

Canon

PHOTOMICRO UNIT F

INSTRUCTIONS

Canon Photomicro Unit F is a device for performing photomicrography easily and conveniently using single-lens reflex cameras.

The Photomicro Unit F is composed of outer and inner hood barrels, a shade barrel and a tightening clamp ring. It can be used on any ordinary biological or metallurgical microscope having an eyepiece sleeve with a 25mm outer diameter. Photography is possible with or without the eyepiece of the microscope.

SPECIFICATIONS

Usable Microscopes: Ordinary biological or metallurgical microscope having an eyepiece sleeve with a 25 mm outer diameter.

Photomicrographic Magnification: Approx. 0.5X magnification of microscope.

Attaching onto Microscope: With tightening knob of inner barrel or accessory clamp ring.

Attaching onto Camera: With bayonet ring of outer barrel.

Dimensions: Max. Length × Max. Diameter = 107.5 mm × 59 mm (4-1/4" × 2-3/8").

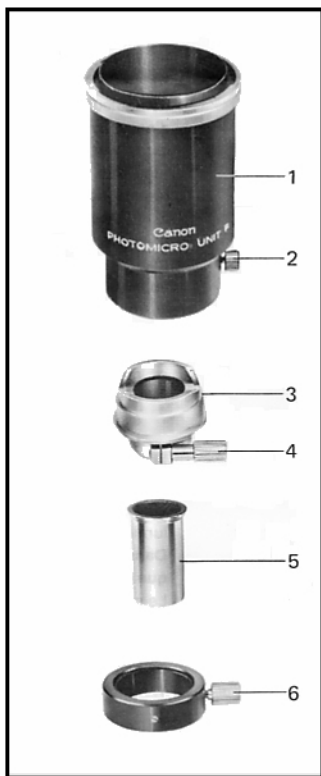
Weight: Approx. 320 g (11-1/4 ozs.).

Subject to change without notice.

1. Outer Hood Barrel
2. Tightening Screw
3. Inner Hood Barrel
4. Tightening Knob
5. Shade Barrel
6. Clamp Ring

CONNECTION WHEN SHOOTING WITH EYEPIECE OF MICROSCOPE

1. Remove the inner barrel from the outer barrel by loosening the tightening screw on the outer barrel.
2. Pull out the eyepiece of the microscope and set it into the inner barrel.
3. In that condition, connect the inner barrel to the microscope sleeve and fix it with the tightening knob of the inner barrel.
4. To attach the outer barrel to the camera, first turn the chrome ring of the outer barrel to align the red dot on the ring with the attaching pin. Next, match the red dot of the outer barrel to the red dot of the camera mount. Fix by turning the chrome ring clockwise.



5. Slide the outer barrel attached to the camera over the inner barrel, which is connected to the microscope, and fix with the tightening screw on the outer barrel.
- * Collective Magnification = Magnification of Microscope Objective \times Magnification of Eyepiece $\times f/250$.
 - $f = 108.4 \text{ mm} \approx 109 \text{ mm}$ (Canon FTb, etc.)



CONNECTION WHEN SHOOTING WITHOUT EYEPIECE OF MICROSCOPE

1. Separate the outer and inner hood barrels.
 2. Put the accessory shade barrel, instead of the eyepiece, into the inner barrel. The succeeding assembly procedures are performed in exactly the same manner as outlined in the preceding instructions.
- * Collective Magnification = Magnification of Microscope Objective $\times f/250$.
 - * The accessory clamp ring is used for fixing the photomicro unit on a microscope other than the vertically-moving stage type.



PRECAUTIONS IN PHOTOMICROGRAPHY

When shooting with high magnifications, great care should be taken regarding vibration, exposure and focusing. Note the following for failure-proof photomicrography.

1. Avoid Vibrations

One of the most important conditions in performing photomicrography is to completely eliminate vibration. Avoid places close to motor-driven machinery or where there is a heavy traffic of people or vehicles nearby. Use an anti-vibration rubber base whenever possible.

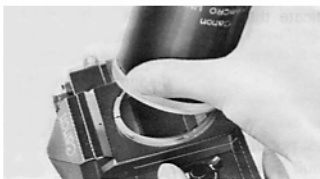
2. Prevent Camera Shake

After the shooting site has been chosen, observe the following in order to prevent any image blurs due to camera shake which easily occurs as the camera mechanism functions.

- * With the Canon New F-1, F-1, FTb, EF, A-1, AE-1 PROGRAM, AL-1, AE-1 and AT-1, the stop-down lever, which is locked during metering, should remain in that position at shutter release. In the case of the F-1, FTb and EF, the mirror should also be locked in the raised position after focusing and metering. With the coupling pin of the diaphragm (and the mirror), fixed, any unnecessary shocks due to mechanical movements are reduced to a minimum.
- * The meter-switch lever of the Pellix and Pellix QL and the stop-down lever of the TX should be returned to their original positions after metering.
- * Set the shutter speed to 1/2 sec. or slower or to 1/30 sec. or faster, and control exposure conditions to obtain proper exposure by changing illumination and film speed or by regulating the aperture if this is possible with your microscope.

3. Shutter Release

Always use a cable release. When a cable release absolutely cannot be used, perform remote controlled release with the use of the self-timer on the camera. Never press the shutter release button directly as is done in general photography.



4. Lighting

For Color Film:

There are two types of color film, according to color temperature. They are the daylight and tungsten types. In order to obtain a faithful color balance it is necessary to perform lighting with a light source that fits the film used.

Film Type	Light Source	Filter to Be Used on Light Source
Daylight	Daylight, Blue Floodlight	◦
	Tungsten Floodlight	CCB 12
Tungsten	Tungsten Floodlight	◦
	Daylight, Blue Floodlight	CCA 12

◦ No filter necessary.

For Black and White Film:

There are no light source restrictions when using black and white film. Since, in photomicrography, the brightness of the subject is ordinarily lower than that in general photography, use films with high contrast such as copy films or Kodak Panatomic-X.

When using an achromatic microscope objective, cover the light source with a G1 color balancing filter. Since the objective usually has an achromatic correction for greenish-yellow light, the G1 filter is necessary for obtaining more highly contrasted images and more detailed structures of the subject.

5. Lighting Method

There are many methods of illumination, both direct and indirect, for photomicrography. We will not go into details here, but we recommend the Köhler illumination method for the most uniform distribution of light on the subject.

- * When using a slide projector as a light source, it is helpful to keep the light beam at a narrow angle. This can easily be achieved by clipping a piece of black paper with a small hole in its center onto the slide mount.

6. Deciding the Proper Exposure

After preparing the most suitable lighting conditions, measure the exposure.

In the case of cameras with the selective-area metering such as Canon F-1

The central area through-the-lens metering system of this type of camera is the most suitable for obtaining correct exposure in photomicrography. Note the following when measuring the exposure.

1. Set the film speed on the camera.
 2. Push the stop-down lever (or meter-switch lever for the Pellix or Pellix QL) towards the Photomicro Unit and lock.
 3. While looking into the viewfinder, turn the shutter speed dial to align the meter needle with the index mark. The shutter speed indicated on the shutter speed dial when the meter needle is aligned with the index mark is the proper exposure value.
- * With the Pellix QL and Pellix, unlock the meter-switch lever after metering or else the shutter cannot be released.

In the case of cameras with the center-weighted average metering such as Canon AE-1 PROGRAM

Stopped-down metering is necessary. It is also necessary to make a slight exposure correction because of the camera's central emphasis metering system. When photographing translucent subjects, set the shutter speed one or two steps slower than the measured value.

In the case of the A-1:

Use the stopped-down AE mode. Increase the exposure 1-2 exposure degrees for a translucent subject.

In the case of the FX, FP:

Obtain the proper exposure value with the use of an exclusive exposure meter for photomicrography or an individual spot-type exposure meter having a narrow light receiving angle. When not using a through-the-lens meter, the metered exposure must be increased. Refer to technical literature on photomicrography for further details.

7. Focusing

With high magnifications, the light beam becomes extremely narrow. Since focusing with the split-image/microprism rangefinder is very difficult under these circumstances, focus by means of the surrounding matte field of the viewing screen instead.

ACCESSORIES

Angle Finders A2 and B

These finders are very convenient for performing photomicrography. They are attached to the camera eyepiece and can be revolved to obtain the most suitable viewing position.

Canon Releases 30, 50

The designations for these cable releases indicate that their lengths are 30 and 50 cm respectively.

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