

Olympus Inverted microscope IX 83 Instruction

1. Turn on microscope

- 1) Turn on main switch of mercury lamp X-Cite
- 2) Turn on main switch of control box IX3-CBH
- 3) Turn on main switch of control box BX3-SSU
- 4) Turn on main switch of touch panel controller
- 5) Turn on shutter controller (black box), make sure the switch is in auto position
- 6) Turn on PC and open Cellsens software

2. Load sample

- 1) Use the knob above the condenser to move the condenser up
- 2) Load sample on the sample stage
- 3) Lower the condenser by the knob to the end position

3. Imaging:

- 1) Choose imaging mode on the software: BF, DIC, TRITC, FITC, DAPI, etc.
- 2) Choose the object lens on the software: 4X, 10X, 20X, 40X, 60X
- 3) Click on **live** icon button
- 4) Adjust the exposure by moving the slider to right until your image appears properly exposed
 - a. The exposure normally can be set as **auto** in bright field or DIC image mode and as **manual** in fluorescent image mode
- 5) Using controller U-MCZ coarse and fine focus knob to focus the sample by eyepieces or on the computer screen
- 6) Move the sample by XY controller to find interesting area
- 7) Focus your image to the camera using the fine focus if needed
- 8) Normalize background:
 - a. For Bright field images: on the top right toolbar, click the white dropper icon
 - b. For fluorescent images: on the top right toolbar, click the black dropper icon
 - c. Then select an area of 'background' on your image slide by drawing a small box encompassing only the background. This sets the white or black balance for your image and reduces background noise.

- 8) Click the **Snapshot** icon button to capture an image
 - a. Save your image under the **user** folder on the desktop or in your personal device (if you have scale bar on your images, when you save the images as .tiff, the images will have two layers; when you save the images as .jpg, the images will only have one layer)

4. **Movie recording**

- 1) Select Movie recording
- 2) Click **movie** icon button to capture a movie
- 3) Save your movie .avi file under the user folder on the desktop or in your personal device

5. **Process set up**

- 1) On the right set of the software screen, select process management window
- 2) Set up channel selection
- 3) Set up Z stack condition if needed
- 4) Set up XY stage capture condition if needed
- 5) Set up time-lapse capture condition if needed

6. **Experiment set up**

- 1) On the right set of the software screen, select experiment management window
- 2) Open the saved experiment or establish a new experiment by clicking on **new**
- 3) Set up image acquisition
- 4) Set up Z stack condition if needed
- 5) Set up stage loop if needed
- 6) Set up time laps loop if needed
- 7) Set up transmitted or reflected shutter if needed
- 8) Set up reflected lamp if needed
- 9) Save the experiment if needed

Note: The experiment or process file will automatic saved under E:/user/temp as .vsi file. The .vsi file can be open in ImageJ by following instruction <http://imagej.net/OlympusImageJPlugin>

7. **Turn off the microscope**

- 1) Save all your files

- 2) Close Cellsens software
- 3) Turn off shutter controller (black box)
- 4) Turn off touch panel controller on the screen and its main switch on the back
- 5) Turn off main switch of control box BX3-SSU
- 6) Turn off main switch of control box IX3-CBH
- 7) Turn off main switch of mercury lamp X-Cite
- 8) Sign in log book

