GenoSens Series
Gel Documentation System

MANUAL
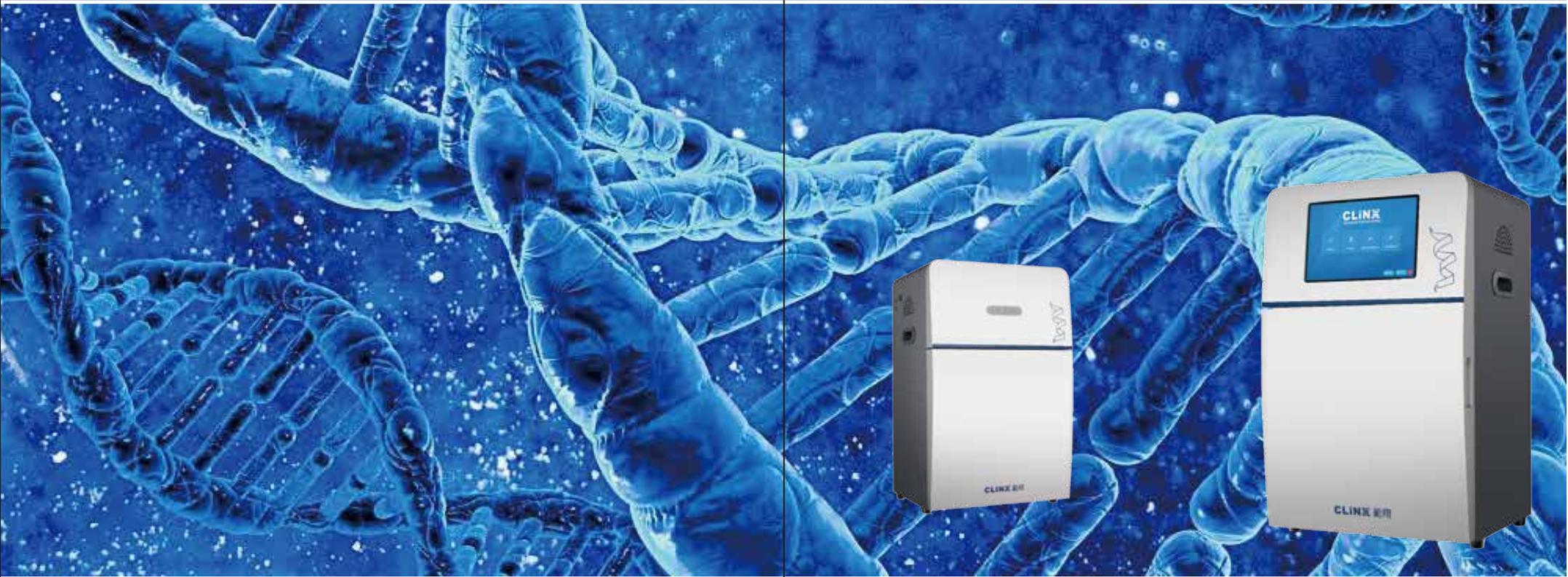
CLiNX

Clinx Science Instruments Co., Ltd.

Contents

01

Important Notice

Read the user guide carefully!
The instrument is suitable for research use only.
Therefore ,it must be used onlyby specialized personnel who know the health risks associated with the reagents that are normally used with instrument

WARNING! This instrument must be connected to an appropriate AC voltage outletthat is properly grounded.

Do not leave the instrument in a damp, dusty or hot place.

Do not pour liquids or inside the instrument!

Do not drag or scratch with hard or sharp objects to prevent scratches.

The product must not be dismantled without authorization. If you have any problems, please contact us or our authorized distributor.

Clear the sample tray after use!

⊕ Safety Information

UV Danger! Do not look directly unless use UV shielding guard or goggles!

The product involves UV illumination. It must be used only by specialized personnel who know the health risks associated with the UV radiation that are normally used with instrument.

The UV™ SMART UV Transilluminator is "no-lamp" design.
It seems even no tubes under the high intensive light, when the power is on.
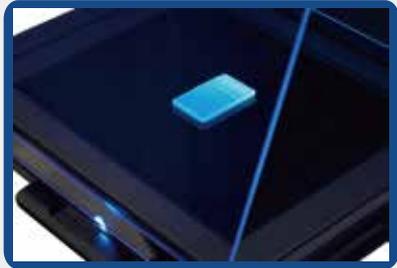
Note 1:
If the blue light of power is on, the UV works.

Note2:
Using UV shield is a must, when you need to observe or to cut gel.

Note3:
Wearing the goggles for protection of your eyes away from the blue light illumination, when your need to observe the gel with blue light transilluminator.

02

Product Introduction
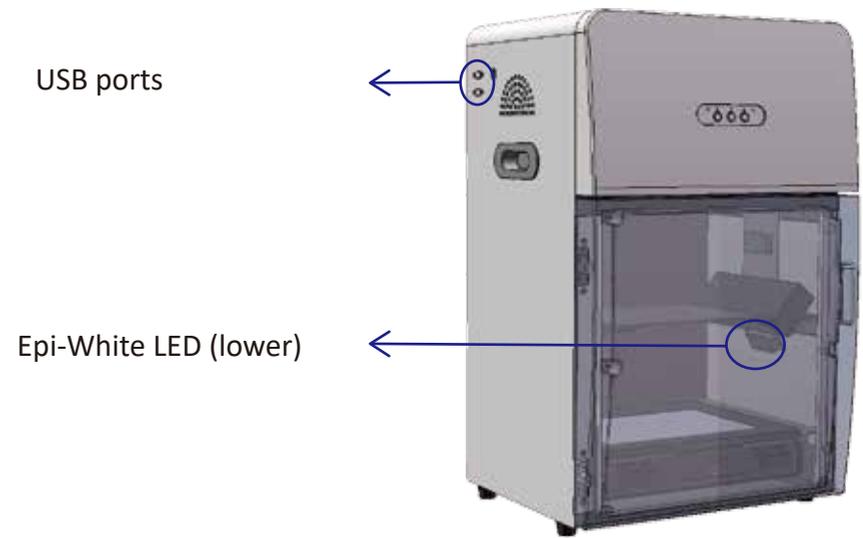
Summery

Thank you for choosing our products!

Clinx GenoSens Series Gel Documentation and Analysis System is designed for the detection and documentation of nucleic acids and proteins. It adopts a high resolution and high sensitive scientific CCD-Camera, which enables the instrument to capture utter weak signals under extremely low illumination condition.
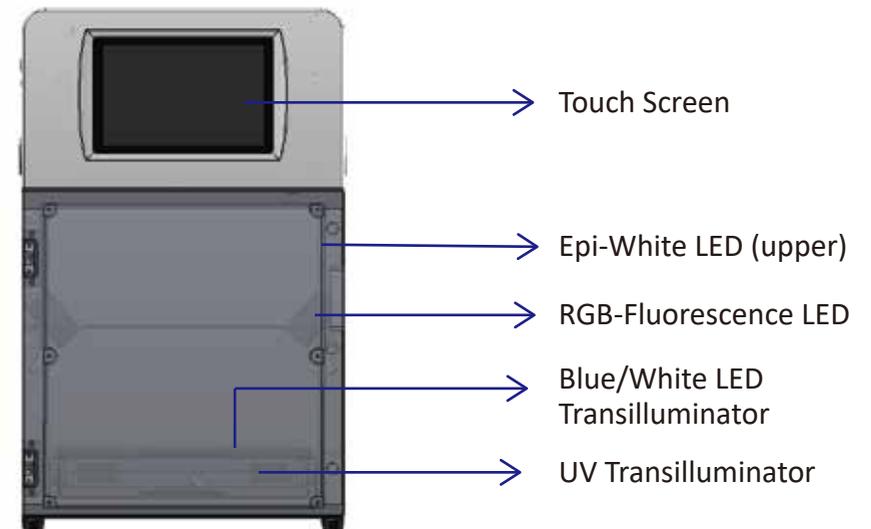
Panel Components

GenoSens 2000 Series front panel components

Buttons

Epi-White LED (upper)

RGB-Fluorescence LED

Blue/White LED Transilluminator

UV Transilluminator
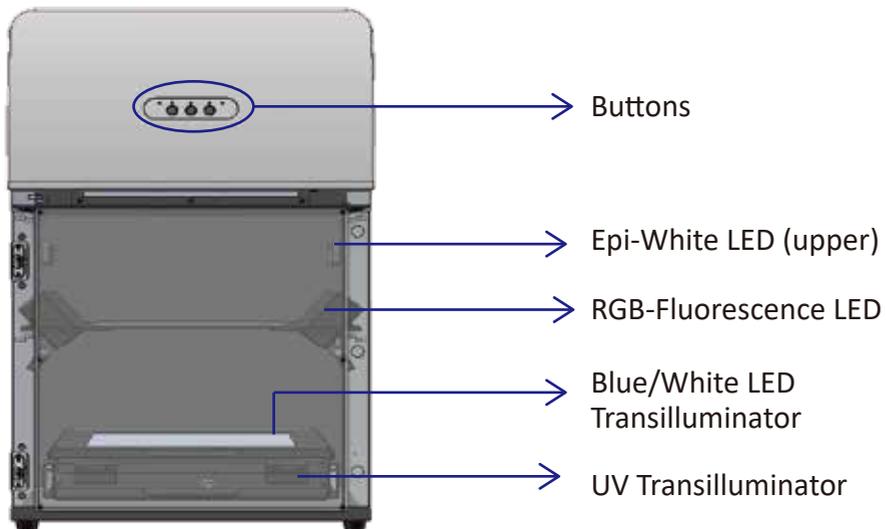
GenoSens 2000 Series side Panel Components

USB ports

Epi-White LED (lower)

GenoSens Touch Series front panel components

Touch Screen

Epi-White LED (upper)

RGB-Fluorescence LED

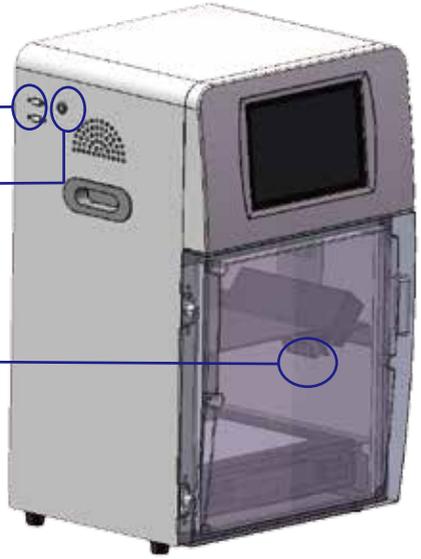Blue/White LED Transilluminator

UV Transilluminator

USB Ports
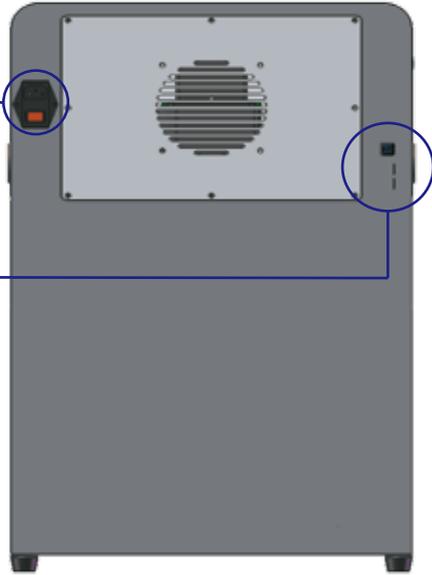
Operation mode converter

Epi-White LED (lower)

The back sides of these two series keep consistent

Power switch

USB 3.0 port

03

Hardware Guide

Check Packing list

Please open the box carefully and check the items up as packing list.
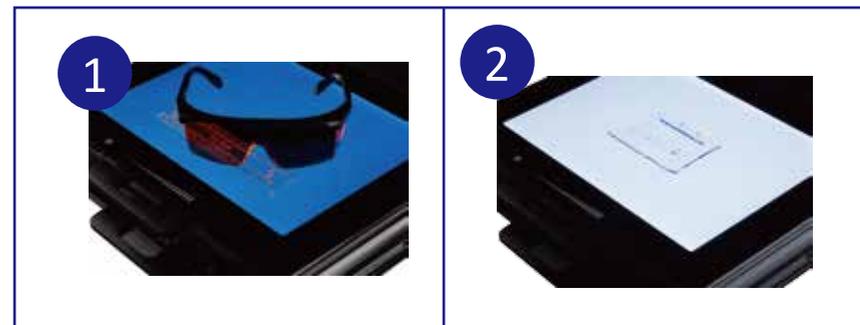If any parts are missed or damaged, please contact your provider immediately.

Standard Accessories

1. USB disk
2. Software Dongle
3. USB 3.0cable
4. Power cord
5. UV Smart™ UV transilluminator & UV shield

Optional Accessories

According to your option, we provide the following accessories:

1. Ultra-slim white LED transilluminator
2. Ultra-slim blue LED transilluminator

Configuration and application list

Configuration	Application
Main System	Gel Documentation with EtBr,etc.
White LED Transilluminator	SDS PAGE, Silver staining, etc.
Blue LED Transilluminator	Gel Documentation with Gel Green, etc.
RGB-Fluorescence	Support various fluorescence dyes

1. Ensure the machine is plugged in and turn on using the
POWER switch on the back of instrument.
2. Connect USB cable to computer if you want to use the
stand alone PC) Power switch and USB port are shown as below:

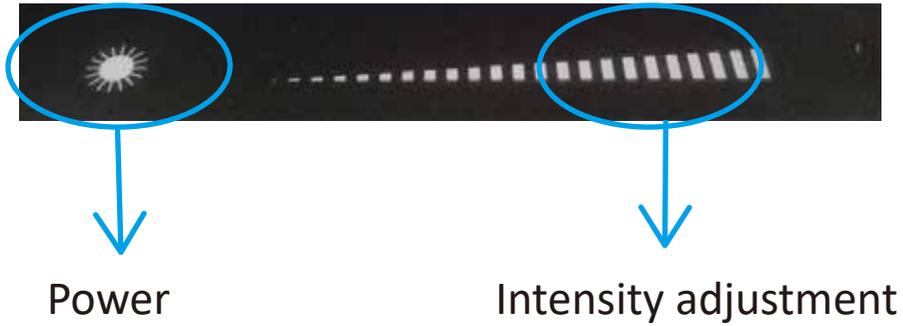Power and switch

USB 3.0 port
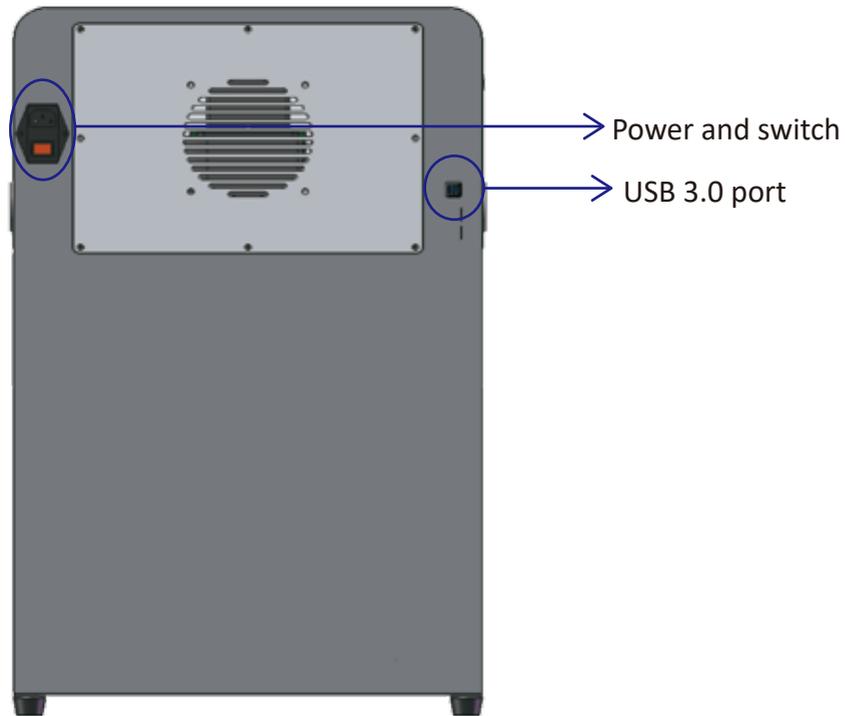
The ultra-thin blue light sample stage has a magnetic thimble port :

Magnetic thimble

The side of the magnetic thimble port should be aimed at the inside of the instrument and push the blue light stage into the "drawer" .Position is as shown.

Power   Intensity adjustment

The operation is designed by touch-sensitive design

1.Power On : To power the sample stage on by touching the "power" icon.

2.Brightness adjustment: Based on indication of brightness in the picture, you can adjust brightness by touching and dragging. The intensity of white and blue light is increased from the left to right.

04

Software Installation

📄 Software Introduction

Clinx GenoSens image capture and analysis software is designed for Clinx gel documentation system. All the intelligence property of the software mentioned below belongs to Clinx Science Instruments Co., Ltd. We promise, we offer free life time upgrades.
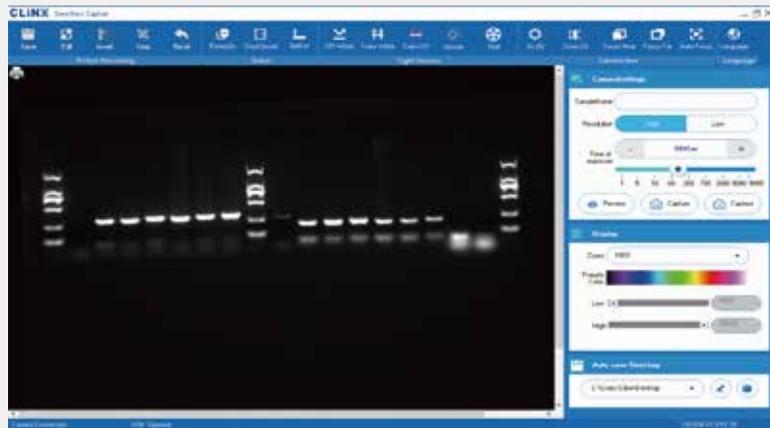
（GenoSens Capture PC version）

（GenoSens Capture Touch version）

🔧 Installation guide

▶ Double-click the installation software package
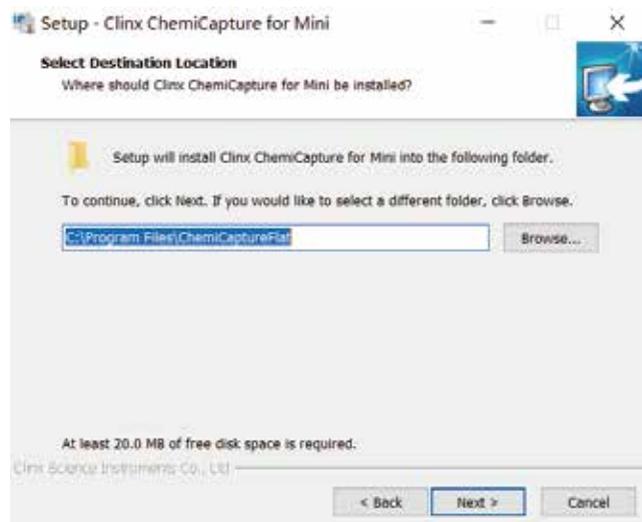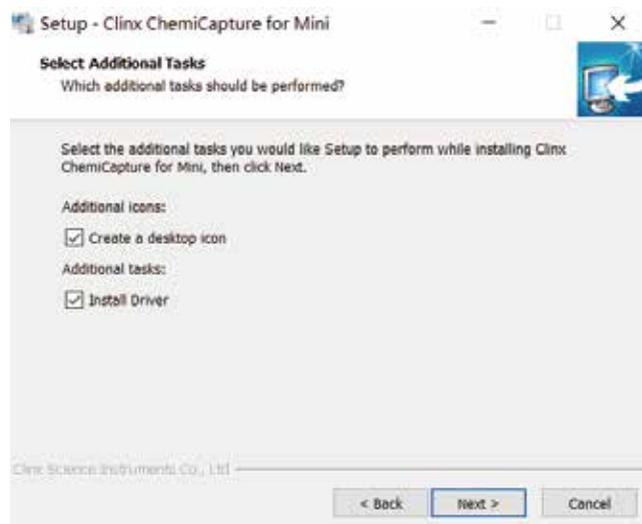

▶ Select language

English ⌄

▶ Click "Next"

Select the installation path and click "Next"

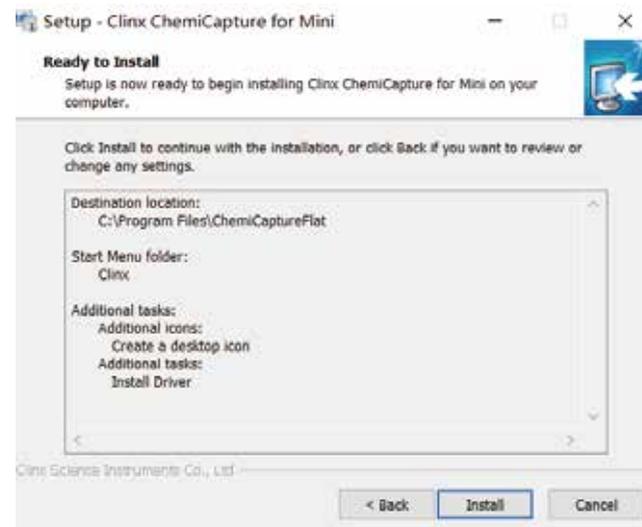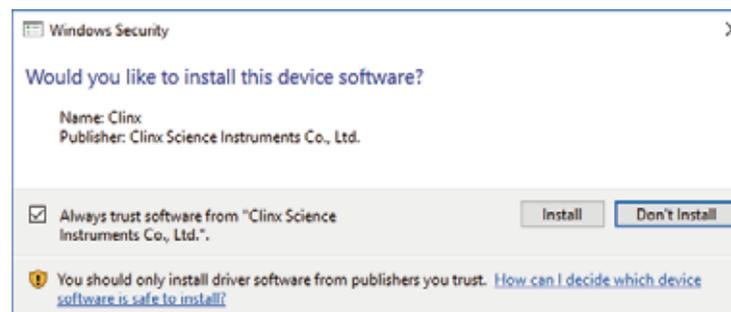
It is recommended to choose the default option

Click "Install" to proceed

Click "install"to continue and trust our software

🛠 Installation guide

▶ **Click "Finish" and the installation is completed**

⤤ Software icon

Two icons will be generated on the desktop after the software installatioin：

Clinx GenoSens
Capture software

Clinx GenoSens
Analysis software

05

Gel Capture

Gel Capture

Before you take pictures of nucleic acid gel, please make sure that yourmachine is equipped with one of the following transilluminator:

1. UV™ SMART UV Transilluminator

UV™SMART UV Transilluminator has an excitation wavelength of 302nm and a 590 nm filter. Support dyes such as EB and Gel Red.

2. Super Slim blue LED Transilluminator

Super Slim blue LED Transilluminator has a excitation wavelength of 470nm. Support safety dyes such as Gel Green and SYBR™Green.

Safety alert

WARNING: When you use the UV™SMART UV Transilluminator or Super Slim blue LED Transilluminator .It must be used only by specialized personnel who know the health risks associated with the UV radiation that are normally used with instrument. Users should be trained on the appropriate personnel protection gear for working with UV light to minimize UV exposure.

Super Slim transilluminator Installation

Please refer to page 13 and 14 in the manual!

Part 1: Gel Capture PC standalone version

Before using the software, please complete the hardware installation, connect USB cable correctly and turn the power on. Hardware installation refers to P10 in user manual.

Notes: If you are using an embedded PC gel documentation system, there is a different UI by interactive touching. If you have an embedded PC gel documentation system, but you want to use standalone computer, and you can press the "mode convertor" button. Button position refers to manual P6-P8 and connect USB cable correctly.

Run GenoSens Capture function

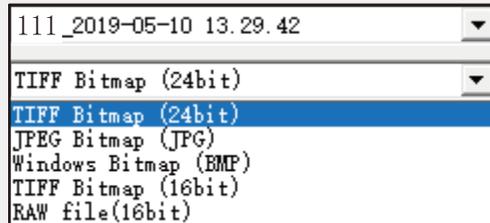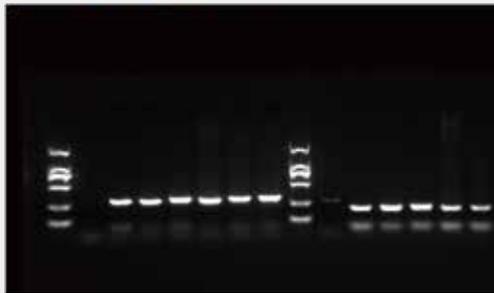| No.	Description
1	Tool Bar
2	Preview window
3	Parameter setting
4	Display setting
5	Auto save path

Tool bar function introduction
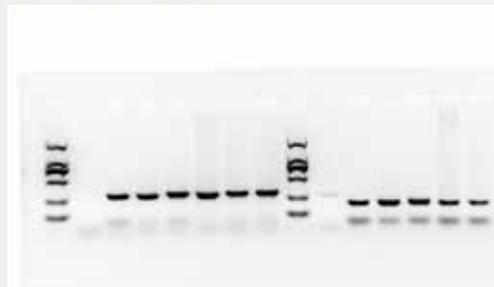
A. Image Processing

Save the captured picture in specified path.
File format software supports is shown as below:

Inverted function is shown as below:

Original file

Inverted effect

Click icon to enter the cropping mode

Press the left mouse button and select area you want to crop, as shown on the left.

Press the "Enter" to complete image cropping, as shown on the left.

Cancel image processing and restore the original image by clicking.

Tips:

The image processing function can only be used when you have captured the image. Please refer to P29-30 in this chapter about image acquisition!

B. Status indication

On	Off
(icon)	(icon)
(icon)	(icon)
(icon)	(icon)

Power status indicator: The icon of power status has two different indicators, power-on icon and power-off icon.

Door status indication: The icon of door status has two different indicators, door-on icon and door-off icon.
Notes: When we are shooting, we must make sure that the door is in "closed" status.

Gel-cutting icon: The icon of gel-cutting status has two different indicators, gel-cutting-on icon and gel-cutting-off icon.

Warning:
1. Before cutting gel, please check safety items on page P3.

2. Operation methods of the gel cutting, please refer to P38 in user manual.

C. Light source control

Click icon to turn on the double-sided LED EPI white light. This function is also used to adjust the sample position, focus precisely and enter the preview function of the instrument.

Notes: The preview function of instrument need to set various parameters before you use this function. Please refer to P27-P30 in this chapter.

Click icon alternately to power the Super Slim trans-white/trans-blue LED transilluminator on or off.
White LED Transilluminator: apply for the Protein gel.
Blue LED Transilluminator: apply for the nucleic acid gel with dyes such as Gel Green and Sybr Green.

Blue LED (white LED)Transilluminator Installation refers to p13-p14 in user manual.

UV Transilluminator : Click icon alternately to power the Super Slim trans-UV LED transilluminator on or off.
UV Transilluminator: apply for the nucleic acid gel dyed with dyes such as EB or Gel Red.

D.Camera parameter Setting

Set aperture: We use the seven digit numbers to cover adjustment of the aperture size. The larger aperture value (1-7) is, the larger light transmission is and the brighter background is because the customer is not expert of optic filed. Doing in this way, it can avoid customs confusing the generic term, such as F1.4, F2, and F2.8.
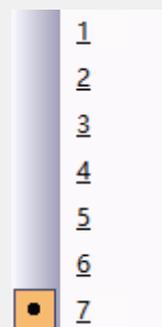
In the left picture: aperture value is 7, the stronger captures light signal, and the background is brighter.

General parameter of aperture:
Under UV transmission, aperture value is 5-6.
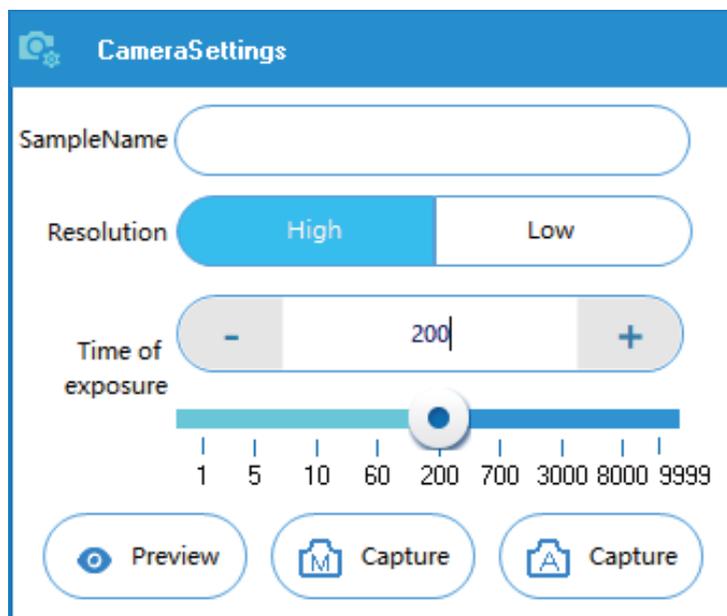Under blue light transmission, aperture value to 4-5.

To adjust the focal length: The smaller focal length value is, the larger of shooting area of sample is. Vice versa.

| Focus Far | Focus Near | Auto |
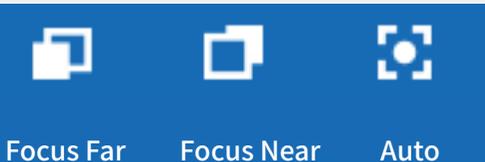
To click the left corresponding icon to enter focal fine adjustment or auto focus function.

Camera Parameter Setting

A. Input Sample name

You enter the sample name for automatically saving image file after the sample picture is taken. Please refer to P31 in this chapter for file path selection.

B. Resolution selection

High resolution

When you select High resolution for shooting, the system will provide high-definition images. The experimental image can be used to print HD files.

Note: The exposure time will be longer if you choose High resolution mode. The sensitivity of the camera will decrease.

Low resolution

When you select Low resolution for shooting, the system will provide low-definition images.

Note: The exposure time will be shorter if you choose Low resolution mode. The sensitivity of the camera will increase.

C. To adjust exposure time
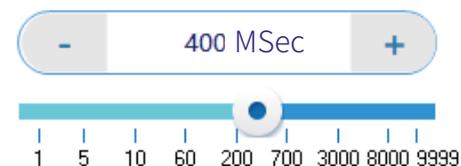
The longer exposure time is, the brighter picture is. The user can adjust exposure time according to different application. What You See Is What You Get when you adjust the exposure time under preview mode.

D. Preview and Capture

Turn on/off the preview mode: The image will be presented based on parameters such as aperture, light source and exposure time.
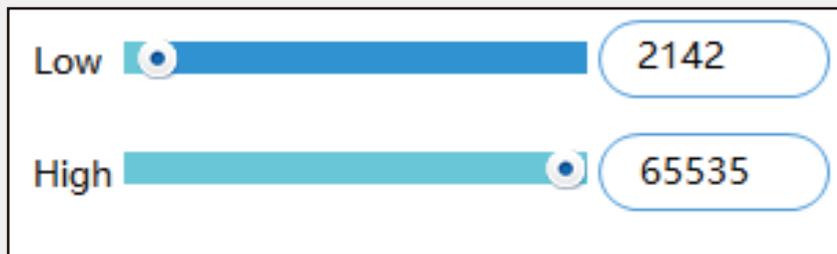
Image capture manually: parameters are same as current settings when shooting

Auto Exposure: The system automatically calculates the exposure time, the aperture, focus length and other parameters are consistent with the lightness of samples.

Display setting window

Adjust the grayscale range

We firstly need to capture images before adjusting grayscale. To adjust grayscale range is for the background and the brightness of bands to be best to watch. The grayscale range is from 0 to 65535.
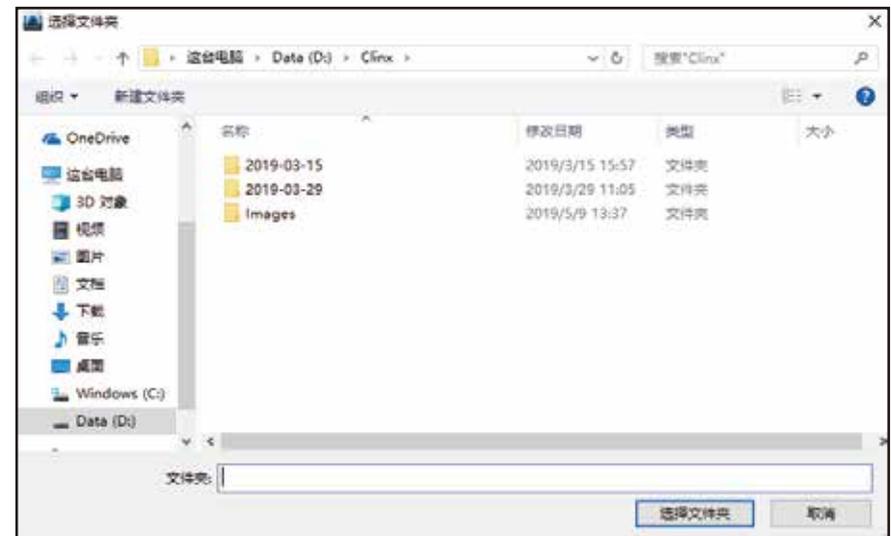
The lower value means that the background is darker (suggestion: not to adjust). The lower is the high value, the brighter band is. You can control the brightness of band by decreasing the value.

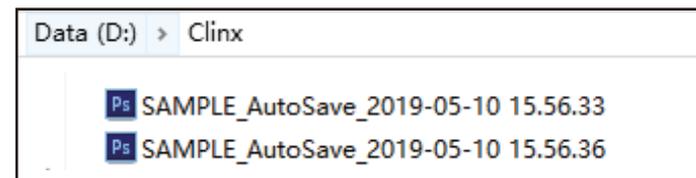We only turn the High value down.

Auto save file path

Click this icon to select folder path which is automatically saved, shown as below:

It will be automatically saved into this folder when picture is taken in every time, and the customized file name , the date and time of the shooting will be displayed , shown as below:

Introduction

If you are purchasing an embeded gel documentation system, please read the GenoSens Capture Touch Screen Operating Instructions:

It has the same features as the PC version, but the user interface is different. It is designed for more suitable for touch operation.

⚠ Before shooting samples, please insert the U disk into the USB port on the left side of the instrument. Please refer to P8 in user manual for the USB port location.

Main interface of Touch screen operation
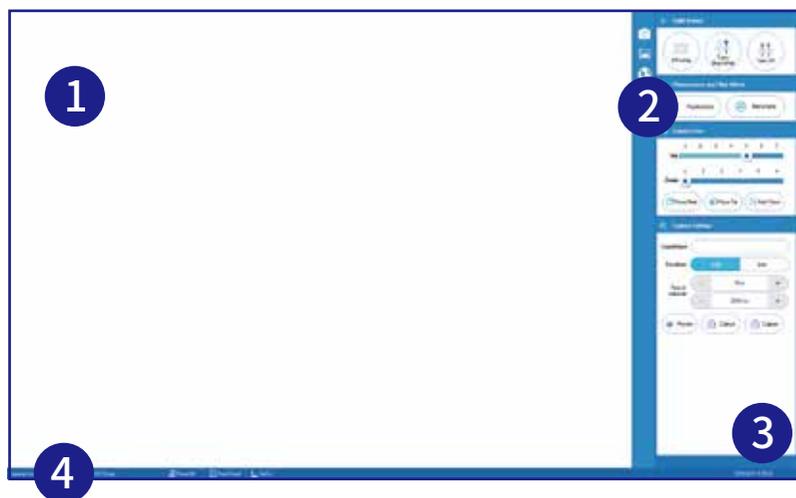
No.	Description
1	Image display window
2	Parameter setting bar
3	Picture Tool bar
4	Status bar

Tab Bar

📷 ⟶ Shooting parameters setting

🖼 ⟶ Images save and edition

🌐 ⟶ Language option

Shooting parameters setting

📷 Click this icon to set the shooting parameters including: light source, fluorescence, filter wheel, lens and acquisition settings.

A. Light source setting

Click the icon shown on the left to open the light source.

Introductions to the light source, please refer to P26-P27 in this chapter.
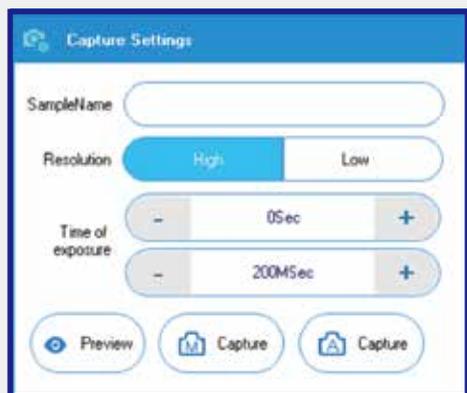
B. Lens setting

As shown on the left, the aperture size and focus length can be adjusted by pulling the slider. To click the corresponding icon to enter focal fine adjustment or auto focus function.

If you need detailed operation instructions, please refer to P26-P27 in this chapter.

C. Image capture setting

You enter sample name in the input box, the pictures will be automatically saved into the specified path after shooting every time.

Auto save file path settings, please refer to P31-P35 in this chapter.

Clicking Preview button, you can observe samples on the screen. Details about the exposure time setting and image acquisition operation, please you refer to P26-P27 in this chapter.
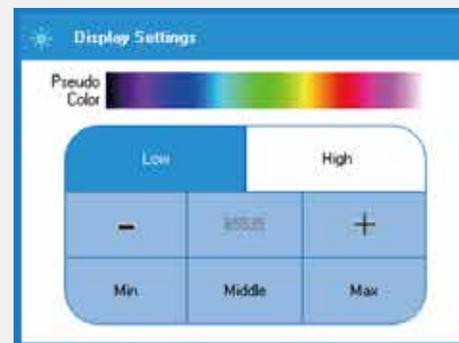
Image editing and saving

Click this icon to edit the image and save the picture into the specified path.
Note: Before editing and saving an image, we firstly need to capture the image.

A. Display Setting

After the image is acquired, we can add pseudo-color through the display settings.

To adjust the grayscale value (low value, High value), you can get the best picture to be watched. Instructions on adjusting the grayscale value, please you refer to P30 in this chapter.
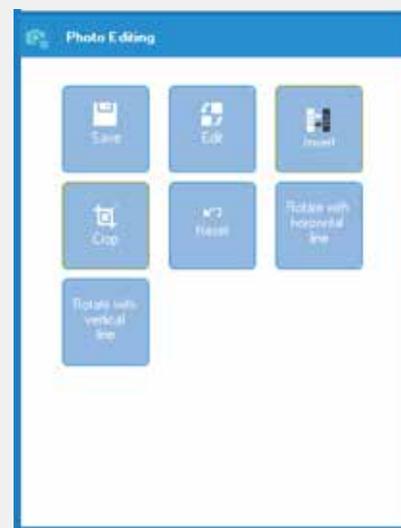
B. Auto save file path

Set a file path of saving. The picture will be saved automatically into this path when you shoot images every time.
To use auto save file path please you refer to P31 in this chapter.

C. Image editing

After the image is captured, we can edit images as shown on the left

To use image editing function, please you refer to P24 in this chapter.

Status Bar

The status bar displays the key status when the instrument runs. If you want to know the detailed information, please refer to P26 in this chapter.

06

Gel observation

Installation for UV shield

The product's UV SMART™ UV transilluminator is designed with a shadowless lamp that does not see the UV lamp when the power is turned on.

Installation method is as shown on the left: Please pull the UV transilluminator out of the dark box and place the UV shield on the two iron clamps of the transilluminator
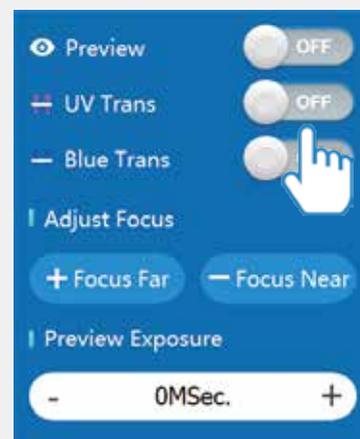
Turn UV transilluminator on

Due to the UV damage to the human body, the UV transmission of the product will automatically close when the door is opening. Please read safety warnings on page P3-P4 of the manual if you need to cut gel recovery.

A. Turn the UV transilluminator on by pressing panel

Trans UV
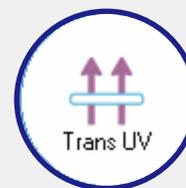
If you are using the ChemiScope 6000 Series System, you can turn on the UV transilluminator by pressing UV transmission button on the front panel of the instrument. (as shown on the left)

B. Turn the UV transilluminator on by software

If you are using the ChemiScope 6000 Touch Series, you can turn on the UV transilluminator by touching the bar.
(as shown on the left)

Indicator light of UV working

When indicator light in the front of UV transilluminator is light, it means that the UV transmission has been turned on.

Warning: Please pay attention to the eye protection from the UV to avoid looking directly

Transilluminator Installation

Transilluminator Installation,please refer to P13 in manual

Turn on the LED Transilluminator

No need to turn on blue(white)LED Transilluminator through the software. For details, please refer to P14 in manual.
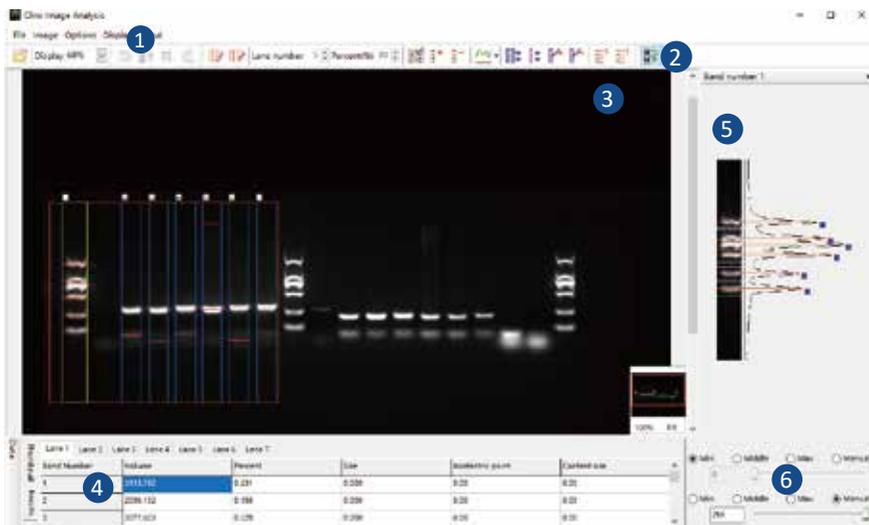
⚠️ Blue and white light, and other types of visible light are exposed to eyes that can cause harm. When using blue and white light transmission stations, Please be sure to protect your eyes when using blue (white) LED Transilluminator.For details, please refer to P4 in manual.

07

Analysis Software

Enter the main interface

| No.	Description
1	Menu bar
2	Tool bar
3	Main image windows
4	Thumbnail and data window
5	Bands window
6	Adjustment of Grayscale range window

Gray scale display setting

Before we start analyzing the image, we need to adjust grayscale range so that the background and the brightness of bands are the best situation. Firstly, we switch the High and Low values in the left corner of the software to manual state, as shown below:
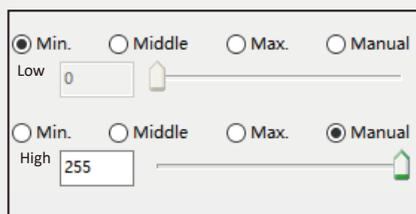
The Low value is more higher, the background is more darker(suggestion: not to adjust). The High value is smaller, the bands are more brighter. We only turn down the High value.
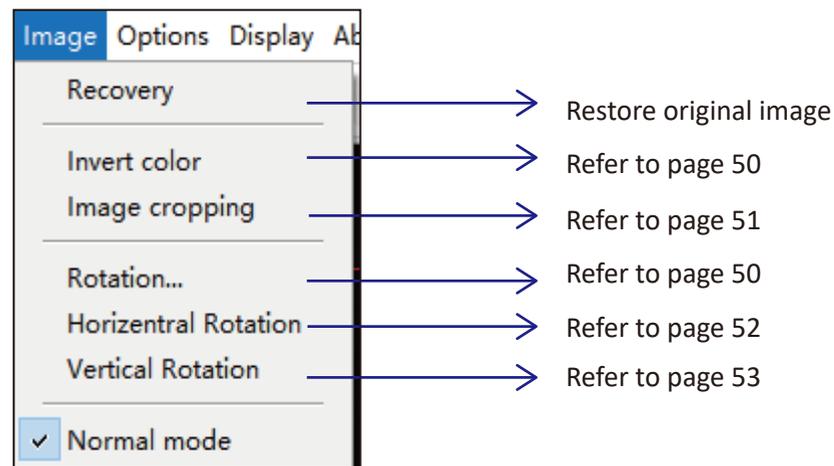
Menu Bar

File Menu
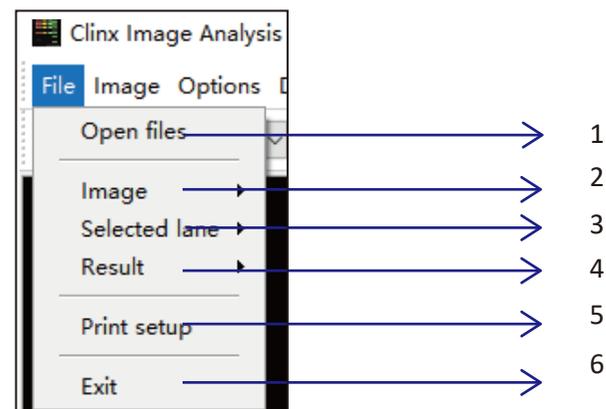
NO.	Function
1	Open the experimental image. System supports JPG, TIFF and BMP formats.
2	After clicking on the image menu, you can save or print the image of results.
3	After clicking on the "selected lane",you can save save or print the image of lanes
4	Save the analyzed results to an Excel or JPG files
5	Select and set your printer properties
6	Exit the software

Image Menu

Restore original image

Refer to page 50

Refer to page 51

Refer to page 50

Refer to page 52

Refer to page 53
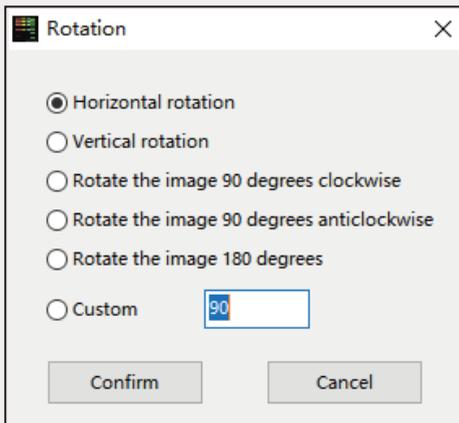
Main function for Image menu bar

Invert color

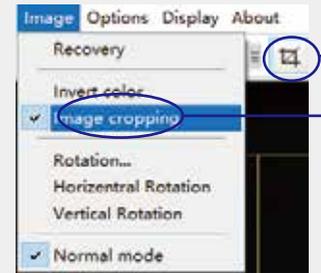Original Image

Inverse effect

Rotation

Various rotation modes

Main function for Image menu bar

Image cropping

After click the Image cropping, the menu bar "Cropping" will be ticked Short-cut of the crop will be active.

Hold the left mouse button and select area you want to keep, as shown on the left.

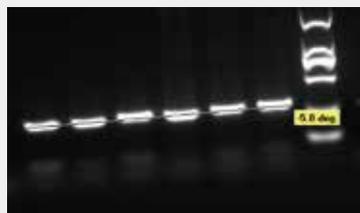After selecting, press the "Enter" key to co-mplete the cropping of image, as shown on the left

Main function for Image menu bar

Horizental rotation

When the bands of the original image is not horizontal (as shown on the left). We can use this function to put bands horizontally for image analysis.

After click this function, we can use the mouse to pull a horizontal line along the strip (as shown on the left)

Adjusted picture is shown on the figure above. The bands basically kept in a horizontal position for later analysis.

Main function for Image menu bar

Vertical rotation

When the bands of the original image is not horizontal (as shown on the left). We can also use this function to put bands horizontally for image analysis.

After click this function, we can use the mouse to pull a vertical line along the edge of the bands.

Adjusted picture is shown on the figure above. The bands basically kept in a horizontal position for later analysis.
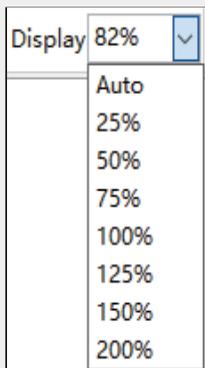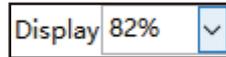
A. Open files

Click the icon to open the experiment picture quickly.
Support 8bit, 16bit, 24bit of TIFF, JPG and BMP files.

B. Image size display   `Display 82%`

On the right side of the short-cut bar, you can adjust the size of the image in the main window by using the drop-down box, or you can select "Auto" funcion to auto-maically match the size of the image.

Tips

Place the mouse in the main image window, we can adjust the size of the picture display by scrolling the mouse roller up and down.

C. Image ediing tools
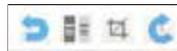
Recovery：One-click recovery of the original image
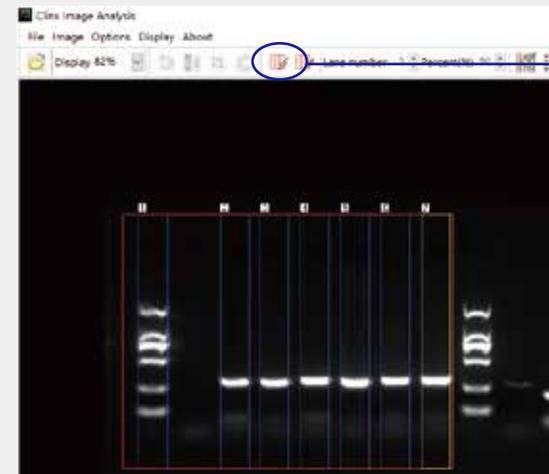
Invert color display：Refer to page 50

Image cropping：Refer to page 51
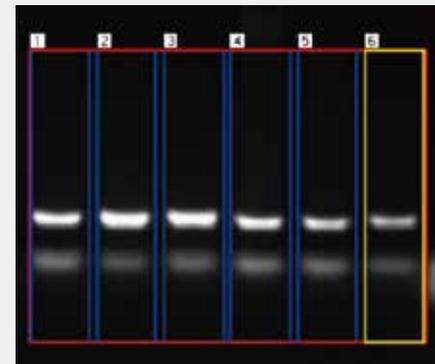
Image Rotaion：Refer to Page 50

D. Auto lane detecion

Click the icon to acivate "Auto lane detecion" and hold le mo-use buon to se-lect the area you want to idenify.

Lanes can be iden-ified automaically.

E. Manual lane configuraion   `Lane number 5 Percent(%) 90`

Click the icon to acivate "Manual lane configuraion" and enter number in the lanes then define the percent（Percent means the proporion of the space occupied by bands. If the percent is 90%, 10 % is the distance between the lanes. The percent is generally set to 90%).


Aer seng, hold le mouse buon to select the area you want to idenify. It will be framed if the number of the bands is set to 6. The size and distance of each band is fixed.

At the same ime, use the mouse to select the bands box in the im-age window, selected bands box is yellow. We can pull the width of the selected electrophoresis by mouse.

F. Bands identification, addition and elimination

Manually add bands. Select the lane in which the band is located (yellow box). The image of the selected lane is displayed in the band window at the right of the software interface. As shown below:
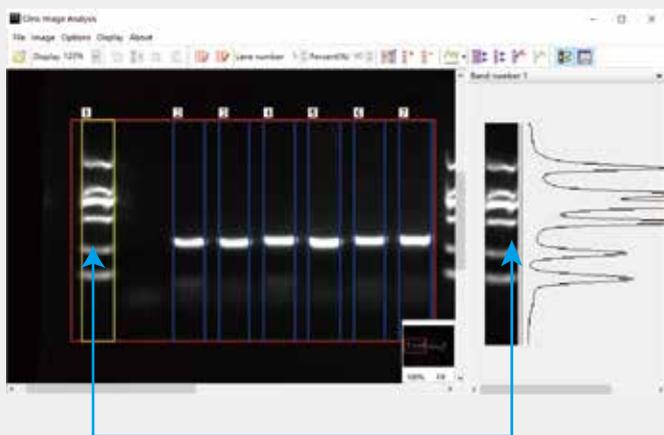
After click the Icon, use the left mouse button to click strip in the right strip window to add a strip. The added bands will be added synchronously on the main window as shown below:
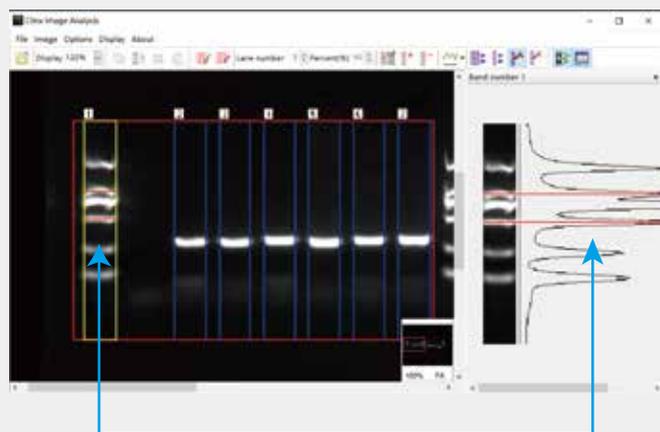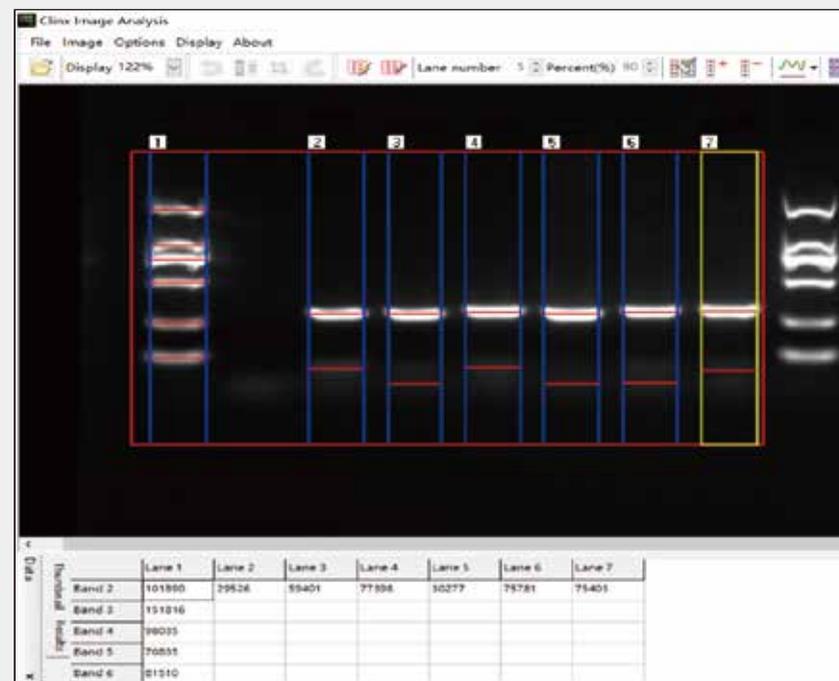
Manually delete strip. The operation method is the same as adding band. Select the lane and use the left mouse button to click the band you want to delete in the strip window.
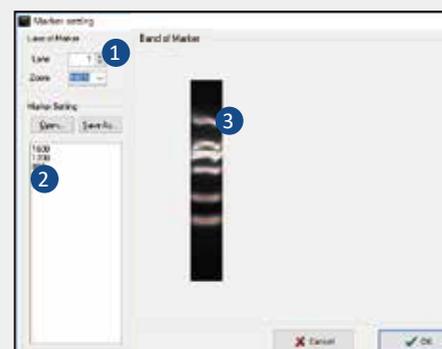
50

G.Molecular weight

Setting molecular weight: Mark the molecular weight of each band according to the Marker instruction

As shown above, we first select lane in the area and identify the bands (refer to P55-P58). Click the left mouse button to select the standard lane (in the yellow box).
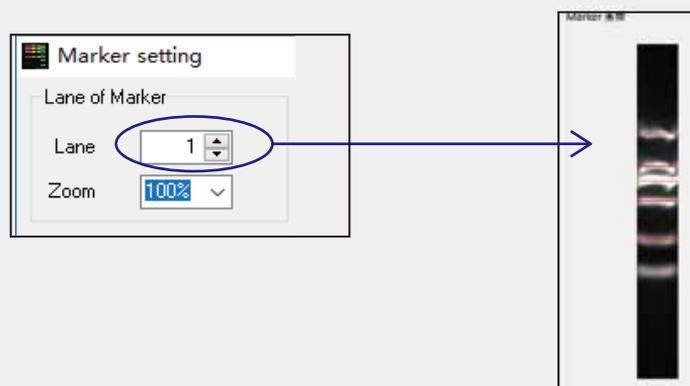
Click to open the window of"Setting molecular weight"that is divided into the following three parts as shown on the left
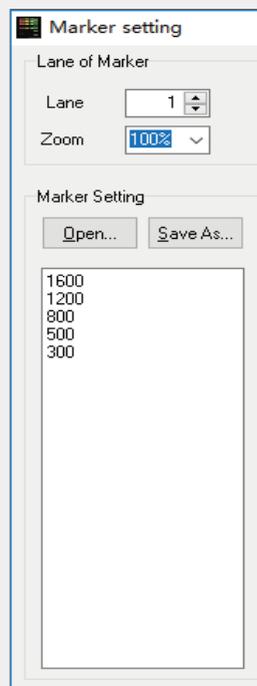
No.	Description
1	Choose Marker's lane
2	Input molecular weight of Marker
3	Bands window

51

I. Choose Marker' lane

The selected lane and identified bands are displayed simultaneously in the Marker bands view window


II. Input molecular weight of Marker

In the first time, you can input molecular weight base on the standard molecular weight , as shown on the left, we enter "1600, 1200, 800, 500 and 300" from top to bottom. You can save theseconfiguration into the file as format ".cmr" by "Save As" button in order to use it in the next time without inputting the same molecular weight again.

Click"Open" button to import former configuration file!

After you enter the molecular weight, the bands corresponding to the standard Marker will displayed in the view windows simultaneously. The related data of the band identified in the lane will be automatically calculated and showed in the "Data" window. As shown below:
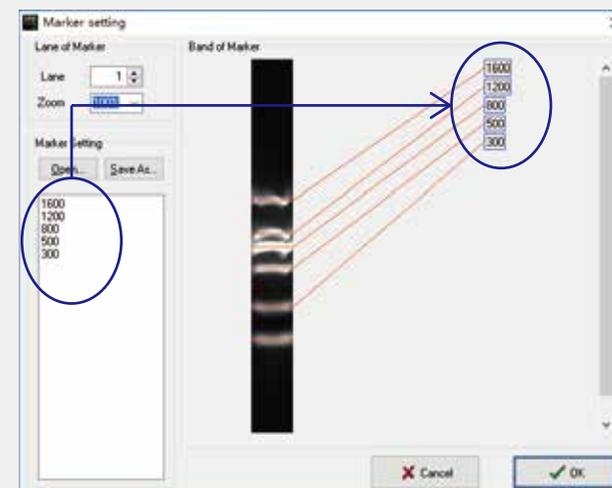
The "Data" window introductions, please refer to P61 in this chapter.
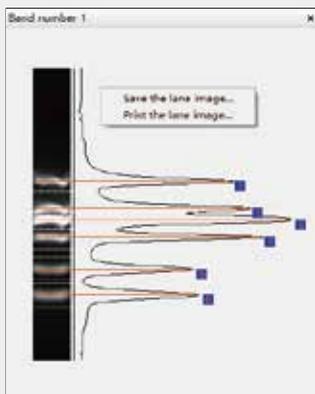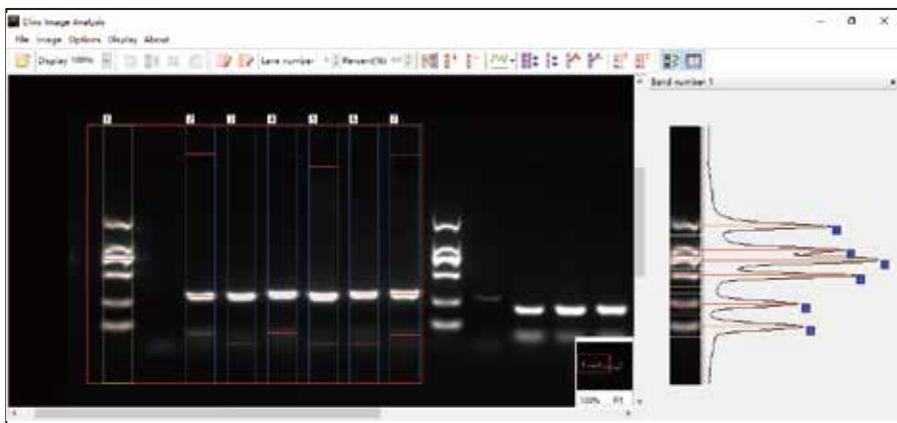
H.Show or hide of lanes and data windows

Show/Hide button of lanes window
To display the lanes window by default.

Show/Hide button of Data window
To display the data window by default.

When we select lane and idenɵfy the band, the selected bands (yellow box)
will be displayed in the windows, including the grayscale value of the band.
As shown below:

You can save the image in the band
window as a JPG, BMP or TIFF ﬁle by
 right-clicking on the band window
area, and you can directly print the
image.

（As shown on the leŌ）

The analysis soŌware can open mulɵple image ﬁles and they are displayed as
thumbnails. We can select the images to be analyzed by clicking the thumbn-
ail, as shown below:
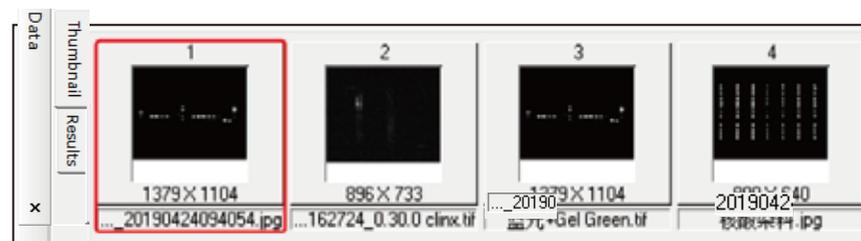
Once the band is recognized, the thumbnail window will automaɵcally switch
to the data window. You can also switch manually by clicking the "Thumbnail"
 or "Analysis Report" tab on the leŌ.

Right click on the data window area, you can open the "Molecular Weight Se-
ƫngs" window in the drop down box, or you can click the "Molecular Weight
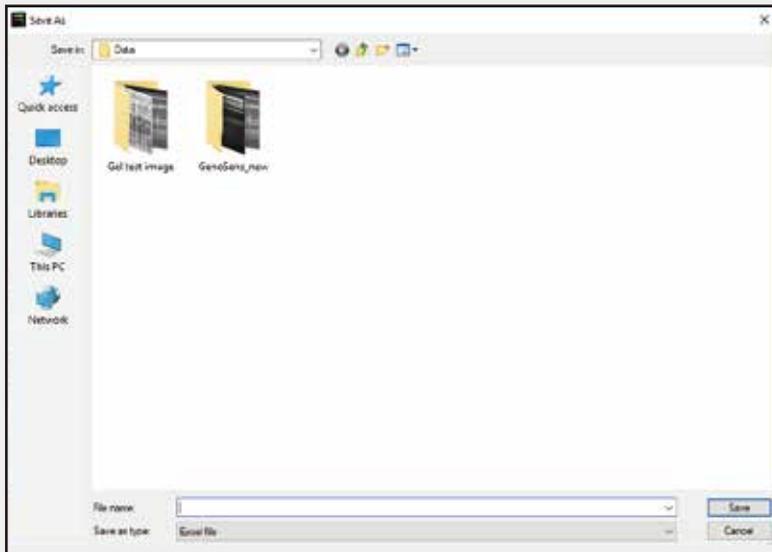Seƫngs" buƩon on the toolbar.

💡 Tips:

The setting of molecular weight, please refer to page
P60-P61 in manual.

Save all the data(Can reload)...
Save all the data...
Save the lane results...
Save selection...
Load all the data...

Molecular size
Isoelectric point
Content Setting

Data Presention
Save the analysis report as an Excel file by right-clicking on the data window.

08

Warranty Liablity

Warranty Liability

We ensure that all of products are fully tested before shipment and in according with the published specifications. It must be installed and used with the manuals provided by our company. We provide one-year warranty without the external force or man-made damage. Improper use or wrong operation result in the loss of the income or business opportunity that is not within the responsibility of our company.

Contact us

If you have any question about the products, contact us please.

Email: info@clinxsci.com

Address: 5C-102, 258 West Songxing Road, Baoshan District, Shanghai, China