Spectrum Technologies, Inc.

IPM Scope

The digital microscope that fits in the palm of your hand

USB Microscope with drivers and software for
Microsoft Windows Computers
Works with laptop computers too

revision 1B

System Requirements: Pentium III 500 MHz or faster, Windows 2000/XP, Internet Explorer 5.0 (or later), DirectX 8.1 or greater, USB 1.1 Port, 128 MB of Free Memory, Video card with 16 MB of video RAM, minimum 800 x 600 resolution at 16-bit color

What is the IPM Scope?

The IPM Scope is a handheld digital microscope. It doesn't have an eyepiece so you don't look into it. Instead, the IPM Scope connects to your computer through its USB port. You see the image from the IPM Scope right on your computer screen. Anything you see can be captured and stored on your computer. What can you look at with the IPM Scope? How about bugs, plants, coins, stamps, jewelry, collectable cards, the small print on prescription bottles. There is no end to uses for your IPM Scope.

The IPM Scope let you view objects at 40 – 140X magnification. The single slider controls both magnification and focus at once. The compact design with built-in lighting means there are no extra parts to lose or to leave behind. And because the IPM Scope works with a laptop computer, you can take it anywhere you want to get a close up view. Take it into the backyard or out to that antique dealer.

With the IPM Scope, you don't just see, you also record. Save still images or movies with labels and markers that you place right on the live picture. You can even draw on the picture to point out the important features. Then print or e-mail that picture or add it to a report.

Installing the IPM Scope Software

The IPM Scope Installer CD contains all the software needed to use the IPM Scope and the Video ToolBox software. These step-by-step instructions will show you how to install all the software.

On some networked computers, it is necessary to be logged in as the administrator or as a user with administrator privileges. If you computer is connected to a corporate network, contact your network administrator to make sure your user account is setup to install driver software. If you are installing the software on your personal computer, then this is not an issue.

Instructions

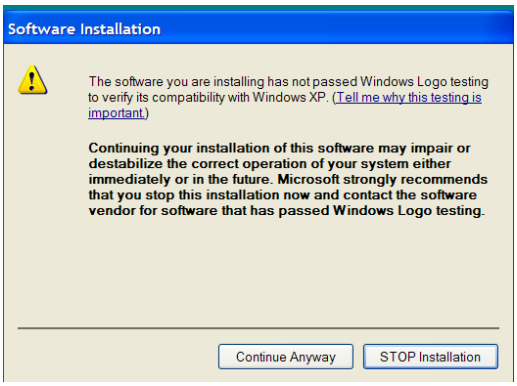
1. To install the software insert the CD into your computer's CD-ROM drive.

2. Open the "My Computer" window and double-click on the CD-ROM icon.

3. Open the IPM Scope Drivers folder and double-click on the Setup.exe program to start the driver install program.

   Setup.exe

   Follow the directions in the program. If you see this window while

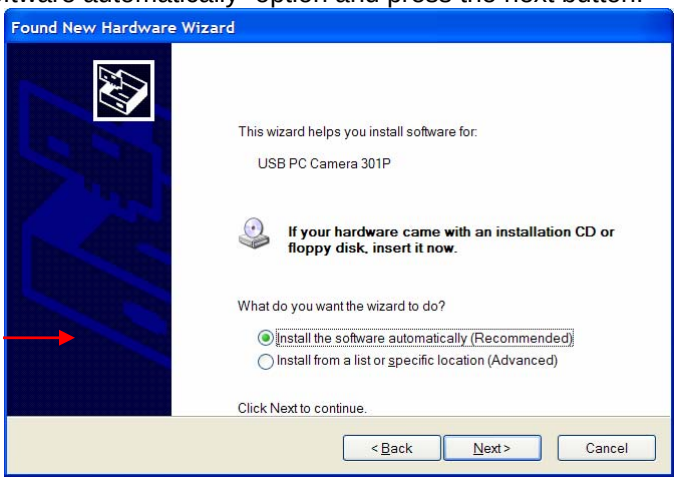
   installing the software, press the "Continue Anyway" button.

4. If the installation program asks you to restart your computer then press the Restart button. Otherwise, proceed to step 5.

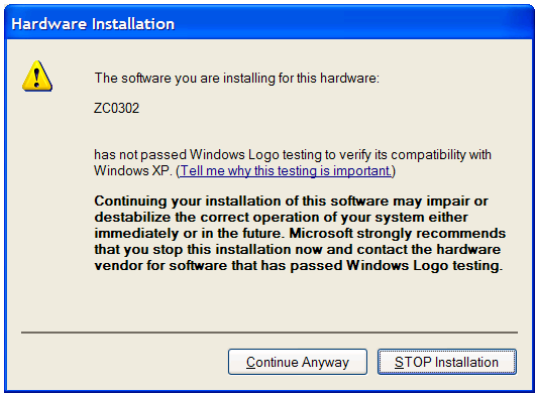
5. Plug the USB cable into the side of the IPM Scope. Connect the other end of the cable to the USB port on your computer. The USB port is a rectangular opening with the symbol next to it. The "new hardware found" wizard will start up.

6. If you get this screen press the No option (you do not want windows to search the internet for the drivers) and then press next.

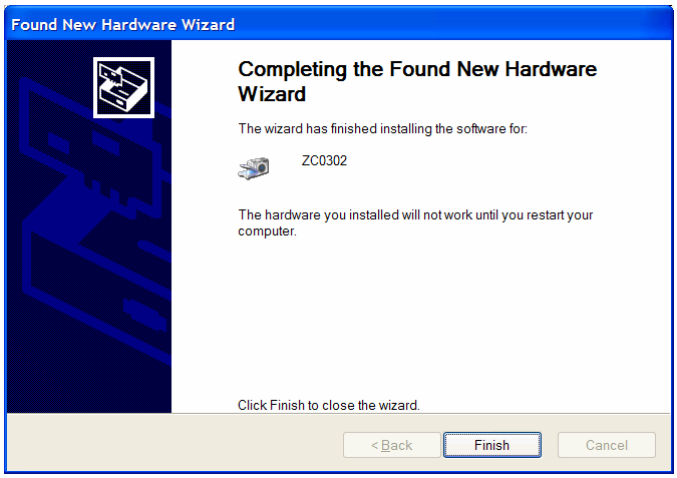
7. Select the "Install software automatically" option and press the next button.



8. If you see the next window, press the "Continue Anyway" button.



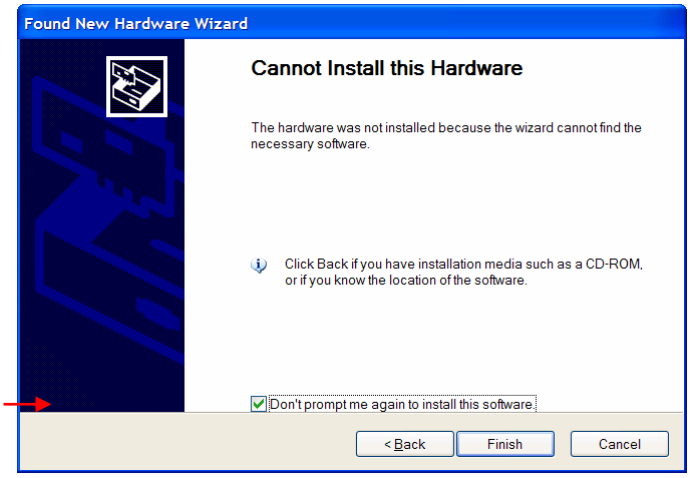
9. Press the finish button.



10. The “New Hardware Wizard” will start again.

11. If you get this screen press the No option (you do not want windows to search the internet for the drivers) and then press next.

12. After a short period Windows will tell you that the drivers are not available to complete the installation. Make sure to that the box next to “Don’t prompt me again…” is checked. Press the Finish button to complete the driver installation.



13. Restart the computer.

14. After the computer restarts, open the CD and double-click on the *Video ToolBox Installer* program. Follow the instructions in the installer program to complete the software installation.

Video ToolBox Installer.exe

15. The installation is complete. You can now start the Video ToolBox program (the icon is located on your desktop) and configure the program to work with the IPM Scope.

16. Make sure you follow the instructions: “Using your IPM Scope for the First Time.” These instructions will help you set up the IPM Scope for the best possible image quality.

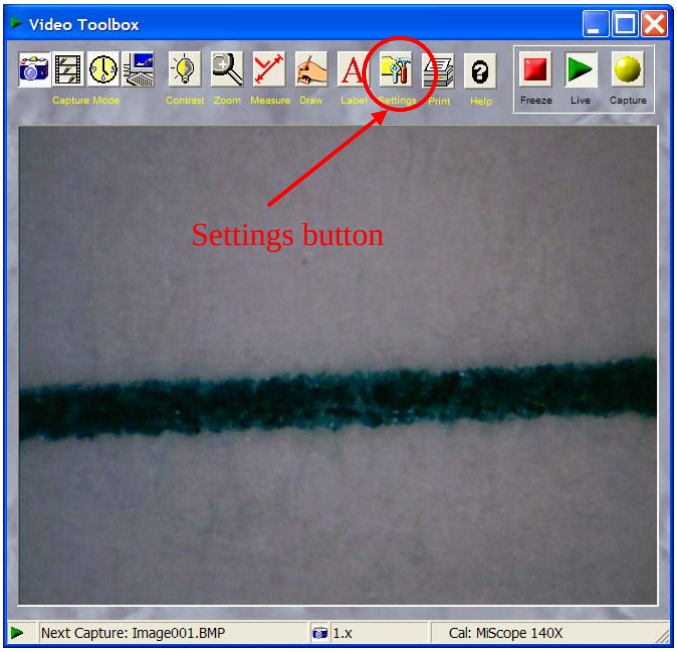
Using your IPM Scope for the First Time

The first time you use your IPM Scope, you will need to configure your software. After your first use, the program will remember all the settings and will restore them each time the program is used. The following instructions will show you how to properly configure the software.

Starting Video ToolBox

You can start Video ToolBox by using the Windows Start Menu or by double-clicking on the Video ToolBox green arrow icon on your main desktop window. To use the Windows Start Menu, click on the Start menu button at the bottom left of the screen and select Programs → Zarbeco → Video ToolBox to start the program.

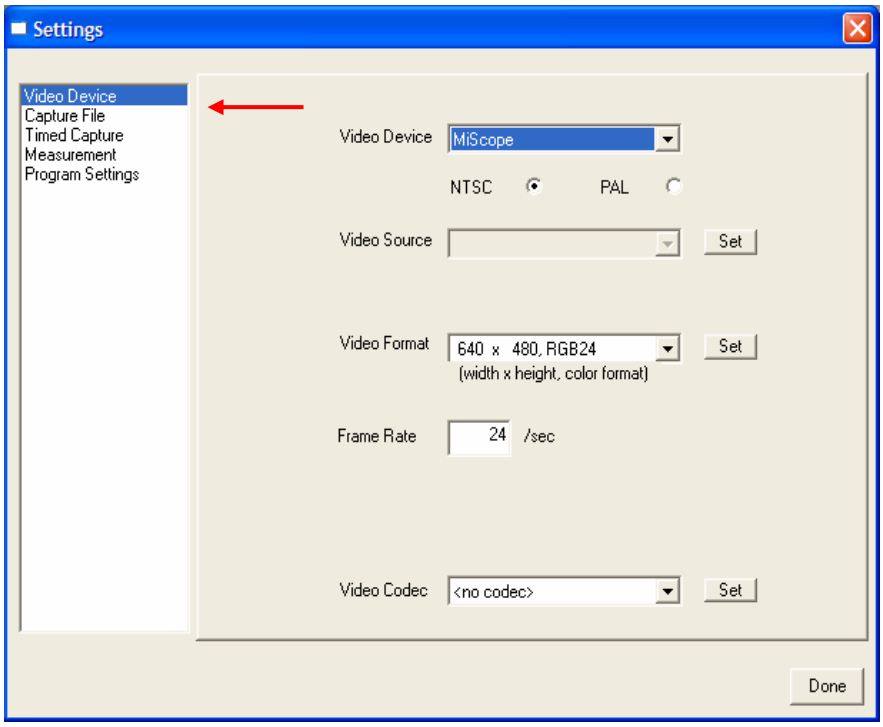
This will open the Video ToolBox main window.


Video Toolbox
Capture Mode
Contrast
Zoom
Measure
Draw
Label
Settings
Print
Help
Freeze
Live
Capture
Settings button
Next Capture: Image001.BMP
1.x
Cal: MiScope 140X

Configuring Video ToolBox Program Settings

To configure the program press the Settings Button to open the Settings window. The help file will provide a detailed description of each option. For now you will need to select the video device and configure it to display the video image on the screen.

Select Video Device from the list on the left side of the window.



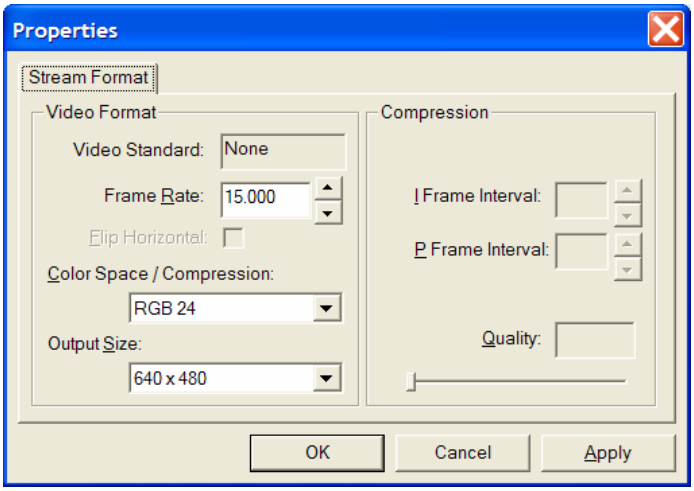
Configure the program to match the window above. The parameters are:

Video Device (menu): Identifies the device which is connected to the video source. For the IPM Scope, the device type is either "IPM Scope" or "ZC0302."

NTSC/PAL: Video format. Not applicable for a digital camera.

Video Source: Press the set button to access the camera settings. Many of these settings are also accessible from the Contrast button on the main window.

Video Format: Size and type of image. For the IPM Scope, the options are "640 x 480, RGB24" and smaller sizes. You will want to set the resolution to 640 x 480, RGB24 for the best picture quality. You can access additional settings by press the Set button which will bring up the following window:



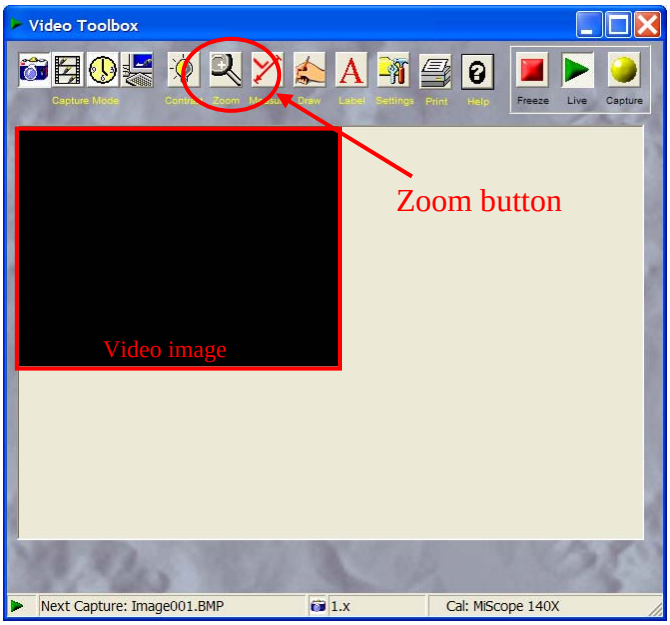
Frame Rate: The speed at which the image updates. When set to 640 x 480 pixels, the IPM Scope camera can display images at up to 15 frames/second. Usually a value between 12 – 15 produces a nice image with smooth motion.

Video Codec: A program which reduces the size of movie files. See the help file (How To Capture A Movie At High Frame Rate) for more information on this parameter. You do not need to change this setting now.

Press the done button to close the Settings Window. You should see a video image on the screen. If not, open the help file (by pressing the Help button) and go to the section on troubleshooting.

Resizing the Image in the Window

Video ToolBox can resize the image to fill the window or the screen by using the Zoom button. Use the "Fit to window" option of the zoom button to make the image fill the window. Set the image to an exact size using the 1x – 4x Zoom button options.



Learning More About Video ToolBox

To learn more about Video ToolBox see the Video ToolBox Help file – accessed through the Help button on the main window.

Using the IPM Scope

The IPM Scope is as easy to use as a computer mouse. Grab the IPM Scope with your right hand, placing your thumb on the slider control. The slider control is used to adjust the focus and magnification of the image. Start by moving the slider control with your thump to the top position (40X). In this position the IPM Scope is set to 40X magnification and it will focus on an object directly below the microscope.

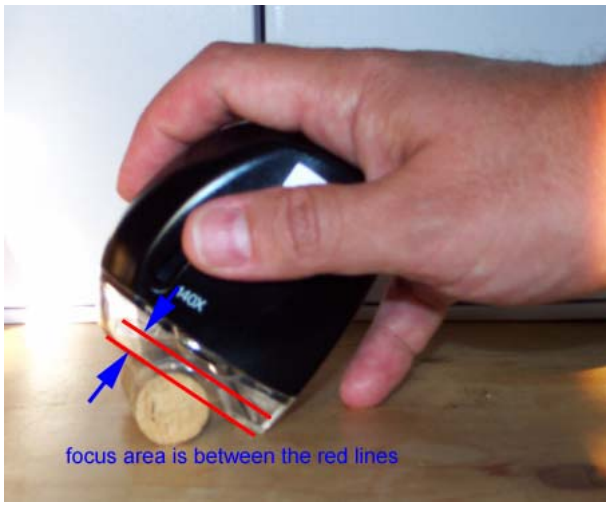
Place the IPM Scope on top of the object to view. The IPM Scope must be in contact (or almost in contact) to focus on the object. If the image is blurry, slowly move the slider control down and view the image until it is in focus. If you continue moving the slider control down, the image will get blurry and also larger. As you continue to move the slider control near the 140X position the image will once again become focused.

The IPM Scope can be used to inspect many samples. Place it on fabric, skin, money, insects or plants. If the sample doesn't fit completely under the IPM Scope, you can tip the IPM Scope to accommodate the large objects. You can also place the IPM Scope sideways onto a large object to view its fine details.

Solutions to Common Problems

My image is out of focus.

The IPM Scope will focus on any object located from the surface of the clear plastic window up into the cutout section (see photo below). To adjust the focus, move the slider control with your thumb and watch the image on the screen. The image will change size and focus but just watch until the object is clearly in focus.



Video updates very slowly on the screen.

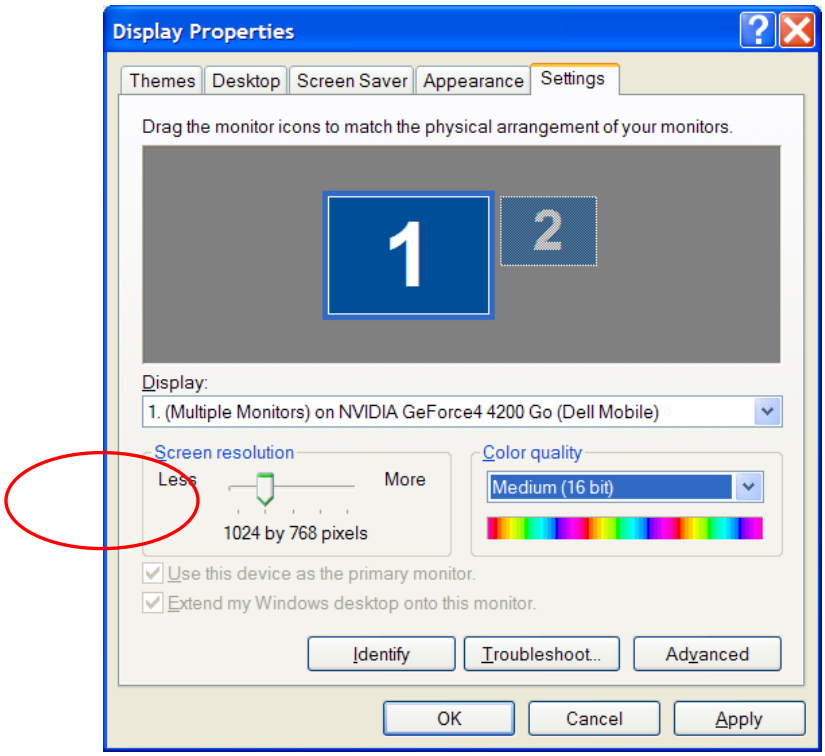
The video speed on the screen is related to the speed of the computer, the speed of the video card, and the amount of video memory. A minimum Pentium III 1 GHz with a 16MB video card is recommended. There are other ways to increase the speed of the video display:

1) Reduce the monitor resolution.

From the Start Menu (lower left corner of the screen) select Settings → Control Panel and then select the Display icon. At the top of the Display Properties window select Settings. Under the option for Color Quality select Medium (16 bit) and press the Apply button.

2) Reduce the screen resolution (if step #1 didn't solve the problem).

On the same Display Properties window change the Screen Resolution setting to 1024 x 768 pixels or to 800 x 600 pixels. Press the Apply button to change the screen resolution.



Technical Support

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Plainfield, IL 60544

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Fax: 815.436.4460
E-mail: support@specmeters.com

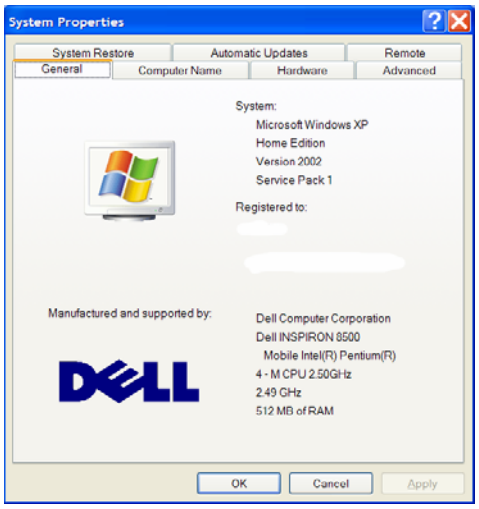
Please try to have the following information available:

Computer operating system _____
Computer memory _____

Video memory _____
Processor speed _____

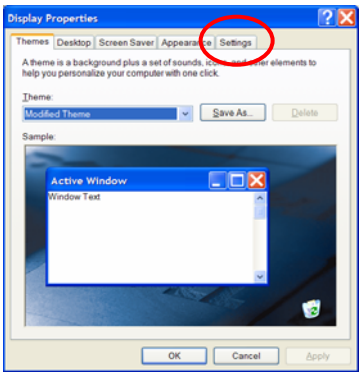
You can find most of this information in the following locations:

Start Menu → Settings → Control Panel, then double-click on the System icon to bring up the following screen:

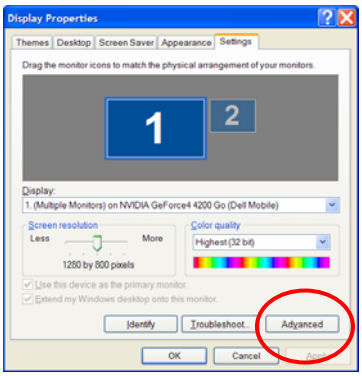


Additional information on your video card can be found by:

Start Menu → Settings → Control Panel, then double-click on the Display icon to bring up the following display



Select the settings tab to get this next window



Press the advanced button to bring up a new window which will have additional information on your video card. You may need to find a tab labeled Adapter or Hardware to locate the information you will need.

IPM Scope Specifications

Image Sensor:	1/3” CMOS
Pixels:	640 x 480
Power:	USB port
Light Source:	super-bright LEDs
Field of View	
@40X:	7.5 x 10 mm
@140X:	1.8 x 2.5 mm
Resolution:	4 microns @ 140x magnification

Computer Requirements

Pentium III 500MHz or greater,
Windows 2000/XP, DirectX 8.1 or greater, Internet Explorer 5.0 or greater, USB port.

Accessories

If you plan you use your IPM Scope on the go, these accessories will make your IPM Scope work even better:

Part No.	Description
MiSC-HC	Watertight hard case for IPM Scope. Protect your IPM Scope from the elements with this foam-lined case.
VTB-GPS	GPS option with software and antenna. Add a location stamp to your images which tells you exactly where you where when you captured that important picture. You will never again have to worry about forgetting to record your location information.

CE

This equipment has been manufactured for
Spectrum Technologies, Inc.
12360 S. Industrial Dr. East
Plainfield, IL 60585 USA

The Manufacturer's **DECLARATION OF CONFORMITY** is on file at the above address, and certifies conformity to the following:

Model Number:	2860, 2860MP, 2860UV
Description:	Macroscope/Digital Camera
Type:	Electrical Equipment for Measurement, Control, and Laboratory Use
Directive:	89/336/EC and as amended by Directives 92/81/EEC and 93/68/EEC
Standards:	EN 50081-1 (1998) EN 55022-1 (1998), Class B EN 61000-3-2 (2006) EN 61000-3-3 (1995) EN 55024 (1998) EN 61000-4-2 (1995) EN 61000-4-3 (1995) EN 61000-4-4 (1995) EN 61000-4-5 (1995) EN 61000-4-6 (1996) EN 61000-4-11 (1994)

Douglas L. Kieffer,
Soil/Water Products Manager March 4, 2009