



Camera Technology  
Focused on Scientific Imaging  
and Challenging Inspection

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# Micro-Manager 2.0 Instruction Manual

V1.0.0



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# 1. Introduction

This document contains driver installation and basic operations for third-party software to invoke Tucsen Camera, aiming to simplify the user integration process and ensure that users can use Tucsen camera smoothly in third-party software. This document is only disclosed for the above purposes.

For further development of third-party software or applications with advanced functions, contact the official technical support of the software.

## Updates to this document:

Tucsen does not undertake to update or maintain all information contained in the current document at any time. If the product is changed, the relevant change information will be included in the new manual. Without prior notice.

# 2. Download and Installation of Micro-Manager

## 2.0

- 1) You can download the latest version of Micro-Manager 2.0 from the following website (it is recommended to download the 64-bit version).

<https://download.micro-manager.org/nightly/2.0/Windows/>

- 2) After the download is complete, double-click the executable file to enter the Micro-Manager 2.0 installation interface.

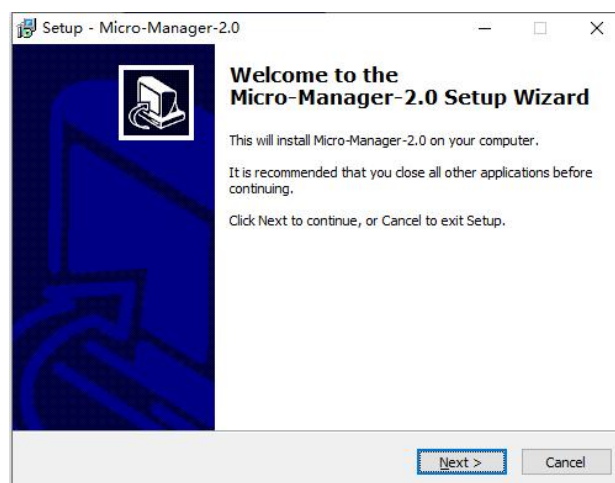


Figure 2- 1

- 3) Click the Next > button to proceed to the installation path selection screen.

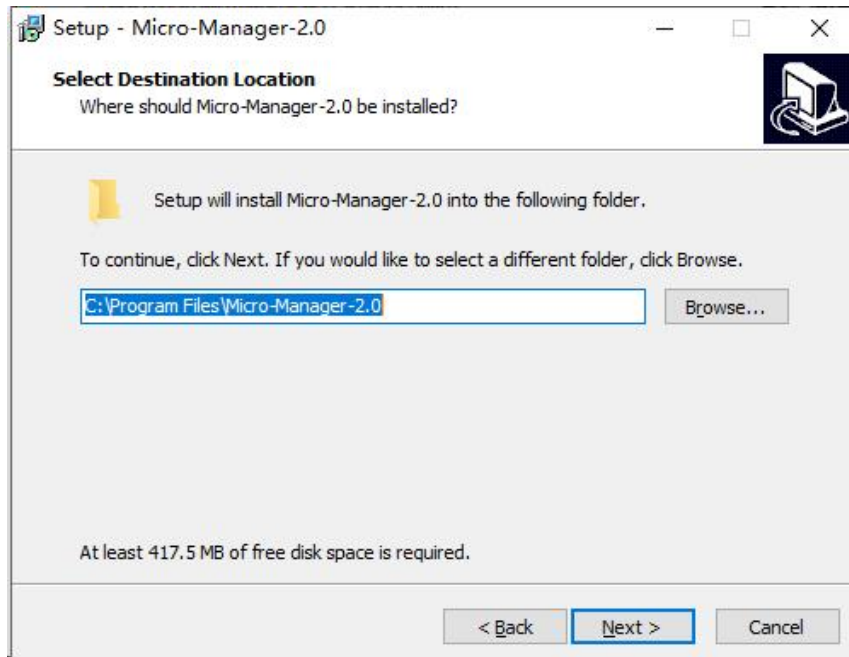


Figure 2- 2

- 4) Select a suitable installation path, click the Next > button, and follow the steps in the installation wizard. After the installation is complete, click Finish to end the process.

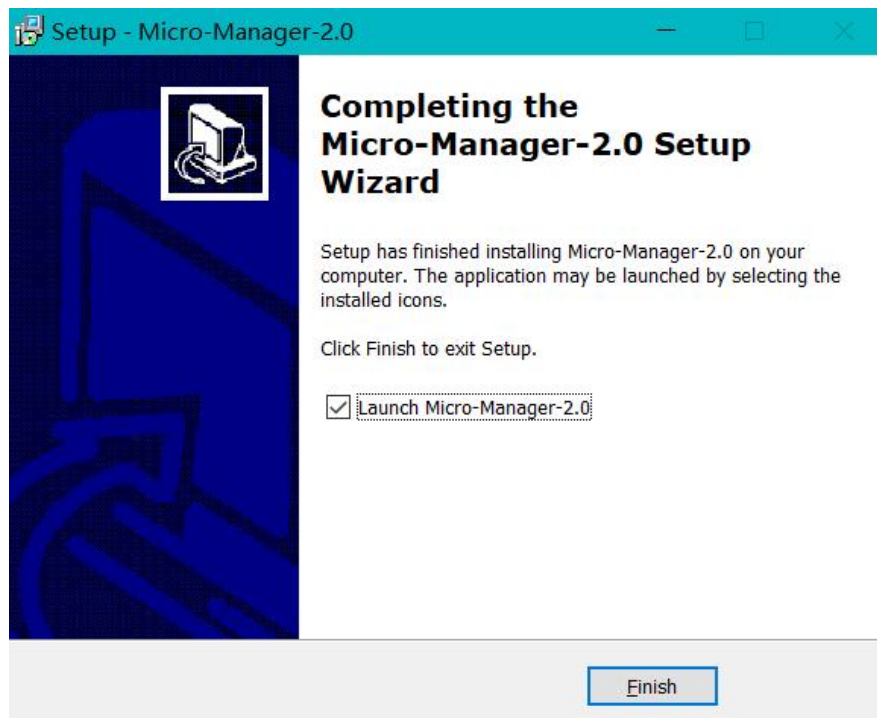


Figure 2- 3

### 3. Download and Install the Tucsen Camera Driver

Download the latest sCMOS camera driver and SDK package from the Tucsen official website, and follow the installation wizard steps.

<https://www.tucsen.net/download-software/>

#### Notes:

- 1) *After installation, confirm that the camera is recognized properly in Device Manager.*
- 2) *The SDK installation path should be set to the default location on the C drive.*
- 3) *After installing the SDK, ensure that the "TUCam.dll" file is located in the C:\Windows\System32 directory.*

### 4. Loading Camera Settings in Micro-Manager 2.0.

- 1) Connect the camera to the power supply and data cable.
- 2) Double-click the Micro-Manager 2.0 shortcut created on the desktop or the application in the installation directory to open Micro-Manager 2.0.
- 3) A dialog box will appear, allowing the user to select the configuration file to load and start the camera.

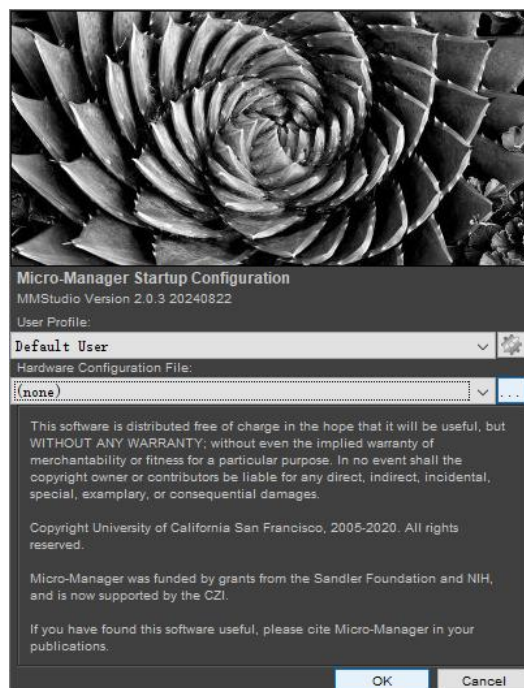


Figure 4- 1

- 4) If this is your first time starting the camera and there is no configuration file, select (none) and click "OK."
- 5) Click on Devices > Hardware Configuration Wizard to enter the Hardware Configuration Wizard. Choose "Create new configuration" and click the "Next >" button.

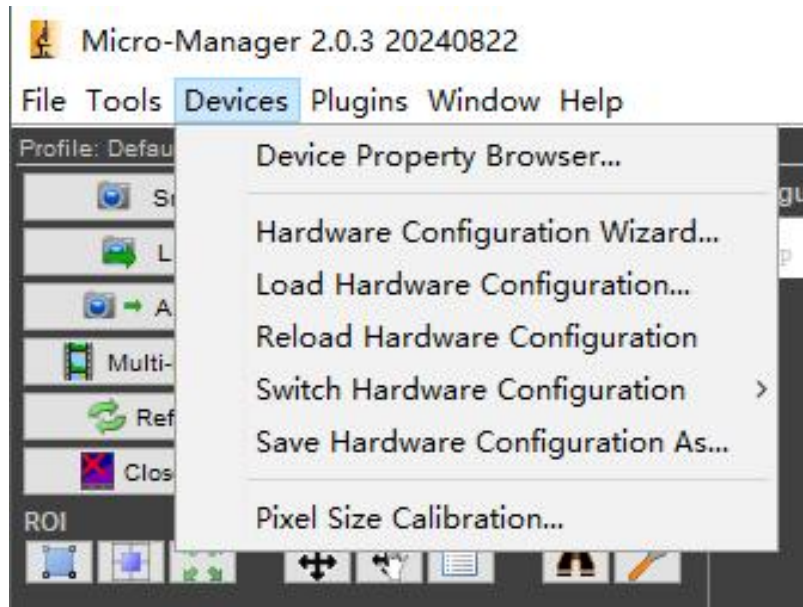


Figure 4- 2

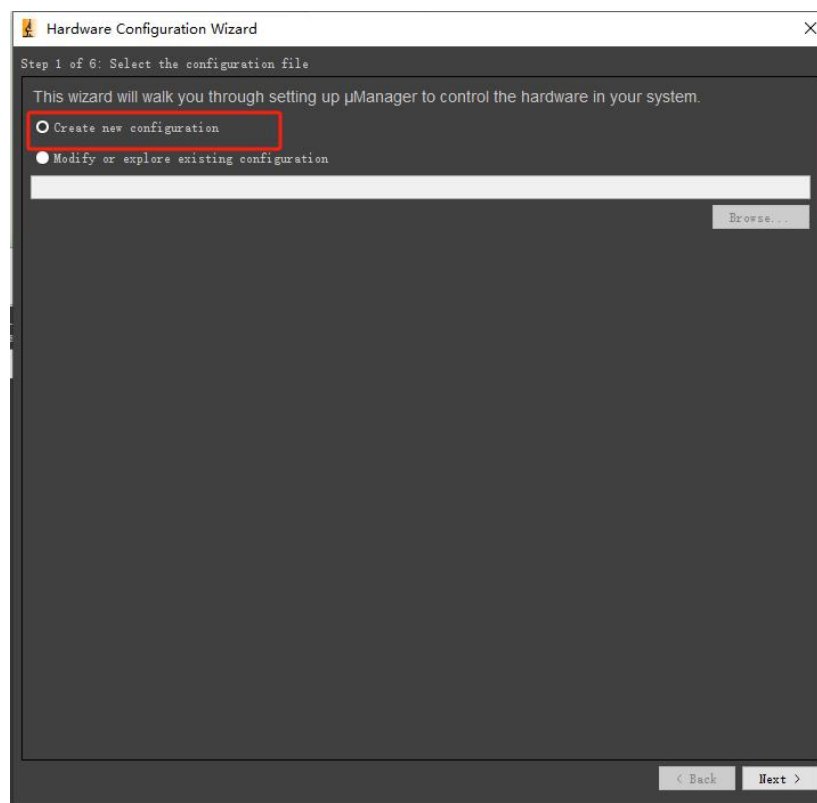


Figure 4- 3

- 6) In the Available Devices, locate the Tucam folder, open it, and select TUCam/TUCSEN Camera, then click the "Add" button.
- 7) After entering the Device: TUCam / Library: TUCam screen, click the OK button and then click the "Next >" button.

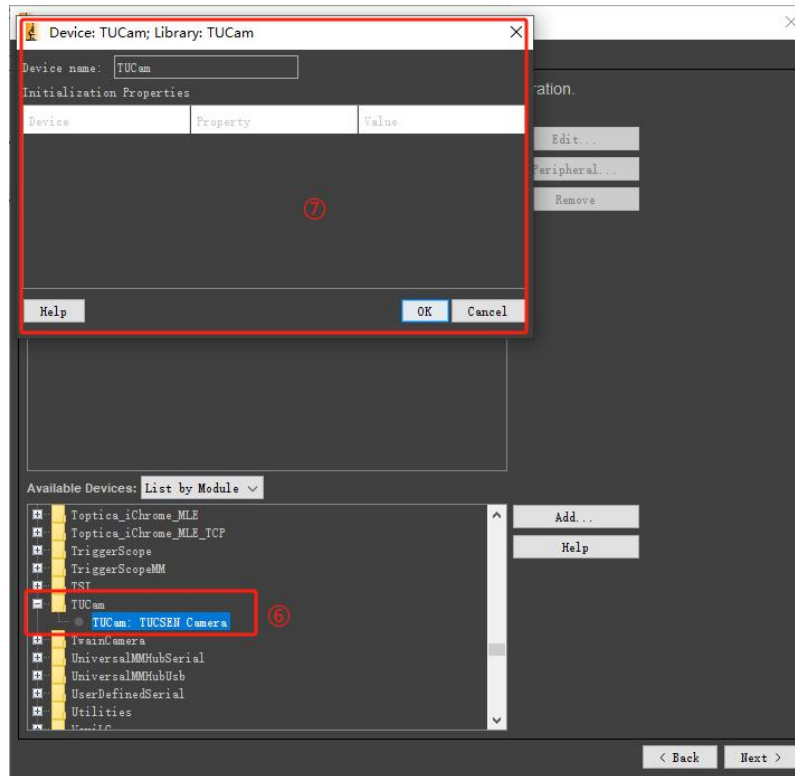


Figure 4- 4

- 8) In the Select default devices and choose auto-shutter setting screen, click the "Next >" button.

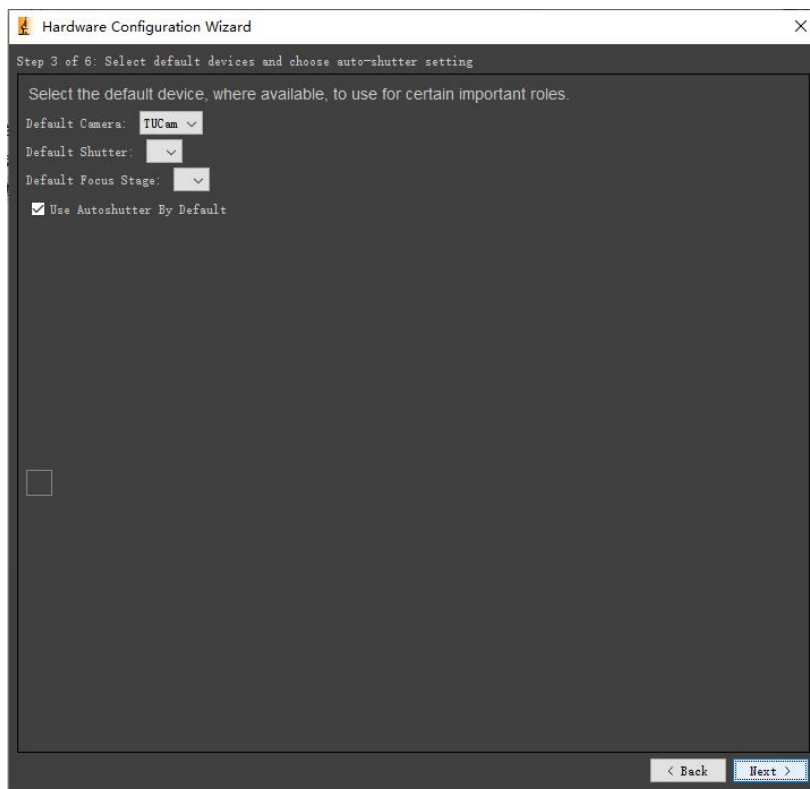


Figure 4- 5

- 9) In the Set delays for devices without synchronization capabilities screen, click the "Next >" button.

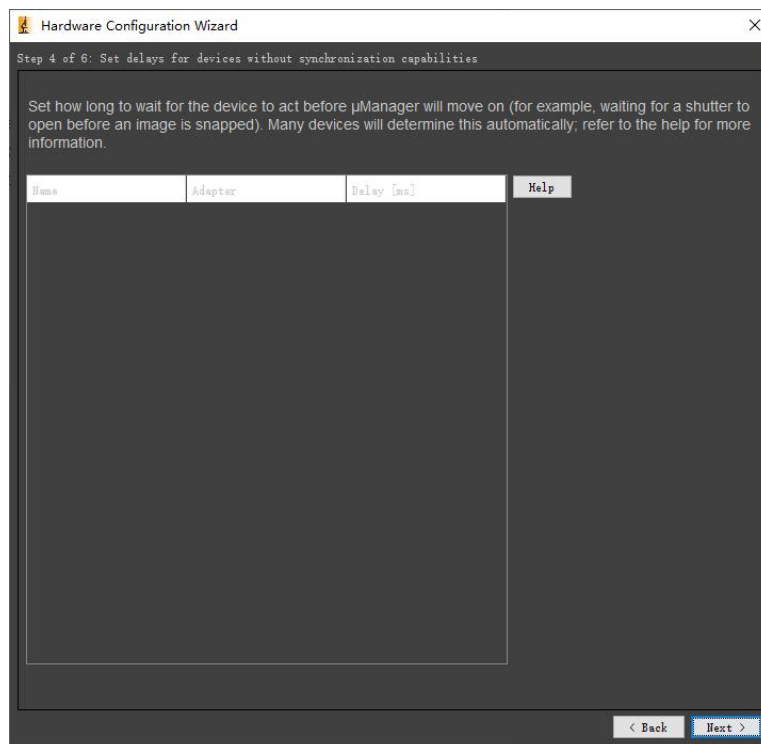



Figure 4- 6

- 
Hardware Configuration Wizard
✕

Step 5 of 6: Define position labels for state devices

Some devices, such as filter wheels and objective turrets, have discrete positions that can have names assigned to them. For example, position 1 of a filter wheel could be the DAPI channel, position 2 the FITC channel, etc. Assign names to positions here.

State devices	State	Label	Read	Reset

< Back
Next >

Hardware Configuration Wizard

Step 6 of 6: Save configuration and exit

All done! Choose where to save your config file.

Filename:

C:\Program Files\Micro-Manager-2.0\400BSI V3.cfg

Browse...

< Back Finish

7



12) You will enter the Micro-Manager 2.0 operating interface.

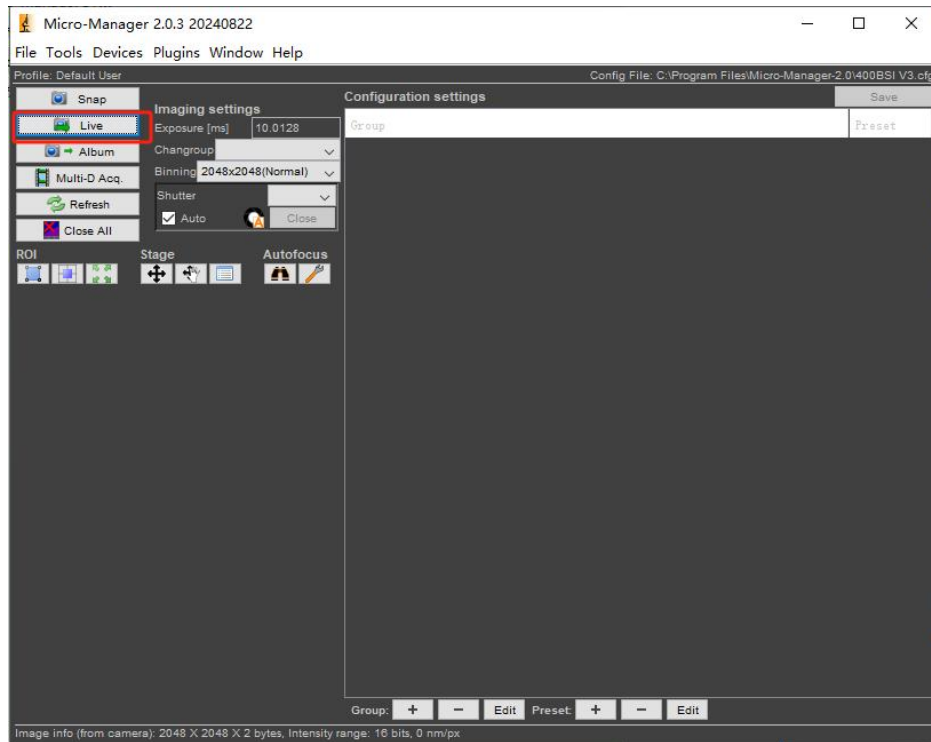


Figure 4- 9

13) Click "Live" to enter image preview mode, indicating the sCMOS camera has loaded successfully.

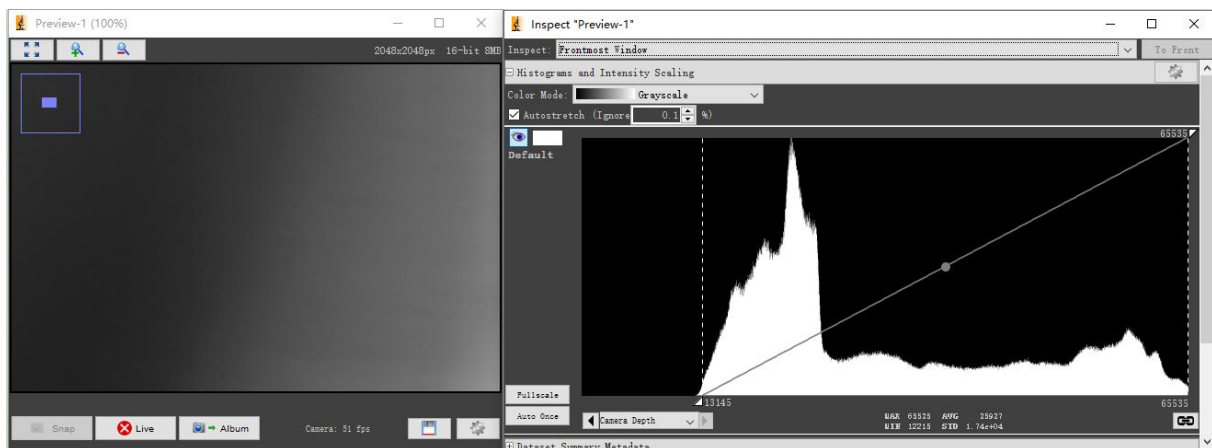


Figure 4- 10

## 5. Multi-Camera

- 1) In the hardware configuration, double-click to add the first camera. Note that you cannot change its name.

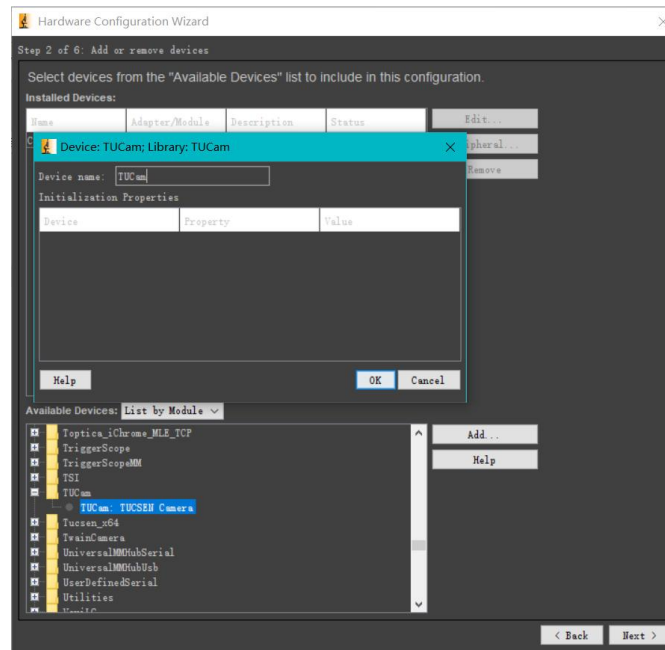


Figure 5- 1

- 2) Double-click again to add the second camera. Note that you cannot change its name.

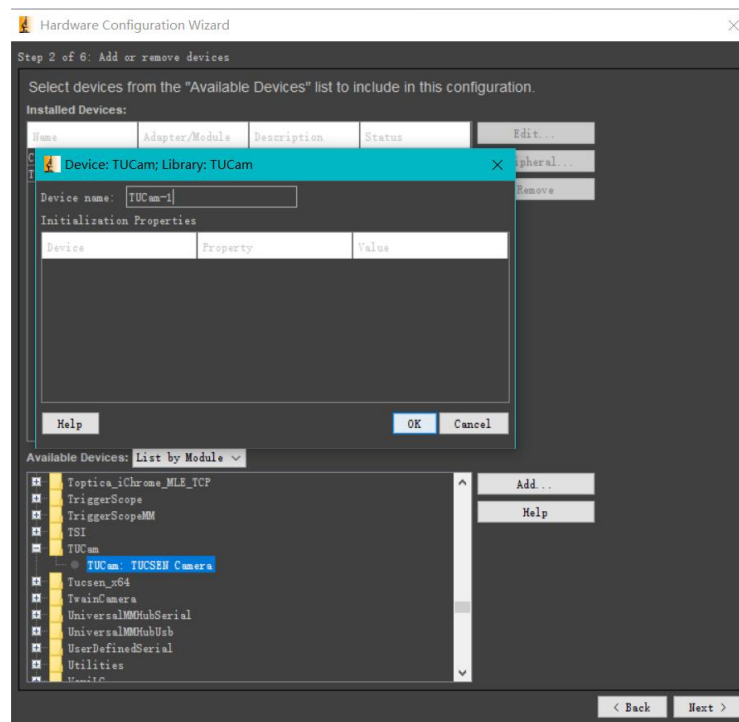


Figure 5- 2

- 3) Double-click to add the multi-camera plugin.

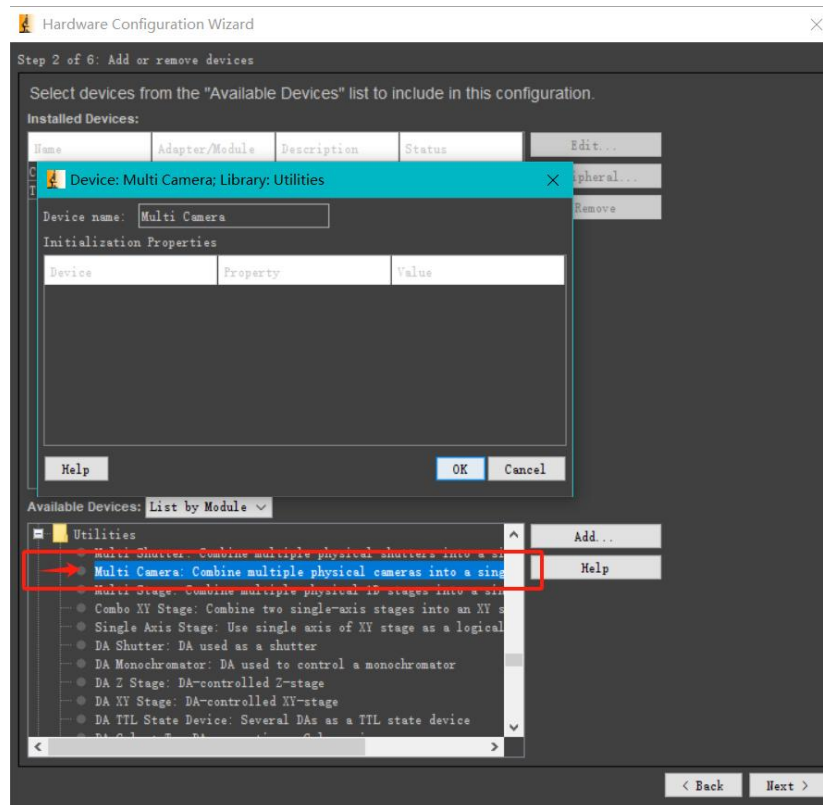


Figure 5- 3

- 4) Click "Next" until all cameras are added successfully.
- 5) Define the order of the cameras.

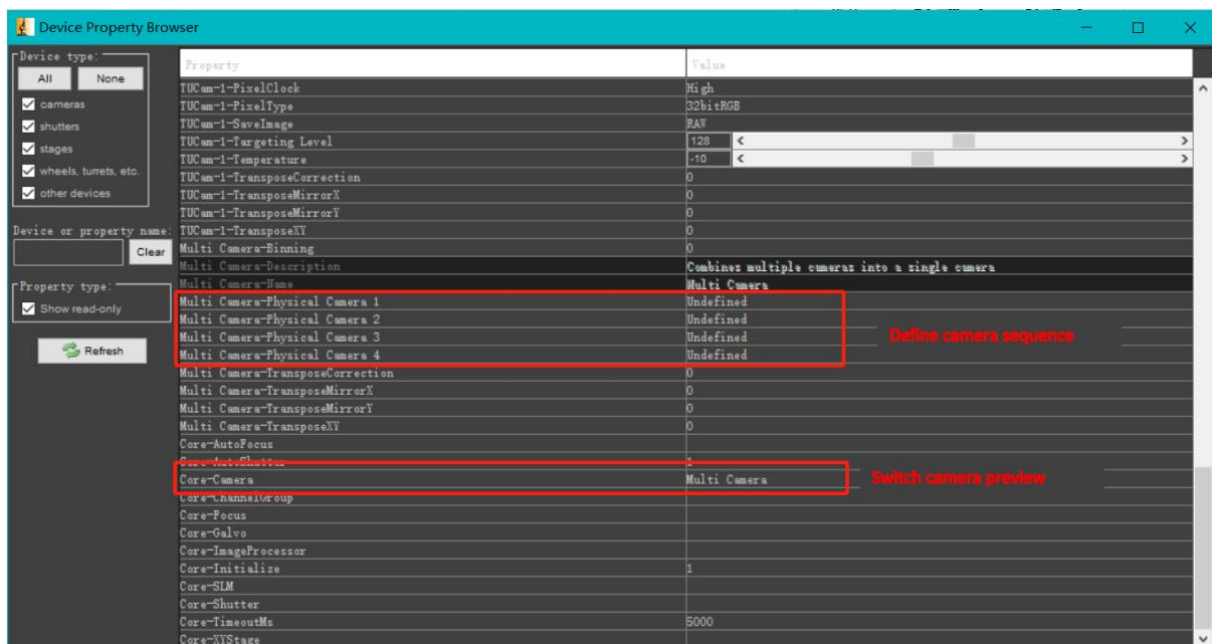


Figure 5- 4

**Note:**

- 1) If you are using a custom version of the plugin, you need to copy the latest .dll file to the Micro-Manager 2.0 installation directory, and also update TUCam.dll in the C:\Windows\System32 directory to the latest version.*
- 2) If the two cameras have different resolutions, simultaneous preview will not be possible.*
- 3) It is recommended to use 64-bit plugins.*