

*Automatic Live Cell Imaging System*

# Cell<sup>o</sup>ger Mini

Quick Manual



CURIOSIS

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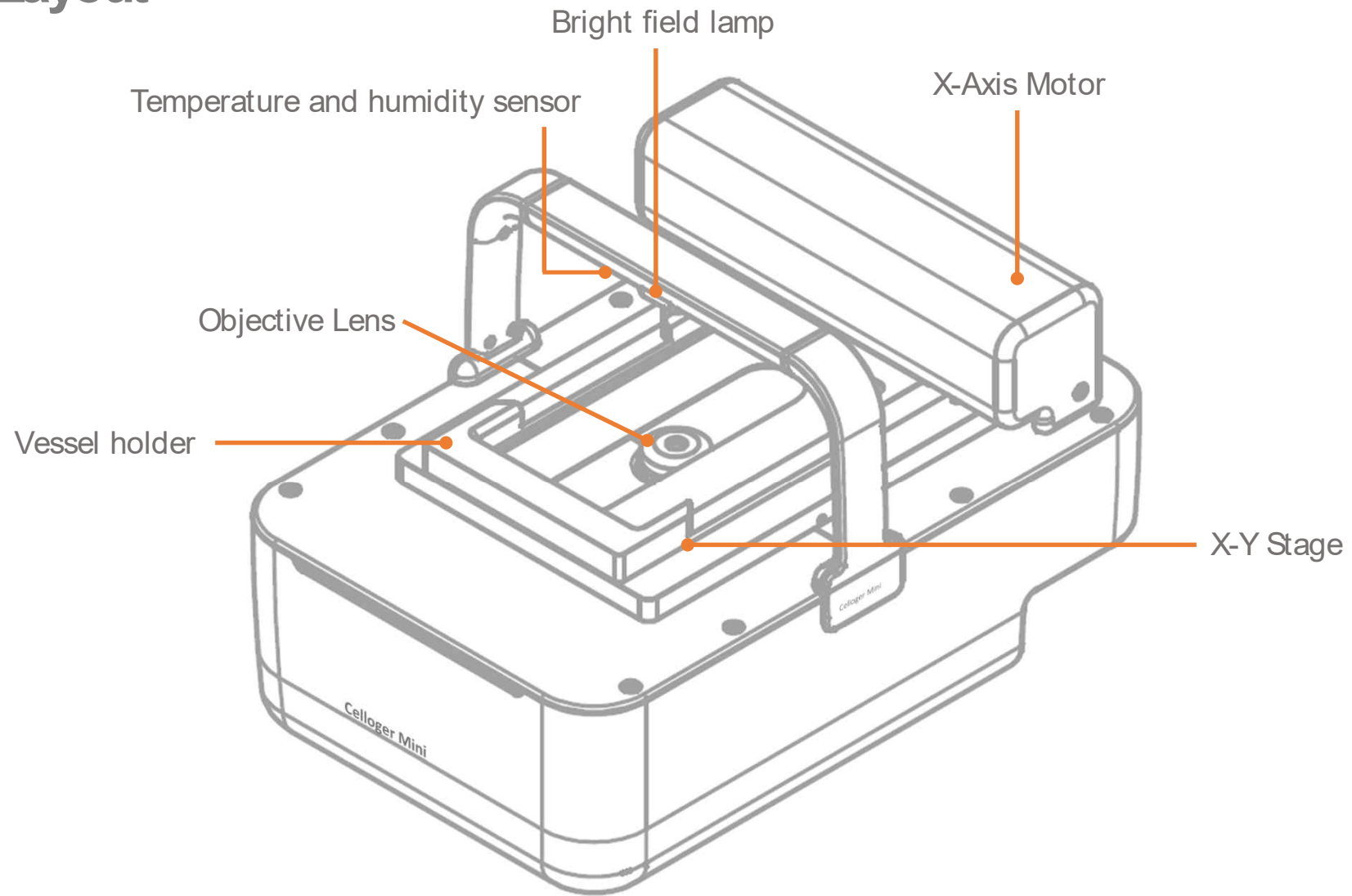
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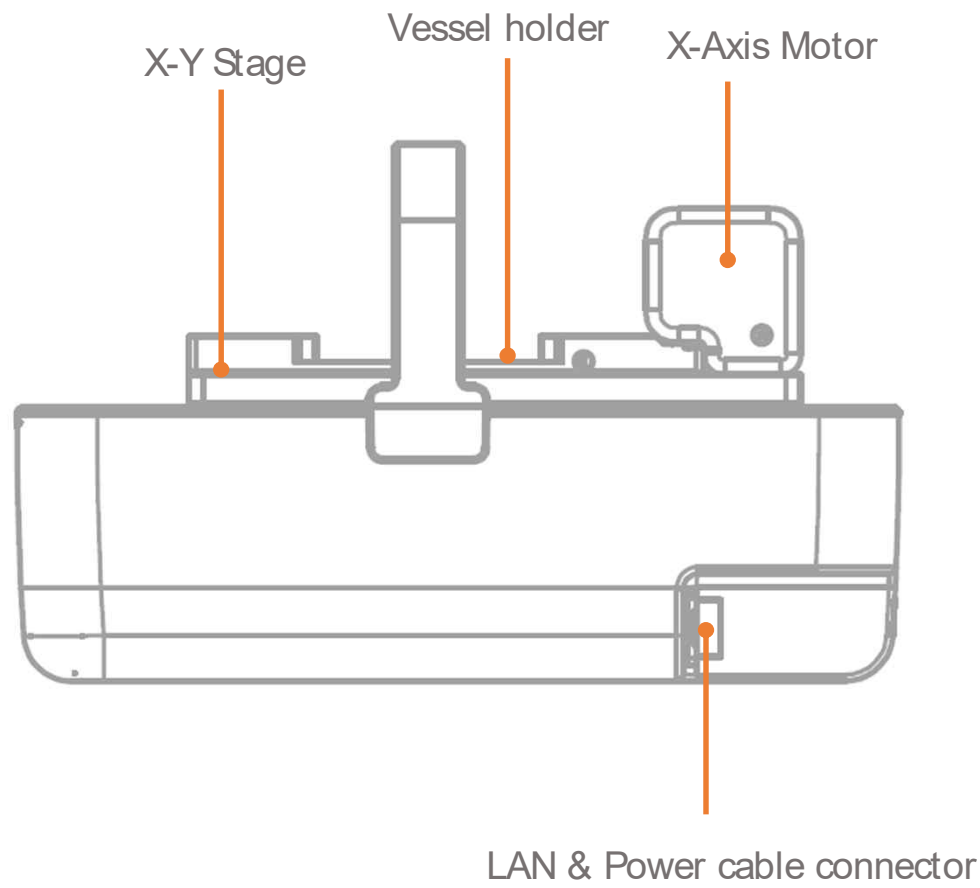


# Device Layout

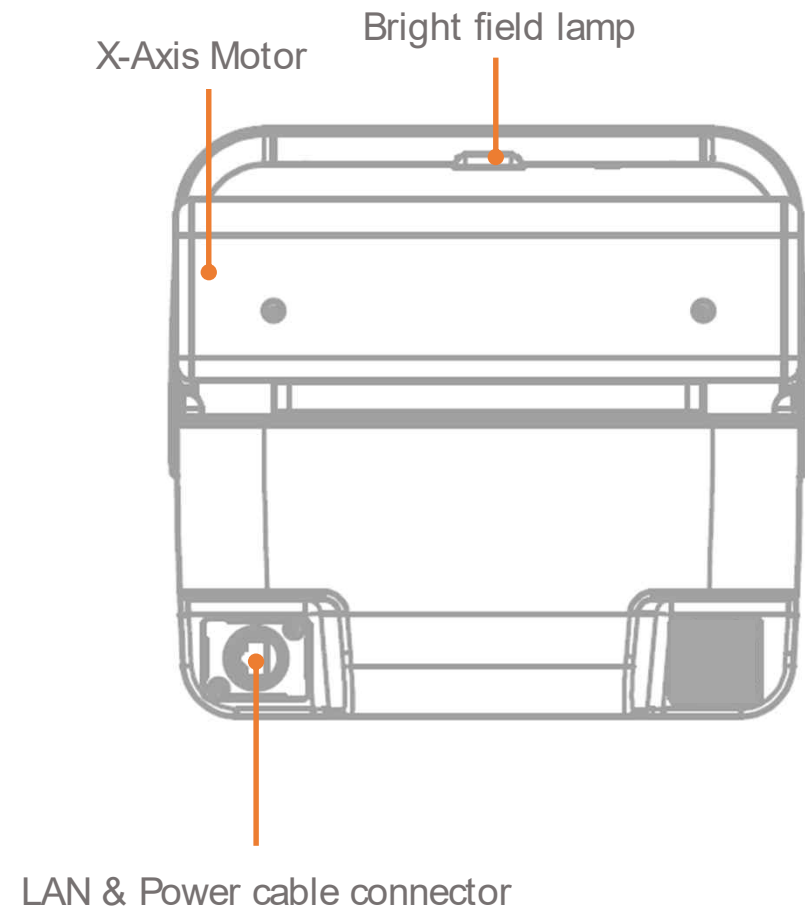
# Front Layout



## Side Layout

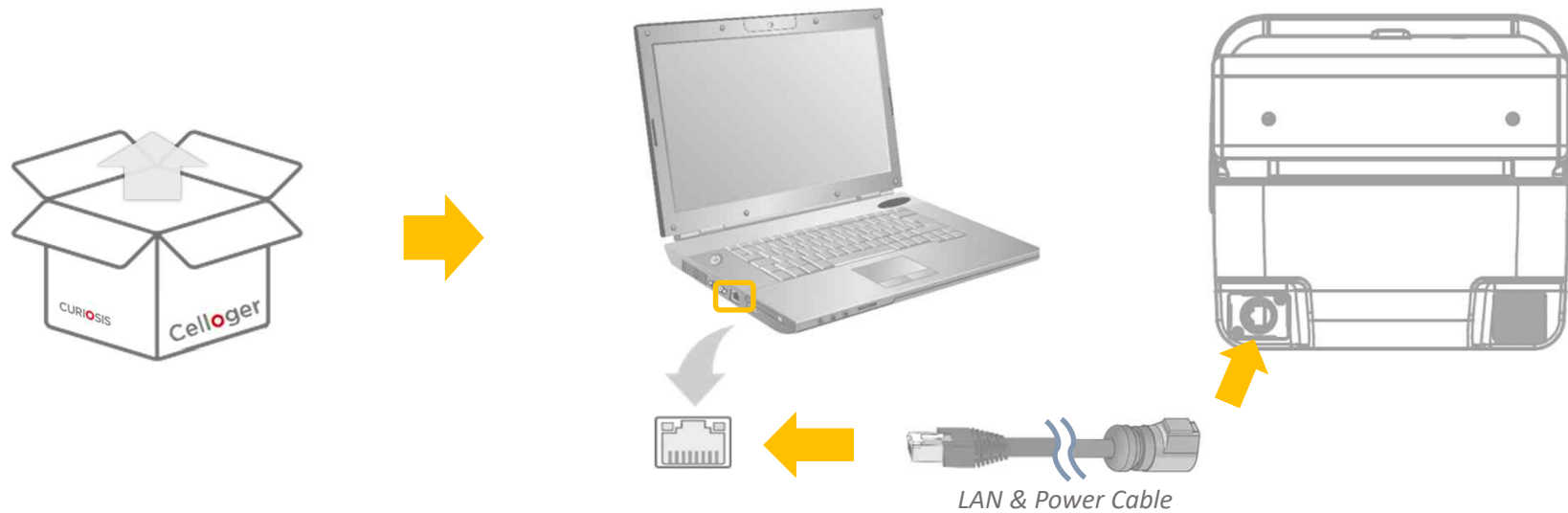


## Rear Layout



# Basic Operation

# 1. Installation



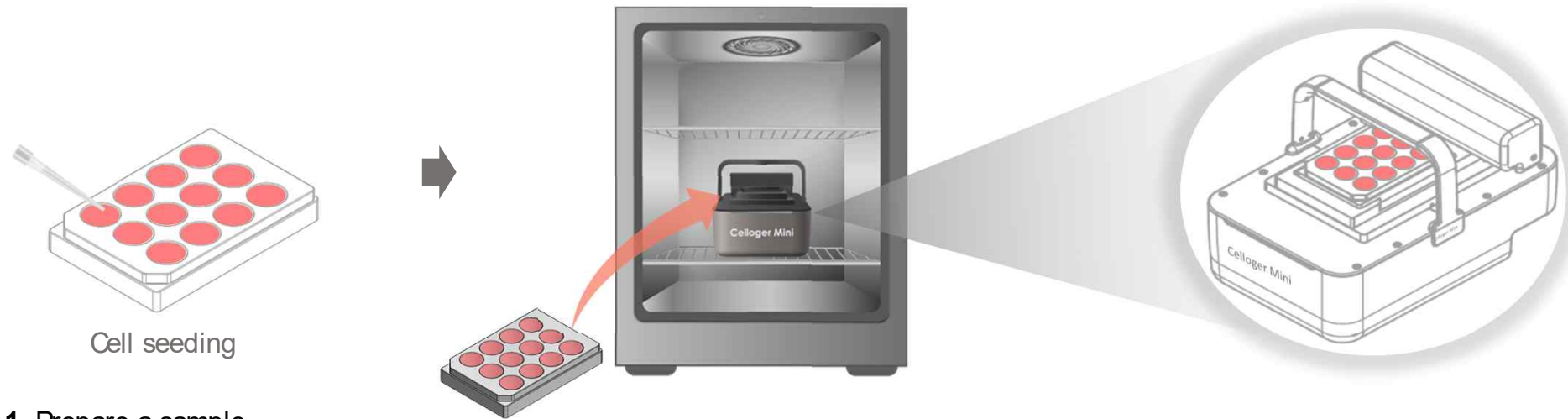
**Connect the device to PC**

**Step 1.** Remove the product from the box.

**Step 2.** Plug the power cable into device

**Step 3.** Connect the device to PC using the connection cable.

## 2. Set up



**Step 1.** Prepare a sample.

**Step 2.** Put the device inside incubator.

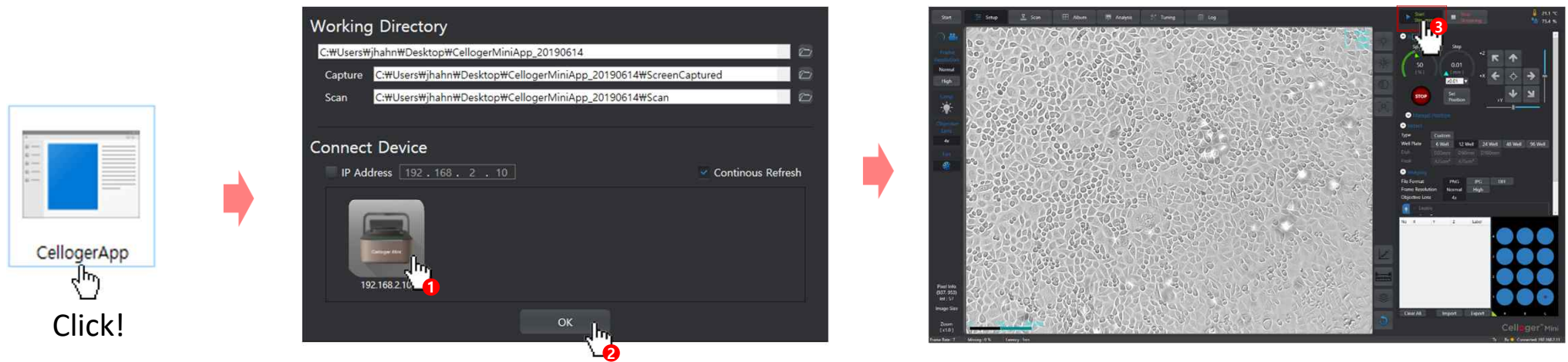
**Step 3.** Place the sample on the stage.

Note: Check the connection between the PC and the device.

- ! ✓ Whole procedure should be done in clean area to avoid to decrease accuracy of captured imaging due to dust.
- ✓ Please spread the cells sufficiently before capturing the imaging.  
(Pay attention to avoid bubbles and check if there are any cell clumps)
- ✓ Cell culture flask should be wetted by the culture media before making a capturing.




# 3. Starting



**Step 1.** Click a **Celloger Mini App**

**Step 2.** Select the file to save and Connect **device**

**Step 3.** Press **Start streaming** button to display the current plate.

Note: If the device icon  does not appear, enter the IP address directly.

# Description

# 1. Set up mode

**Current X-Y-Z position**   **Live cell monitoring**   **Current temperature & humidity**

Start   Setup   Scan   Album   Analysis

**Connection with Celloger Mini**

**Selectable resolution**

- Normal
- High

**X-Y-Z Control panel**

- Speed
- Step[mm]
- Set position

**Move to absolute X-Y-Z position in mm unit**

**Vessel type**

**Imaging exported formats**

**AF**

- Depth
- Resolution
- ROI

**Image information**

**Scale bar**

**Light up**

**Blink Me!**

Speed 30 [%]   Step 1 [mm]   x1

STOP   Set Position

Manual Position

Vessel

Type	Custom				
Well Plate	6 Well	12 Well	24 Well	48 Well	96 Well
Dish	D35mm	D60mm	D100mm		
Flask	A25cm <sup>2</sup>		A75cm <sup>2</sup>		

Imaging

AF

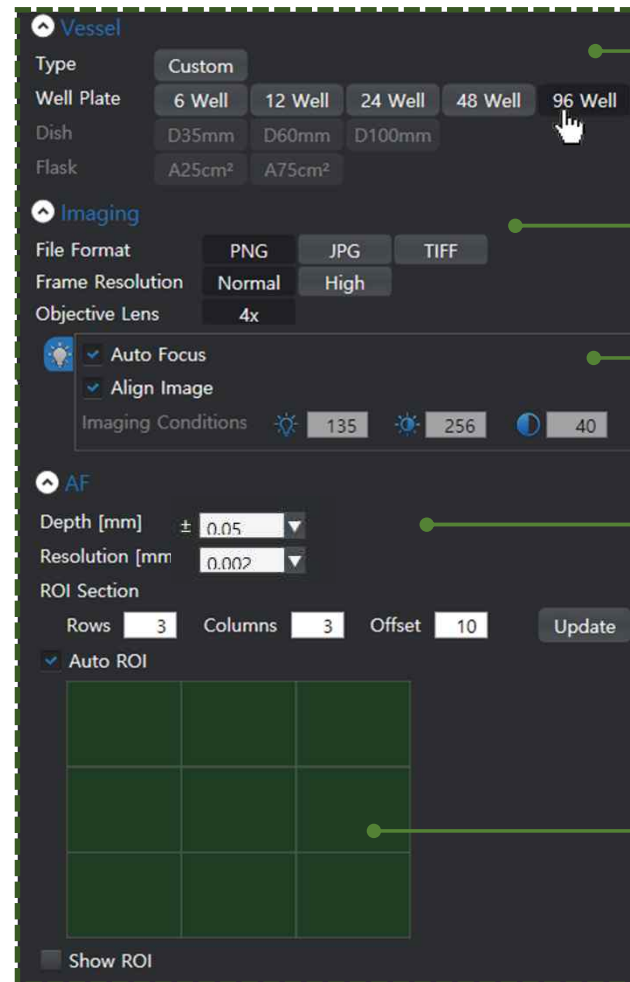
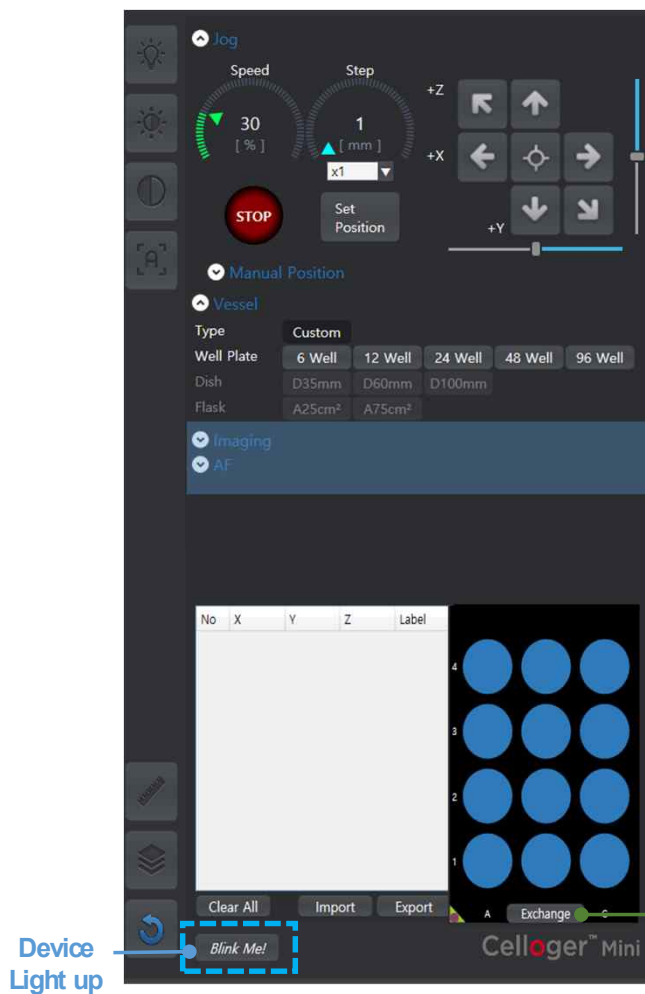
No	X	Y	Z	Label
3				
2				
1				
	A	B		

Clear All   Import   Export

Celloger™ Mini

Connected: 192.168.2.113, ( 1.0.13.C5)   Tx   Rx

# 1. Set up mode





# 2. Scan mode

**X-Y-Z position**

**Start & Stop & Pause**

**Current progress of the work**

**Schedule**

- Period
- Total time
- Total cycle

**Image information**

**Scale bar**

**Refresh**

**Display**

**Current location**

**Pixel Info**  
(1295, 589)  
Int : 131  
Image Size  
(1296 x 970)  
Zoom  
[ x1.0 ]

Frame Rate : 0 | Missing : 0 % | Latency : 0ms

24.1 °C  
19.5 %

Start Streaming | Stop Streaming

Start | Stop | Pause

C:\Users\Wjahn\Desktop\CellogerApp\_V1.0.2002.2521\Scan

**Progress**

Total 0 %  
Cycle 1 / 6

Cycle Time Remaining 00 : 09 : 56  
Elapsed Time 00 : 00 : 03

Start Date Mar 04, 15 : 07  
End Date Mar 06, 15 : 07

**Schedule**

Period 0 : 10 ( HH : MM )  
Total Time 2 : 00 ( DD : HH : MM )  
Total Cycle 288 cycle(s)  
Req. Storage 0.0 GB ( 26.4 GB Available )

No	X	Y	Z	Label	AF
1	23.08	24.56	5.31	A1	<input checked="" type="checkbox"/>
2	23.08	63.8	5.31	A2	<input checked="" type="checkbox"/>
3	23.08	103.04	5.31	A3	<input checked="" type="checkbox"/>
4	62.32	24.56	5.31	B1	<input checked="" type="checkbox"/>
5	62.32	63.8	5.31	B2	<input checked="" type="checkbox"/>
6	62.32	103.04	5.31	B3	<input checked="" type="checkbox"/>

Clear All | Import | Export  
Blink Me!

Celloger™ Mini  
Connected: 192.168.2.113, ( 1.0.13.C5) Tx Rx

# 3. Album mode

**Album mode**

Start | Setup | Scan | **Album** | Analysis

Frame Resolution: Normal | High  
Lamp: 4x  
Objective Lens: 4x

Pixel Info (729, 958) Int : 0  
Image Size (1296 x 970)  
Zoom [x1.0]  
Scale bar: 0 100 200 [μm]

Frame Rate : 0 | Missing : 0 % | Latency : 1ms

Import file: X : 42.700, Y : 63.800, Z : 0.000

Video recording: Start Streaming, Stop Streaming, Stop

Captured image play: Video speed control (FPS: 10)

Temperature: 24.7 °C, 26.8 %

Index	Label	X	Y	Cycle	TimeStamp
85	H1	73	13.2	1	2020-02-21 18:31:16
2				2	2020-02-21 19:45:01
3				3	2020-02-21 20:42:50
4				4	2020-02-21 21:44:28
5				5	2020-02-21 22:45:46
6				6	2020-02-21 23:44:38
7				7	2020-02-22 00:44:08
8				8	2020-02-22 02:28:39
9				9	2020-02-22 03:23:28
10				10	2020-02-22 04:22:59
11				11	2020-02-22 06:39:23
12				12	2020-02-22 08:20:35
13				13	2020-02-22 09:20:24
14				14	2020-02-22 10:17:12
15				15	2020-02-22 12:37:16
16				16	2020-02-22 13:35:21
17				17	2020-02-22 14:35:30
18				18	2020-02-22 15:34:06
19				19	2020-02-22 16:34:02
20				20	2020-02-22 17:34:51
21				21	2020-02-22 18:33:30
22				22	2020-02-22 19:34:52
23				23	2020-02-22 20:34:40
24				24	2020-02-22 21:34:41
25				25	2020-02-22 22:35:56
26				26	2020-02-22 23:36:47
27				27	2020-02-23 00:36:02
28				28	2020-02-23 01:34:40
29				29	2020-02-23 02:35:04
30				30	2020-02-23 03:36:16
31				31	2020-02-23 04:35:21
32				32	2020-02-23 05:35:41

Measure cell length, Cell detection, Light Blink Me!, Refresh

Cellologer Mini  
Connected: 192.168.2.112, ( 1.0.14.23) Tx Rx



# 4. Analysis mode

Start Setup Scan Album **Analysis**

Frame Resolution: Normal, High  
Lamp  
Objective Lens: 4x

Pixel Info (516, 346) Int : 186  
Image Size (1296 x 970)  
Zoom [x1.0]

Scale bar

Frame Rate : 0 Missing : 0 % Latency : 0ms

Start Streaming Stop Streaming 0.0 °C 0.0 %

Run

Source  
Live Image  
Local Image  
Time-Lapse Images

Import image

H:\20190821\_165538\_1311444435#12,(68.735,102.88) - AGS  
D:\#1. Celloger Mini#cell#AGS

Data Graph **Confluency**

56.7 %

Color

Red 255  
Green 255  
Blue 0  
Alpha 62

Adjust Color settings

Display

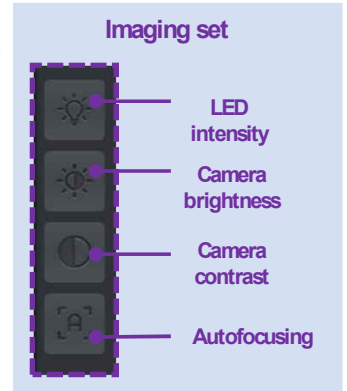
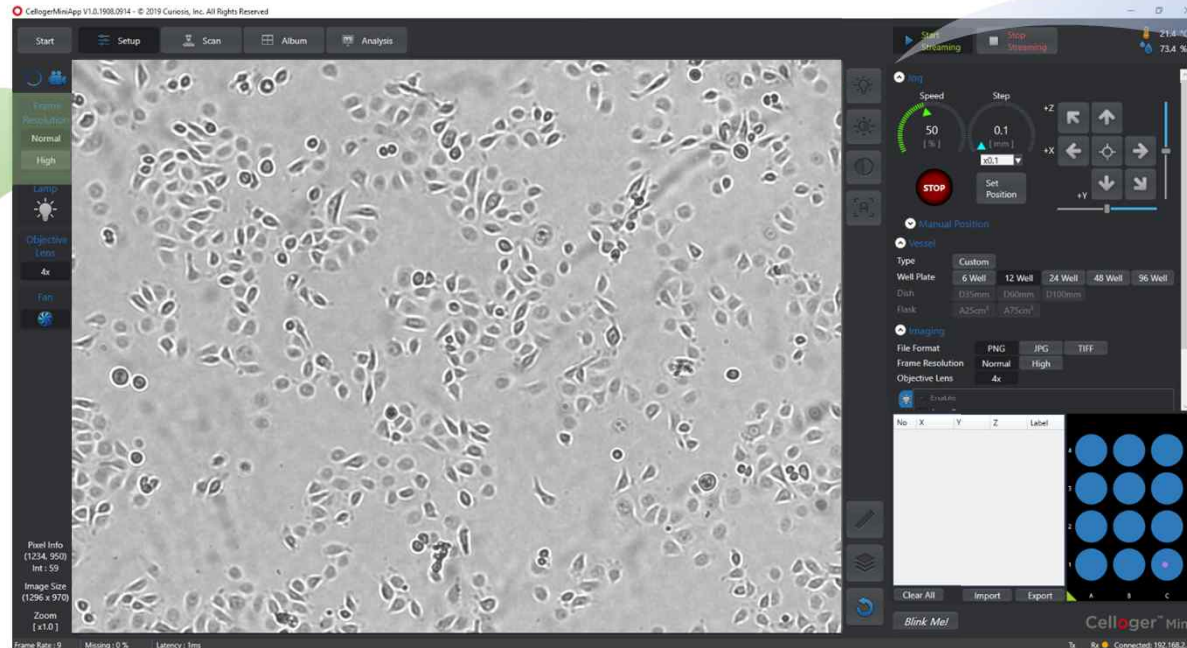
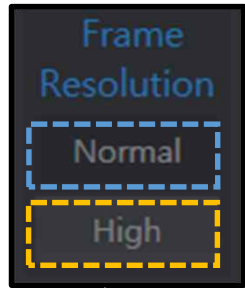
Blink Me!

Celloger Mini  
Tx Rx Disconnected

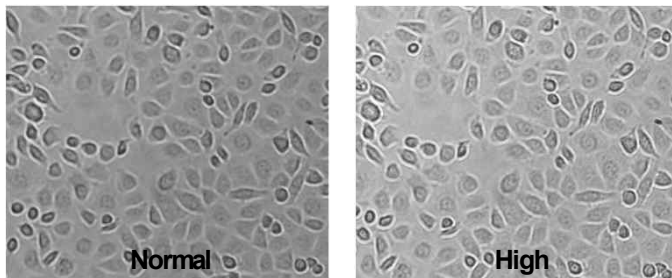
# Operation



# 1. Set up mode



## Frame Resolution Result

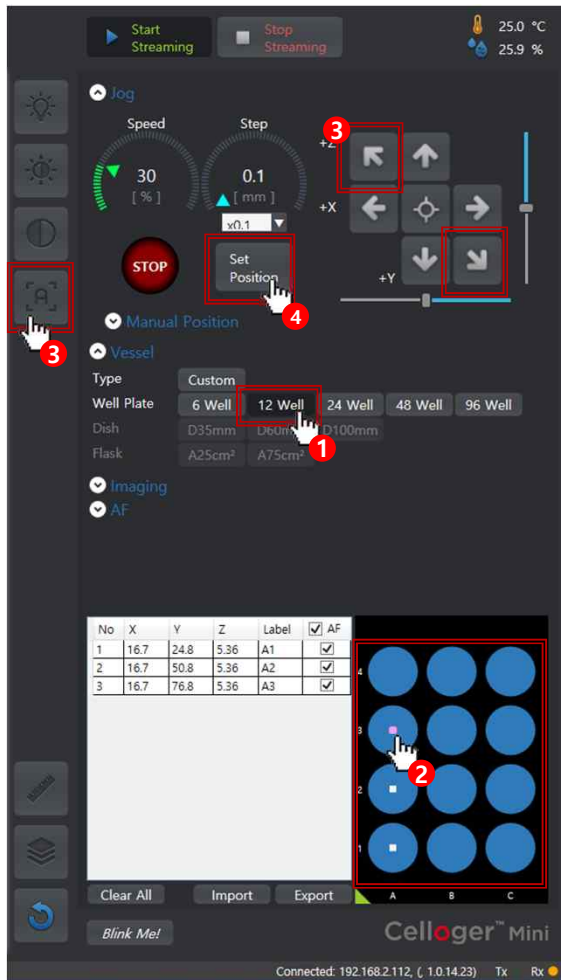


**Step 1.** Press **Start streaming** button, then image is displayed.

**Step 2.** To adjust illumination, use the **LED intensity**, **camera brightness**, **camera contrast** on the imaging tap.

**Step 3.** Choose Frame resolution of **Normal** or **High**

## 2. Vessel Setting & Focusing



### Step 1.

Select the well plate of the **Vessel type** and the options such as image saving format.

### Step 2.

Specify where to take the picture.

### Step 3.

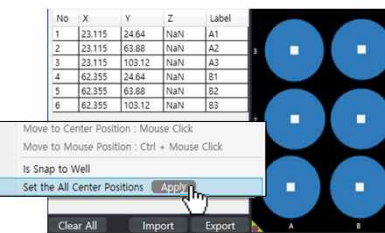
Adjust the focus using the **autofocusing** button or **jog tap**.

### Step 4.

After specifying position for each well, press  button.

⚠ Note: X-Y-Z position is displayed on the left.

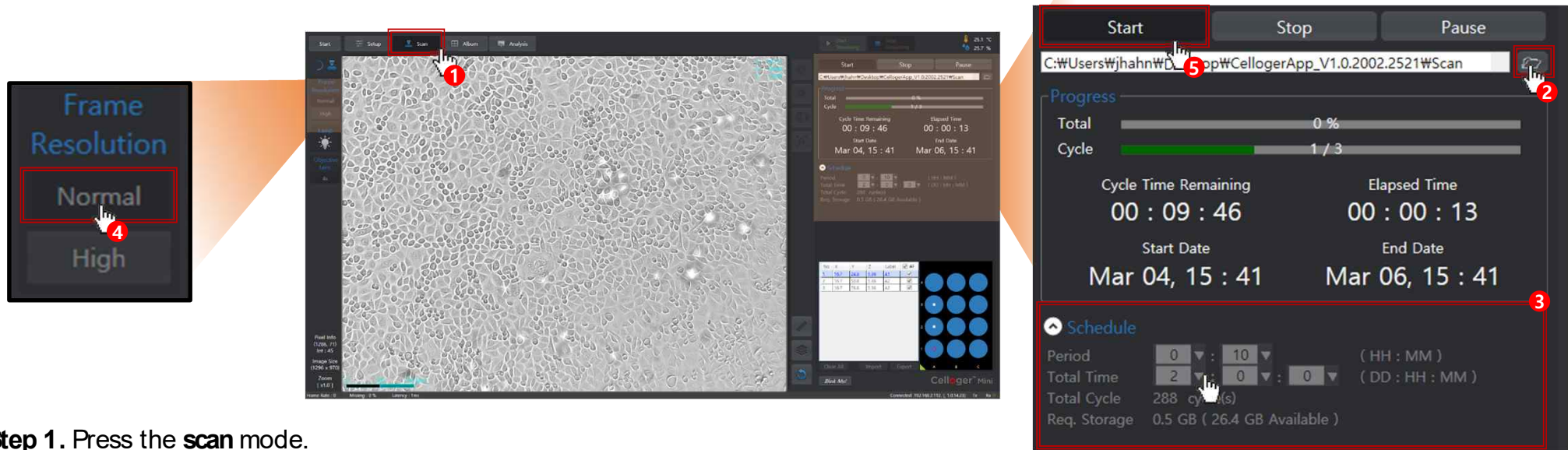
### How to Set the all center positions



Right-click the well plate and apply the all center positions of well.

▶ Focus manually before using the autofocusing function.

### 3. Image Scan & Time lapse image capture



**Step 1.** Press the **scan** mode.

**Step 2.** Select a file to save the captured image.

**Step 3.** Set up **total time** and **period** in the schedule, the total cycle is entered automatically.

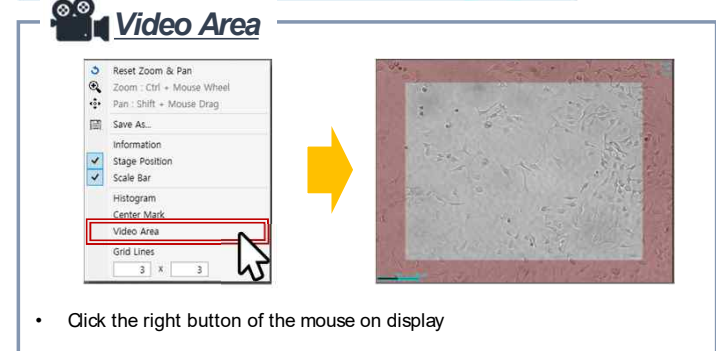
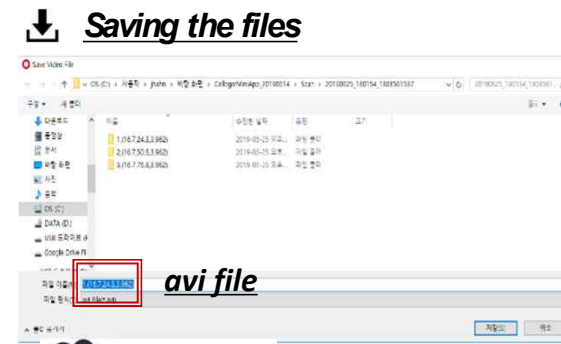
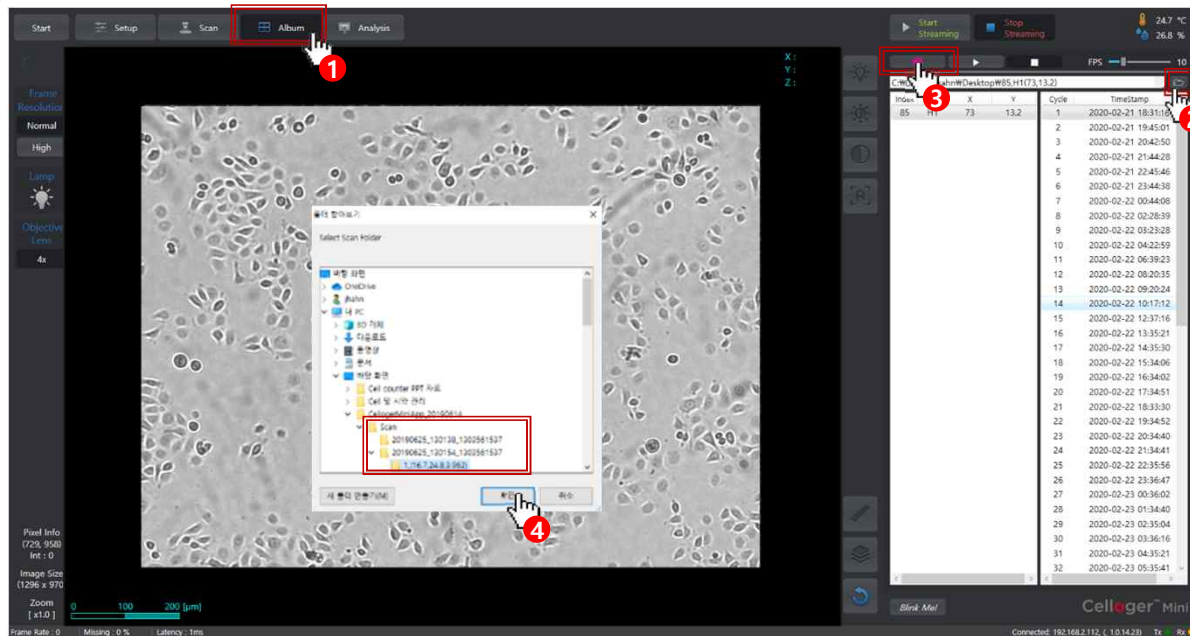
**Step 4.** After selecting the schedule, select **frame resolution**.

**Step 5.** Press **start** button to begin capturing.

🕒 Note:

Position	Recommended period	
6 - 12	10 min	Minimum
12 - 48	30 min	
96	1 hour	

# 4. Video recording






- Click the right button of the mouse on display

**Step 1.** Press the **album** mode.

**Step 2.** Import the saved folder.

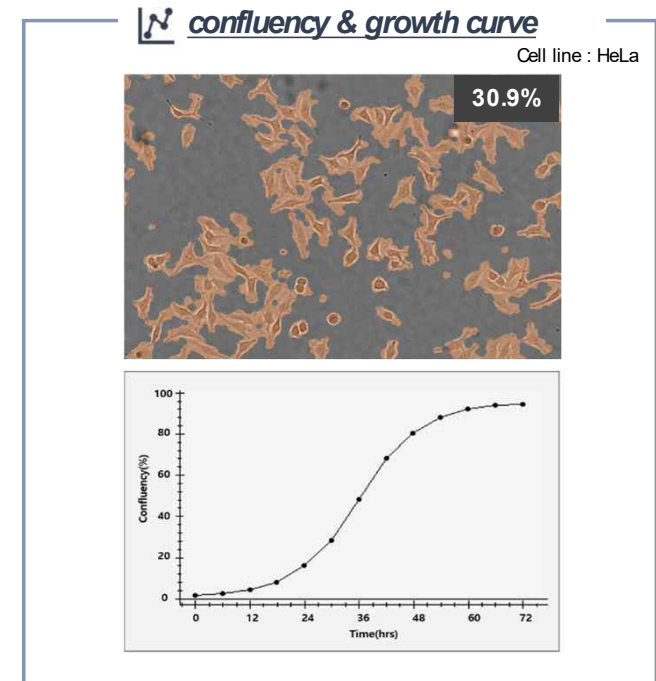
**Step 3.** Press  button. The video can be exported.

 Note : The  button displays pictures continuously and  button produces video.

- ✓ Select the name of image in the data list. The preview window will show the image and movie you selected.
- ✓ Warm up Celloger Mini for 1 hour in incubator before making a movie. If not, it might be the cause of uncertain data or unclear videos.
- ✓ The video is created in the video area, and FPS(Frame Per Second) is adjustable.
- ✓ Cell culture flask should be wetted by the culture media before making a movie.



# 5. Confluency & Growth Curve




**Step 1.** Press the **analysis** mode

**Step 2.** Import an image or folder

**Select Live image (1 image) / Local image (1 image) / Time-Lapse images (folder)** in source menu

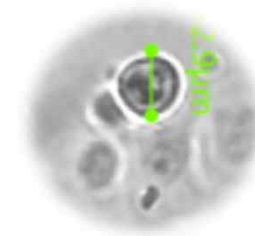
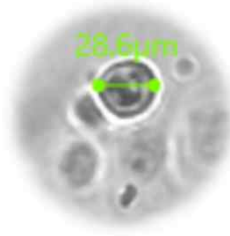
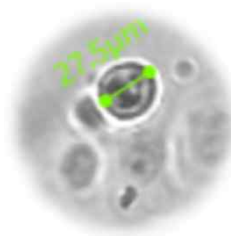
**Step 3.** Adjust the parameters and color. (Specified as default)

**Step 4.** Press the **run** button.

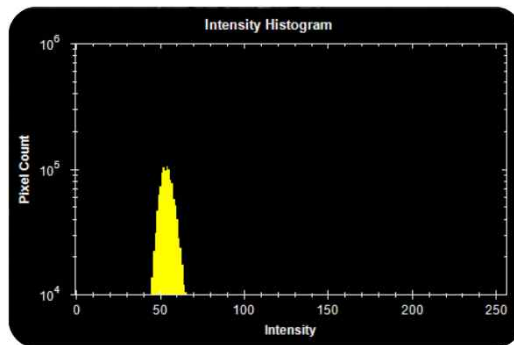
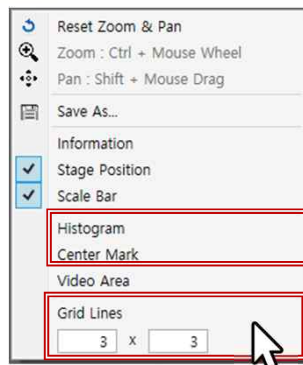
 **Note :** The alpha button controls the transparency or opacity of a color.

## 6. Additional setting

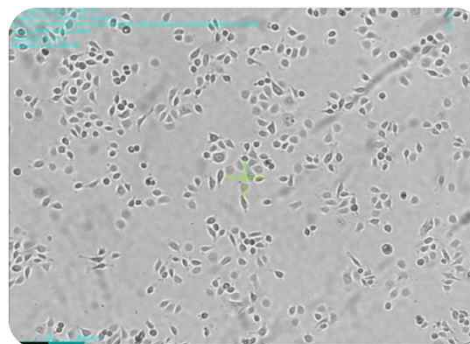
### Measure cell length



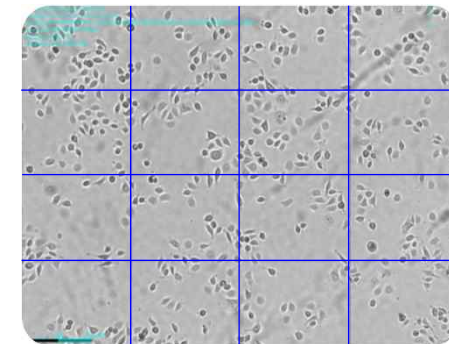
### Other settings



< Histogram >



< Center mark >



< Grid line >

**Step 1.** Click the right button of the mouse on display

**Step 2.** Click "Histogram" or "Center mark" or "Measure" or "Grid line"

Note : Grid line can be set according to user's convenience (default : 3 x 3)

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