	40X, dry	0.85	0.25	4.59	0.17	Correction collar (0.11—0.23), Spring-loaded.	UVFL 40X (D)
	40X, S.I.	1.30	0.11	4.56	0.17	Iris diaphragm, Spring-loaded.	UVFL 40X (O)
	100X, S.I.	1.30	0.14	1.91	0.17	Iris diaphragm, Spring-loaded.	UVFL 100X

No Cover Objectives

S Plan	40X, dry	0.70	0.45	4.19	—	S.W., Spring -loaded.	NCSPL 40X
D Plan FL	60X, dry	0.95	0.14	3.05	—	Spring-loaded.	NCDPLFL 60X
S Plan Apo	100X, oil	1.40	0.31	1.63	—	S.W., Iris diaphragm, Spring-loaded.	NCSPLAPO 100X

Note: S.W. = *Super Widefield.* PL = *Positive Low Contrast.* PLL = *Positive Low-Low Contrast.* NH = *Negative High Contrast.* NM = *Negative Medium Contrast.*
D.I.C. = *Nomarski Differential Interference Contrast.*

Eyepiece Series

	Field Number mm ϕ	Eyepoint mm	Focal length mm	Remarks
Widefield Eyepieces				
WHK 8X	20	18.7	31.25	
WHK 10X	20	18.7	25.0	
WHK 10X-H	20	18.7	25.0	Diopter adjustment −8— +2.
WHK 15X	14	15.7	16.7	
Micro-WHK 10X	20	18.7	25.0	Built-in 10/100 micrometer disc.
Cross-WHK 10X	20	18.7	25.0	Built-in cross micrometer disc
Compensation Eyepiece				
NK 20X	10	10.5	12.5	
Super Widefield Eyepiece				
SWK 10X	26.5	15.6	25.0	Diopter adjustment −8 ~ +2
Framing Eyepieces				
35-WHK 10X	20	18.7	25.0	With built-in 35mm-mask
P-WHK 10X	20	18.7	25.0	With built-in 3¼" × 4¼" mask
4 × 5-WHK 10X	20	18.7	25.0	With built-in 4" × 5" mask
MH-WHK 10X	20	18.7	25.0	With built-in 16mm cine mask.
35-SWK 10X	26.5	15.6	25.0	With built-in 35mm mask.
P-SWK 10X	26.5	15.6	25.0	With built-in 3¼" × 4¼" mask.
4 × 5-SWK 10X	26.5	15.6	25.0	With built-in 4" × 5" mask.
MH-SWK 10X	26.5	15.6	25.0	With built-in 16mm cine mask.
Photo Eyepieces				
NFK 2.5X	23.0	—	—	
NFK 3.3X	18.4	—	—	
NFK 5X	12.4	—	—	
NFK 6.7X	8.8	—	—	

AHB-LB Standard Outfits

		Module	AHB-LB	
			(1)	(2)
Microscope Stand		AHB-F-3	○	○
Power Cord		UYCP	○	○
Observation Tube		AH-BI	○	○
Quintuple Revolving Nosepiece		AH-RE	○	○
Mechanical Stage		AH-SV	○	○
Achromatic/Aplanatic Condenser		AH-AAC	○	○
Centering Frosted Glass		AH-SG	○	○
Halogen Lamp Housing		AH-LSH-3	○	○
Halogen Bulb (2pcs.)		JC12V100WHAL	○	○
Objective	D Plan Achromat 4x	DPL4x	○	
	D Plan Achromat 10x	DPL10x	○	
	D Plan Achromat 20x (spring)	DPL20x	○	
	D Plan Achromat 40x (spring)	DPL40x	○	
	D Plan Achromat 100x (spring, oil)	DPL100x	○	
	S Plan Achromat 4x	SPL4x		○
	S Plan Achromat 10x	SPL10x		○
	S Plan Achromat 20x (spring)	SPL20x		○
	S Plan Achromat 40x (spring)	SPL40X		○
	S Plan Achromat 100x (spring, oil)	SPL100x		○
Eyepiece (2pcs.)		WHK 10x	○	○
Photo Eyepiece		NFK 3.3x	○	○
		NFK 5x	○	○

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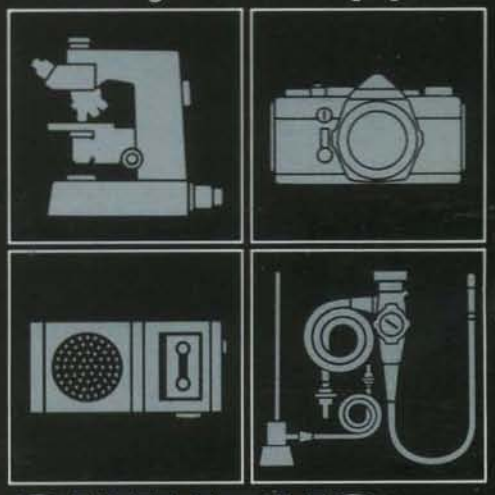

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Printed in Japan M05E-0283B