ZEISS

Photomicrographic cameras

2

Photomicrographic cameras

This line of equipment will solve your problems . . .

■ if you wish to obtain photomicrographs of a quality commensurate with that of our microscopes;

■ if you wish to tailor the equipment to your specific needs as regards operator comfort and price;

■ if you wish to obtain a basic outfit that can be easily supplemented and converted for special-purpose work;

■ if you want to use an existing microscope — even a stereo-microscope — for photomicrographic work;

■ if you wish to have a choice of nine different negative sizes — size 135, 120 or 220 film, plates, cut film and film pack,
between conventional and Polaroid photography;

■ if you wish to choose between manually and automatically controlled exposure,
between manual and automatic film advance;

■ if you wish to use your own camera, be it a Contarex, Icarex, Hasselblad, or whatever its name may be;

■ if you should also wish to use certain components of the system (e.g. the beam splitter) for low-power photography with the TESSOVAR or for cinemicrographic work.

Have you ever – anywhere – seen another lin
complete, as versatile and as reasonably pr

er line of photomicrographic equipment as ly priced as this one?

A. Mounting the camera on the microscope

1. Base plate, column with supporting arm and light-tight sleeve 49 60 00: Optimum stability, since there is no direct mechanical contact between the camera and the microscope. Can be combined with 2 and 3.

2. Inclined binocular body with photo tube, 47 30 26, with adapter ring 47 60 01: A sliding prism allows all the light to be used for either binocular viewing or photography. Illuminating aperture can be easily checked.
High operator comfort; versatile.

3. Vertical monocular tube 47 30 20 and adapter ring 47 60 01: Without conversion, the microscopic image can only be viewed via the photomicrographic camera. Simplest solution; inexpensive.

4. Vertical photo tube 47 30 23: Not only suitable for use with large UNIVERSAL microscopes and PHOTOMICROSCOPE.
Simple; very rugged.

5. Photomicrographic tube 47 50 81 with adapter ring 47 60 02: For Stereomicroscopes II and IV; also suitable for true stereophotography.

B. Camera viewfinder

The focusing eyepiece on each of the two beam splitters (=basic units) offers a continuously visible aerial image for observation. The frames corresponding to the different formats are marked on a reticule together with the area covered by the light meter. Eyesight correction from +5 to −5 diopters.

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1. Basic unit I 47 60 10 with focusing eyepiece 47 60 25: Fixed beam-splitting ratio provides 30% light for viewing and 60% for photography. For all normal work.
2. Basic unit II 47 60 11 with focusing eyepiece 47 60 25: Variable reflector system allows all the light to be used either for viewing or for photography.
Particularly interesting for extreme conditions in fluorescence, dark-field and polarized-light microscopy.

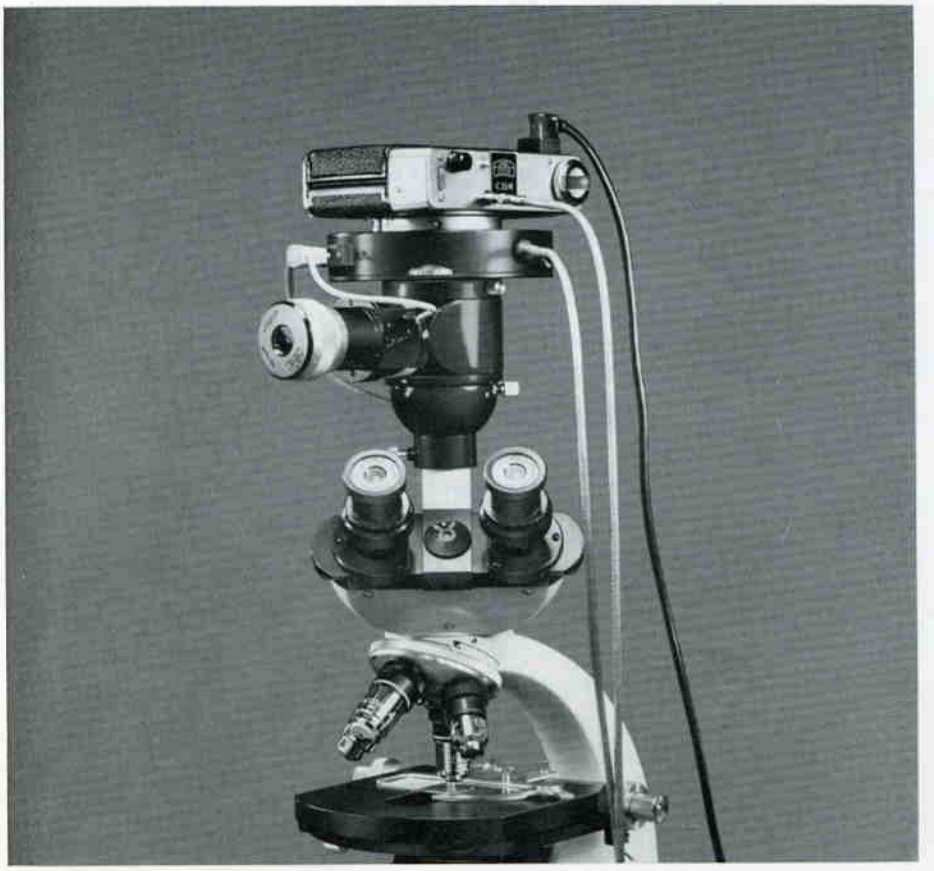
C. Exposure
1. Manual shutter 47 60 37: Shutter speed settings from 1/125 sec to T. The required exposure is determined by means of the direct-reading IKOPHOT-M CdS meter 47 42 02. A flash calculator takes all problems out of flash photography. Flash terminal.
2. CS-matic 47 60 39: Only the film speed and negative size are set on the control unit – correct exposure is obtained automatically. Speed settings from 6 to 39 DIN (3.2 to 6,300 ASA). Shortest automatic exposure 1/100 sec, longest five minutes. Automatic control with manual override for B and flash. Flash terminal.
Recommended for **any kind of work.** High operator comfort.
3. The shutter of your own camera: If our camera has interchangeable lenses, it can be directly attached to the basic unit via an adapter of which several different versions are available. Please write for further information, specifying your type of camera.

D. Camera attachments and negative sizes
1. C-35 camera attachment 47 60 70: for 35 mm film (negative size 24 x 36 mm).Manual film advance by rapid wind lever, frame counter.
Simple, inexpensive; recommended for low-budget organizations.
2. C-35-M camera attachment 47 60 71: Automatic film advance by electric motor, otherwise same as D 1.
High operator comfort; very reasonably priced.
3. CR-120 camera attachment 47 60 52 with quick-change back for combination with:
3. 1 Ground-glass back 47 60 50: for 6.5 x 9 cm and 2¼″ x 3¼″ sheet film in commercial LINHOF film holders. Fold-out glare-shield bellows.
3. 2 LINHOF double sheet-film holder (commercially available): 6.5 x 9 cm sheet film.
3. 3 Cine-Rollex back commercially available, LINHOF No. 001457): for perforated 70 mm film (53 exposures of the "ideal format" 56 x 72 mm).
Special processing equipment required. Otherwise same as 3. 4.
3. 4 LINHOF Super-Rollex back 47 60 86: for size 120 film (10 exposures of the "ideal format" 56 x 72 mm), film wind lever with stop, frame counter. Easy and convenient operation.
LINHOF Rollex backs for other negative sizes are also commercially available.
4. C-120 camera attachment 47 60 30, for combination with:
4. 1 Universal film-sheet and plate holder 47 60 85: For 6.5 x 9 cm sheet film or plates.
4. 2 Rada roll-film holder 47 60 82: Size 120 film for negative sizes 6 x 9 cm, 4 x 6 cm and 6 x 6 cm. Film advance without stop, checked through film window. Very economic outfit.
4. 3 Filmpack adapter 47 60 81: For filmpack 6.5 x 9 cm.
5. C-912 camera attachment 47 60 55 with "international back" for combination with:
5. 1 LINHOF-Super-Rollex back (commercially available) on 9 x 12 cm frame.
Otherwise same as 3. 4.
5. 2 Universal sheet-film and plate holder 47 61 29: for 9 x 12 cm sheet film or plates.
5. 3 LINHOF double sheet-film holder (commercially available): 9 x 12 cm sheet film.
5. 4 Type 545 Polaroid sheet-film holder (commercially available): for 4 x 5″ instantaneous black-and-white or color photography. Wide choice of emulsions; also offers good negatives for first-rate enlargements.
6. CP-100 camera attachment 47 60 54: for 3¼″ x 4¼″ Polaroid film pack. Eight exposures on size 107 (monochrome) or 108 (color) film. For the production of instantaneous photographic records. Conversion for other types of work is not possible. Low price.
7. Camera attachment 47 62 30 for Hasselblad 500-C and EL. For combination with type C-1 or C-2 shutter.

6

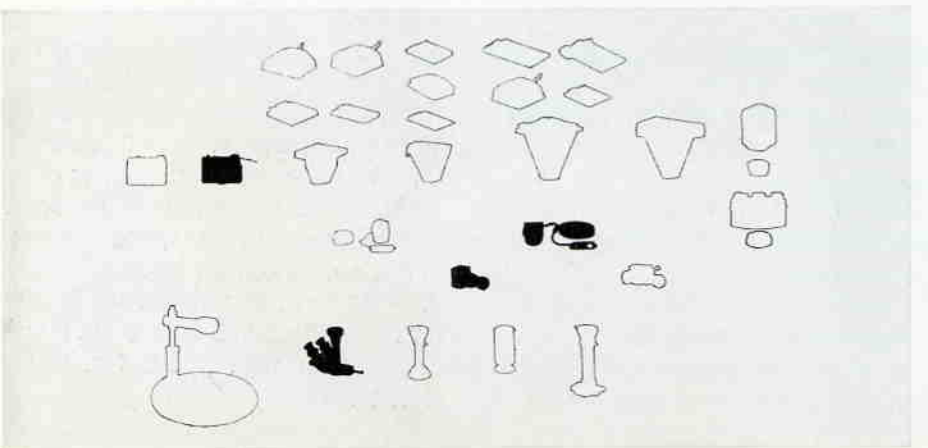
First example of suggested equipment combination

Model C-35-M CS-matic photomicrographic camera on STANDARD RA microscope. The double cable release 47 60 96 prevents double exposures and blank frames.



Automatic exposure control unit.

Power supply for film-advance motor.



Easy change-over to photography or binocular viewing. Always 100% light.

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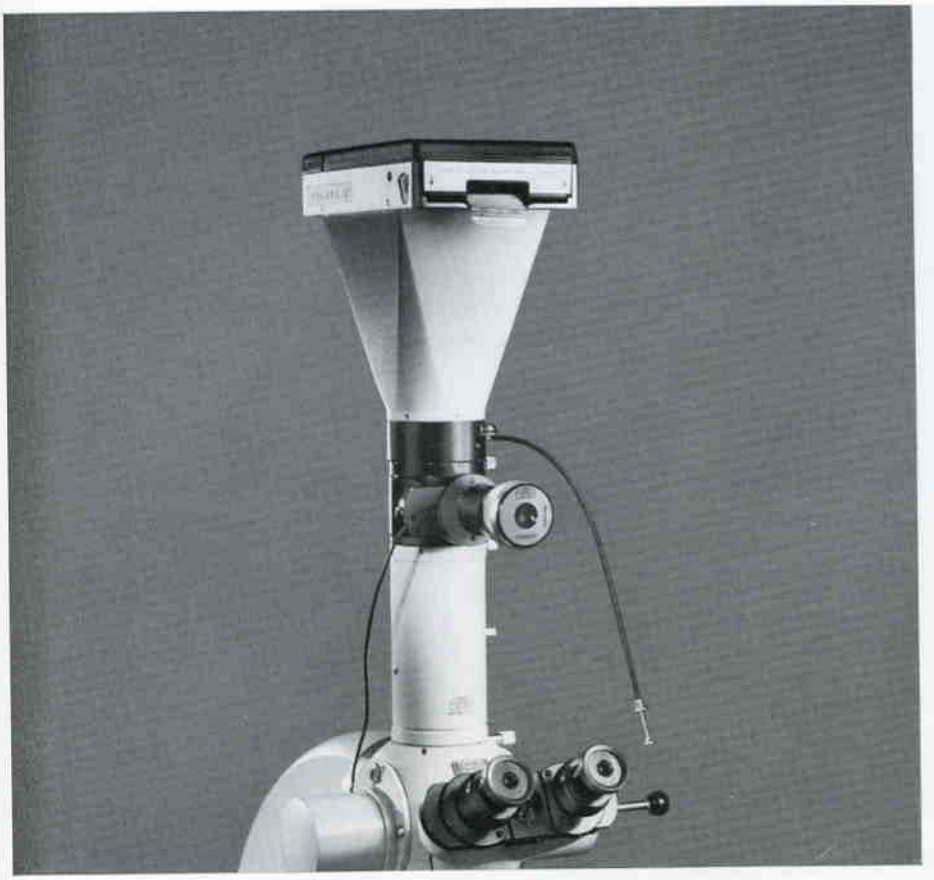
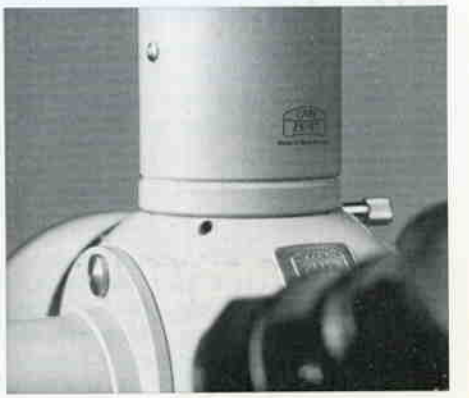
Second example of suggested equipment combination

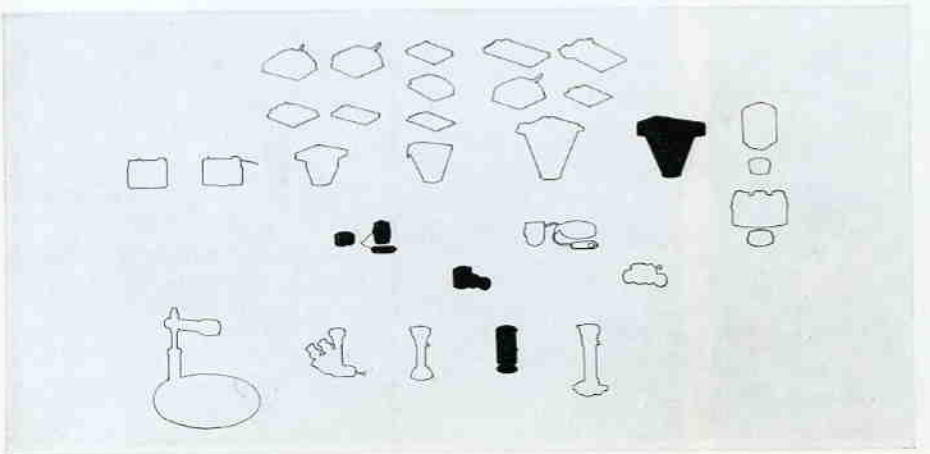
Type CP-100-CS photomicrographic camera on UNIVERSAL microscope.



IKOPHOT-M: direct reading of exposure time.

High stability due to large tube diameter.





Speeds of manually operated shutter.

8

Additional information

We recommend the following negative sizes:

35 mm film for routine work and, in any case, for fluorescence and dark-field microscopy.
Size 120 roll film if a medium-large format is required for printing purposes or if this format is being used for other work (e. g. metallography).
6.5 x 9 and 9 x 12 cm sheet film if individual photos are to be separately developed, if a larger negative size is needed for printing, if 9 x 12 cm transparencies are to be mounted in light boxes or if you do not wish to wait for the last frame on the roll.

Spot metering

The light meter measures the brightness of about 8 % of the rectangular frame within the double circle that is continuously visible. Thus it is neither necessary to switch from average-brightness to spot measurement nor to make allowance for the object component.
The metering area is large enough to serve for determining average brightness, but also small enough to eliminate any disturbing background effect on the reading. This applies even to critical work involving fluorescent or dark-field specimens.

Lunar rock brought back by Apollo 11:
Heterogeneous glass sphere from Mare Tranquillitatis.
Thin section. Bubbles are visible which were unable to escape during rapid cooling of the silicate melt. Magnification approx. 65x.
Model C-35-CS photomicrographic camera.
Photomicrograph by Prof. Dr. W. von Engelhardt, Mineralog.-Petrogr.-Institut, Tübingen.

Fluorescing anthracene crystals under excitation by blue-violet light.
Objective: 6.3x NEOFLUAR. Magnification approx. 75x.
Model C-35-CS photomicrographic camera.

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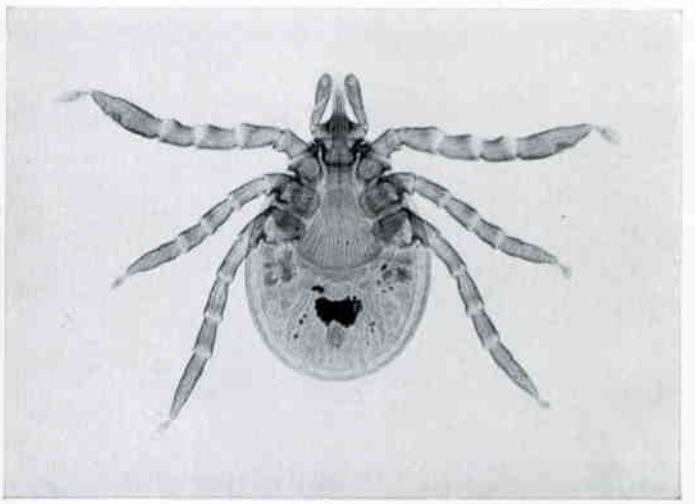
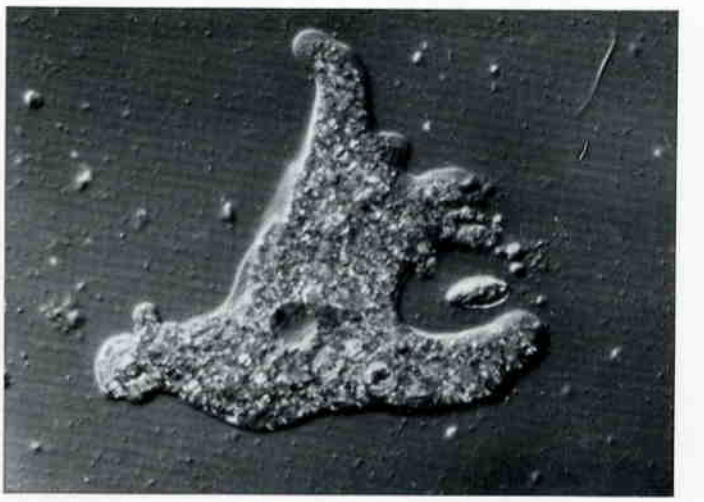


Tick (Ixodes) in bright field. Objective: 4x Planapochromat.
Magnification approx. 50x.
Model C-120-CS photomicrographic camera.
Specimen: Johannes Lieder, Ludwigsburg.



Amoebae in Nomarski differential interference contrast.
Objective: 16x, 0.35 N. A. Planachromat. Magnification 280x.
Model CS photomicrographic camera with attachment 47 62 30 and Hasselblad 500-C. Type UN 60 microflash, 3000 wsec.
Filter index on flash calculator.

Cover photo:
Grain rust, Puccinia graminis.
Aecidium on a berberidaceae leaf, cross section.
Magnification approx. 125 x.
Model C 912 CS-matic photomicrographic camera.
CARL ZEISS photo.
Specimen: Johannes Lieder, Ludwigsburg.

I should like to receive, without obligation:

- ☐ A quotation on equipment combination 1
- ☐ A quotation on equipment combination 2
- ☐ The visit of your sales engineer
- ☐ A demonstration

I work in the field of

I use the following microscope

Literature on

- ☐ Microscope illuminators, Micro-flash unit (41-300)
- ☐ Color filters for photomicrography (41-305)
- ☐ Color photomicrography (S 40-431)
- ☐ Low-power photography (41-450)
- ☐ Cinemicrography (S 40-492)