

User Guide



Getting to Know Your Bio-6000

The Bio-6000 is a professional gel scanner specially designed and optimized for image capture of biological samples from gels or transparent film. It features a 12" x 16.9" scan bed, 48-bit color depth, 3200 x 6400-dpi optical resolution, and one Smart-Touch button on the front panel for an easy access to the scan function. With a Dmin of 0.05D and a Dmax of 3.77D, the Bio-6000 can deliver a wide dynamic range to enhance the image quality in both bright and dark areas of the image. Additionally, the Bio-6000 also lets you scan reflectives and prints up to 12" x 16.9" in size, convenient for any biological laboratory use.

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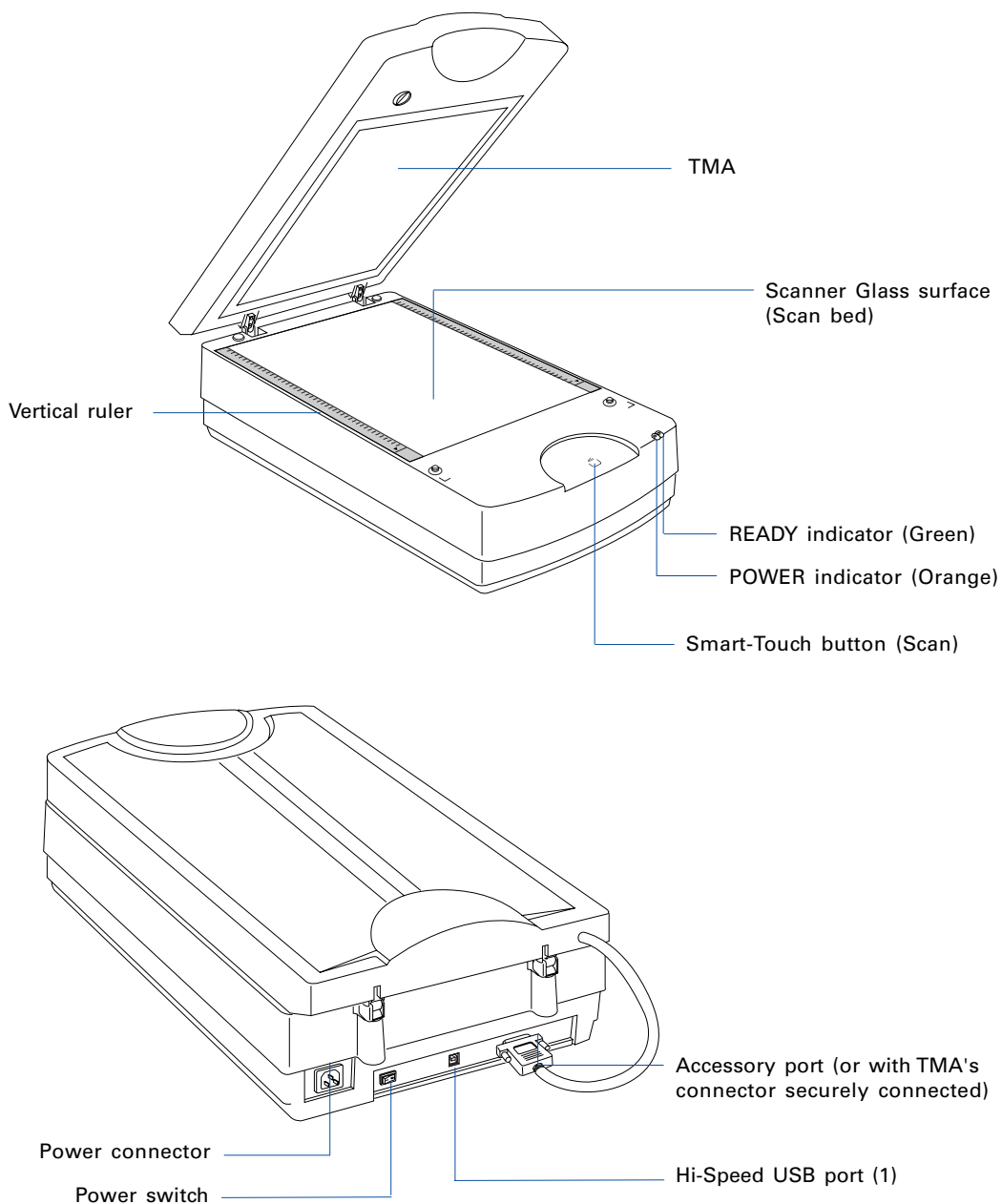
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Features of the Bio-6000

The Bio-6000 comes with several important features, including the following:

- **Large 12" x 16.9" scan bed** — The tabloid-size scan bed of the Bio-6000 lets you easily scan biological samples from a gel or film up to 12" x 16 1/16" and oversized reflective originals, such as contact sheets, large pieces of art, and mechanical blueprints.
- **3200 x 6400-dpi resolution:** The exceptionally high resolution of the Bio-6000 lets you scan even postage-size images and enlarge them with amazing clarity, with little loss of detail. The scanner's 3.77 maximum optical density allows it to capture a wide range of tones approximating real-life color and hues.
- **Smart-Touch button:** A Smart-Touch button (Scan) locating at the front panel of the scanner provides you a quick and easy way to capture images that can be automatically saved as files or sent to another application for further processing later.
- **Energy-saving LED light source:** Adopting LEDs as the light source, when the scanner is detected by the system, there are no requirements for any warm-up time before carrying out the scan, which boots your productivity and reduces energy costs amazingly. With its stable performance, the image quality will remain consistent even after used for a certain period of time.
- **Microtek ScanWizard™ Bio scanning software:** This is a scanning software for the use of the electrophoresis gel/film scanning. Friendly and easy-to-use interface with powerful functions and controls offer you a quick access and management for all your scanning tasks.
- **Microtek's MiBio software:** This is a management software developed exclusively for Bio-tech analysis and research. It features several easy-to-use but very practical functions, supporting users with powerful tools in a clear and simple control panel.

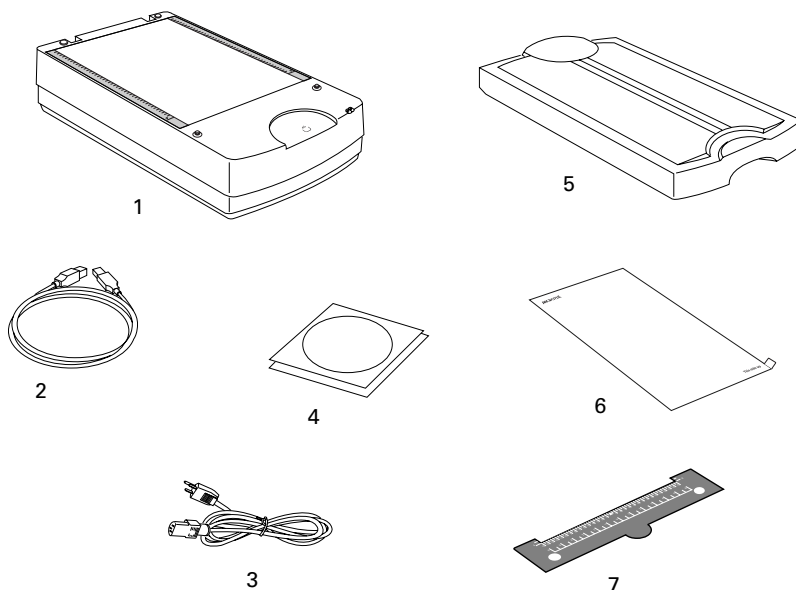
Taking a Closer Look



Initial Setup

Step 1: Unpacking Package Contents

After unpacking your scanner package, please check for the major components listed below.



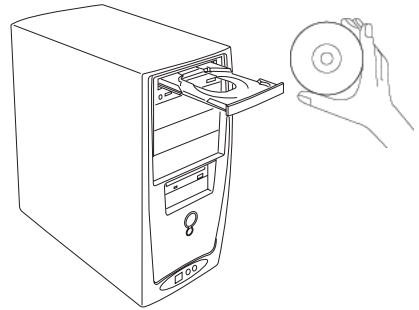
1. Bio-6000 (lower base)
2. USB Cable
3. Power Cord
4. Software CDs
5. TMA (Transparent Media Adapter)
6. Black Plate - for scanning reflective media
7. U-shaped Ruler (Calibration Ruler) - for calibrating your scanner

Step 2: Installing the Software

Important: Do not remove the yellow sticker from your scanner until you are told to do so. You must install software before connecting your scanner.

Always close any open programs and turn off Anti-virus utilities before installing software.

1. Place the **Adobe CD-ROM** into the CD-ROM drive, and install the software. Skip this step if you have a newer version of Adobe Photoshop Elements already installed on your computer.
2. Place the **Microtek software CD-ROM** into the CD-ROM drive, then follow the on-screen instructions to install the driver and software.



***NOTE:** If the Microtek Software Installer screen does not come up automatically, double-click the following in succession: "My Computer"; the CD-ROM icon; then cdsetup.exe to start the installer program.*

3. Restart your computer at the end of all software installation.

Drivers & Software Upgrades

After you finish the installation of software, if you found that the installed drivers and software cannot run your product or your computer system properly later, please go to the Microtek **Download Service** site at ww7.microtek.com.tw/service.php to download and install any updates you may require.

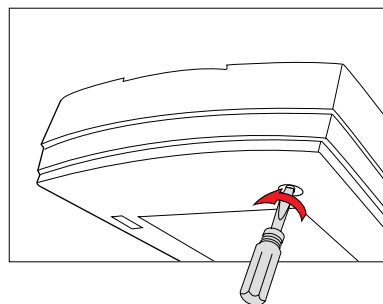
For additional information about Microtek products, please visit our website at www.microtek.com.

Step 3: Unlocking the Scanner

Before you operate the scanner, you will need to unlock the scanner. To unlock the scanner, follow the steps below:

1. Remove the yellow “Unlock” sticker from your scanner.
2. With the scanner power off, turn the scanner on its side and locate the locking screw at the bottom of the scanner.
3. Using a screwdriver, push and turn the locking screw counterclockwise to the unlock position.

When successfully unlocked, the screw will push out a little, protruding slightly from the bottom of the scanner.



Unlocked

Locking the Scanner

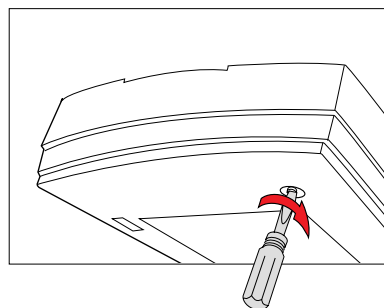
To lock the scanner (for shipping and other purposes), follow the steps below:

1. Turn off the scanner.
2. Turn the scanner back on.

When the indicators on the front of your scanner stop blinking, use a screwdriver, and then push and turn the locking screw clockwise to the locked position.

When the screw has been tightened, this indicates that your scanner is locked.

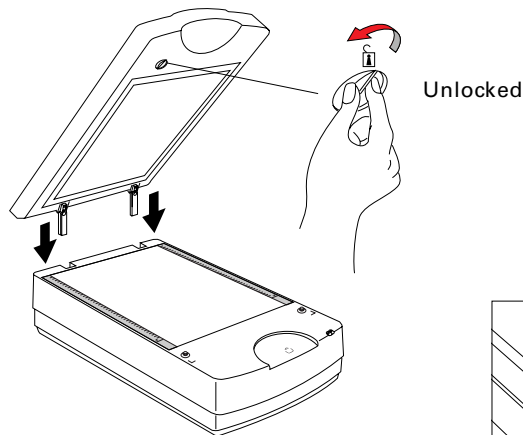
3. Turn off your scanner.



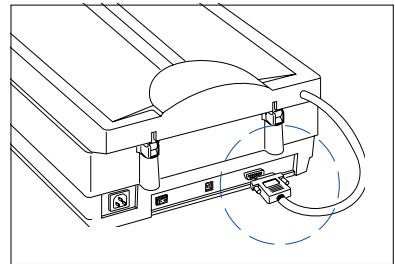
Locked

Step 4: Installing the TMA

1. Attach the TMA by sliding the posts at the rear of the TMA into the holes.



2. Plug the connector of the TMA into the scanner's 15-pin accessory port.
3. Unlock the TMA.

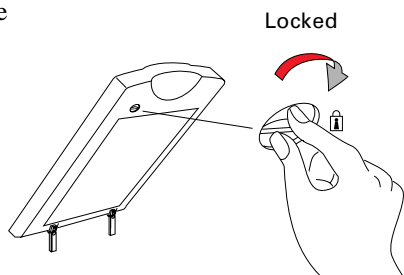


- a) Remove the yellow "Unlock" sticker from the TMA.
- a) Look for the locking knob at the base of the TMA.
- b) Turn the locking knob counterclockwise to the unlock position "U".

Locking the TMA

To lock the TMA (for shipping and other purposes), follow the steps below:

1. Make sure the TMA is connected to the scanner, then turn off the scanner if your scanner is on.
2. Turn the scanner back on. The TMA's carriage will move to the standby position in a few moments.
3. When the indicators on the front of your TMA and scanner stop blinking, turn the locking knob clockwise to the lock position "L".
4. Turn off your scanner and disconnect the TMA connector from the scanner. The TMA is ready for transport.



Step 5: Connecting the Scanner

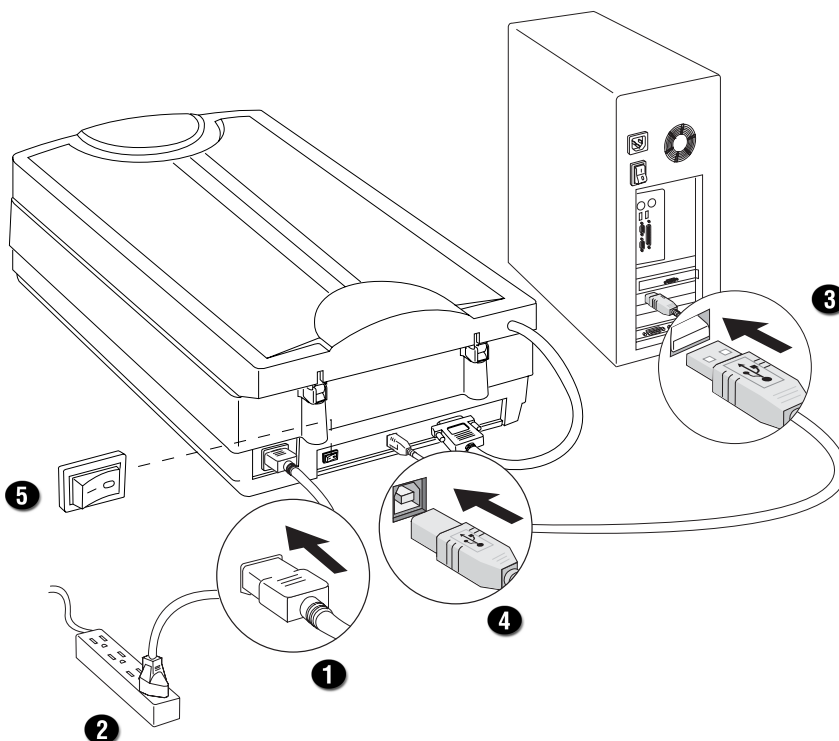
To the power adapter

1. Connect the power cord to the back of the scanner.
2. Plug the power cord into a power source.

To the Hi-Speed USB cable

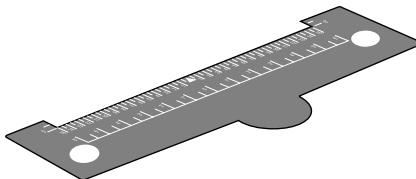
3. Connect one end of the cable to your computer.
4. Connect the other end of the cable to the scanner.
5. Press the power switch at the back of your scanner, and wait for the indicator light on the front panel to stop blinking and stay on steady.

The system will detect your scanner automatically.



Using the U-shaped Ruler (Calibration Ruler)

The U-shaped Ruler (Calibration Ruler) is designed for the use of the scanner calibration. Please take note that before putting the U-shaped Ruler on the scanner glass surface, make sure the scanner is turned off.

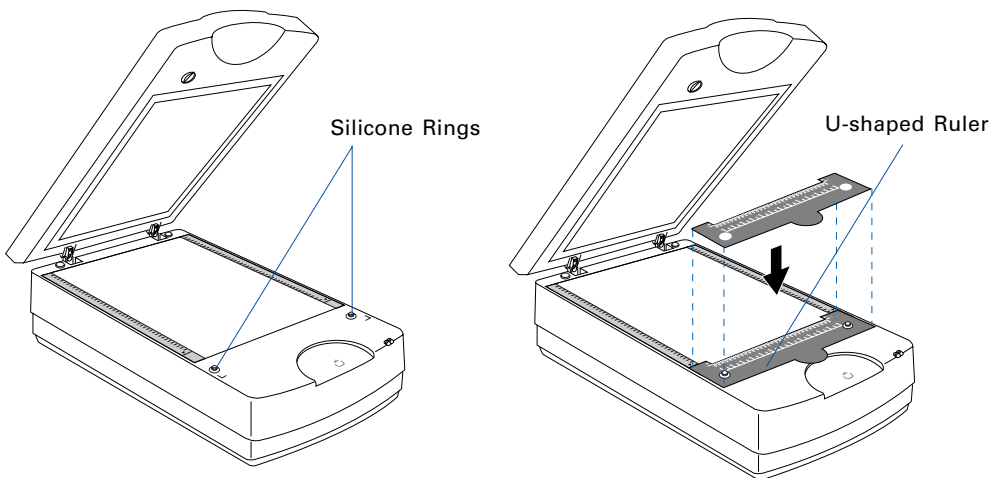


To use the U-shaped Ruler:

1. Peel the protective film from the **back side of the ruler** before using it to calibrate the scanner.



2. Then, put the ruler facing up on the scanner glass surface and hook the ruler onto the raised Silicone Rings located on the both sides of the scanner surface, making sure that they have been oriented correctly.

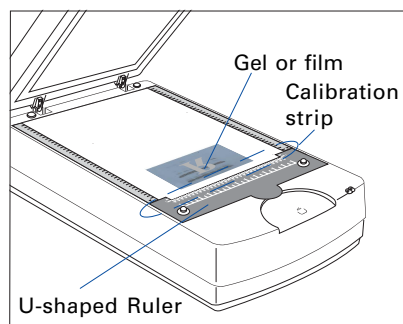


3. Finally, turn on the scanner power.

Positioning Electrophoresis Gels/Film or Transparent Film

To scan the electrophoresis gels/film (such as 1D/2D gels, SDS-PAGE, western/northern/southern blots, or membranes) and transparent film (such as slide, positive film, or reversal film), you have to scan gels or film together with the U-shaped Ruler (Calibration Ruler).

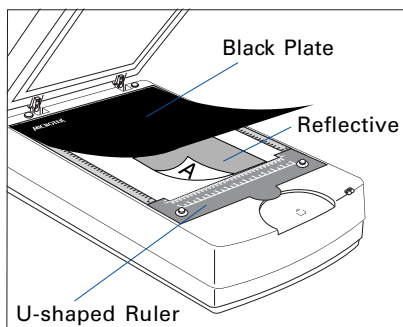
- **To scan with U-shaped Ruler**, refer to the “Using the U-shaped Ruler” section in this guide to place the U-shaped Ruler first, then place and center the gel or film on the scanner glass surface. Make sure to keep the area of the calibration strip clear.



Positioning Reflective Materials

To scan reflective materials (such as photo, prints, dissertations, papers, etc.), you have to scan the reflective original together with the U-shaped Ruler (Calibration Ruler) and Black Plate. **Before positioning the reflective, make sure that the U-shaped Ruler is on the scanner glass surface properly.**

1. Place the reflective original to be scanned **face down** on the scanner glass surface, with the top end of it toward the front of the scanner.
2. Peel the protective film from the **Black Plate**.
3. Put the Black Plate on the top of the reflective to cover it, with the side of the Black Plate that reads “This side up” facing up.

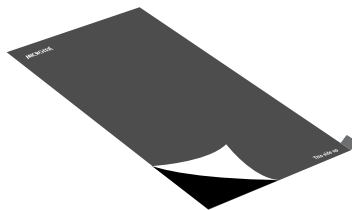
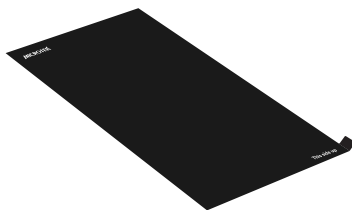


*The Black Plate

Light from the TMA and other ambient light during scanning may result in overexposed images. The Black Plate is designed to work with reflective originals. To ensure correct exposure and optimal image quality during scanning, the Black Mat should be used to shield unwanted light out.

Take note of the following before using the Black Plate.

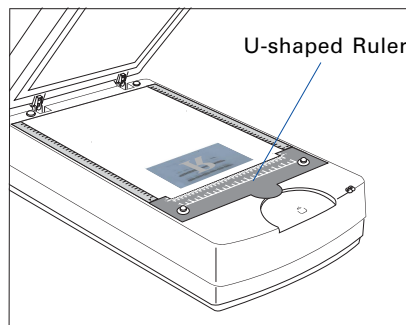
1. The Black Plate may become dirty over time and with prolonged use. To clean the plate, use a white cotton cloth dipped in some water, and gently wipe the plate surface. This ensures that the Black Plate is in optimal condition at all times.
2. A protective film covers the Black Plate during shipping and prevents it from being scratched. When peeling the film from the plate, be careful not to tear or bend the Black Plate.



Your First Scan

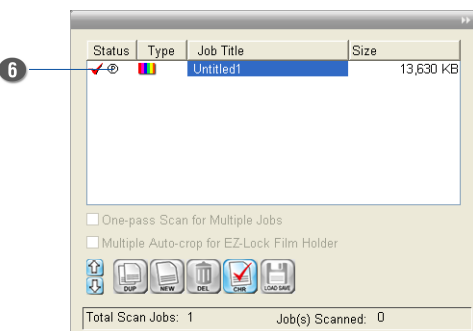
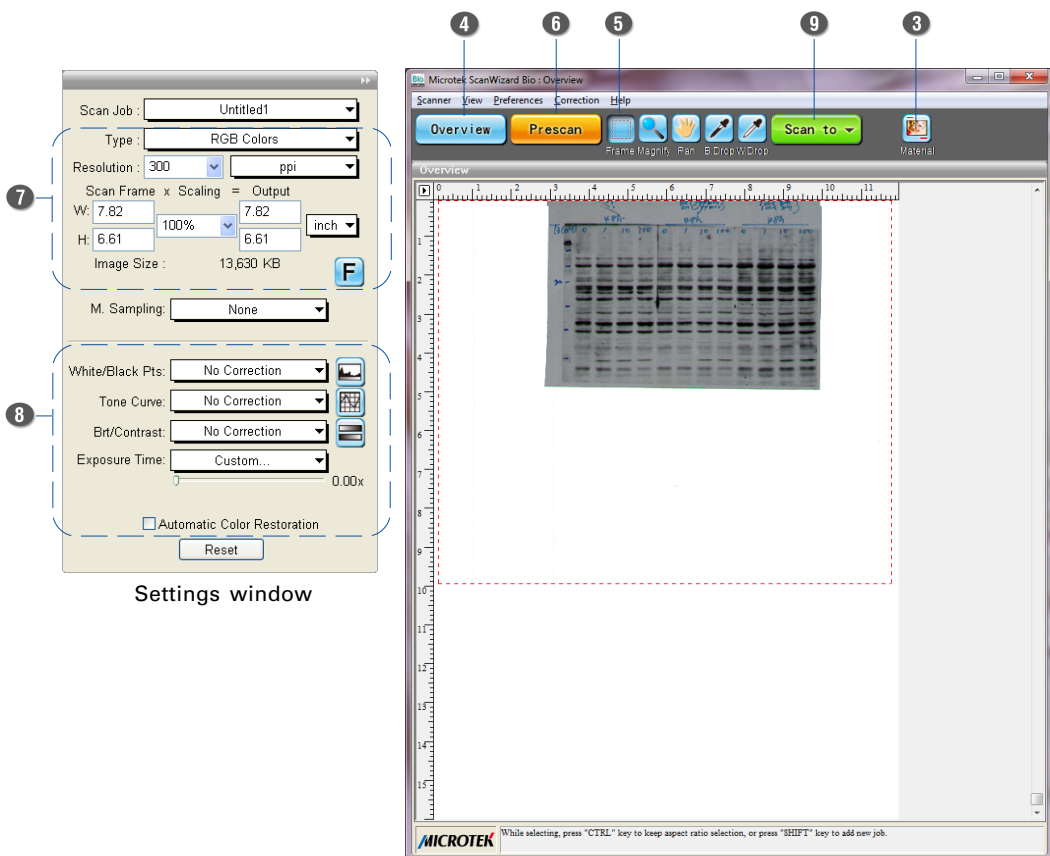
This section is to guide you to perform your first scan by using the ScanWizard Bio. You should familiarize yourself with the basic scanning technique before you continue further scanning scenarios described in next pages.

1. Launch **ScanWizard Bio** either as a stand-alone by clicking on the program icon, or by using the File-Import or File-Acquire command from your image-editing program.
2. Place the gel or film to be scanned facing down on the scanner glass surface, with the top end of it toward the front of the scanner. Remember to keep the calibration strip clear.
3. Go to the Preview window of ScanWizard Bio, and choose **Transmissive** from the Scan Material menu.



4. Click the **Overview** button to perform a preliminary scan of the image, which will appear in the Preview window.
5. Select the **Scan Frame** tool from the Toolbar in the Preview window, and choose the area to be scanned by dragging a rectangle around it. You will see a flashing frame (marquee) around the selected area.
6. Click the **Prescan** button to display a detailed image of area selected by the Scan Frame tool. A thumbnail of the image appears as well in the Scan Job Queue window.
7. Specify your scanning requirements in the Settings window.
 - a) Select a desired image type.
 - b) Select a desired resolution.
 - c) Adjust the scan frame settings if necessary.
8. Adjust image quality if necessary, using the Advanced Image Correction (AIC) tools.
9. Click the **Scan to** (or "Scan") button in the Preview window or on the scanner unit to start scanning.
 - If ScanWizard Bio was launched from an application program, the image is then delivered to your application, where the image can be saved, printed, or edited.

- If ScanWizard Bio was launched in stand-alone mode, you will be prompted to specify the file attributes for the scanned image after the Scan or Scan to button is pressed, such as entering the file name, specifying a folder name of your own, etc. When you have completed the settings, press the Done/Save button, and the scanner will automatically scan and save your image based on your settings.



Scan Job window

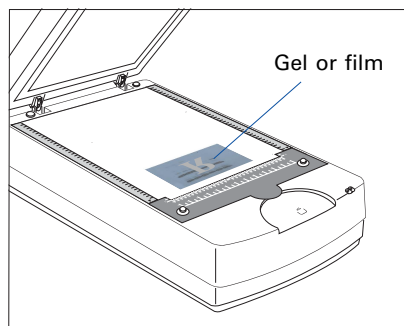
Scanning Scenarios

The following pages provide various scenarios for scanning with the Bio-6000, including the following:

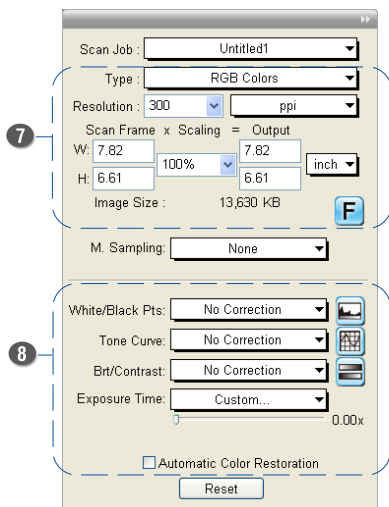
- Scanning electrophoresis gels or film: This scenario details the steps for scanning electrophoresis gels or film.
- Scanning reflective originals: This scenario details the steps for scanning reflective materials, such as photos or prints.

Scanning Electrophoresis Gels or Film

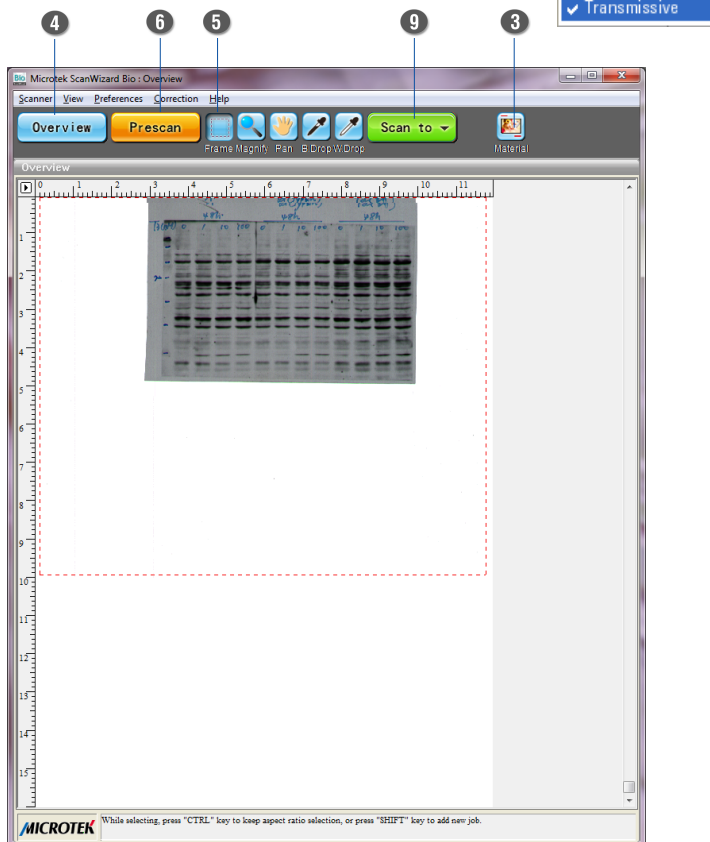
1. Place the gel or film to be scanned on the scanner glass surface, as detailed in the “Positioning Electrophoresis Gels/Film or Transparent Film” section of this guide.
2. Launch **ScanWizard Bio** either as a stand-alone by clicking on the program icon, or by using the File-Import or File-Acquire command from your image-editing program.



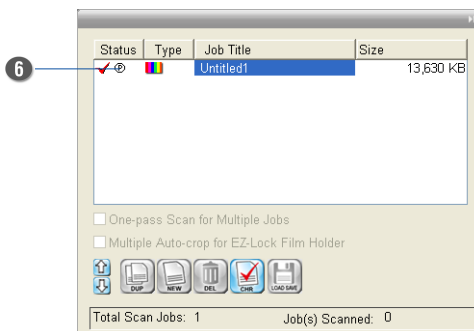
3. Go to the Preview window and choose **Transmissive** from the **Scan Material** menu.
4. Click the **Overview** button to perform a preliminary scan of your original.
5. Select the **Scan Frame** tool from the Toolbar in the Preview window, and choose the area to be scanned by dragging a rectangle around it. You will see a flashing frame (marquee) around the selected area.
6. Click the **Prescan** button to display a detailed image area selected via the Scan Frame tool. A thumbnail of the image appears as well in the Scan Job Queue window.
7. Specify your scanning requirements in the Settings window.
 - a) Select a desired image type.
 - b) Select a desired resolution.
 - c) Adjust the scan frame settings if necessary.
8. Adjust image quality if necessary, using the Advanced Image Correction (AIC) tools.
9. Click the **Scan to** (or “Scan”) button in the Preview window or on the scanner unit to start scanning.
 - If ScanWizard Bio was launched from an application program, the image is then delivered to your application, where the image can be saved, printed, or edited.
 - If ScanWizard Bio was launched in stand-alone mode, you will be prompted to specify the file attributes for the scanned image after the Scan or Scan to button is pressed, such as entering the file name, specifying a folder name of your own, etc. When you have completed the settings, press the Done/Save button, and the scanner will automatically scan and save your image based on your settings.



Settings window



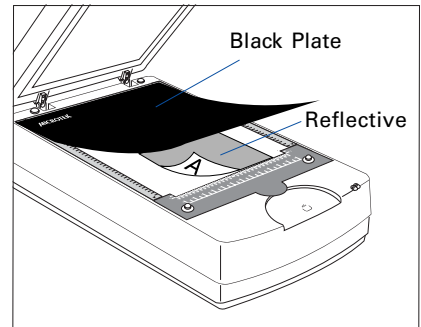
Preview window

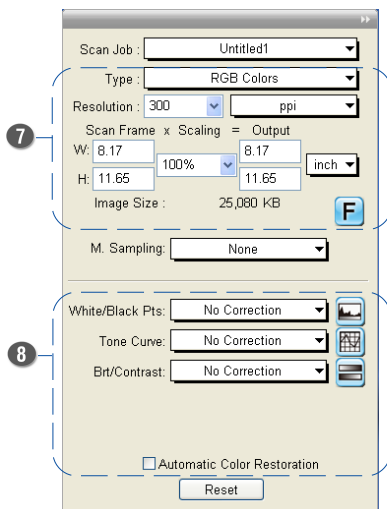


Scan Job window

Scanning Reflective Materials

1. Place the reflective original to be scanned on the scanner glass surface, as detailed in the “Positioning Reflective Materials” section of this guide.
2. Launch **ScanWizard Bio** either as a stand-alone by clicking on the program icon, or by using the File-Import or File-Acquire command from your image-editing program.
3. Go to the Preview window of ScanWizard Bio, and choose **Reflective** from the **Scan Material** menu.
4. Click the **Overview** button to perform a preliminary scan of the image, which will appear in the Preview window.
5. Select the **Scan Frame** tool from the Toolbar in the Preview window, and choose the area to be scanned by dragging a rectangle around it. You will see a flashing frame (marquee) around the selected area.
6. Click the **Prescan** button to display a detailed image area selected via the Scan Frame tool. A thumbnail of the image appears as well in the Scan Job Queue window.
7. Specify your scanning requirements in the Settings window.
 - a) Select a desired image type.
 - b) Select a desired resolution.
 - c) Adjust the scan frame settings if necessary.
8. Adjust image quality if necessary, using the Advanced Image Correction (AIC) tools.
9. Click the **Scan to** (or “Scan”) button in the Preview window or on the scanner unit to start scanning.
 - If ScanWizard Bio was launched from an application program, the image is then delivered to your application, where the image can be saved, printed, or edited.
 - If ScanWizard Bio was launched in stand-alone mode, you will be prompted to specify the file attributes for the scanned image after the Scan or Scan to button is pressed, such as entering the file name, specifying a folder name of your own, etc. When you have completed the settings, press the Done/Save button, and the scanner will automatically scan and save your image based on your settings.

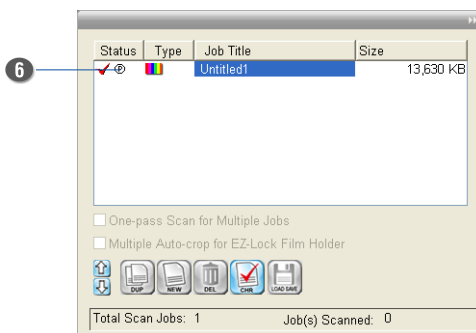




Settings window



Preview window



Scan Job window

Specifications

Scanning Modes	Color and grayscale in a single scanning pass True 48-bit color (approx. 281 billion colors) 16-bit grayscale (approx. 65,536 shades of gray)
Light Source	LED
Scanning Area	Reflective: 12" x 16.9" (304.8 mm x 429.26 mm) Transparent: 12" x 16 1/16" (304.8 mm x 408 mm)
Resolution	Optical: 3200 (H) dpi x 6400 (V) dpi
Dynamic Range	Transparency: 0.05D ~ 3.77D, 3.77 Dmax
Interface	Hi-Speed USB (USB 2.0)
Dimensions (L x W x H)	24.7" x 14.8" x 7.3" (627 mm x 375 mm x 185 mm)
Weight	35.4 lbs (16.1 kg)
Voltage	AC 100V-240V, 47-63 Hz, 1.5 A max.
Power Consumption	54.9 W max.
Environment	Operating Temperature: 50° F to 104° F (10° C to 40° C) Relative Humidity: 20% to 85%

System Requirements

General Requirements

- CD-ROM drive (for installing software)
- Color display with 24-bit color output capability
- 512 MB RAM or more

PC and compatibles

- Pentium IV PC or higher with Hi-Speed USB (USB 2.0) port
- Microsoft Windows 7; compatible with Windows XP, Vista and Windows 8

Important

Specifications, software bundles, and accessories are subject to change without notice. Not responsible for typographic errors.

FCC Compliance Statement

This equipment (Model: MRS-6400A3PL) 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: *A shielded Hi-Speed USB interface cable with ferrite core installed on the scanner connector and must be used with this equipment.*

Caution: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.