



Digital Microscope Camera (DMC)

User Guide

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Quick startup

For more information, see the page indicated.

Setting up

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11	11	3 Attach the camera to the microscope.
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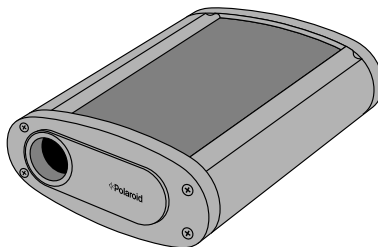
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26	1 Turn on the camera.
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Introduction

Introducing the DMC Digital Microscope Camera

The Polaroid DMC Digital Microscope Camera captures high-quality digital color images from light microscopes and other optical instruments. The camera uses a unique, million-pixel, 12.15mm CCD (charge coupled device) to capture pictures with up to 16.7 million colors. It transfers these pictures in seconds to an IBM-PC-, PowerMac- or PowerPC-compatible computer as high resolution (800x600 pixels) or super-high resolution (1600x1200 pixels) TIFF images.



Using the Microsoft Windows or PowerMac/PowerPC software provided with the camera, you can display a viewfinder image on your computer screen, choose resolution and other options, enhance color balance, brightness, contrast and sharpness, then transfer the picture to your image-processing application or a disk drive.

The camera has a SCSI-2 connection requiring no frame-grabber or other special hardware or software. (For use with IBM PCs or PC-compatible computers, the camera requires a SCSI adapter board.)

Using a standard .63, 1:1, or larger c-mount adapter, the camera attaches easily to microscopes for most types of transmitted-light and reflected-light microscopy.

The camera also features a tripod mount and x-sync connection for use with standard c-mount lenses on a copystand.

For more detailed camera specifications, see page 41.

System requirements

Using the DMC software to view and capture pictures taken with the DMC camera requires the following hardware and software. If you do not have the required configuration, contact your Polaroid dealer.

PC systems

- An IBM PC or compatible computer, with at least a 66 MHz Pentium-class processor and 20 megabytes (MB) of RAM (32 MB recommended).
- Microsoft Windows 95 or Windows NT operating system.
- A monitor and graphics adapter capable of displaying 24-bit color (16.7 million colors) is recommended for optimal display of DMC pictures. (DMC software can be used with monitors and adapters capable of displaying fewer colors, but the quality of pictures displayed on the monitor may not be satisfactory.)
- An ASPI-compliant SCSI adapter and the appropriate Windows 95 or Windows NT drivers.
- A TWAIN-compliant image-processing application, such as Adobe Photoshop, is recommended for working with DMC pictures. If you do not have such an application, you can use DMC Direct (provided and installed as part of the DMC software) to capture pictures and save them on your computer's hard drive.)
- Light microscope with a .63 or larger C-mount adapter

PowerMac or PowerPC systems

- A PowerMac or PowerPC computer or compatible with a PowerPC processor and 20 megabytes (MB) of RAM. (32 MB is recommended.)
- Apple system software version 7.5 or later.
- An image-processing application, such as Adobe Photoshop, compatible with Adobe Photoshop plug-in modules, is

recommended for working with DMC pictures. If you do not have such an application, you can use DMC Direct (provided and installed as part of the DMC software) to transfer pictures from the camera and to control the camera from the computer.

- Light microscope with a .63 or larger C-mount adapter

Technical assistance

Call Polaroid toll-free from within the U.S.A. at 1-800-432-5355, Monday through Friday, 8 a.m. to 8 p.m., Eastern time. Polaroid offers a variety of customer support services. Call for details and applicable fees.

In Canada, call toll-free at 1-800-268-6970. Outside the U.S.A. and Canada, contact the Polaroid office nearest you. See *Polaroid Offices and Service Centers* on page 47.

Technical support is also available over the Internet. Connect to the Polaroid World Wide Web site at <http://www.polaroid.com>.

Using this manual

This book explains how to set up and use your Polaroid DMC camera. It also includes the procedures for installing the DMC software on your PowerMac or PowerPC computer or PC, and for taking and saving pictures. To use these instructions, you should be familiar with the operation of your PowerMac/PowerPC computer or PC with the Microsoft Windows 95 operating system.

Here's what you'll find in this book:

Quick startup: Summarizes instructions for setting up the DMC camera and software, and for taking pictures and transferring them to the computer.

Introduction: Briefly describes the DMC camera, lists system requirements and explains how to obtain technical assistance.

Setting up: Explains how to install the DMC software on your PC or PowerMac/PowerPC computer, and how to connect the DMC camera to your computer.

Using the DMC camera: Provides detailed instructions for taking and enhancing pictures.

Maintenance and troubleshooting: Contains camera care information, solutions to problems that might occur, and warranty and service information.

DMC camera specifications: Detailed camera operating and physical characteristics.

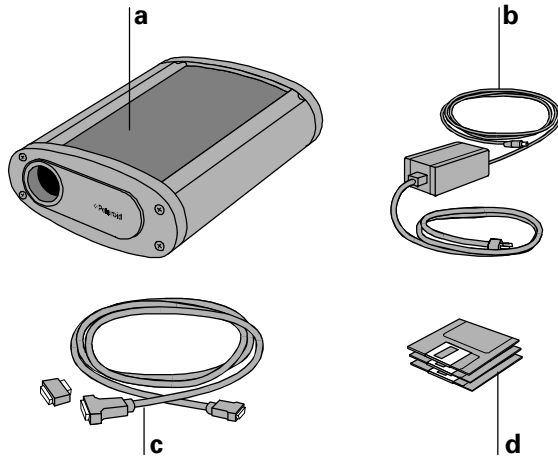
Software license agreement: License agreement for the DMC software accompanying the camera.

Polaroid Offices and Service Centers: Telephone numbers of Polaroid locations throughout the world in case you need service or support.

Setting up

Unpacking

Listed below are the components in the DMC camera package. If any is missing, contact your dealer immediately.



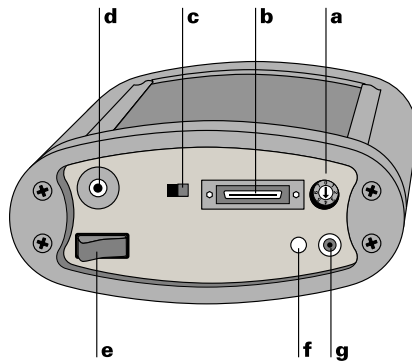
- a** DMC camera
- b** **Power adapter:** Provides surge-protected 5.8VDC, 3-amp power for the camera from 110-240VAC power outlets.

- c SCSI cable (2 meter) and 25/50 DB to HD SCSI adapter:** Connect the DMC camera to a PowerMac/PowerPC computer or the PC SCSI-2 adapter.
- d Software diskettes:** TWAIN driver (for Windows 95 and Windows NT only), DMC Plug-in software for PowerMac/PowerPC systems, and Polaroid DMC Direct camera utility software for Windows 95, Windows NT, and PowerMac/ PowerPC systems.

The package also contains this user's guide, not shown in the illustration.

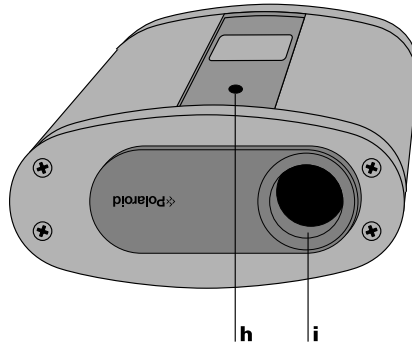
WARNING: NOTHING INSIDE THE DMC CAMERA IS USER-SERVICEABLE. TO AVOID THE POSSIBILITY OF DAMAGING THE CAMERA OR VOIDING THE WARRANTY, DO NOT DISASSEMBLE THE CAMERA.

Camera switches and connectors



- a SCSI ID selector:** Sets the SCSI address of the camera (see page 10).
- b SCSI connector:** Connects to the computer SCSI port via the SCSI cable provided.
- c Termination selector:** Turns camera SCSI termination on or off (normally set to On as shown).

- d X-sync connector:** Connector for electronic flash, if used with the camera.
- e Power switch:** Turns the camera on and off.
- f Power indicator LED:** Lights to indicate that camera is powered on.
- g Power connector:** Connection for the AC power adapter.



- h Tripod mount:** Standard mount for attaching the camera to a copystand or tripod.
- i C-mount:** Accepts standard c-mount adapter for attachment to microscopes, other optical instruments and c-mount lenses.

Setting the SCSI ID

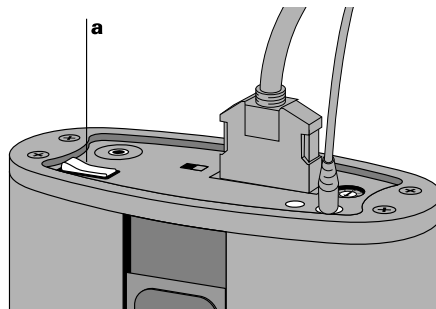
The DMC camera is a Small Computer Systems Interface (SCSI) device. You can connect up to seven SCSI devices to your computer, one to another in a SCSI chain.

The DMC camera's SCSI ID is preset to 4 at the factory. You do not need to change this number unless another SCSI device in the chain is already using it. To determine whether 4 is already being used, check the user guides of the other devices or run a SCSI utility program.

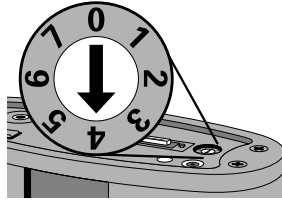
WARNING: EACH SCSI DEVICE CONNECTED TO YOUR COMPUTER MUST HAVE ITS OWN UNIQUE ID NUMBER SO YOUR COMPUTER CAN DISTINGUISH IT FROM OTHER ATTACHED SCSI DEVICES. USING TWO OR MORE DEVICES WITH THE SAME ID NUMBER CAN CAUSE THEM TO MALFUNCTION. YOU CAN LOSE DATA AS A RESULT.

If the DMC is your only external SCSI device or no other device in the chain is using ID 4, skip the rest of this section and go on to *Attaching the camera to your microscope* on page 11. If you must change the camera's SCSI ID, use the following steps:

- 1 Make sure the camera power is off and the camera is disconnected from the computer. If the camera is on, use the power switch (a) to turn it off.



- 2 Insert a small screwdriver into the slot of the SCSI ID selector on the camera and rotate the selector until the arrow points to the desired SCSI ID.

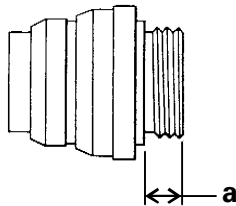


Note: Do not use 7 or 0, which are customarily reserved for the computer and for PowerMac/PowerPC hard drives. If possible, you should also avoid SCSI ID 3, which is often used for internal CD-ROM drives.

Attaching the camera to your microscope

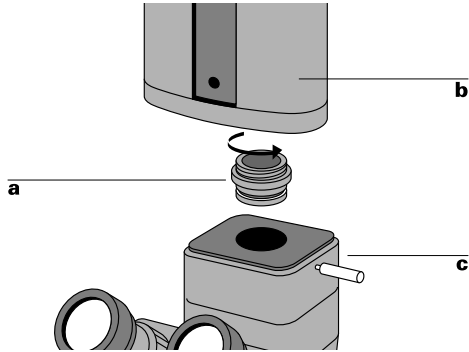
Note: Attaching the DMC camera to your microscope requires a .63 or 1:1 c-mount adapter (not provided) compatible with your microscope. Do **not** use a .5 c-mount adapter, because it will produce image vignetting (dark corners). Refer to the microscope's instruction manual or contact the microscope manufacturer for more information about c-mounts.

Caution: Before attaching a c-mount adapter or lens to the camera, verify that the threaded end of the adapter (a) **does not exceed 0.195 inches (5mm)**. Longer c-mount adapters may damage the camera. (The drawing below is actual size to help you check the thread length of your c-mount adapter.)



Use the following steps to attach the camera to your microscope:

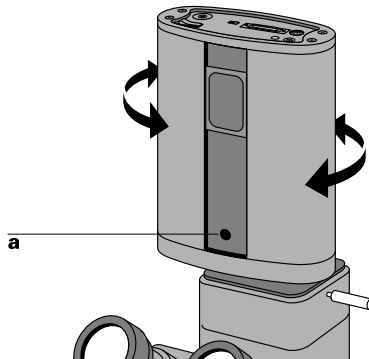
- 1 Screw the threaded side of the c-mount adapter (a) into the DMC camera (b).



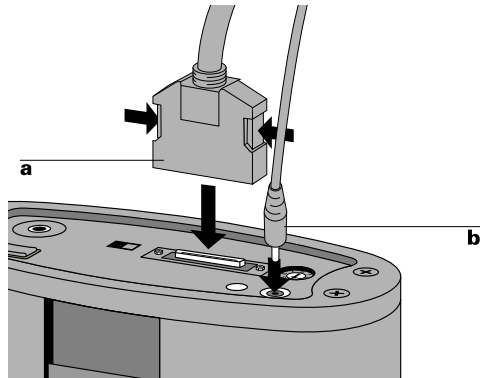
The mounting arrangement shown is typical. Yours may be different.

Important: Finger-tighten the adapter. Do not use any tools.

- 2 Following instructions with your microscope or c-mount adapter, insert the c-mount adapter into the microscope (c).
- 3 Assure that the camera image orientation matches the microscope eyepiece image by rotating the camera so the tripod mount (a) faces toward the bottom of the image.



- 4 Attach the cables to the camera as shown.



- a SCSI cable
- b Power adapter cable

Connecting the camera to your PC

How you connect the camera to your PC depends on whether your computer has a SCSI adapter, and whether you have additional SCSI devices connected to your computer.

Installing a SCSI adapter

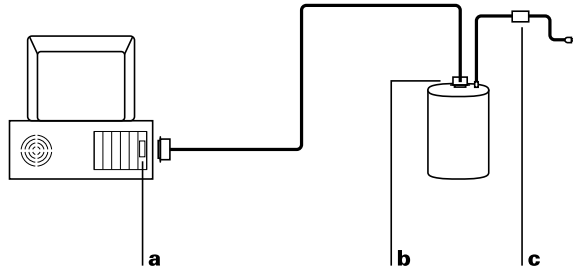
The DMC camera is a SCSI device designed to connect to a SCSI adapter on your IBM-compatible computer. If your computer has a compatible SCSI adapter, you can skip this section and go to the appropriate connection instructions below.

If your computer does not have a compatible SCSI adapter, you must open the computer case and install one. Follow installation and setup instructions provided with the adapter.

After you install and set up the adapter, be sure you have set the camera SCSI ID as described on page 8 before continuing with the appropriate connection instructions below.

If the DMC is the only SCSI device

If the DMC camera is the only external SCSI device being used with your computer, turn off the computer and the camera. Then connect the camera SCSI cable to the computer's SCSI port (a). If you have not already done so, connect the other end of the SCSI cable (b) to the camera's SCSI connector as shown on page 13.



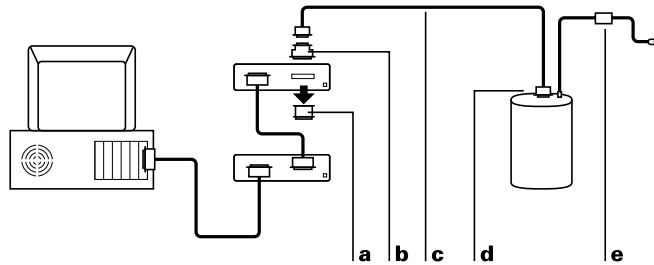
Use only the SCSI cable provided with the camera. Other cables may appear similar, but could damage the camera or your computer.

After connecting the SCSI cable, connect the camera to AC power using the power adapter (c).

If your PC has other SCSI devices

Follow the steps below if your computer has other external SCSI devices in addition to the DMC camera. **You must install the DMC camera as the last device in your SCSI chain** as follows:

- 1 Turn off the computer, all SCSI devices, and the camera.
- 2 Remove the terminator (a) from the last device in your SCSI chain.



Note: Keep the terminator. You will need to reconnect it if you wish to use the computer while the camera is disconnected from it.

- 3 If necessary for your installation, attach the 25/50 DB to HD SCSI adapter (b) to the end of the SCSI cable (c).

Use only the cable provided with the camera. Other cables may appear similar, but could damage the camera or your computer.

- 4 Connect the 25/50 DB to HD SCSI adapter (b) to the connector from which you removed the terminator.
- 5 If you have not already done so, connect the other end of the SCSI cable (d) to the SCSI connector on the DMC camera as shown on page 13.
- 6 Connect the camera to AC power using the power adapter (e).

Note: If a cable or adapter you need is not included with the DMC camera, Polaroid Technical Assistance (see page 4) can provide instructions for obtaining it.

IMPORTANT: Always connect the camera to AC power when it is connected to the computer. If the camera or any other SCSI device turns off while connected, it could corrupt data on your hard disk.

Installing the DMC software on your PC

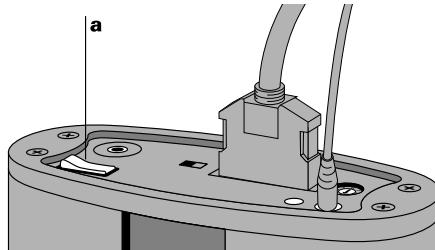
To operate the DMC camera, you must use one of the following programs on your PC. Both are provided with the DMC camera and are installed during the procedure given below.

- **DMC TWAIN driver** Using the TWAIN driver requires an image-processing application (not provided) compatible with the TWAIN specification.
- **DMC Direct software** If you do not have an image-processing application compatible with TWAIN, you can use DMC Direct to transfer pictures from the DMC to your computer.

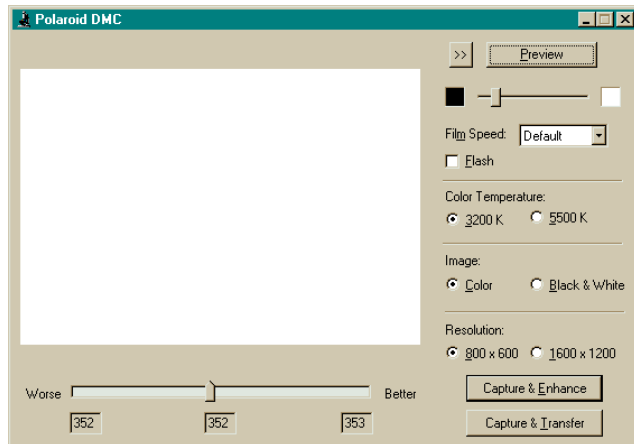
To install the DMC software:

- 1** Turn on the computer and start the Windows program.
- 2** Insert the DMC for Windows diskette or CD-ROM into the drive.
- 3** Click the Windows 95 Start button and choose Run.
- 4** Type **a:\setup** (or **b:\setup** if the diskette is in drive B) and click OK.
- 5** Follow instructions on the screen to complete the installation.
- 6** When an on-screen message indicates that installation has been completed, click OK.

- 7 Remove the diskette or CD-ROM from the drive.
- 8 If you have not already connected the DMC to the computer, turn off the computer and connect the camera as described on page 13.
- 9 Use the power switch (a) to turn the camera on.



- 10 Restart your computer.
- 11 Start DMC Direct and wait for the DMC window to appear, verifying that the camera and computer are communicating.



Note: If an error message appears instead of the DMC window, refer to *Troubleshooting SCSI connection problems* on page 36 to correct the problem.

- 12 Proceed to *Parfocalizing* on page 24.

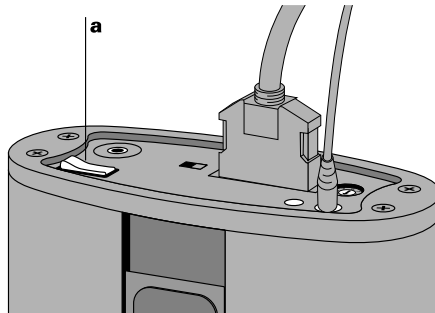
Connecting the camera to your PowerMac or PowerPC

The DMC camera is a SCSI device designed to connect to the SCSI port of your PowerMac or PowerPC computer. How you connect the DMC depends on whether you have other SCSI devices connected to your computer.

Be sure to set the camera's SCSI ID as described on page 10 before connecting the camera.

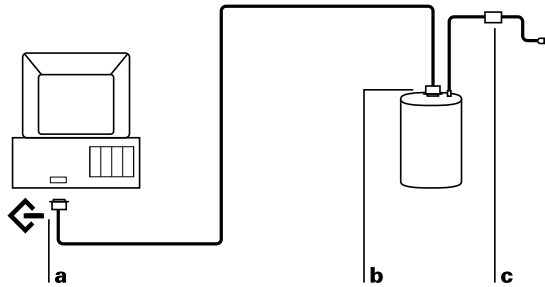
WARNING: IF YOU ARE CONNECTING THE DMC TO AN APPLE POWERBOOK COMPUTER, READ "CONNECTING TO AN APPLE POWERBOOK" ON PAGE 21 BEFORE CONTINUING.

DO NOT CONNECT OR DISCONNECT THE DMC CAMERA OR ANY OTHER SCSI DEVICE WHILE THE DEVICE OR YOUR COMPUTER IS TURNED ON. DOING SO COULD DAMAGE THE DEVICE, YOUR COMPUTER, OR BOTH. (TURN OFF THE CAMERA WITH THE POWER SWITCH a.)



If the DMC is the only SCSI device

If the DMC camera is the only external SCSI device being used with your computer, turn off the computer and the camera. Then connect the SCSI cable provided to the computer's SCSI port (a). The port is marked with a SCSI symbol for easy identification. If you have not already done so, connect the other end of the SCSI cable (b) to the camera's SCSI connector as shown on page 13.



Use only the SCSI cable provided with the camera. Other cables may appear similar, but could damage the camera or your computer. If you are using an Apple PowerBook computer, read the special instructions on page 21 before continuing.

After connecting the SCSI cable, connect the camera to AC power using the power adapter (c).

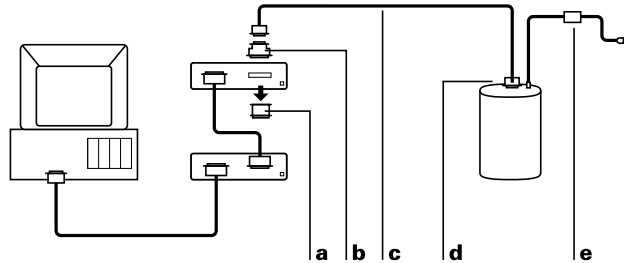
IMPORTANT: ALWAYS CONNECT THE CAMERA TO AC POWER WHEN IT IS CONNECTED TO THE COMPUTER. IF THE CAMERA OR ANY OTHER SCSI DEVICE TURNS OFF WHILE CONNECTED, IT COULD CORRUPT DATA ON YOUR HARD DISK.

WHEN DISCONNECTING THE CAMERA, ALWAYS DISCONNECT THE SCSI CABLE FROM THE BACK OF THE COMPUTER BEFORE RESTARTING THE COMPUTER. FAILURE TO DO SO COULD CORRUPT DATA ON YOUR HARD DISK.

If your PowerMac or PowerPC has other SCSI devices

Because the DMC camera has only one SCSI connector, you must install it as the last device in your SCSI chain as follows:

- 1 Turn off the computer, all SCSI devices, and the camera.
- 2 Remove the terminator (a) from the last SCSI device in your SCSI chain.



Note: Keep the terminator. You must reconnect it if you use the computer while the camera is not attached.

- 3 Attach the 25/50 DB to HD SCSI adapter (b) to the end of the SCSI cable (c).

Use only the SCSI cable provided with the camera. Other cables may appear similar, but could damage the camera or your computer. If you are using an Apple PowerBook computer, read the special instructions for PowerBooks in the following section before continuing.

- 4 Connect the 25/50 DB to HD SCSI adapter (b) to the connector from which you removed the terminator.
- 5 If you have not already done so, connect the other end of the SCSI cable (d) to the SCSI connector on the DMC camera as shown on page 13.
- 6 Connect the camera to AC power with the power adapter (e).

IMPORTANT: ALWAYS CONNECT THE CAMERA TO AC POWER WHEN IT IS CONNECTED TO THE COMPUTER. IF THE CAMERA OR ANY OTHER SCSI DEVICE TURNS OFF WHILE CONNECTED, IT COULD CORRUPT DATA ON YOUR HARD DISK.

WHEN DISCONNECTING THE CAMERA, ALWAYS REINSTALL THE TERMINATOR ON THE LAST DEVICE IN THE SCSI CHAIN BEFORE RESTARTING THE COMPUTER. FAILURE TO DO SO COULD CORRUPT DATA ON YOUR HARD DISK.

Connecting to an Apple PowerBook

In addition to the cables and adapters described in the previous sections, Apple PowerBook computers require a 1-meter SCSI cable (available from your Polaroid dealer) and an HDI-30/DB25 adapter (available from PowerMac/PowerPC dealers) to connect the DMC to the PowerBook SCSI port.

If you are using an Apple PowerBook, do **not** use the 2-meter SCSI cable provided with the DMC, and do **not** use a SCSI dock adapter or a cable-type adapter. (These cables and adapters may not work and could corrupt data on your PowerBook hard disk.)

WARNING: WITH POWERBOOK COMPUTERS, USE A SCSI CABLE NO LONGER THAN 1 METER TO CONNECT THE CAMERA TO THE COMPUTER OR TO THE LAST DEVICE IN THE SCSI CHAIN. LONGER CABLES MAY CORRUPT DATA OR DAMAGE THE COMPUTER'S HARD DRIVE.

Other than the exceptions above, follow the instructions for connecting to PowerMac/PowerPC computers (starting on page 13) when connecting the DMC camera to an Apple PowerBook computer.

Installing DMC software on your PowerMac/PowerPC

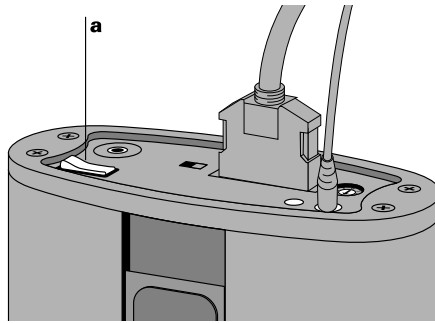
To take pictures with the DMC camera, you must use one of the following programs on your PowerMac or PowerPC. Both are provided with the DMC camera and are installed during the procedure described below.

- **DMC Plug-in software** Using the Plug-in after it is installed requires an image-processing application (not provided) compatible with Adobe Photoshop plug-in modules.
- **DMC Direct software** If you do not have an image-processing application compatible with Photoshop plug-in modules, you can use DMC Direct to operate the DMC camera.

To install the DMC software on your PowerMac or PowerPC:

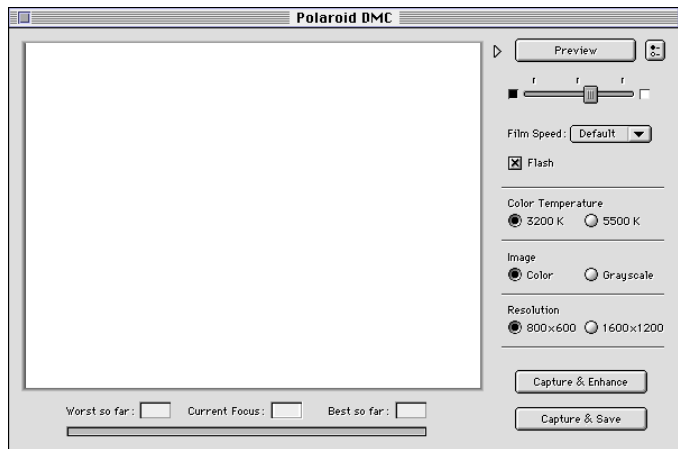
- 1** Insert the DMC for PowerMac/PowerPC disk into an internal or external drive.
- 2** Be sure to read any Read Me First sheets packed with the camera and any Read Me file included on the disk. These contain important late-breaking product information that may affect installation or use.
- 3** Double-click the Installer icon to open the Installer program.
- 4** Click the Install button and follow instructions on the screen.
- 5** Choose your Photoshop Plug-ins folder.
- 6** When an on-screen message indicates that installation has been completed, click OK.
- 7** If you have not already connected the DMC to the computer, turn off the computer and connect the camera as described on page 13.

8 Use the power switch (a) to turn the camera on.



9 Restart your computer.

10 Start DMC Direct and wait for the DMC window to appear, verifying that the camera and computer are communicating.



Note: If an error message appears instead of the DMC window, refer to "Troubleshooting SCSI connection problems" on page 36 to correct the problem.

12 Proceed to *Parfocalizing* (the following section).

Parfocalizing

After installing the camera on the microscope, parfocalize as described below to assure that the eyepiece image and the camera image are both in focus simultaneously.

Note: If you are using a 1:1 c-mount adapter, parfocalizing is not necessary.

Parfocalize as follows:

- 1** Place a focusing target or specimen under the microscope.
- 2** Adjust the microscope lighting and focus to optimize the image viewed through the eyepiece.
- 3** If a viewfinder image is not visible in the DMC Direct window on your computer display, click the Preview button in the main DMC Direct window.
- 4** Adjust the c-mount on the microscope until the target or specimen image on the computer display is in focus. (Refer to your microscope instructions for c-mount adjustment instructions.)

Using the DMC camera

Typical DMC workflow

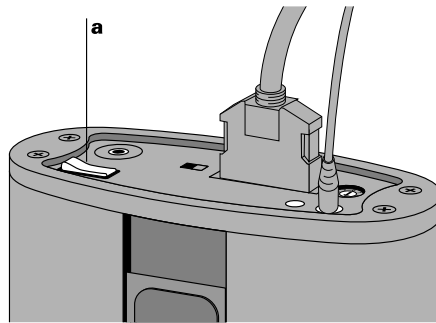
To help you immediately begin using the DMC camera, a typical workflow sequence is presented below. (After you become familiar with DMC operation and features, you can use the camera in the way that best suits your imaging needs.)

- 1** Start your imaging application or DMC Direct.
- 2** If you are using an imaging application, use the Acquire or Import command to launch the DMC interface.
- 3** View the subject through the microscope eyepiece, and focus and position it as desired.
- 4** In the DMC window on your computer display, fine-tune subject focus and select shutter and film speed, color temperature and other options.
- 5** If necessary, click the Capture and Enhance button and adjust color balance, contrast, brightness or sharpening.

- 6 Transfer the image to your imaging application or to your hard drive as a TIFF file.
- 7 Import the image to your presentation, publishing or archiving application.

Turning on the camera

Turn off your computer before powering up the DMC camera. Then turn on the camera by pressing the side of the power switch (a) labeled “1.”



After turning on the camera, restart your computer.

Starting the DMC application

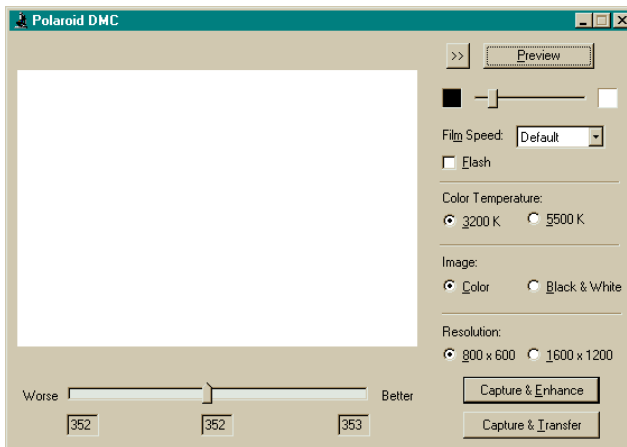
- 1 Start an image-processing application compatible with Photoshop plug-ins or TWAIN. If you do not have such an application, start DMC Direct.
- 2 If you are using DMC Direct, go directly to step 3.

If you are using a plug-in or TWAIN compatible application, choose Acquire or Import from the File menu, then choose Polaroid DMC.

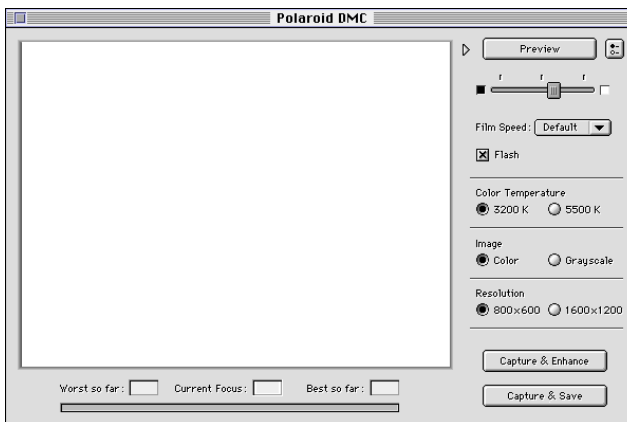
Note: This procedure may be slightly different for some plug-in or TWAIN compatible applications.

- 3 Wait for the main DMC window to appear.

PC:



PowerMac/PowerPC:



- 4 If the viewfinder image area is not visible on the left side of the window, click the expand button (<< or ◀) to display it.

Framing and focusing the image

Before attempting to capture an image with the DMC camera, view the subject through the microscope eyepiece and adjust its position, focus and lighting according to the microscope instructions.

When the subject appears as desired in the microscope eyepiece, continue to the following section.

Selecting picture options

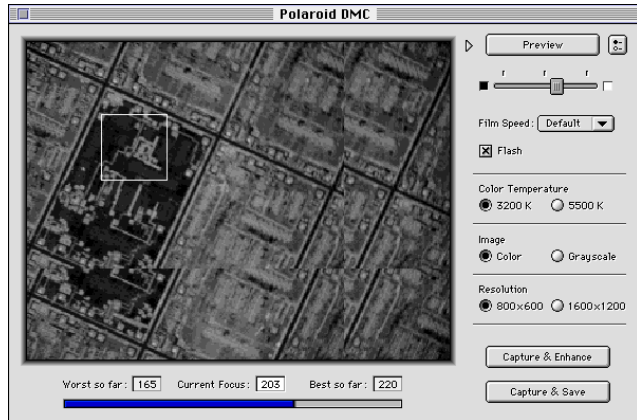
After adjusting the image through the microscope eyepiece, view the black-and-white viewfinder image in the main DMC window on your computer display. You can then choose the optimum picture options as described below.

Note: If a viewfinder image is not visible on your computer display, click the Preview button. You may also need to adjust shutter speed or film speed as described below to make an image visible.

PC window:



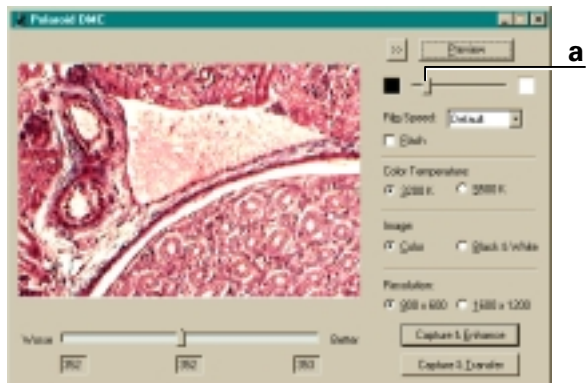
PowerMac/PowerPC window:



Shutter speed

Select a shutter speed between 1/500 and 1 second by dragging the shutter speed slider (a) and observe its effect on the viewfinder image.

PC:



PowerMac/PowerPC:



Film speed

Choose a film speed (ISO 25, 50 or 100) from the Film Speed drop-down list box and observe its effect on the viewfinder image.

Flash mode

If an electronic flash is connected to the x-sync connector of the camera, click the Flash box to activate it.

Color temperature

If you are capturing a color image, click the appropriate color temperature (3200K or 5500K) for your lighting.

Color or black-and-white

Choose color (24-bit, 16.7 million colors) or black-and-white (8-bit, 256 gray shades).

Resolution

Choose a resolution of 800x600 pixels or 1600x1200 pixels. Your selection also affects image file size and the time required to transfer the image to your computer:

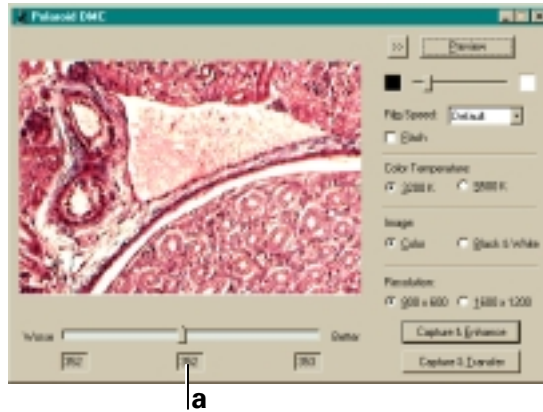
	<i>File size</i>	<i>Approximate transfer time*</i>
1600x1200, color	5.6 MB	3 sec
800x600, color	1.4 MB	0.7 sec
1600x1200, black and white	1.8 MB	0.9 sec
800x600, black and white	0.5 MB	0.2 sec

* Transfer time depends on your computer speed and available memory.

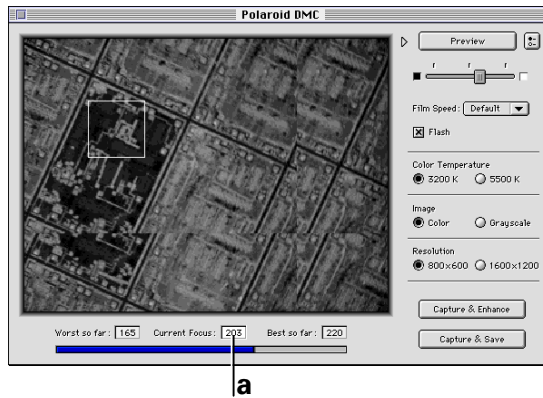
Using the focus indicator

The focus indicator (a) at the bottom of the DMC window helps achieve optimum focus for any selected area of the image.

PC:



PowerMac/PowerPC:



To use the focus indicator:

- 1** Using the mouse, move the cursor to the area you want to use for determining optimum focus. Click the mouse to define a 50x50-pixel focusing area below and to the right of the cursor.
- 2** While watching the focus indicator (a) in the DMC window, change the microscope focus slightly according to the microscope instructions.

If the indicator increases in value, your adjustment improved the focus. If it decreases, your adjustment degraded the focus.

- 3** Continue adjusting the microscope focus to obtain a peak focus indicator value.

Capturing the picture

After selecting picture options as described in the previous section, you have the following choices for capturing the image:

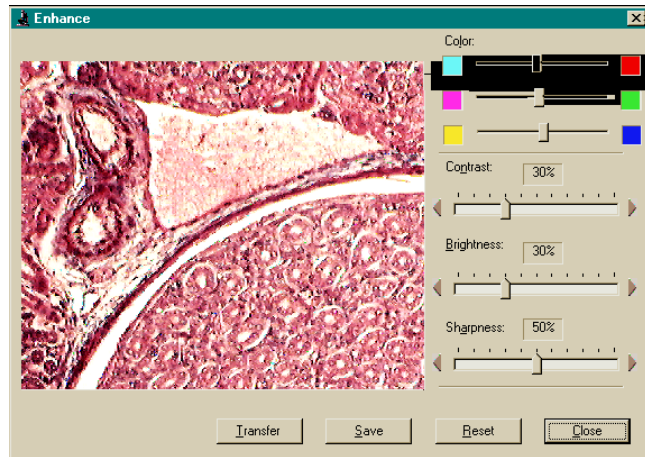
- Capture and enhance.
- Capture and transfer to an application (not available in DMC Direct).
- Capture and save directly to disk.

Capturing and enhancing

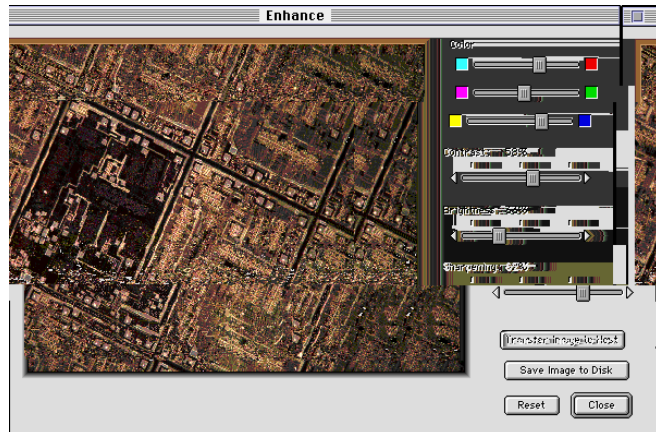
Use this procedure to capture the image currently displayed in the DMC main window and to enhance it with DMC software:

- 1 Click the Capture & Enhance button to display the DMC Enhance window.

PC:



PowerMac/PowerPC:



- 2 Adjust color, contrast, brightness and sharpening as desired by dragging the sliders. The preview image displays the effect of any changes you make.

Note: When you open the Enhance window, the sliders are in the positions you set for the previous image. To reset the sliders to the settings in effect when you opened the Enhance window, click Reset.

- 3 To save the enhanced image to disk, click Save and choose a folder and file name for the image.

To transfer the image to your image-processing application, click Transfer. (This option is not available in DMC Direct.) Follow instructions with your image processing application for editing the image (if necessary) and saving it.

Capturing and transferring to an application

Use this procedure to capture the image currently displayed in the DMC main window and to transfer it to your image-processing application. (This option is not available in DMC Direct.)

- 1 Click the Capture & Transfer button to display the image in your image processing application.
- 2 Follow instructions with your image processing application for editing the image (if necessary) and saving it.

Capturing and saving directly to disk

Use this procedure to capture the image currently displayed in the DMC main window and to save it to your hard disk without enhancing it:

- 1 Click the Capture & Save button.
- 2 Choose a folder and file name for the image.

Maintenance and troubleshooting

Caring for the DMC camera

Be sure to keep the DMC camera protected from dirt, dust, rain and moisture. Damaged caused by these conditions may not be covered by the warranty.

If the DMC camera body requires cleaning, use a clean, soft cloth dampened with water. **Do not use cleaners of any kind, and do not spray water or other liquids directly onto the camera.**

When cleaning lenses or other optics attached to the camera, use only lens-cleaning fluid and lens-cleaning tissue (available from microscope dealers).

Important: Always protect the CCD sensor in the camera by placing the cap on the camera c-mount opening whenever the camera is removed from the microscope.

Troubleshooting SCSI connection problems

PowerMac/PowerPC SCSI ID conflicts

The SCSI ID number used for the DMC must be unique, and must not be used by any other of the computer's internal or external SCSI devices on any SCSI bus. If another SCSI device is using the same ID as the DMC camera, the following message appears on the PowerMac/PowerPC display: "Unable to communicate with camera..."

To identify the SCSI IDs being used by the devices connected to your PowerMac or PowerPC, use a program such as SCSI Explorer or Apple System Profiler (distributed on the Apple software CD).

Windows 95 SCSI ID registry entries

When the SCSI ID of the DMC is changed and the computer running Windows 95 is rebooted, Windows 95 adds another DMC entry to the registry corresponding to the new SCSI ID. If you change the DMC SCSI ID back to its original setting, you must delete the new registry entry before the DMC software will recognize the camera.

Refer to the Windows 95 documentation for registry-editing instructions.

SCSI drivers

Verify that you have the latest software drivers for your SCSI adapter. Instructions for obtaining updated drivers are usually packaged with the adapter. You may also be able to obtain drivers from the adapter manufacturer's customer support department or site on the World Wide Web.

DMC full one-year warranty

Polaroid Corporation warrants the DMC camera against defects in manufacture or workmanship for a period of one year from the date of purchase. To verify the warranty period, you should keep the invoice, sales receipt, or other proof of the purchase date.

Should this product or any component or accessory included with it, with the exception of software, prove to be defective at any time during the warranty period, Polaroid Corporation will, at its discretion, either replace or repair this item, without charge. Please refer to the Software Warranties under Software License Agreements (page 43) for the DMC software warranty.

This warranty does not cover damage caused by accident, incorrect installation, unauthorized modification, and misuse or abuse. A charge will be made for repair of such damage.

This warranty excludes all consequential damages. Some jurisdictions do not allow the exclusion or limitation of consequential damages, so the foregoing exclusion may not apply to you.

Service

U.S.A. and Canada

If your DMC camera requires service, call Polaroid Technical Assistance at the numbers on page 4 for instructions.

If you return the camera for service, pack it carefully in its original shipping carton or other sturdy container, with plenty of padding. Shipping instructions are available from Polaroid Technical Assistance specialists.

Outside North America

Please contact your nearest Polaroid office or service center (see page 47).

Radio and television interference

FCC Notice (U.S.A.)

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.
- Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected.
- Consult the dealer or an experienced radio/television 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.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASS B PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

**EMC Statement
(Europe)**

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

Safety

Low Voltage Directive 73/23/EEC
IEC 950/EN60950

EMC

89/336/EEC EMC Directive
EN 55022, Class B
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4

Use only a harmonized detachable cordset that has conductors with a cross sectional area equal to or greater than 1.0mm. This cord shall be rated for 220-240VAC, 10 Amperes. It should be approved by a European agency such as VDE, SEMKO, ASTA or VTE.

DMC camera specifications

Camera type	Microscope-mounted, computer-controlled digital camera
Sensor resolution and size	Polaroid 1 million pixel, 12.15mm CCD
Output resolution	High resolution: 800x600 pixels, 24-bit color (16.7 million colors), 1.4MB file or 800x600 pixels, 8-bit gray scale (256 gray shades), 450kb file Super high resolution: 1600x1200 pixels, 24-bit color (16.7 million colors), 5.6MB file or 1600x1200 pixels, 8-bit gray scale (256 gray shades), 1.8MB file
Image transfer	SCSI data transfer at 2MB/second or greater
Computer interface	SCSI-2
ISO rating	Selectable: 25, 50 or 100 (film speed equivalent)
Shutter	Scanning aperture, microprocessor-controlled
Shutter speed	Selectable: 1/500 to 1 second

Preview mode	Black and white, up to 5 frames/second
Power adapter	IEC universal power adapter Input: 100-240VAC, 0.38A, 50-60Hz (surge protected) Output: +5.8 VDC, 3.0A Class II, double-insulated UL, SA, CE, DVE approved
Dimensions	Height: 7.8 inches (19.8cm) Length: 4.6 inches (11.7cm) Width: 2.2 inches (5.6cm)
Weight	2.6 pounds (1.2 kg)
Operating environment	Temperature: 32° to 120°F (0° to 48°C) Relative humidity: 5% to 90%, no condensation

Software license agreement

Polaroid End User License Agreement

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its terms. This Agreement may only be modified in writing signed by an authorized officer of Polaroid.

Your Acceptance of the Foregoing Agreement Will Be Indicated During Installation

Polaroid Offices and Service Centers

For information about technical support or service, contact the Polaroid Office or Service Center nearest you:

<i>Location</i>	<i>Telephone</i>
Australia.....	1800 066 021
België.....	02 714 31 02
Belgique.....	02 714 31 06
Brasil	0800 11 2177
Canada	1-800-268-6970
Danmark	80 01 59 56
Deutschland	069 9509 6056
España.....	01 377 81 03
France.....	01 41 91 38 10
Ireland.....	01 402 6897
Italia	02696 33253
Japan	(81-3) 3438 8811
Latin America.....	(305) 592 4212 (Miami, FL, U.S.A.)
Luxembourg.....	08 00 25 42
México	01 800 70 72777
Nederland.....	020 487 45 34
New Zealand.....	09 377 3773
Norge	80 01 18 87
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Suisse.....	01 838 53 48
Suomi	080 011 7008
Sverige	08 445 12 31
Svizzera	01 838 53 49
United Kingdom....	(01) 8130 86508
U.S.A.	1-800-432-5355

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