

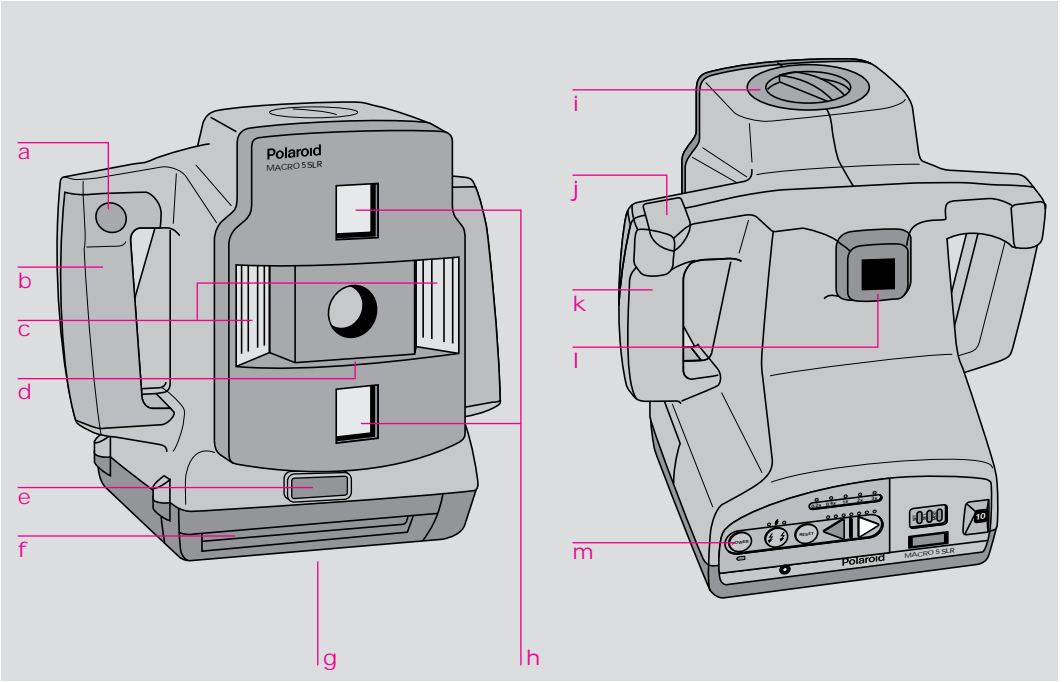
Polaroid Macro 5 SLR User Guide

(ENGLISH VERSION)

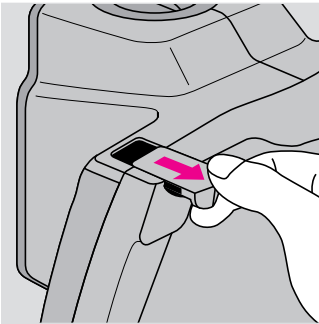
Macro 5 SLR



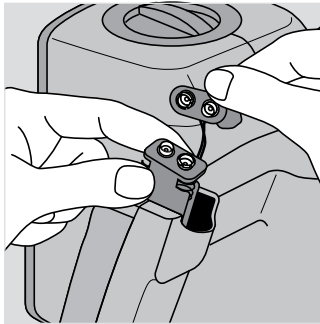
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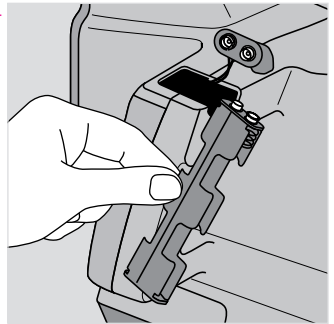
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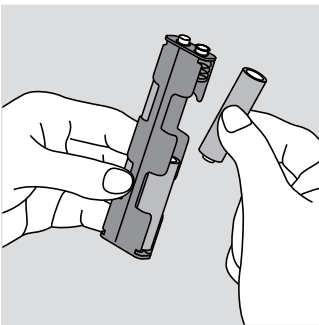
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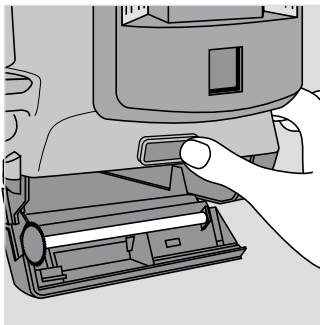
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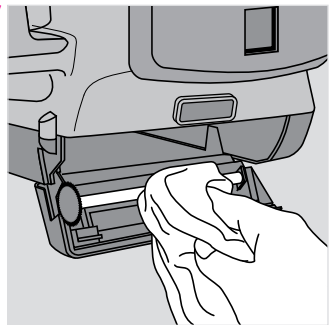
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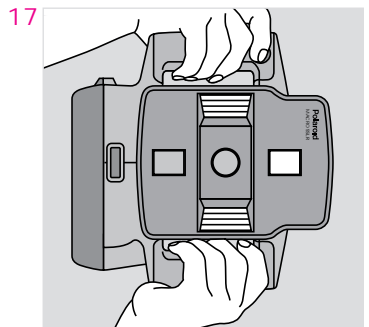
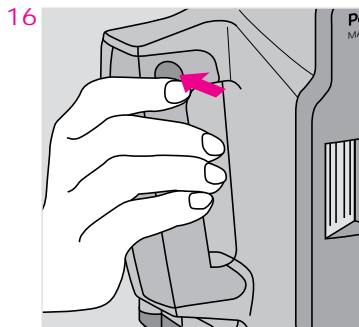
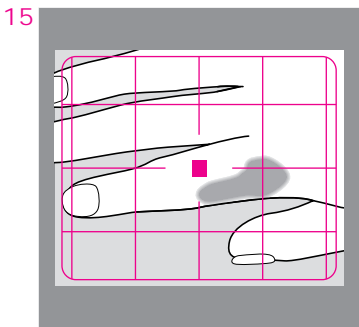
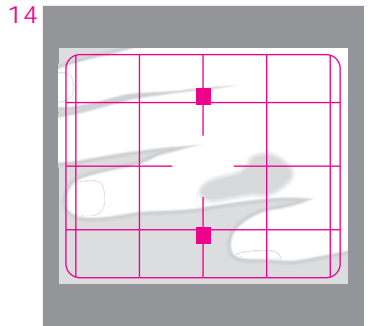
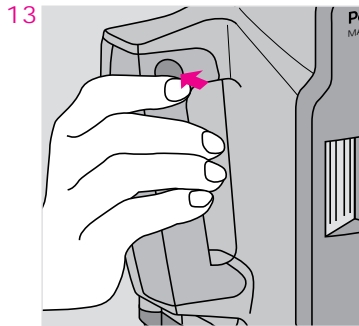
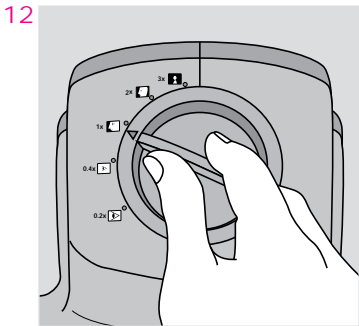
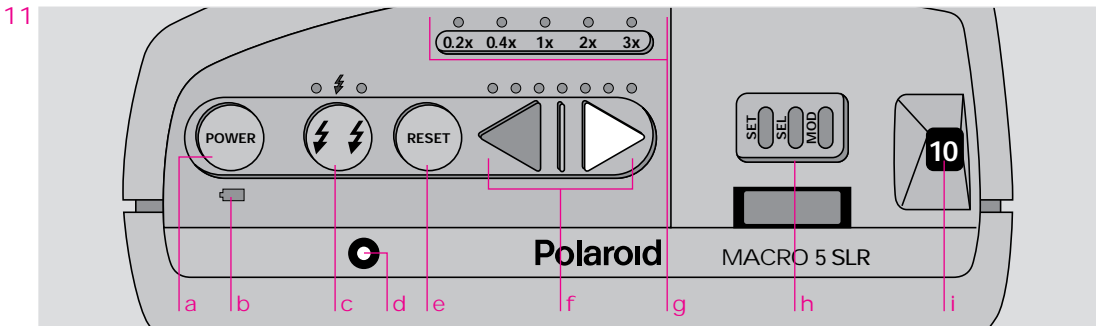
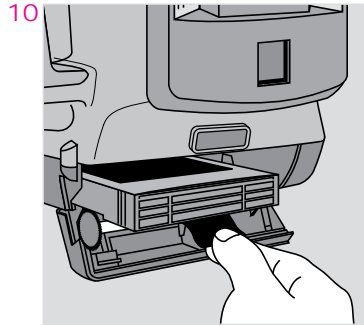
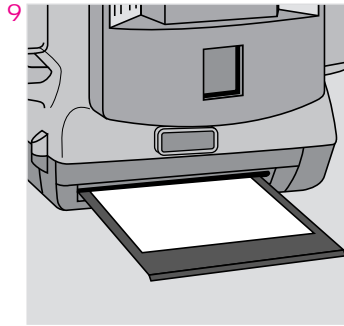
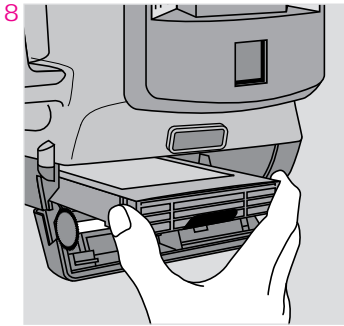


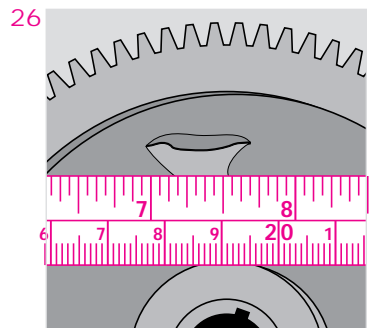
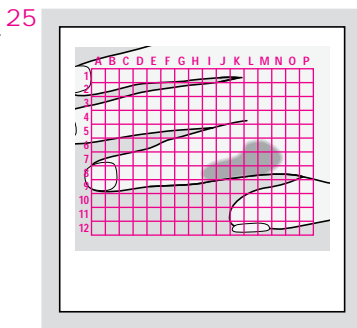
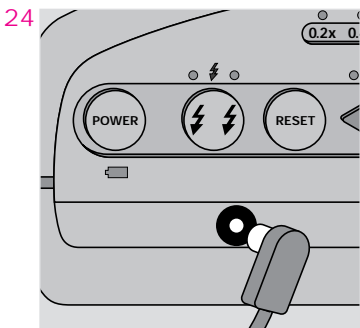
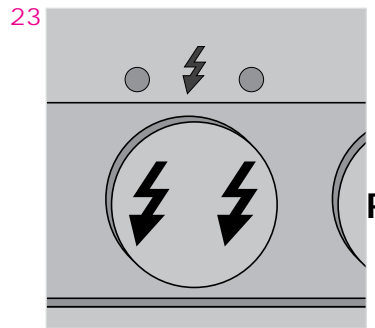
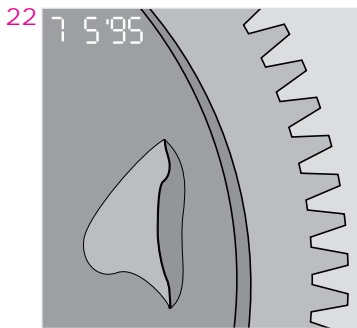
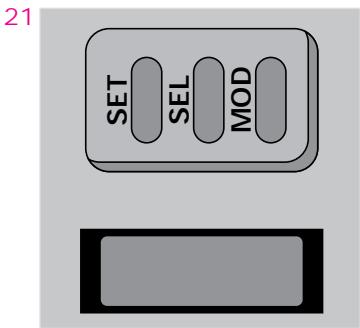
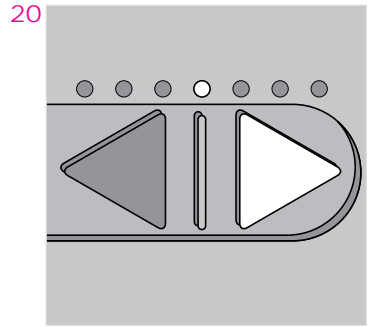
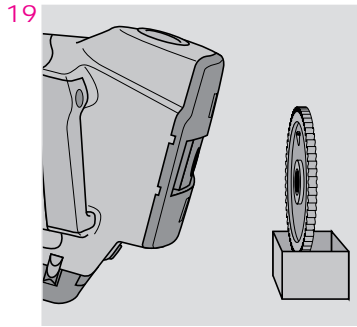
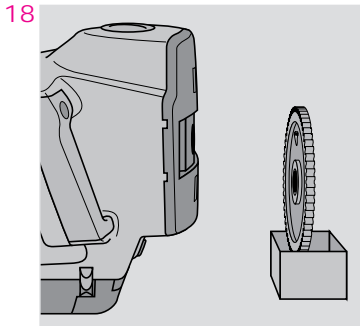
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Introduction

The Polaroid Macro 5 SLR is a simple to operate, fully automatic, portable camera designed for medical and dental documentation of patient condition, manufacturing, quality control, law enforcement, and other applications that require close-up photographs. The camera uses Polaroid self-developing instant color films, so you know right away that you have the picture you need.

The camera produces reproductions at: 0.2X (20%), 0.4X (40%), 1X (100%), 2X (200%) and 3X (300%). The lenses for each reproduction size are self-contained, so there is no need to attach accessories when changing magnification.

The camera has two built-in electronic flash units that provide even illumination, and a microprocessor-controlled exposure system that automatically sets the camera for the correct exposure at all magnifications. The flash units also can be used individually for side-lighting, or in combination with auxiliary lighting.

Other features include:

- Dual-light rangefinder helps you place the camera at the proper distance from the subject for correct focus.
- Date/time module that allows you to print the date or time on pictures.
- Can be hand-held or used on a tripod or copystand.
- Grid screen in viewfinder for consistent framing of subjects.

4 English

Accessory filter kits

- Polarizer kit to reduce reflections from the flash units when photographing glossy or glass subjects (PID No. 619909)
- Fluorescein kit for external ophthalmic photography includes a #8 yellow barrier filter and #47A blue exciter filters (PID No. 619908)

The numbers throughout the text refer to the illustrations at the end of the book.

CAUTION: THIS CAMERA IS BATTERY POWERED. TO AVOID ELECTRICAL SHOCK, CAMERA SHOULD NOT BE EXPOSED TO OR IMMERSSED IN WATER OR OTHER FLUIDS, DISASSEMBLED, OR OPERATED IF DROPPED OR DAMAGED. FOR REPAIR INFORMATION, CONTACT NEAREST SERVICE CENTER.

Camera parts (Fig. 1)

- a Shutter button
- b Right hand grip
- c Electronic flash units
- d Lens
- e Film door release button
- f Film door
- g Tripod socket (on bottom of camera)
- h Ranging lights
- i Magnification selector knob
- j Battery compartment (inside hand grip)
- k Left hand grip
- l Viewfinder
- m Control panel

Load the batteries

The camera requires four AA batteries to provide power for the ranging lights. Alkaline batteries (standard or rechargeable) are recommended; rechargeable NiCad batteries also can be used.

The battery compartment is located in the handgrip; slide the battery door open (2); the battery holder will pop up. Unsnap the battery clip (3) and remove the battery holder (4). Insert the batteries in the orientation shown on the holder (5). Replace the battery holder, snap on the clip and close the door.

Important: Remove the batteries and store them separately if the camera will not be used for an extended period of time. Use of the camera in extreme heat or cold will shorten battery life.

See *Battery cautions*.

Load the film

The camera uses Polaroid HighDefinition instant self-developing color films. Type 990 film is recommended; GridFilm and Spectra/Image films also can be used. Each film pack contains 10 sheets of film and a battery that provides power for the exposure controls, flash units and film motor. These high-speed (ISO640/29°) films are balanced for electronic flash and daylight (5500°K), and produce positive color prints.

- 1 Press the film door release button; the door will drop open (6).
- 2 Before loading the film, check that the film processing rollers are clean. Dirt or bits of dried developer on the rollers can cause a pattern of repeated spots or bars on pictures. Clean both rollers with a soft, lint-free cloth, dampened with water if necessary (7). Rotate the rollers as you clean and inspect them.
- 3 Hold the film pack by the edges, with the safety cover facing up (8). Slide the pack all the way into the camera.
- 4 Close the film door. The safety cover will be ejected from the front of the camera (9).

The film counter will read '10'. It counts down, to show how many pictures remain in the pack.

To remove an empty film pack

Open the film door, grasp the tab on the end of the pack, and pull the pack out (10).

The control panel (11)

- a Power button

Press to turn on the camera. The flash units will begin charging, and the green indicators will light up when the camera is ready for picture-taking.

The camera will turn off if the power button is pressed again, or after 30 seconds of inactivity. (Note: The camera also can also be turned on by lightly pressing the shutter button.)
- b Low battery indicator

Yellow light comes on when the batteries in the hand grip are weak (the ranging lights also will become dim).
- c Flash control/status lights

The red light will blink while the flash units are charging; the green lights will come on when READY.

The flash units can be turned on or off selectively.
- d Standard PC socket for auxiliary flash
- e Reset button

This returns the camera to the nominal flash and Lighten/Darken settings.

The camera has a "memory" and will return to your custom settings for each magnification when it is turned on.
- f Lighten/Darken controls

Each setting adjusts the flash output to increase or decrease exposure by $\frac{1}{3}$ f-stop.
- g Magnification indicators

Light up to show the selected magnification.
- h Date/time control and display

Allows you to print the date or time on pictures.
- i Film counter

Counts down, to indicate the number of pictures that remain in the pack.

6 English

Set the magnification

Turn the magnification selector knob to the desired setting (12). The knob will click into position at each magnification; the camera will not function if the knob is between lens settings.

In addition to the magnification, the selector shows the camera-to-subject distance and icons that represent the approximate area of a subject included in the picture.

Focusing and framing the subject

- 1 Hold the camera at the approximate distance from the subject for the selected magnification. For example, if taking pictures at 1X, hold the camera 10 in. (25cm) from the subject.
- 2 Press the shutter button **lightly** (13); the ranging lights will go on. The lights stay on as long as the button is pressed. If you release the button, the lights go off in about 15 sec. Press the shutter button lightly to turn them on again.
- 3 Look over the top of the camera; note the two ranging lights on the subject (14). Move the camera nearer or farther from the subject, until the two lights merge (15).
- 4 The viewfinder shows the area included in the picture, with the ranging lights in the center of the picture. Use the grid screen to ensure consistent framing. If you have difficulty seeing the ranging lights, check that the camera is at the correct distance from the subject. See also *Troubleshooting*.

Take the picture

Look through the viewfinder, and reframe the subject as needed.

Press the shutter button all the way to take the picture (16).

The picture will be automatically ejected from the front of the camera when you release the shutter button. Lay the picture down flat or hold it by its wide border while it develops. Do not shake, bend or squeeze the picture, and never cut pictures or take them apart. See *Caution* notice on film box.

Picture tips

- When taking portraits at 0.4X or 0.2X magnification, turn the camera 90° for a vertical format to include the entire face (17). You may want to turn off the lower flash unit for more pleasing lighting.
- Important: Always hold the camera so the front panel is parallel to the subject (18). Holding the camera at an angle (19) may cause uneven picture sharpness.
- If you wear eye glasses for distant viewing, wear them when using the camera for accurate viewing and focusing.

Lighten/Darken control (20)

The camera is designed to provide the correct exposure for subjects of average brightness. With some subjects, you may wish to make the picture lighter or darker to enhance specific details. Each setting on the panel indicates an exposure change of $\frac{1}{3}$ f-stop, up to 1 full f-stop.

- Press the light arrow to lighten pictures (increase the exposure).
- Press the dark arrow to darken pictures (decrease the exposure).

The camera has a memory and will save your custom Lighten/Darken setting until you press the reset button to return to the nominal setting.

Date display module

The date display module (21) allows you to print the date or the day/time on pictures (22).

Setting the date

- 1 Press MOD (mode) repeatedly until the desired date sequence is displayed:

No printing	--	--	--
Month/day/year	8	27	'95
Day/month/year	27	8	'95
Year/month/day	'95	8	27
Day/time (24-hour clock)	27	14:22	
- 2 Press SEL (select) to select the year, month or day (see blinking digit).
- 3 Press SET repeatedly (or hold button) until the desired digit is displayed. Repeat steps 2 and 3 until the desired year, month and day are all set.
- 4 Press SEL again to lock in the date.

Setting the time

- 1 Press MOD until the day/time mode is displayed. The first set of digits in the display is the day of the month, followed by the time in hours and minutes.
- 2 Press SEL and the hours will blink. Press SET to toggle through the hours. Press SEL again to lock in the hour. The minutes will now blink.
- 3 Press SET to toggle through the minutes. Press SEL again to lock in the minutes.
- 4 Press SEL again to lock in the time.

Shutting off the date display option

Press MOD until a series of dashes appears in the display.

Note: The date module is powered by the battery in the film pack, or by the batteries in the handgrip. If there are no batteries or film in the camera for more than 5 minutes, you will need to reset the date/time after replacing the batteries.

Flash control (23)

The two built-in electronic flash units are designed to provide even illumination at all reproduction scales. You can turn off either flash unit if side lighting is needed to show texture or elevation. The light output from the remaining flash unit will be increased to produce the correct exposure.

Press the flash control once to turn off the right flash; press it a second time to turn off the left flash; press it a third time to turn off both flash units.

Lighting techniques

Both built-in flash units can be turned off, and auxiliary lighting used. The auxiliary light is connected to the PC socket on the back of the camera (24). Advanced photographers may find it useful to experiment with different lighting arrangements.

- The auxiliary lighting must be electronic flash — do not use tungsten, halogen or fluorescent lights.
- The built-in flash can be combined with auxiliary lighting.
- Test exposures may be required to determine the correct location and settings for the auxiliary flash unit for correct exposure.

Outdoor use

The camera is designed primarily for indoor use; if it *must* be used outdoors:

- Select an area that is not subjected to bright sunlight, which may cause over-exposed pictures.
- Shade the subject from direct sunlight. (It is difficult to see the ranging lights in very bright light.)
- Use the built-in flash units to ensure consistent exposure.

GridFilm

This film has a grid pattern which is created during manufacture. The grid pattern appears as an overlay on any picture taken with the film.

The pattern consists of 17 vertical and 13 horizontal lines.

To help you define location on the grid, the vertical lines are identified by letters across the top, and the horizontal lines are identified by numbers along the left border (25). You can specify the location on the picture by a letter-number combination.

Calculating measurement from the grid pattern

When taking pictures at 1X magnification, each square of the grid pattern represents 5mm (0.2 in.). The chart below shows the value represented by each square in pictures taken at each magnification.

Magnification	Grid square value	
0.2X	1 in.	25mm
0.4X	0.5 in.	13mm
1X	0.2 in.	5mm
2X	0.1 in.	2.5mm
3X	0.07 in.	1.7mm

Troubleshooting

Difficulty focusing

The ranging lights may be difficult to see when using the camera in very bright light, or when photographing very dark subjects. If you have difficulty seeing the ranging lights:

- Check that the camera is set for the desired magnification, and is at the correct distance from the subject.
- Look over the top of the camera, rather than through the viewfinder.
- Check the battery indicator; if necessary replace the batteries in the handgrip.

Camera will not function: If the battery in the film pack is weak or dead, the flash units will not charge and/or the control panel will not function.

No image in viewfinder: The magnification selector knob is between settings.

Pictures too light: The camera may be too close to the subject for the selected magnification. The Lighten/Darken control may be set incorrectly. Very light subjects may require setting the control toward Darken. There may be bright ambient light affecting the exposure.

Pictures too dark: The camera may be too far from the subject for the selected magnification. The Lighten/Darken control may be set incorrectly. Very dark subjects may require setting the control toward Lighten.

Subject not sharp: The camera is at the wrong distance from the subject. (Pictures also will be incorrectly exposed — too light or too dark.)

Portions of picture out of focus, or distorted subject: The camera is not parallel to the subject.

Care and Maintenance

Lens care: Avoid touching the lens. To remove dust or fingerprints, breathe on the lens and wipe it gently with a clean, soft facial tissue. Do not use silicone-treated eyeglass tissues.

Temperature: The camera and film are designed for use at temperatures of 55-95°F (13-35°C). Store below 75°F (24°C). Never leave film or a loaded camera in a hot area (such as the luggage compartment of a car).

Caution: To prevent electric shock, do not remove camera covers. No user serviceable parts inside. Refer servicing to the nearest Polaroid Service Center.

EMC statement

Polaroid Corporation certifies that this product conforms to the following standards:

Safety: Low Voltage Directive 73/23/EEC

EMC: EN55022, Class B; EN50082-1; IEC 801-2, 801-3, 801-4

Camera specifications

<i>Magnification</i> ¹	<i>Lens-to-subject distance</i>	<i>Lens focal length</i> ²	<i>Effective Lens aperture</i>	<i>Depth of field</i> ³
0.2X (20%)	52 in./132cm	221mm	f/20	8.8 in./22cm
0.4X (40%)	26 in./66cm	188mm	f/34	3.8 in./10cm
1X (100%)	9.9 in./25cm	128mm	f/47	0.86 in./2.2cm
2X (200%)	4.8 in./12cm	85.4mm	f/67	0.31 in./0.8cm
3X (300%)	3.1 in./8cm	64mm	f/100	0.20 in./0.5cm

¹ If the exact magnification must be documented, include a scale in the picture (26). The scale and the subject must be at the same distance from the camera.

² The camera contains separate lenses for each magnification. Each lens has the proper focal length for minimum perspective distortion and more working space between the camera and subject, and a small lens aperture for better depth of field.

³ The depth of field, or distance zone within which the subject will be in sharp focus, is limited in close-up photography. The zone will extend about half its distance in front of, and half behind, the point of sharpest focus.

Note: The camera has a fixed shutter speed of 1/50 sec.

Free technical assistance

If you need assistance or additional information about specific applications, call toll free at 1-800-225-1618, Mon.-Fri., 8 AM to 8 PM (Eastern time). Or, write to the Customer Care Center, Polaroid Corporation, 201 Burlington Road, Bedford, MA, 01730-1406.

If outside the U.S.A., contact the nearest Polaroid Office. (See list on back page.)

Warranty

Your Macro 5 camera has been thoroughly tested and inspected before shipment. All parts are guaranteed against defects in materials and workmanship for one full year from the date of original purchase. During this period, any such defects will be remedied by Polaroid Corporation without charge, except for transportation costs. The warranty excludes damage resulting from normal wear, mishandling or accident, and a charge will be made for such repairs. The warranty does not include the batteries, or damage caused by leaking batteries.

U.S.A.: This warranty excludes consequential damages.

Outside U.S.A.: This warranty does not affect your statutory rights.

Service

Before returning a camera for service, contact the Polaroid Customer Care Center or the nearest Polaroid Office for shipping and service information. The camera should be packed in its original shipping carton or other sturdy container, and shipped, prepaid and insured, to the nearest Polaroid Office.

Battery cautions

- The batteries used in this device may present a risk of one or more of the following occurrences: Release of toxic materials, release of flammable vapors, rise in surface temperature. Do not recharge, incinerate or mutilate.
- Replace batteries with same type. Use of another battery type may present a risk of fire or explosion.
- Dispose of used batteries promptly. Keep away from children. Do not disassemble and do not dispose of in fire. The cell may explode. Check with local codes for possible special disposal instructions.
- When replacing batteries, replace all at the same time. Mixing fresh and discharged batteries could increase internal cell pressure and rupture the discharged batteries.

Radio and television interference FCC requirements

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference
- 2 This device must accept any interference received, including interference that may cause undesired operation.

FCC Notice (U.S.A. only)

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

EMI Notice (Canada)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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