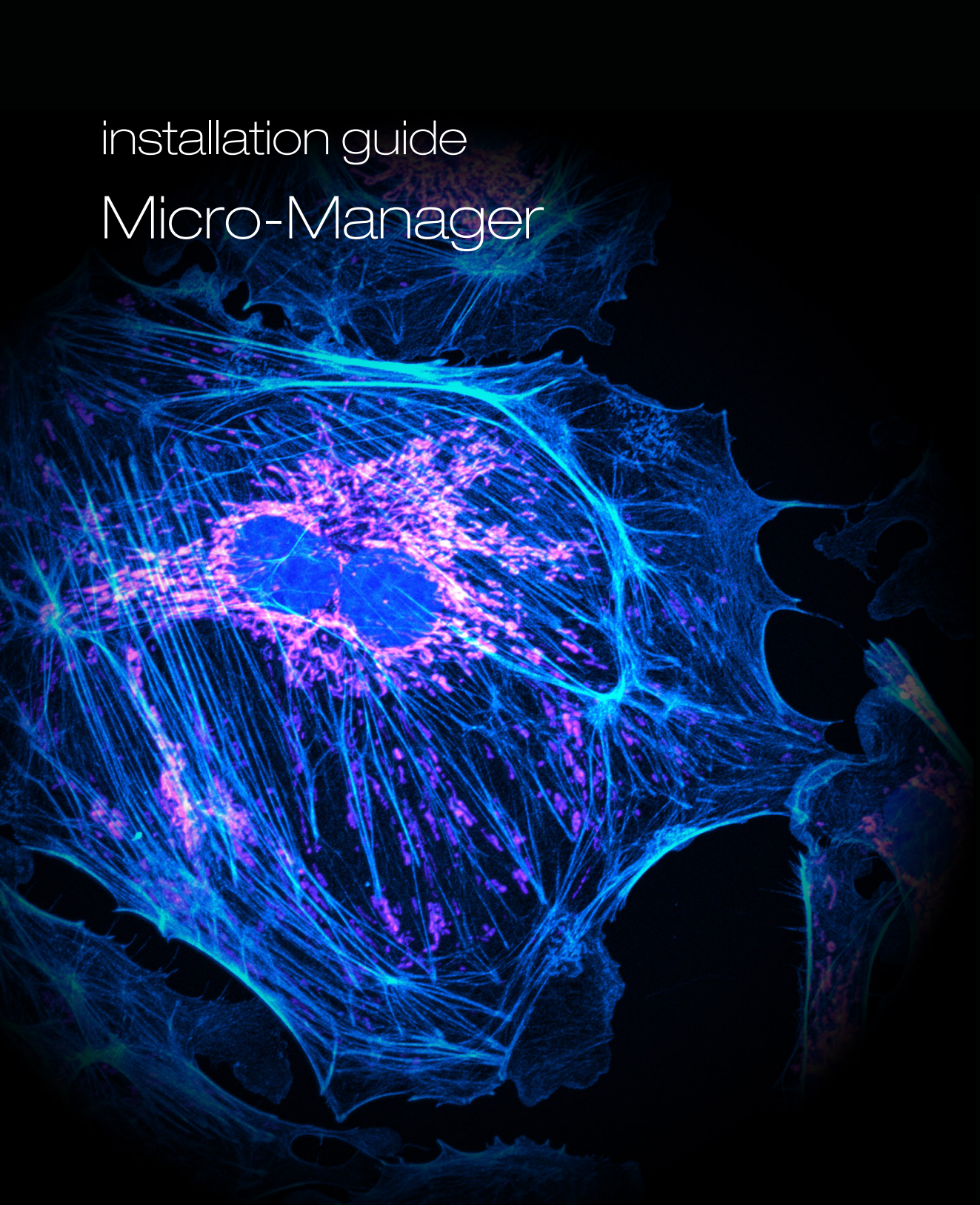
installation guide

Micro-Manager



1288
EMVA Standard Compliant

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PCO asks you to carefully read and follow the instructions in this document.
For any questions or comments, please feel free to contact us at any time.

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Micro-Manager installation guide 3.1.0

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Contents

1 Introduction **4**
1.1 Supported Cameras 4
1.2 About Micro-Manager 4

2 Micro-Manager **5**
2.1 Download 5
2.2 Installation 6
2.3 Copy PCO Files 7

3 Configuration **8**
3.1 Hardware Configuration Wizard 8
3.2 Configuration Settings 10
3.3 Color Camera 12

1 Introduction

1.1 Supported Cameras

Include PCO's entire range of high performance scientific cameras into your specific microscopy setup with Micro-Manager.
All monochrome and color versions of the following list are supported:

Camera	Sensor	Interface	Bit	Alignment
pco.1200	CMOS	FW/CL/GigE/USB 2.0	10	MSB*
pco.1300	CCD	FW	12	”
pco.1400	”	FW	14	”
pco.1600	”	”	14	”
pco.2000	”	”	14	”
pco.4000	”	”	14	”
pco.pixelfly usb	”	USB 2.0	14	”
pco.ultraviolet	”	USB 2.0	14	”
pco.dimax	CMOS	GigE/USB 2.0/USB 3.0	12	”
pco.flim	”	USB 3.0	14	”
pco.edge	sCMOS	CL/CLHS/USB 3.0	16	”
pco.panda	”	USB 3.1 Gen 1	16	”

Explanation ***Interface:*** FW = Firewire IEEE1394A; CL = Camera Link, CLHS = Camera Link HS
Alignment: *most significant bit

1.2 About Micro-Manager

In contrast to virtually all of the available commercial solutions, Micro-Manager supports multiple platforms and provides an ***open plugin interface for adding new devices***. In addition, Micro-Manager is compatible with the widely used image processing package ***ImageJ***, available in the public domain.

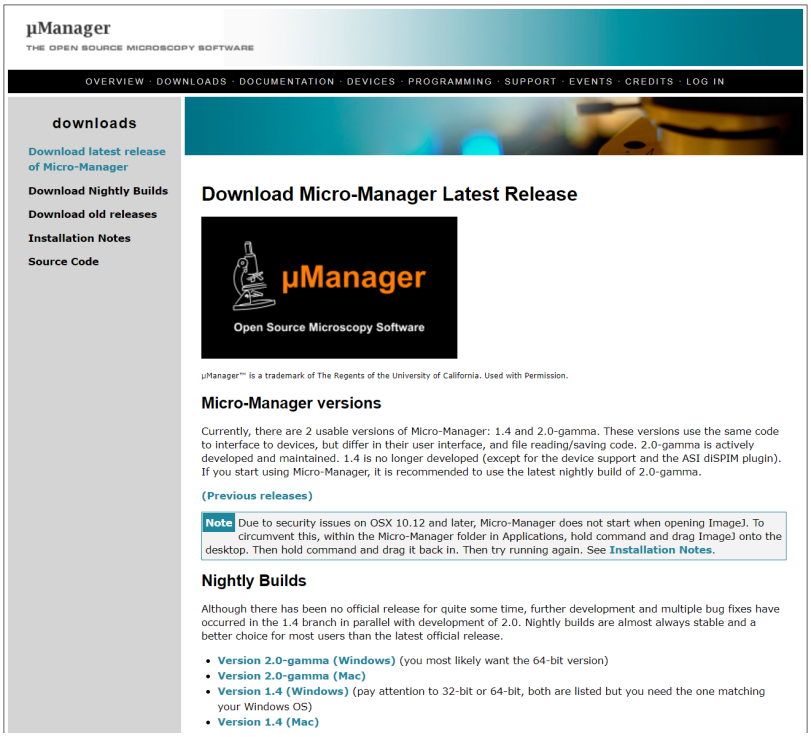
Combined with ImageJ, Micro-Manager provides a ***full featured microscope management and image processing package***, comparable in capabilities to commercial solutions. It is distributed free of charge and under an Open Source license. Its code base and functionality can be customized, extended, and re-used practically without restrictions.

PCO provides a free generic adapter for PCO scientific cameras on Microsoft Windows platforms.

2 Micro-Manager

Copyright for Micro-Manager:
GNU “Lesser General Public License”
Official Micro-Manager website

2.1 Download



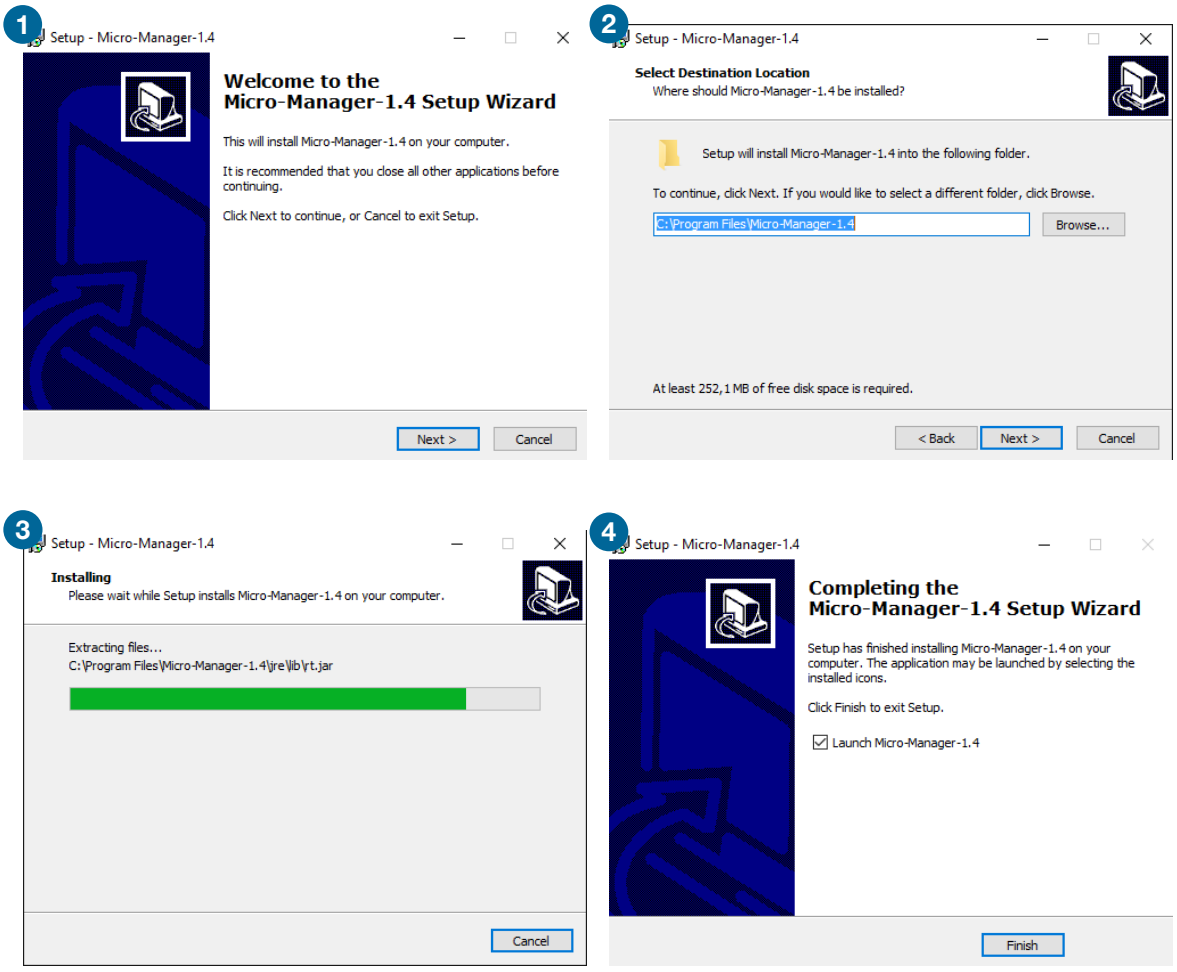
First, ***download Micro-Manager***. PCO recommends to ***download Nightly Builds*** to get the latest version.

Note Nightly Builds is a beta version and is not for productive use: use at your own risk! You always need to install pco.camware, pco.sdk, or the pco.runtime package, because some runtime DLL files from the installed packages are needed (see **2.3**).

Please ***do not use the latest release*** as it does not contain current bug fixes or the most recent PCO device adapter DLLs.

2.2 Installation

Please follow the installation wizard:



2.3 Copy PCO Files

Please ***copy*** the corresponding ***DLL files*** into your Micro-Manager directory.

These files should be found ***on your computer*** under:

Looking for 64 bit DLLs:

- *C:\Program files \PCO Digital Camera Toolbox\pco.camware*
- *C:\Program files(x86)\PCO Digital Camera Toolbox*
  pco.sdk\bin64
  pco.runtime\bin64

Looking for 32 bit DLLs:

- *C:\Program files(x86)\PCO Digital Camera Toolbox*
  pco.sdk\bin
  pco.runtime\bin

Files needed for all PCO cameras:

- ***PCO_Conv.dll***
- ***PCO_CDlg.dll***
- ***SC2_Cam.dll***

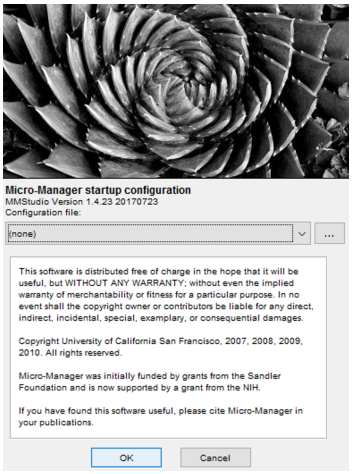
In the case of ***Camera Link HS interface*** you also need the following file:

- ***sc2_clhs.dll***

In case of ***Camera Link*** you also need the following files depending on the used framegrabber:

- Silicon Software ME4: ***sc2_cl_me4.dll***
- Matrox: ***sc2_cl_mtx.dll, clsermtx.dll, mtxclsermil.dll***
- National Instruments: ***sc2_cl_nat.dll***

3 Configuration



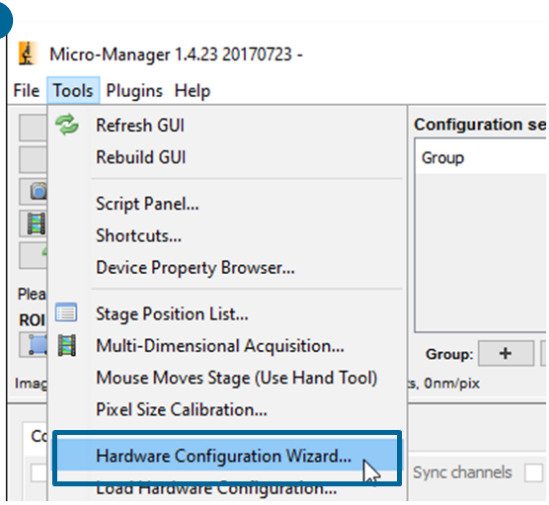
- Start your PCO camera
- Start Micro-Manager
- Open Micro-Manager with the default configuration (none)

3.1 Hardware Configuration Wizard

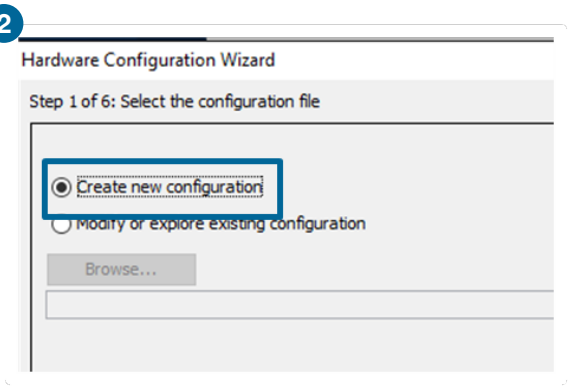
1. Start the Hardware Configuration Wizard
2. Create a new configuration
3. Add the pco_camera adapter from the list
4. Micro-Manager will scan for cameras
5. Skip the steps 3 + 4 + 5
6. Save the new configuration (e.g. “pcoultraviolet”) to the Micro-Manager directory
7. Finish

Snap image for test

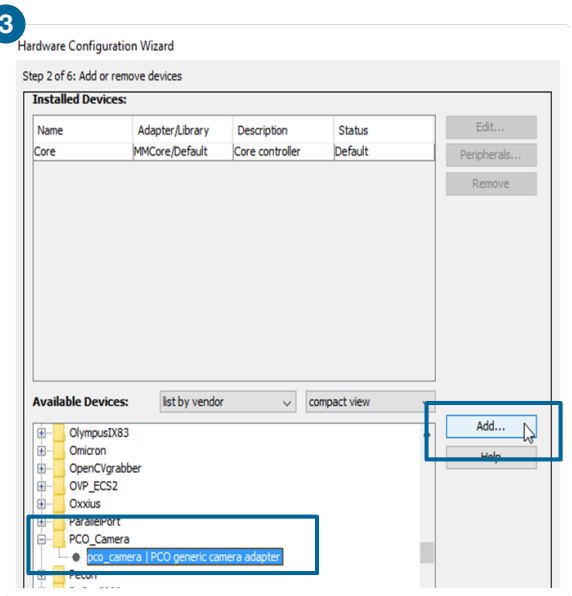
1


Micro-Manager 1.4.23 20170723 -
File Tools Plugins Help
Refresh GUI
Rebuild GUI
Script Panel...
Shortcuts...
Device Property Browser...
Stage Position List...
Multi-Dimensional Acquisition...
Mouse Moves Stage (Use Hand Tool)
Pixel Size Calibration...
Hardware Configuration Wizard...
Configuration se
Group
Group:
Sync channels

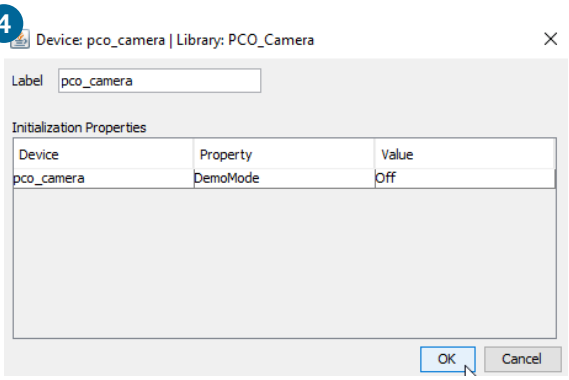
2


Hardware Configuration Wizard
Step 1 of 6: Select the configuration file
Create new configuration
Modify or explore existing configuration
Browse...

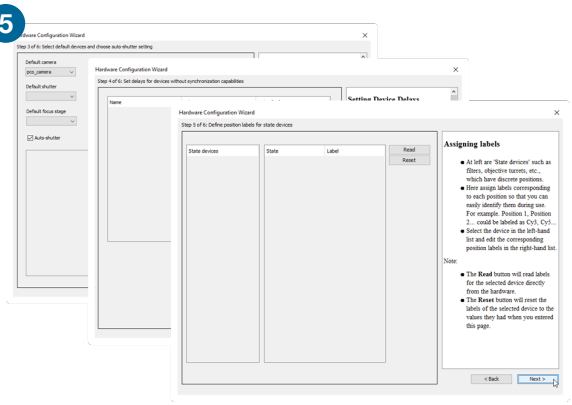
3


Hardware Configuration Wizard
Step 2 of 6: Add or remove devices
Installed Devices:
Name
Adapter/Library
Description
Status
Core
MMCore/Default
Core controller
Default
Edit...
Peripherals...
Remove
Available Devices:
list by vendor
compact view
Add...
OlympusIX83
Omicron
OpenCVgrabber
OVP_ECS2
Oxxius
ParallelPort
PCO_Camera
pco_camera | PCO generic camera adapter

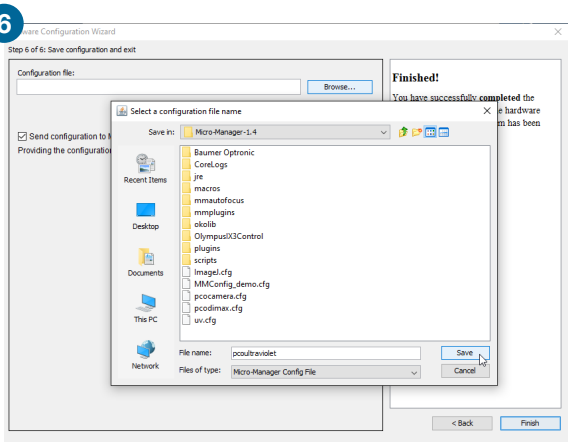
4

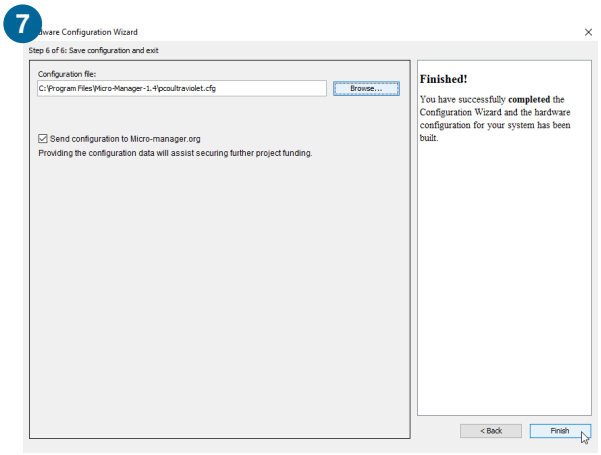

Device: pco_camera | Library: PCO_Camera
Label
pco_camera
Initialization Properties
Device
Property
Value
pco_camera
DemoMode
Off
OK
Cancel

5


Assigning labels

6

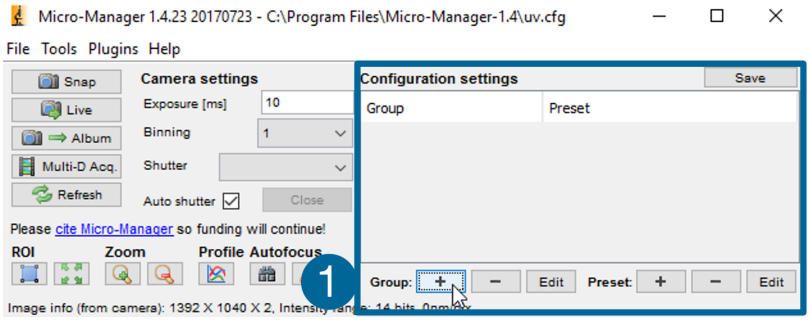

Step 6 of 6: Save configuration and exit
Configuration file:
Browse...
Finished!
Select a configuration file name
Save in:
Micro-Manager-1.4
Baumer Optronic
CoreLogs
jre
macros
mmautofocus
mmplugins
okolib
OlympusIX3Control
plugins
scripts
ImageJ.cfg
MMConfig_demo.cfg
pcocamera.cfg
pcodimax.cfg
uv.cfg
File name:
pcoultraviolet
Files of type:
Micro-Manager Config File
Save
Cancel
< Back
Finish



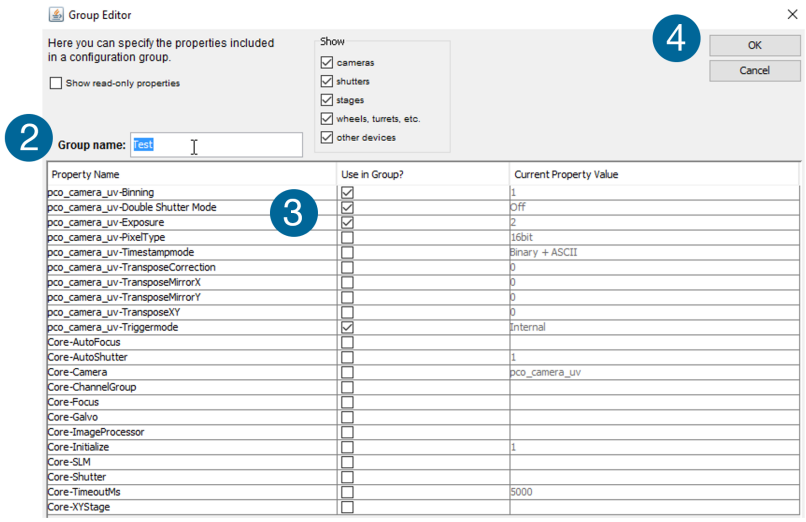
3.2 Configuration Settings

After the Hardware Configuration Wizard is finished successfully, the Configuration settings can be predefined.

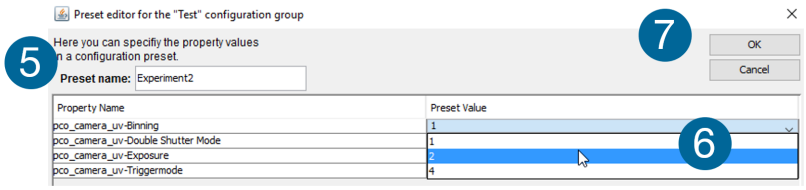
First add a Group 1.



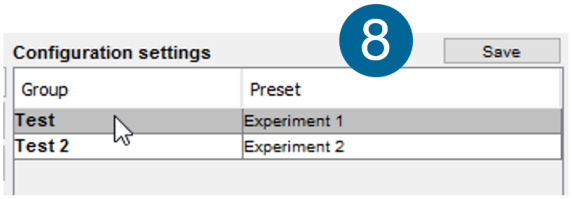
The ***Group Editor*** opens. Enter a group name 2 and select the property names that you want to add to your group 3. Press ***OK*** 4.

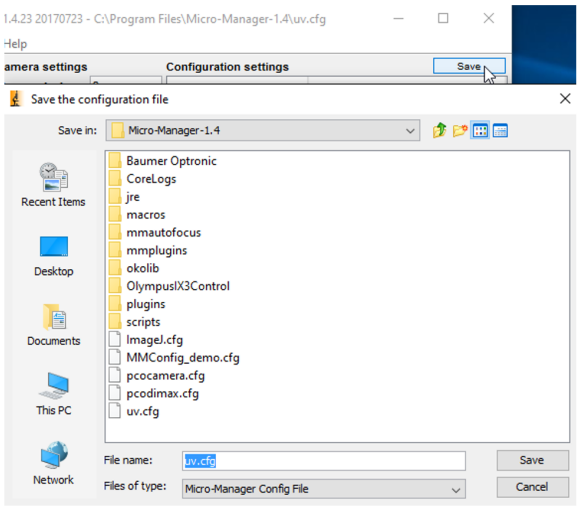


The ***Preset editor*** for the configuration group opens. Enter the ***Preset name*** 5.
Select the ***Preset values*** 6.
Press ***OK*** 7.



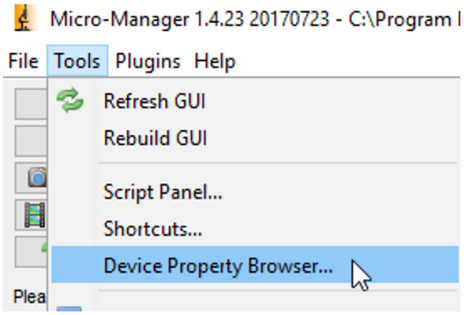
The ***Configuration settings*** window displays all your configuration settings. Press ***Save*** to save your ***Groups and Presets*** 8.



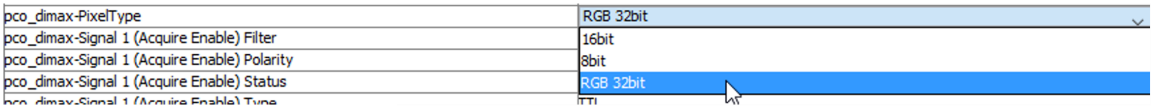


3.3 Color Camera

Open the ***Device Property Browser*** to change the camera settings.



If you use a PCO color camera, change the ***pco_camera-PixelType*** to ***RGB 32bit***.
The ***standard value is 16bit*** – this will provide a monochrome image.



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