

installation guide

pc_o.software Micro-Manager



pc_o.

Target Audience: This software is designed for use by technicians, engineers and scientists.

In case of any questions or comments, please contact us at PCO.



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1. INTRODUCTION

Put together PCO's complete range of high performance scientific cameras into your specific microscopy setup with Micro-Manager.

All b/w and color versions of the following list are supported:

Camera	Sensor	Interface	Bit	Alignment	
pixelfly	CCD	PCO PCI BOARD	12	LSB*	
sensicam					
pco.1200	CCD	FW/CL/GigE/USB 2.0	10	MSB**	
pco.1300		FW	12		
pco.1400		FW	14		
pco.1600		FW/CL/GigE/ USB 2.0/USB 3.0	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 Gen1	16		

Explanation:

Interfaces: FW= Firewire IEEE1394A; CL= Camera Link, CLHS= Camera Link HS

Alignment: *least significant bit; **most significant bit

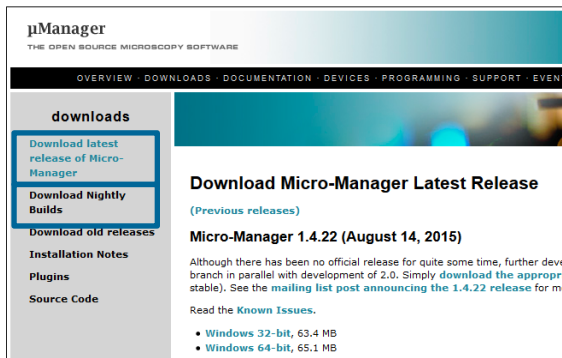
About Micro-Manager

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

2.1. LATEST VERISON



First download the latest **Micro-Manager version**. If you install the release version **1.4.22 from 2015** all new PCO cameras and implemented functions will not work.

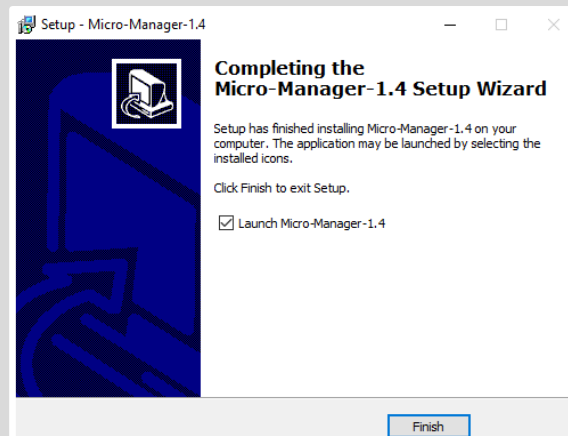
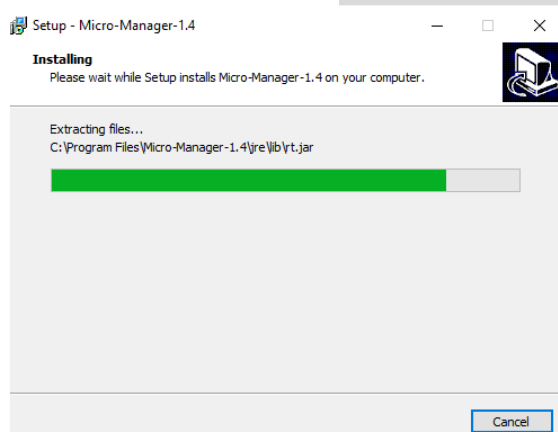
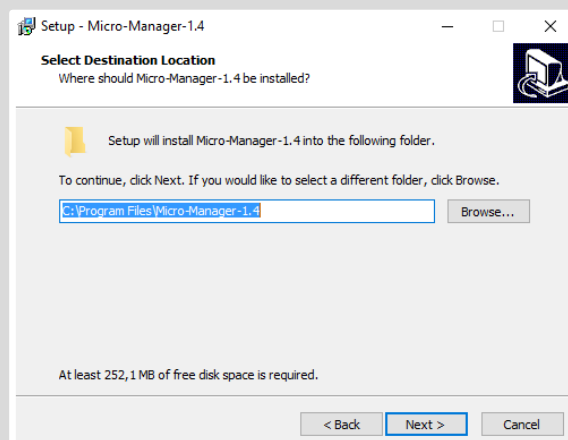
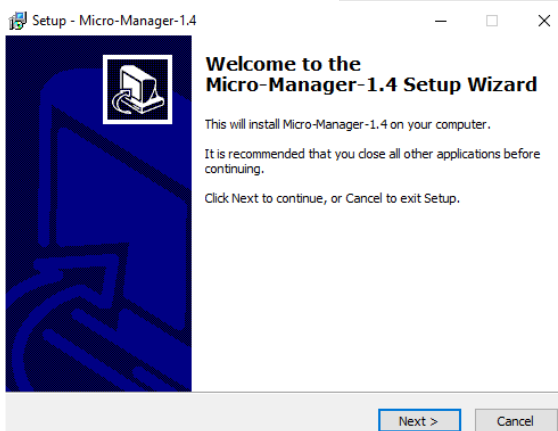
Select **Download Nightly Builds** to get the latest version.

Note: nightly build is a beta version and is not for productive use → the use is at your own risk

You always need to install PCO's Camware or the PCO runtime package, because some runtime DLL-files from the Camware or PCO runtime directory are needed (see **2.3**).

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:

C...\Camware or C:\program files\digital camera toolbox\pco.runtime (64bit version) or under c:\program files (x86) (32bit version on a 64bit system)

Files needed for all PCO cameras:

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

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

- **sc2_clhs.dll**

In case of **Camera Link (CL)** 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



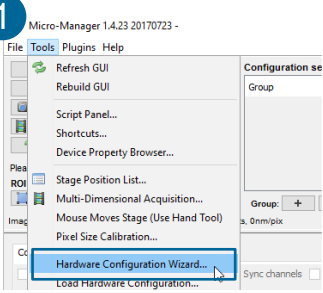
- First start **your PCO camera**
- Start **Micro-Manager**
- Open Micro-Manager with **default configuration (none)**

3.1. HARDWARE CONFIGURATION WIZARD

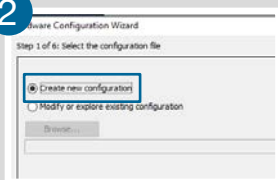
- 1 Start the **Hardware Configuration Wizard**
- 2 Create a **new** configuration
- 3 **Add** the **pco_camera_adapter** from list
- 4 Micro-Manager will scan for cameras
- 5 **Skip** the steps 3 + 4 + 5
- 6 Save new configuration (e.g. "pcoultraviolet") to M-M directory
- 7 Finish

 Snap Snap Image for test

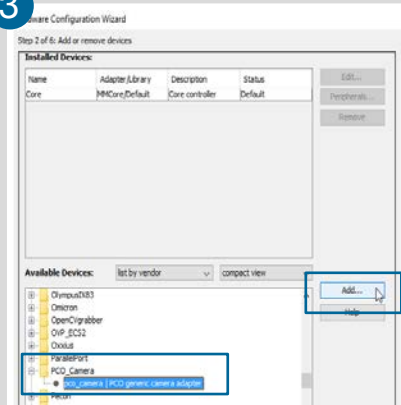
1 Micro-Manager 1.4.23 20170723 -



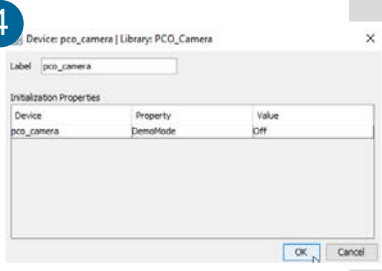
2 Hardware Configuration Wizard
Step 1 of 6: Select the configuration file



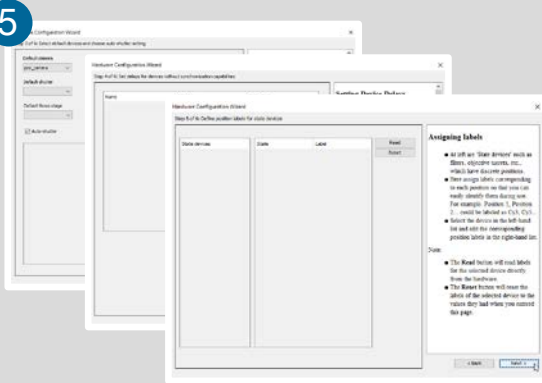
3 Hardware Configuration Wizard
Step 2 of 6: Add or remove devices



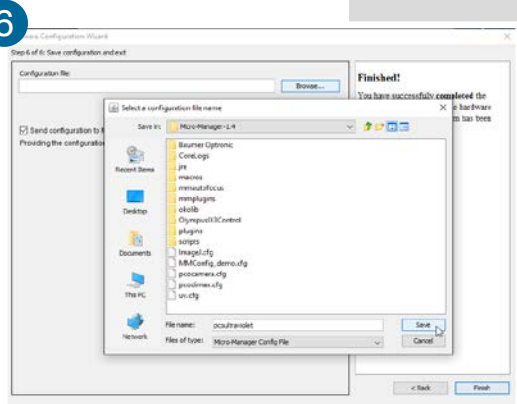
4 Device: pco_camera [Library: PCO_Camera]



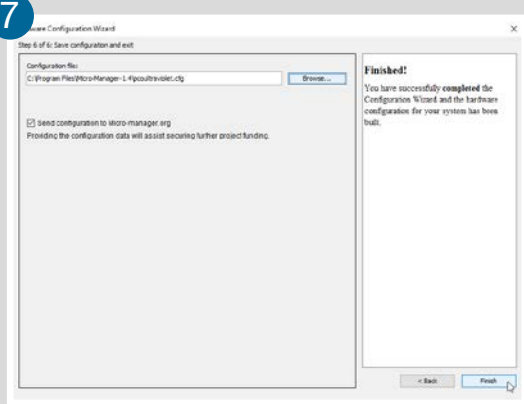
5 Hardware Configuration Wizard
Step 3 of 6: Define problem labels for video device



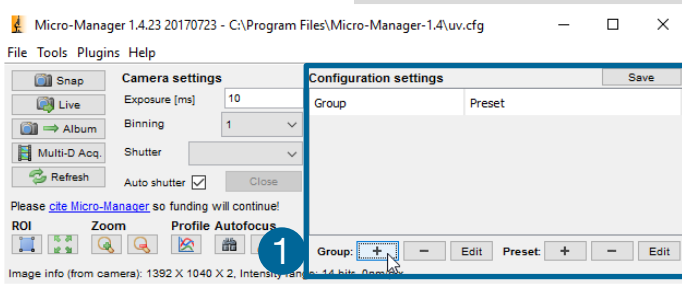
6 Hardware Configuration Wizard
Step 6 of 6: Save configuration and exit



7 Hardware Configuration Wizard
Step 6 of 6: Save configuration and exit

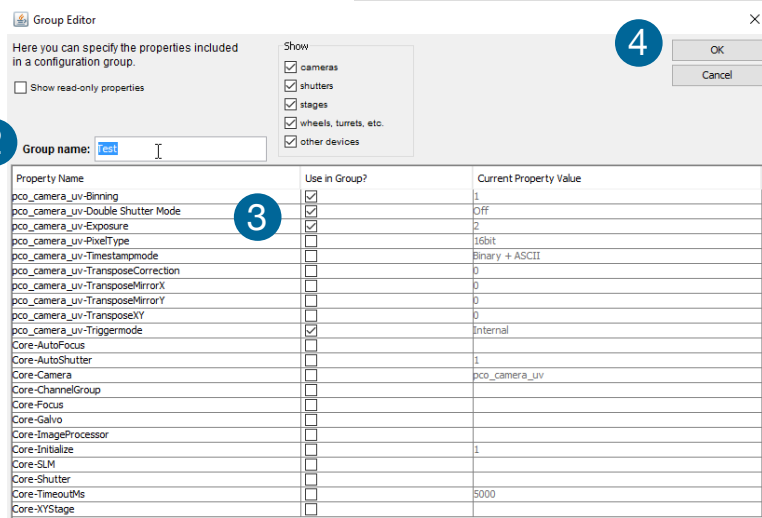


3.2. CONFIGURATION SETTINGS



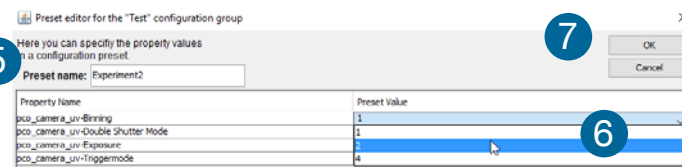
After the Hardware configuration Wizard is successfully finished Configuration settings can be predefined.

First add **Group** 1



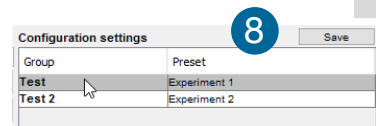
Then **Group Editor** opens. Enter a group name 2 and select the property names that you want to add to your group 3

Press **ok**. 4

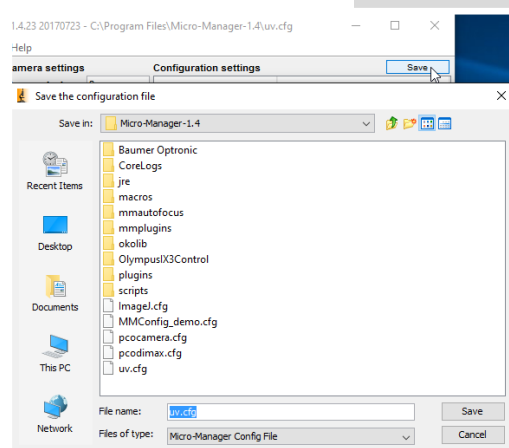


Preset editor for the configuration group opens.

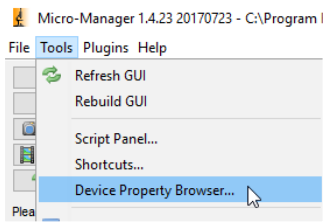
Enter **Preset name** 5. Select the **Preset Values** 6. Press **ok** 7.



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 camera settings.



If you use a PCO color camera, change the **pco_camera-PixelType** to **RGB 32 bit**.

Standard value is 16 bit – this will provide a b/w image.

ABOUT PCO



pcoco.

In 1987, PCO was founded with the objective to develop and to produce specialized, fast and sensitive video camera systems, mainly for scientific applications. Meanwhile the product range of PCO cameras covers digital camera systems with high dynamic range, high resolution, high speed and low noise, which are sold in the scientific and industrial market all over the world.

Currently PCO is one of the leading manufacturers of scientific cameras. Worldwide representatives, together with our own sales department and technical support assure that we keep in touch with our customers and their needs. The actual wide range of specialized camera systems is the result of technical challenge and product specific know-how. A design according to advanced techniques, a high standard of production and strict quality controls guarantee a reliable operation of the cameras. Our own developments in conjunction with an excellent contact to leading manufacturers of image sensors ensure our access to state-of-the-art CCD- and CMOS-technology for our cameras.

Since 2001, PCO is located in its own facility building in Kelheim at the shore of the beautiful and international river Danube. Here in the county Bavaria, which is well known for its excellent support and conditions for high technology companies, we share the benefits of the simple access to high performance products and services in the surrounding area.

Kelheim itself is a historical town, first documented in 866. The small city is founded at the confluence of the Danube and the Altmühl, which has been converted into the Rhine-Main-Danube bypass channel for water transport. Located in Danube-valley, it is the heart of a beautiful river and forest covered lime plateau landscape. It's landmark, the Hall of Liberation, was built by Ludwig I. in 1863 on the Mount Michael and is visible from all over the city and valley. The beautiful Danube-Gorge, which is protected as natural monument since 1840, is located between Kelheim and the famous abbey Weltenburg.

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