Gel Documentation System

Operation Manual

Model: JY04S-3E

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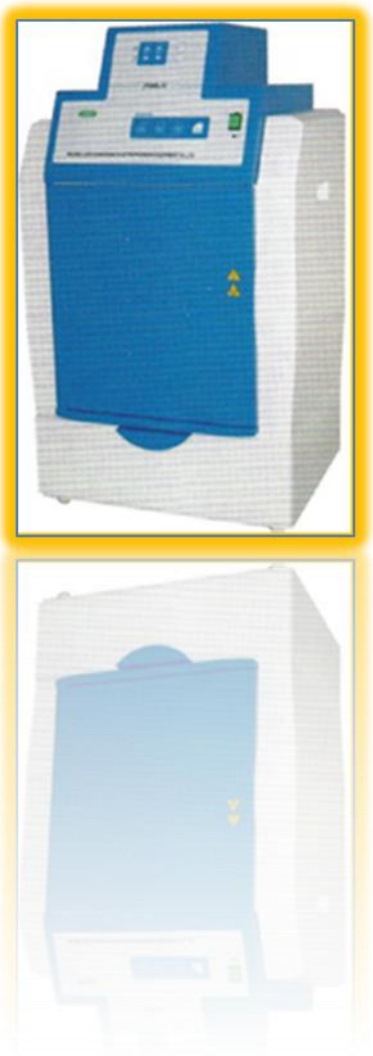
Light up your gels with the gel imaging, analysis and documentation system JY04S-3E. It is comprised of three versions, each intended for DNA or other bimolecular gel analysis.Using a UV light source and a high resolution CCD camera, DNA and other biomolecules can be visualized when stained with fluorescent dyes such as ethidium bromide (EtBr) or non-carcinogenic stains such as DNA Stain Clear G (39804.01). Using the analysis software, imaged gels and their bands can be evaluated in real time, zoomed in on for greater resolution, analyzed and permanently documented for publication.



Key Features Include:

- High-Resolution CCD camera with low lux rating permits resolution of weakly stained bands, real-time browsing with whole-screen display
- Three versions: 1280x 1024, 2048 x 1536 and 2560 x 1920 with automatic recognition of 10bit images
- Viewing surface size: 25 x 20cm
- Transmitting Wavelength: 300nm
- Reflecting Wavelength: 254nm,365nm
- Low Noise: <56DB
- Shutter Control: Electronic Shutter
- Sensitivity: 20pg of Nucleic Acid/band
- Zoom lens With 6 times exchanging zoom lens and simple to enlarge and shrink the gel photos.
- Adjustable focus, focal length, aperture, exposure time and contract via computer or the unit
- Use multi-layer gel-filter and effectually filter the noise of background
- Transferring plate changes UV-light into white-light.
- Drawer-style gel platform, convenient to observe, operate, cut gel
- Intelligent UV light control:
  - Safety: shuts off UV light when the door is opened, turns back on light with closed.
  - Lamp preservation: automatically shuts down the lights after 15 minutes of no use.
- Remote control: Set CCD camera and adjust zoom lens by computer

I. Key Specifications

Specification	Qualification
Light Source	UV
Transmission wavelength	300nm
Reflection wavelength	254nm/365nm
Transmission area	250×200 (mm)
Input voltage	220V±10% ~
Frequency	50Hz
Fuse	Φ5×20　3A

II. Manual

1. Connect the computer monitor and host

Computer must have the USB2.0 interface, inserted the encryption device of analysis software , USB lines of digital CCD and control line to the interface on the back of the computer. Set the computer display resolution to 1024 × 768 Pixels.

2. Driver installation

(1) Open the U disk named “Analysis Software and Installation Driver (JY04S-3E Gel Documentation System) ”There are control line driver,Analysis Software and Installation Driver inside.

(2) Install the driver of control line(open it in the U disk),connect the control line to the computer and the instrument.Connect the other USB cable to the camera and computer.

(3) Open the U disk driver installation:
If your system is 32bit, click the " Capture software " → " Driver Install " → " DriverInstall-32bit.exe " from the CD, click on “next“, until the program is installed.
if your system is 64bit, click the " Capture software " → " Driver Install " → " DriverInstall-64bit.exe " from the CD, click on “next“, until the program is installed.

3. Twain Install

Open the U disk to install:
Click the " Capture software " → " Twain Install " → " JunYiTwain_EN.Install.20170104.exe" from the U disk,
click on “next“, until the program is installed.

4. Install analysis software

(1) Insert the U disk named “Analysis Software and Installation Driver (JY04S-3E Gel Documentation System)”, click the “Encrypted Lock Driver”, click “SoftDogInstdrv “

click “Install “ to install the Encrypted Lock Driver.

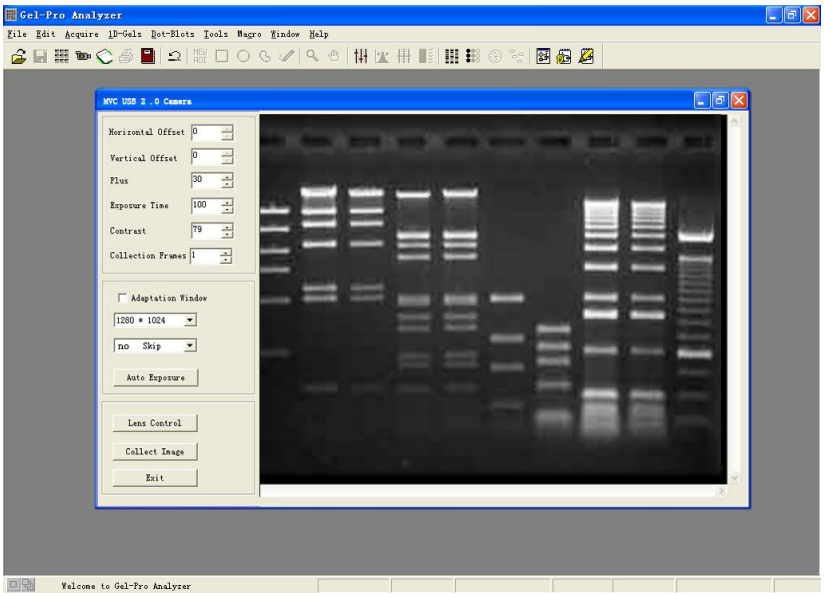
(2) Insert the Encrypted Lock, click the “Analysis Softwar” click the “GP45_Setup_English” to install the Analysis Software.

5. Real-time preview and the gel photo collection operation

Real-time preview

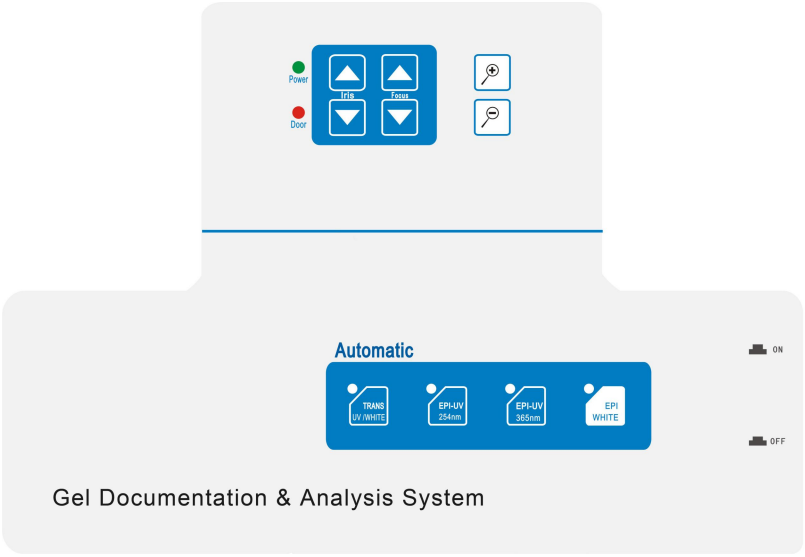
(1) Open the power switch, place the gel on the UV glass. If it is Polyacrylamide gel, you should put a white board on the UV glass. Open the 312nm UV source.

(2) Open the software, click on ' ' at the top of the toolbar, enter the real-time preview. As shown:



(3) Adjust the focal length and aperture on the Instrument panel, observation of the computer

monitor, adjust the image size to your need.



Iris adjustment：Can change the brightness of images, by "+" button can brighten the image; by "-" keys can darken the image.

Focal length adjustment: The images can be closer or pull away. By the "Near" button, can close to the images; by the "Far" button, can pull away the image.

Focus adjustment: When the image was pulled either recently or farthest, to carry out the focus adjustment, enhanced image clarity.

"Power" indicator light is for power indicator light.

"Door" indicator light is for the drawer switch indicator light, when the drawer opened "Door" light, when the UV light in the black-box will shutdown automatic, and the white light opened automatic. When the drawer closed, the "Door" lights out, the white light will shutdown automatic, and the UV light opened automatic.

(4) Based on the image characteristics, as well as the customer's visual requirements, through the mouse or keyboard interface to adjust the shooting parameters.

(5) **"Exposure time"** adjustment is adjusting the brightness of the entire film interface. Numerical size can be adjusted to 90 or so, if such as flickering images phenomenon can be an appropriate increase.

(6) **"Contrast"** to adjust the contrast images of the light and shade, the greater the value the greater the contrast.

(7) Other parameters can be maintained by default.

(8) Click on the **"Lens control"** to use the toolbar of mouse to control the lens.

(9) Gel images based on the size and brightness adjustment "Zoom", "Focus", "Iris" button, observe the computer monitor at this time. Adjust the size and resolution of gel image for your need. At this point Toolbar initialization for the slow adjustment, click on the "slow" button, then the rate of adjustment will accelerate.

Acquisition of gel images

When appear a satisfactory image, click on tools in the filming of "collection" buttons, gel analysis of photos will be displayed on the software interface.

The value of above adjustments is reference value. Debugging in the actual, you can adjust the value and combine with the state of gel, the characteristics of images as well as the customer's visual requirements.

III. Notice

1、UV glass should not put heavy pressure, should not rub metal objects, So as to avoid abrasion.

2、Instruments should be placed in a clean, dry, ventilated and non-corrosive places.

3、After each use，timely manner with a clean gauze (can dip a small amount of anhydrous ethanol) to gently wipe the UV glass，in order to avoid transmission disappear.

4、In order to extend the life of UV glass, When not required the UV lamp, close it timely, Because of prolonged exposure to UV rays will affect the penetrability of UV glass penetrability.

5、The metallic structure of the apparatus should have good grounding power lines.