













## Instructions for using the Tucsen camera in MicroManager

### 1、 MicroManager Download and installation

- 1) You can download the 32bit or 64bitMicroManager from the below link.

<http://valelab4.ucsf.edu/~MM/nightlyBuilds/1.4/Windows/>

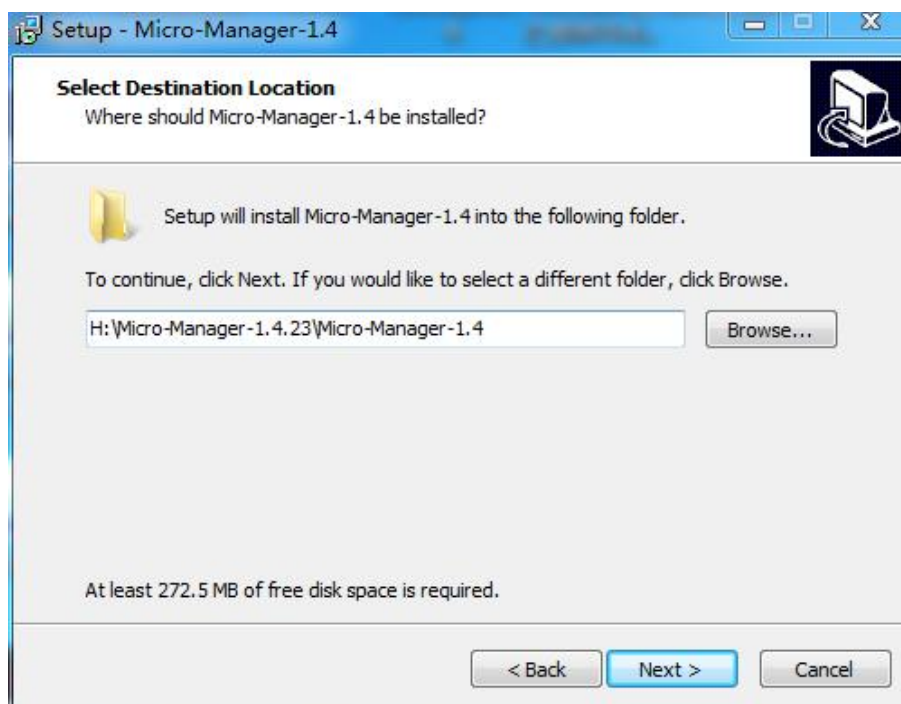
#### Index of /~MM/nightlyBuilds/1.4/Windows

Name	Last modified	Size	Description
 Parent Directory		-	
 <a href="#">MMSetup_64bit_1.4.23_20191023.exe</a>	23-Oct-2019 23:24	87M	
 <a href="#">MMSetup_32bit_1.4.23_20191023.exe</a>	23-Oct-2019 23:24	84M	
 <a href="#">MMSetup_64bit_1.4.23_20191022.exe</a>	22-Oct-2019 23:24	87M	
 <a href="#">MMSetup_32bit_1.4.23_20191022.exe</a>	22-Oct-2019 23:24	84M	
 <a href="#">MMSetup_64bit_1.4.23_20191021.exe</a>	21-Oct-2019 23:24	87M	
 <a href="#">MMSetup_32bit_1.4.23_20191021.exe</a>	21-Oct-2019 23:24	84M	
 <a href="#">MMSetup_64bit_1.4.23_20191020.exe</a>	20-Oct-2019 23:24	87M	
 <a href="#">MMSetup_32bit_1.4.23_20191020.exe</a>	20-Oct-2019 23:24	84M	
 <a href="#">MMSetup_64bit_1.4.23_20191019.exe</a>	19-Oct-2019 23:24	87M	
 <a href="#">MMSetup_32bit_1.4.23_20191019.exe</a>	19-Oct-2019 23:24	84M	
 <a href="#">MMSetup_64bit_1.4.23_20191018.exe</a>	18-Oct-2019 23:24	87M	

- 2) Double click the MicroManager .exe file to enter the interface of installation.



- 3) Click the 'Next>' button to enter the interface of selecting destination location.



- 4) After select the install folder and click 'Next>' button. Follow the steps of the installation wizard and click Finish to complete the installation.



## 2、 Driver download and installation

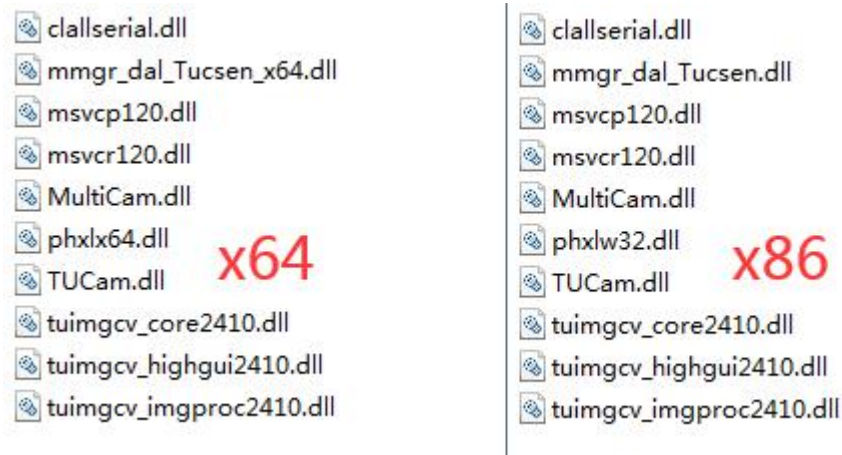
You can download the latest sCMOS camera driver from Tucsen official website. Double-click the downloaded driver and follow the steps of the installation wizard.

## 3、 The load camera settings of MicroManager

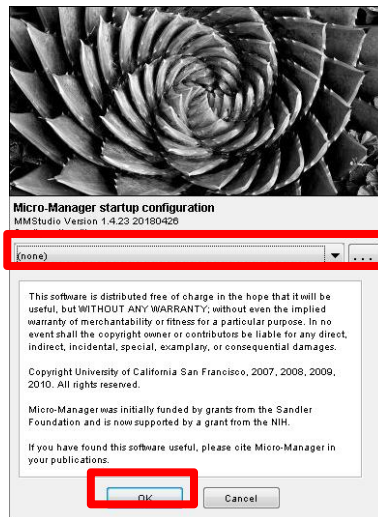
- 1) Put all the files of the provided plug-ins into the root directory of MicroManager installation: 'C:\Program Files\Micro-Manager-1.4',

(C:) > Program Files > Micro-Manager-1.4

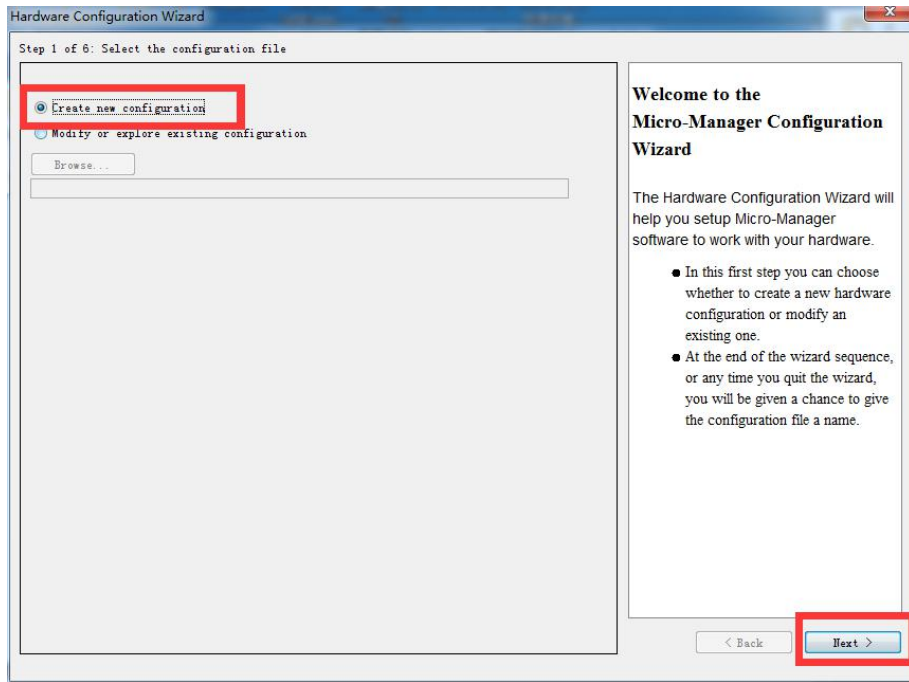
The 64-bit and 32-bit plug-ins should correspond correctly respectively.



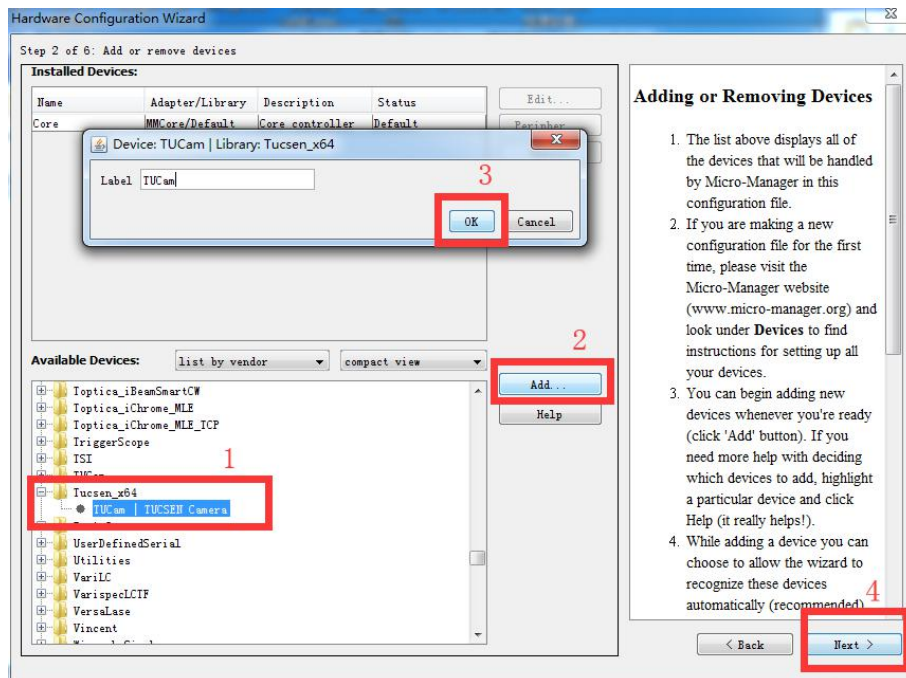
- 1) Connect the power and the data cable of the camera.
- 2) Double click the Micro-Manager icon to open it.
- 3) A dialog box appears that allows the user to select the file to configure the camera.



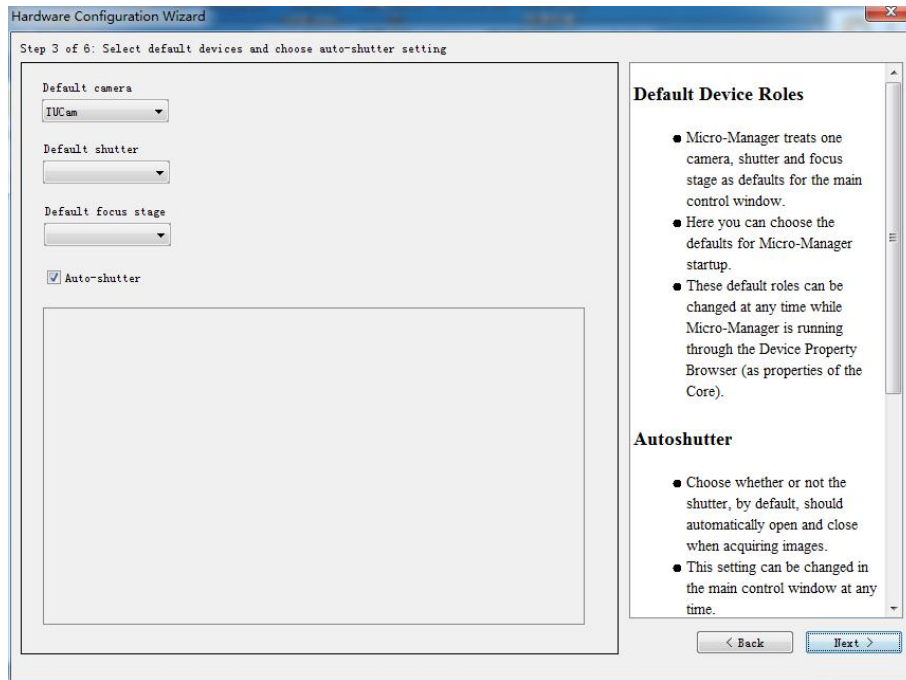
- 4) Start the camera for the first time, select (none) if there is no corresponding configuration file, and click OK.
- 5) Select 'Tools>Hardware Configuration Wizard' to enter 'Hardware Configuration Wizard' interface. Select 'Create new configuration' and click 'Next >' button.



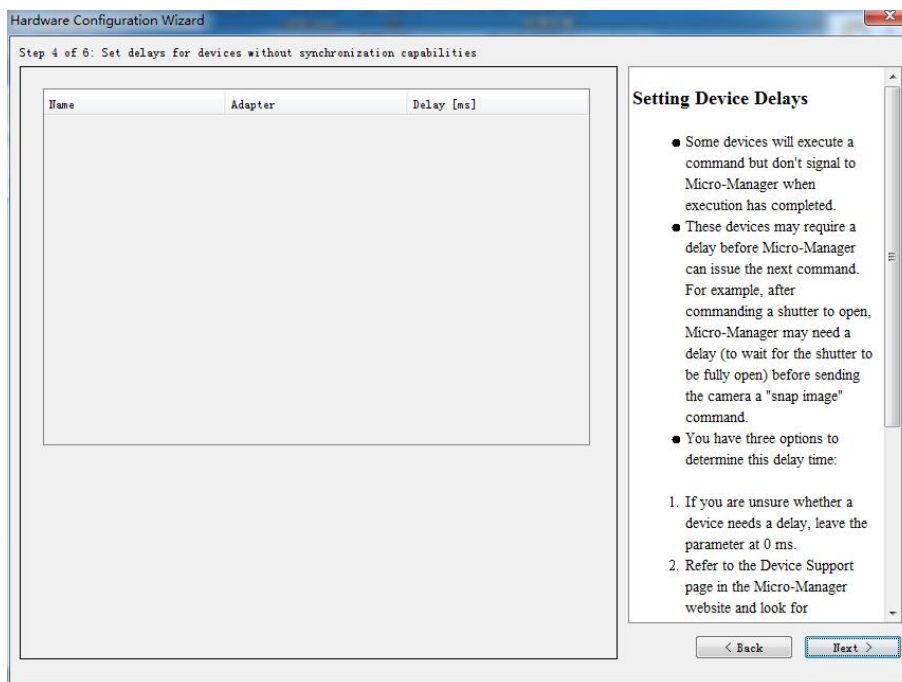
- 6) Step 2 of 6: Add or remove devices. Find the 'Tucsen\_x64' in Available Devices, open it and select 'TUCam/TUCSEN Camera'. Click the 'Add' button to enter the 'Device: TUCam/Library: Tucsen\_x64' interface. Click the 'OK' button and then click 'Next >' button.



- 7) Step 3 of 6: Select default devices and choose auto-shutter setting. Click 'Next >' button.

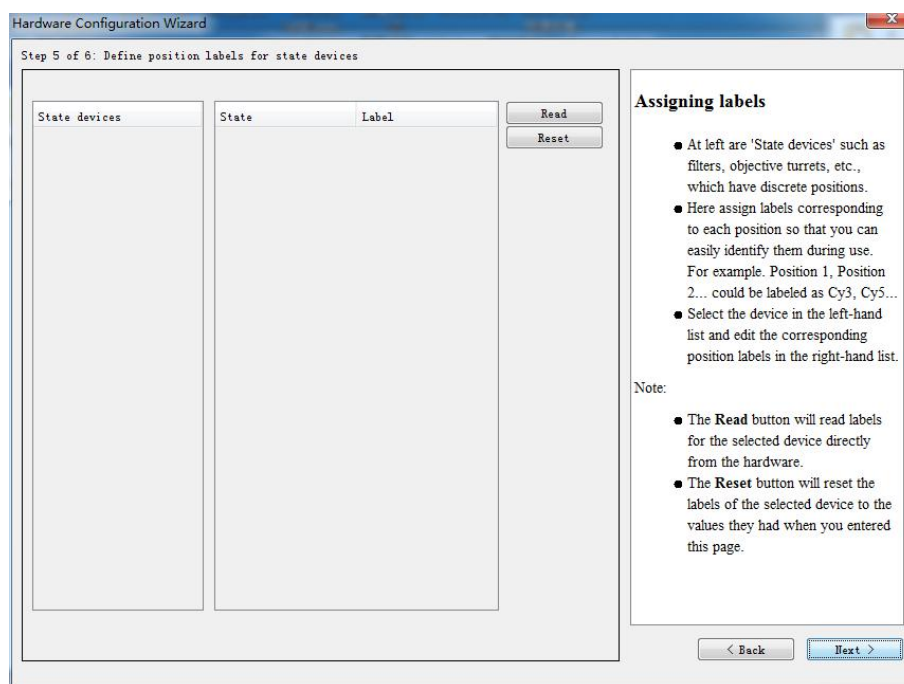


- 8) Step 4 of 6: Set delays for devices without synchronization capabilities. Click 'Next >' button.

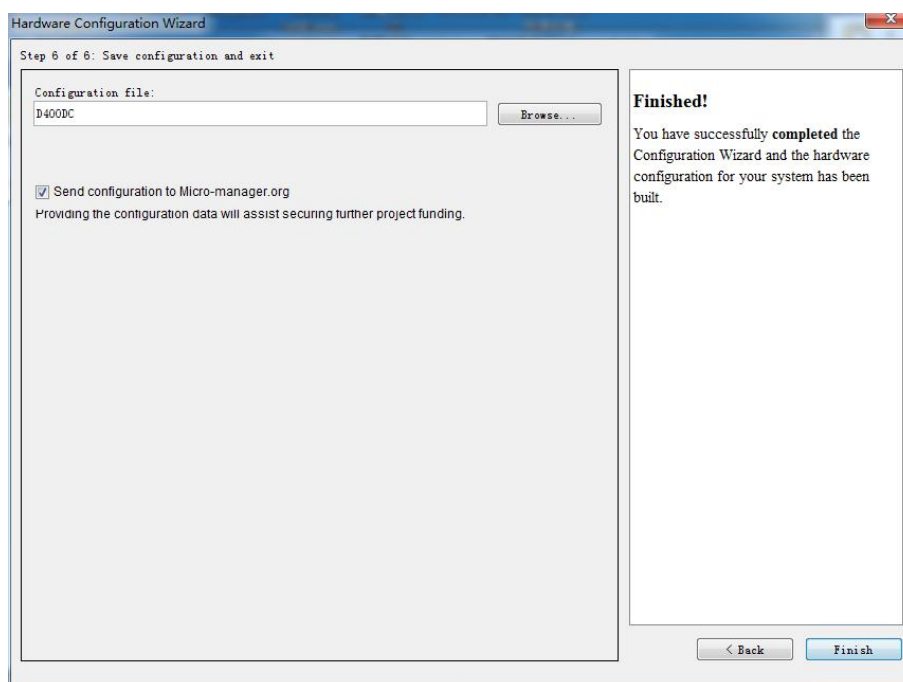


- 9) Step 5 of 6: Set delays for devices without synchronization capabilities. Click 'Next >' button.

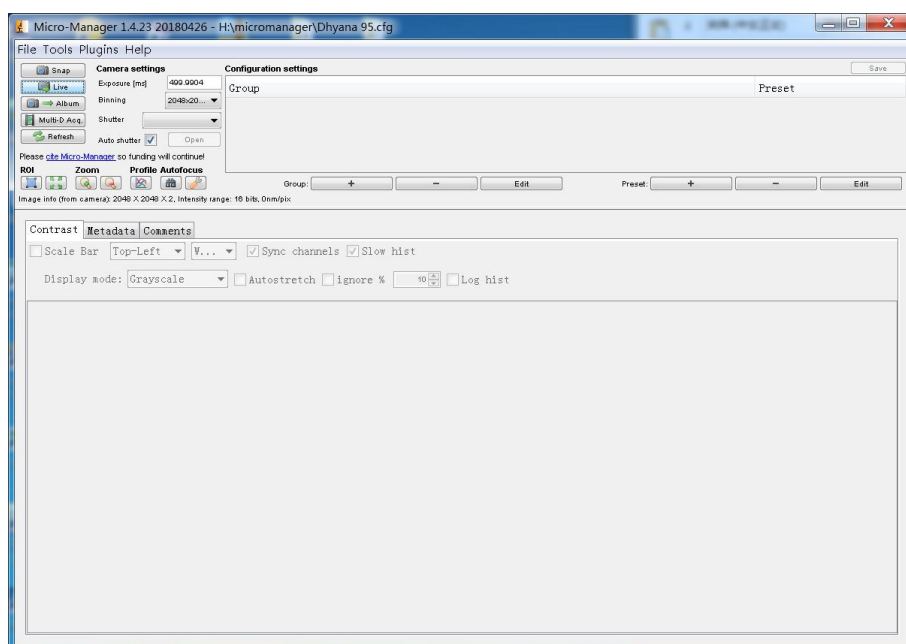




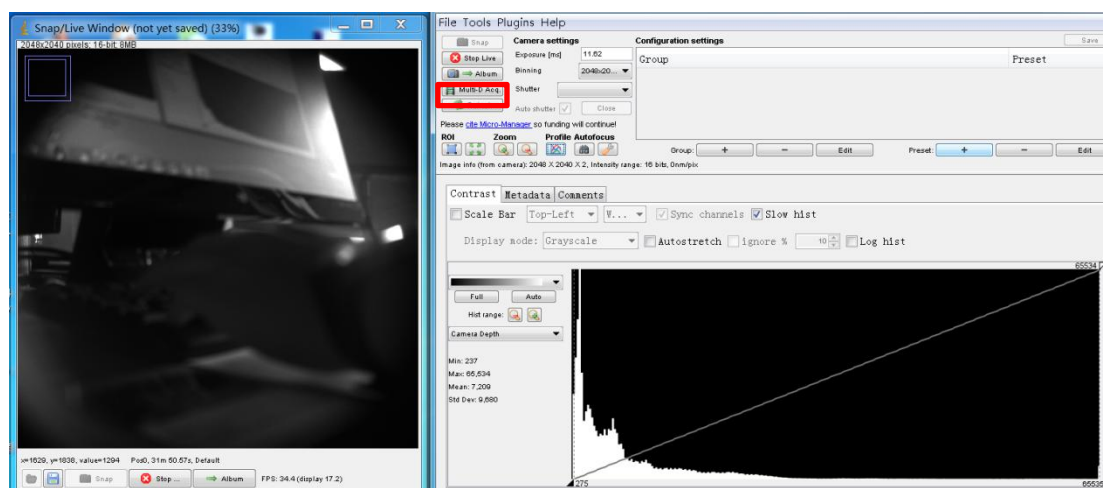
- 10) Step 6 of 6: Save configuration and exit. Name the configuration file and select store folder. And then click the 'Finish' button.



- 11) Enter the Micro-Manager operating interface.



12) Click 'Live' to enter the preview mode and the camera is loaded successfully.

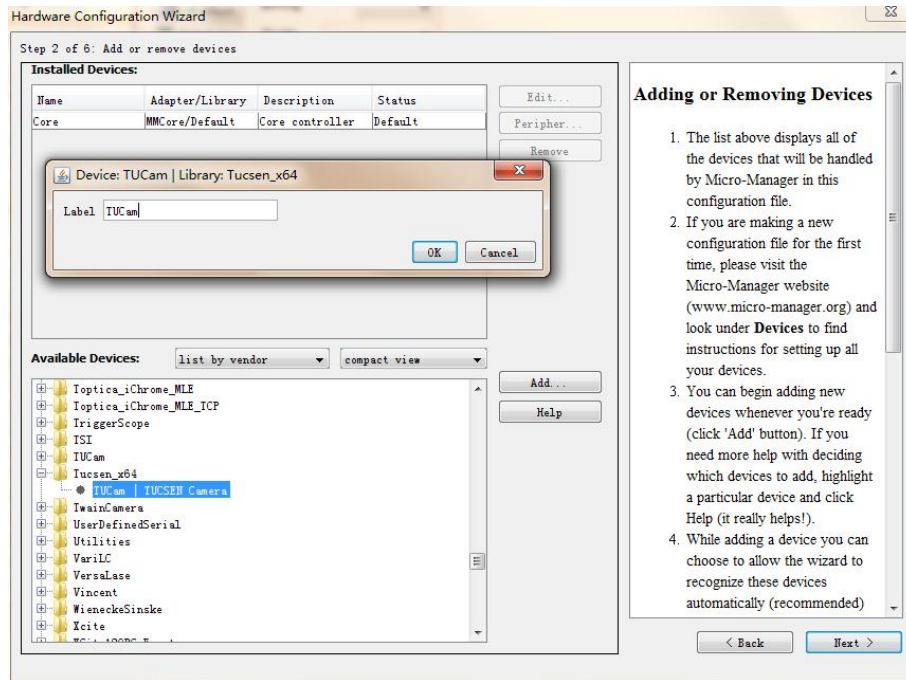


Note:

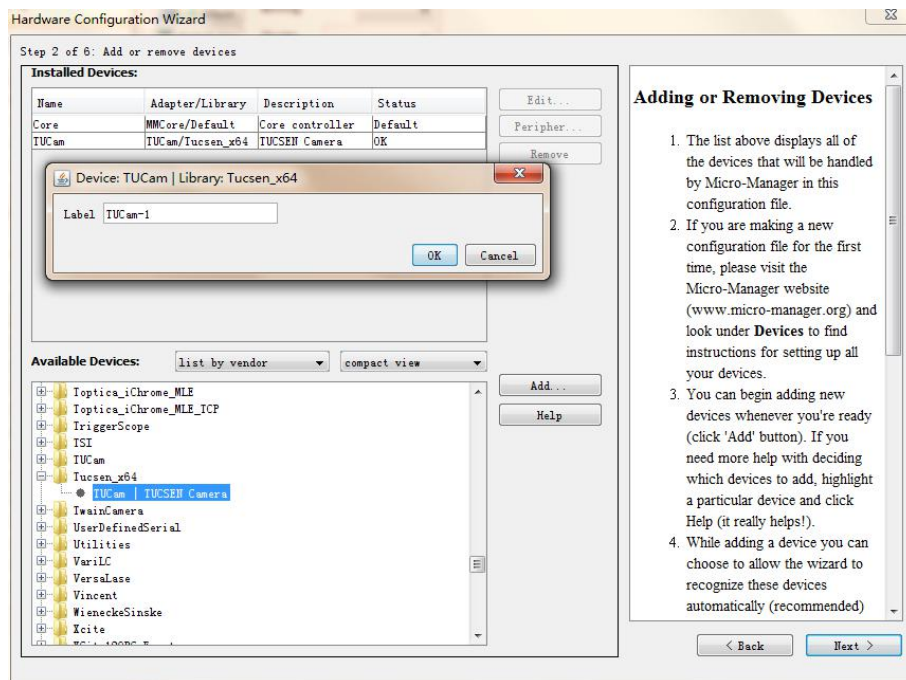
Tucsen cameras currently supported by MicroManager include Dhyana 400D, Dhyana 400DC, Dhyana 95, Dhyana 400BSI, Dhyana 401D and FL 20BW.

#### 4. Multi camera

- 1) In Step 2 of 6 in Hardware Configuration, double click the TUCam to load the first camera. Note that the name cannot be changed.

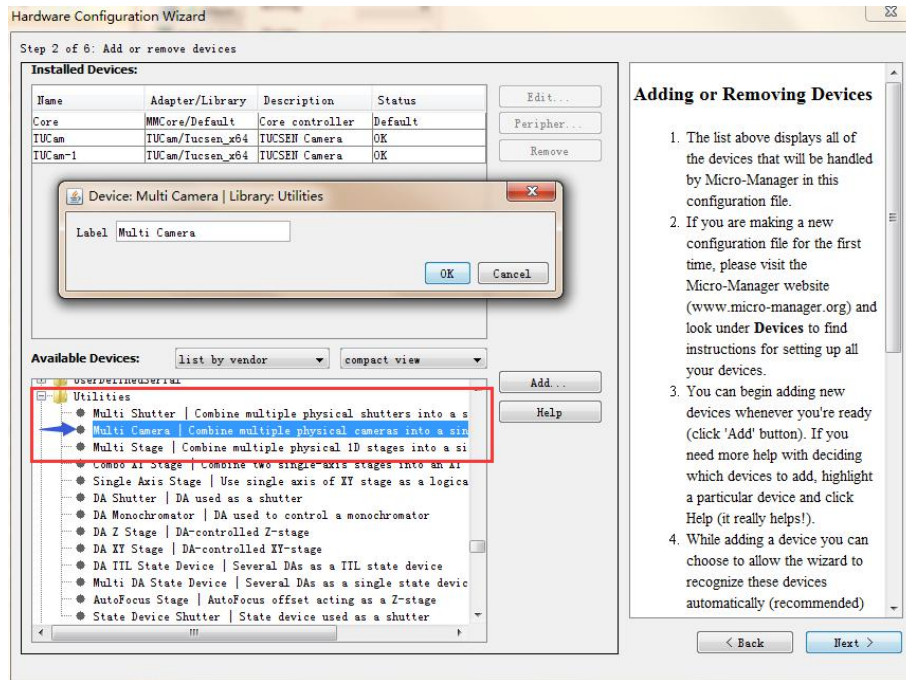


- 2) Double click the TUCam again to load the second camera. Note that the name cannot be changed, too.



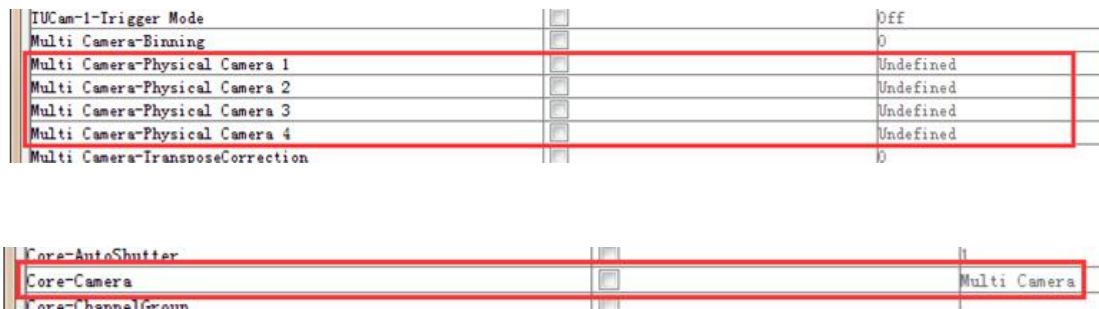
- 3) Double click the Multi Camera in Utilities to load it.





4) Click Next button to complete the configuration.

5) Define the sequence of cameras.



#### Note:

- (1) When using the plug-in, please update the 'TUCam.dll' file in 'C:\Windows\System32' directory to the latest version.
- (2) If the resolution of two cameras is different, preview cannot be done at the same time.
- (3) 64-bit plug-ins are recommended.