



Quick Start Guide for μ Manager

1.4.22 & 1.4.23

IQS006 – Rev 08

Issue Date: 30/09/2021

1 Integrated CoolLED products

- pE-2
- pE-300^{white}, pE-300^{ultra}
- pE-340^{fura}
- pE-4000
- pE-800 Series (Version 1.4.22 only)

2 Setting up your CoolLED Illumination System COM Port via USB:

1. Setting up the USB interface

If using the pE-800 Series with Windows 10, no driver is required to download so please skip to section 3. If software predating Windows 10 is being used with the pE-800 Series, or if using any other illumination system please proceed with this section.

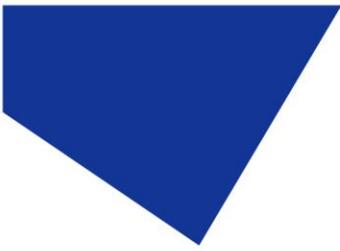
The USB interface uses Microsoft's own built-in drivers for Virtual Serial Ports, which means that the CoolLED Illumination System behaves very much as an ordinary COM port on your PC and can be controlled by any application that uses Windows COM ports correctly. This means that there is a requirement to tell Windows about our hardware via a driver .INF file.

To do this, download the 'CoolLED-pE.inf' file from the CoolLED website:

www.cooled.com/support/imaging-software

When you first plug the CoolLED Illumination System into your PC via the USB interface, Windows will tell you it has found new hardware. It will ask you for the location of the driver file. Tell Windows to look in the location where you have downloaded the .INF file.

2. Setting up USB on Windows Vista and above



First, go to: Start -> Control Panel -> System Management -> System -> Hardware -> Device Manager -> Continue

Click the [+] by Ports to see the list of COM ports. The CoolLED Illumination System ports can be identified with the name: 'CoolLED USB Virtual Serial Port (COMx)' where x is a positive number. Either COM port may be used for control. The creation of two COM ports is to allow for multiple uses. For example, one could be used for controlling the CoolLED Illumination System whilst the other is used for command testing and allows for ease of use if there is a COM port conflict. Please note if using the pE-800 Series only one port will be available.

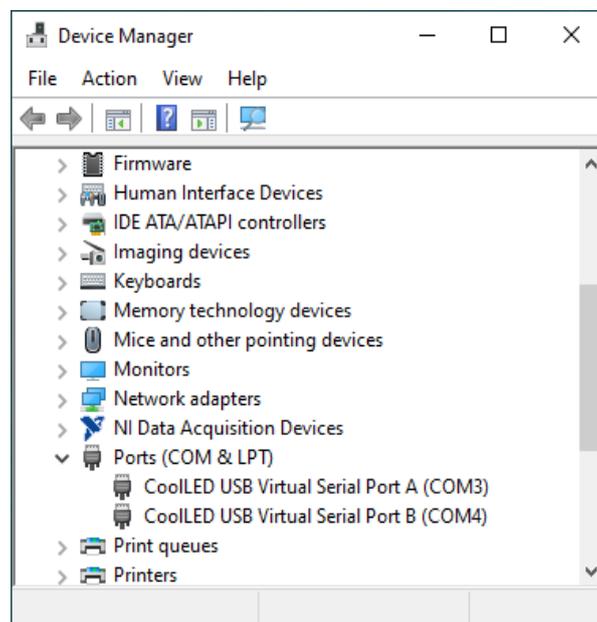
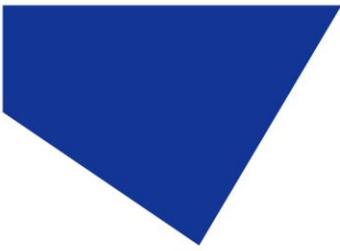


Figure 1. Example COM ports for a CoolLED Illumination System



3 Installation

1. When μ Manager opens, navigate to the 'Tools' tab and then select 'Hardware Configuration Wizard'. This will open the window below:

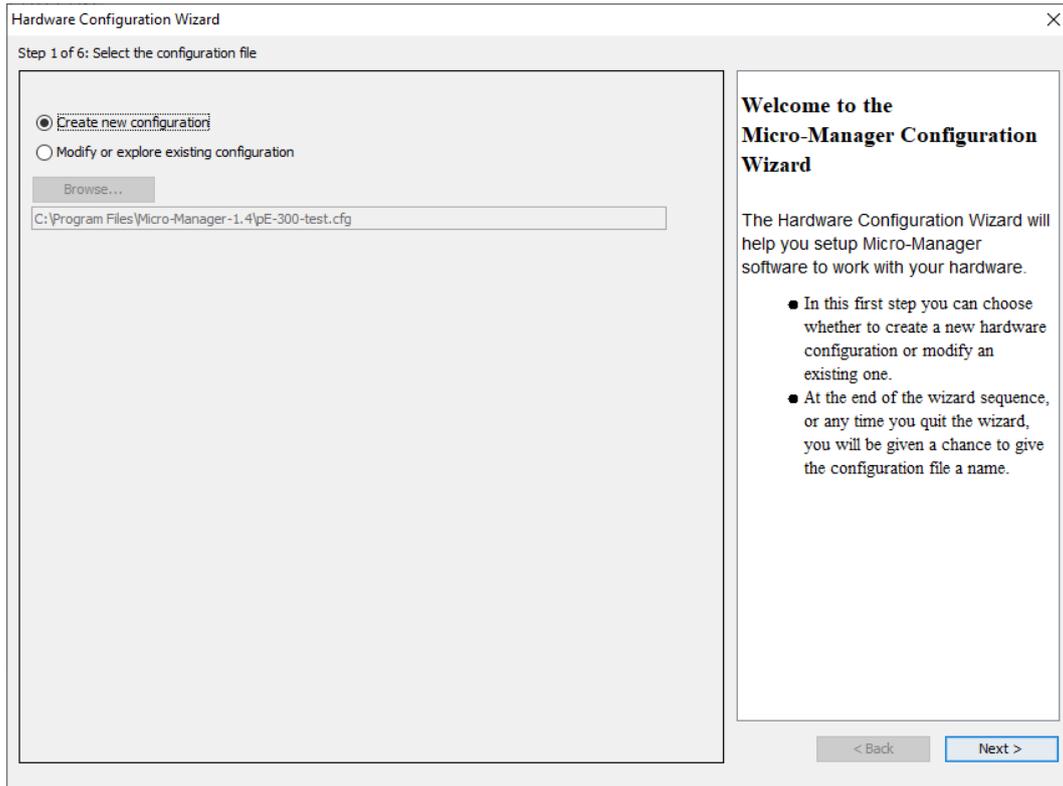


Figure 2. 'Hardware Configuration Wizard'

Select 'Create a new configuration' and click 'Next'.

2. In Step 2 of the Wizard you will be given the option to add or remove devices in addition to the core μ Manager device. Navigate through the list and select the relevant CoolLED Illumination System. The different products can be found under different sections within μ Manager during setup:
 - pE-2 is 'precisExcite'
 - pE-300 Series and pE-340^{fura} is 'pE300'
 - pE-4000 is 'pE4000'
 - pE-800 Series is 'CoolLED-pE800'Once chosen, select 'Add...'

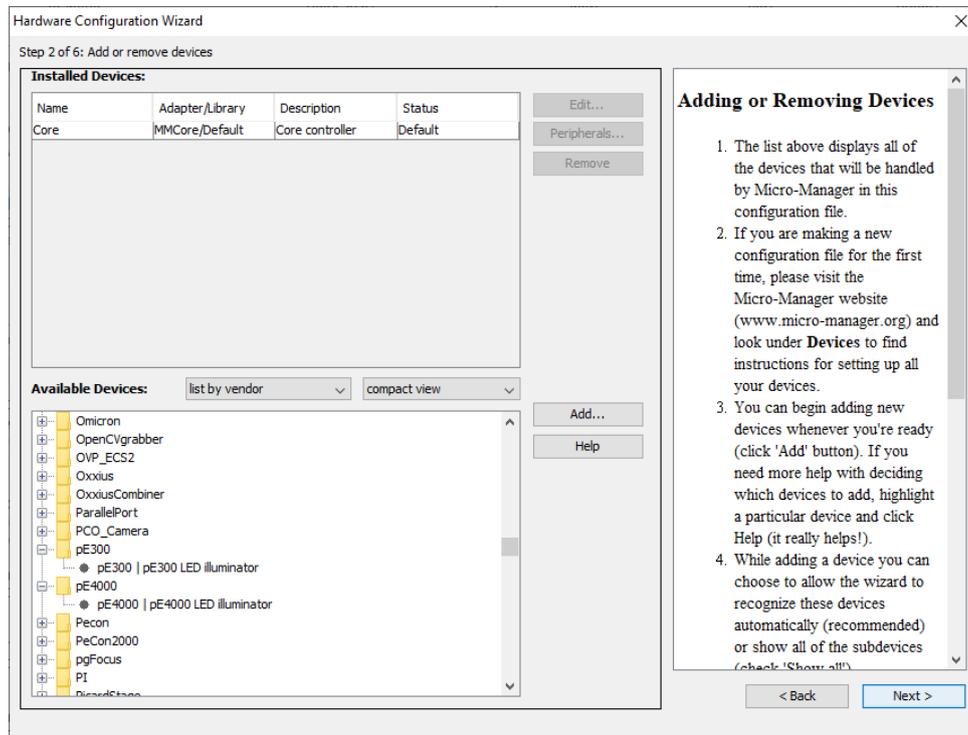


Figure 3. The pE-300 & pE-4000 as listed in 'Hardware Configuration Wizard'

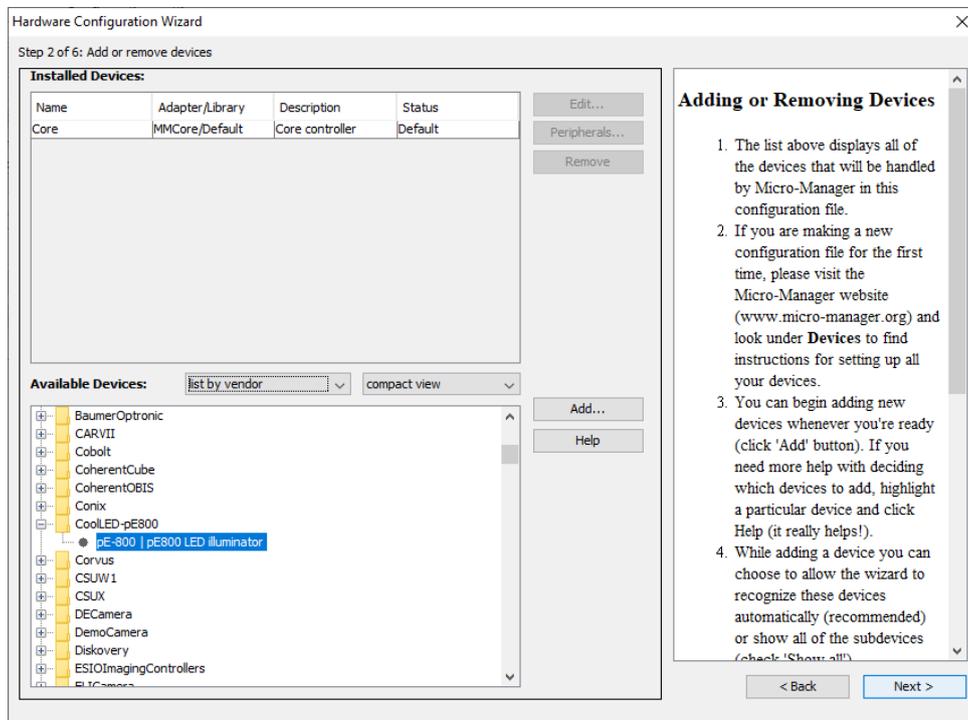
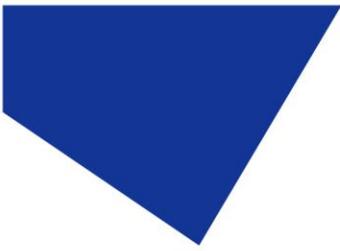


Figure 4. The pE-800 Series listed in Hardware Configuration Wizard'



3. After selecting the CoolLED Illumination System, another screen will pop up (see below). Ensure that you have selected the correct COM port for your device, matching it to the one selected in the Device Manager from earlier.

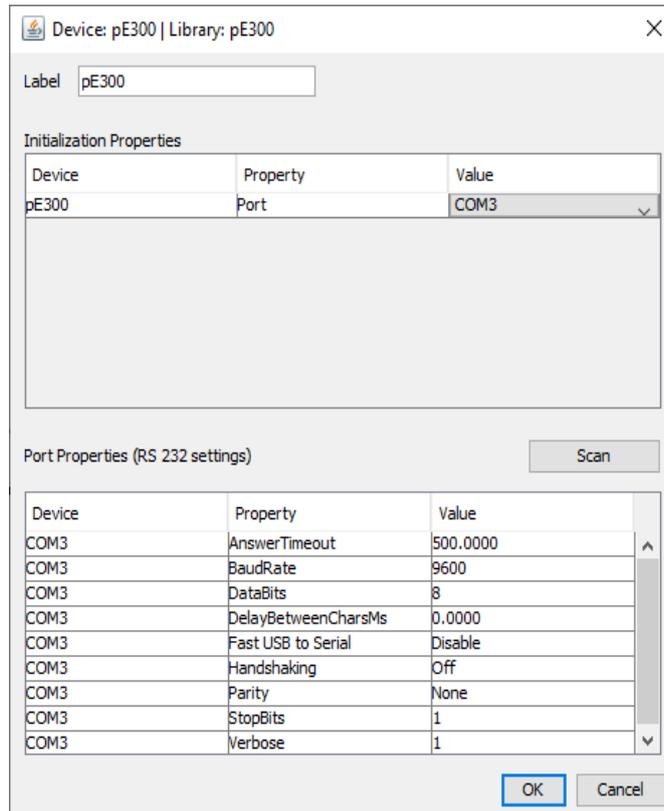
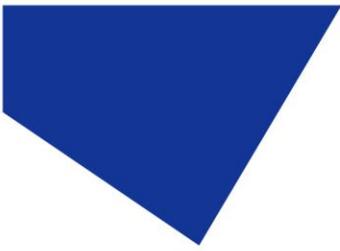


Figure 4. Device Configuration for the pE-300 Series

4. There are a number of parameters listed in 'Port Properties'. These will default to working parameters and generally should be left alone, although the BaudRate can be changed to 576000. It is possible to alter these later if required.



5. Ensure that you have added all the relevant devices for your configuration (camera, stages etc.) and continue to click 'Next' through the 'Hardware Configuration Wizard' until you reach Step 6; here you can save your configuration to be reloaded at any time. After this, click 'Finish'.

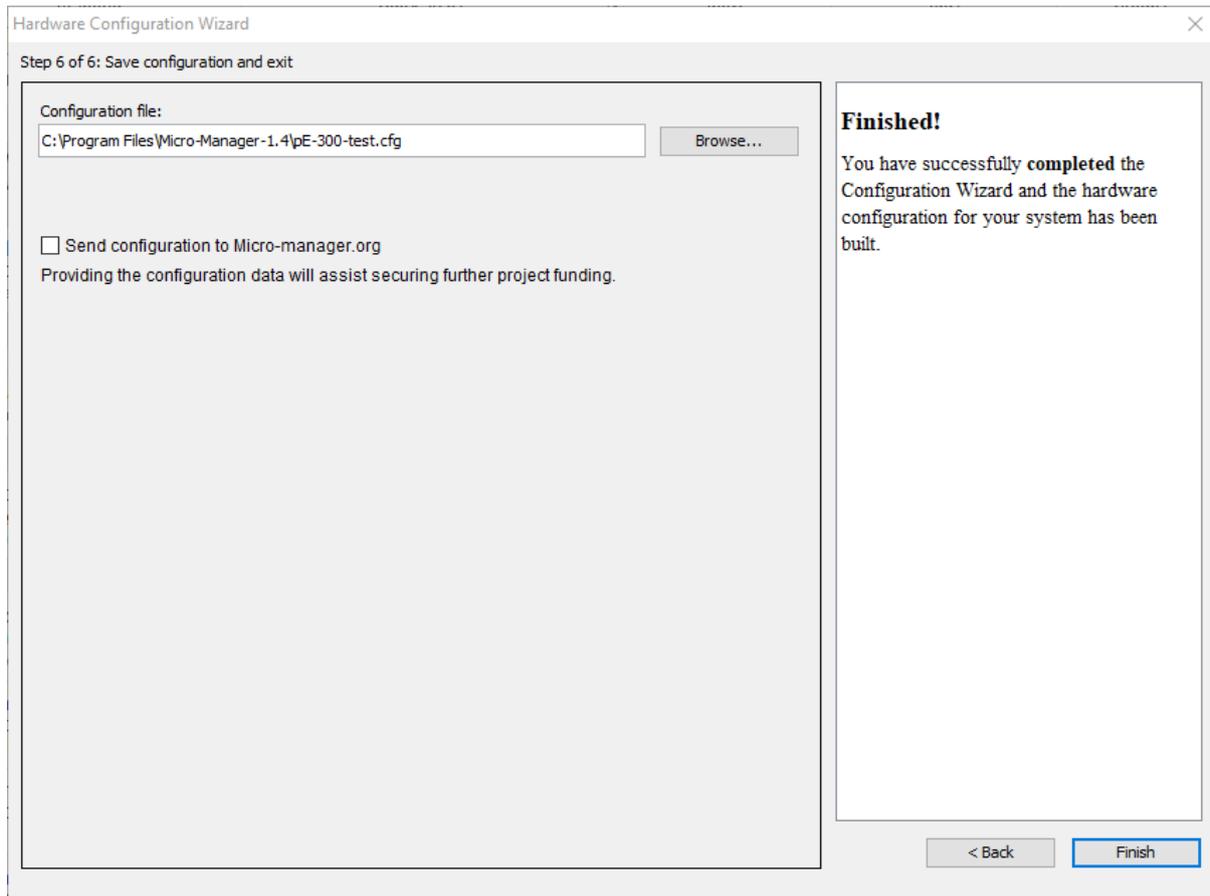
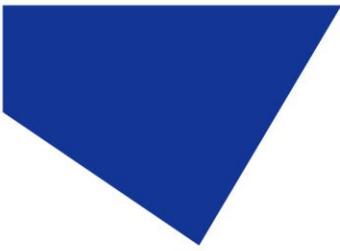


Figure 5. The final screen of the 'Hardware Configuration Wizard'



4 Configuration

1. It is possible to view the variables that can be controlled by μ Manager in the 'Device Property Browser'. In the below example, a pE-4000 is displayed. In the 'Device Property Browser' it is also possible to view the Firmware of your unit in the 'Description' value. This feature is available on the pE-300 Series and pE-4000.

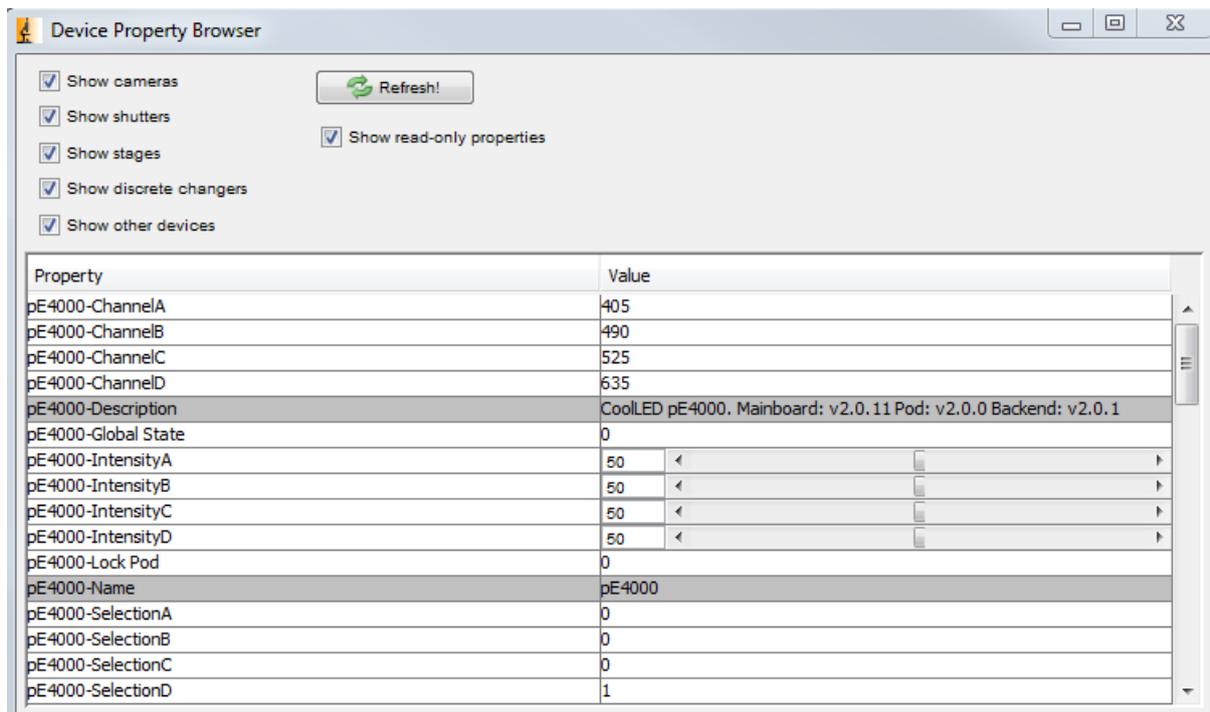


Figure 6. 'Device Property Browser'

2. You can create a 'Group' with any number of these values by clicking the Group '[+]' icon on the main screen (see below):

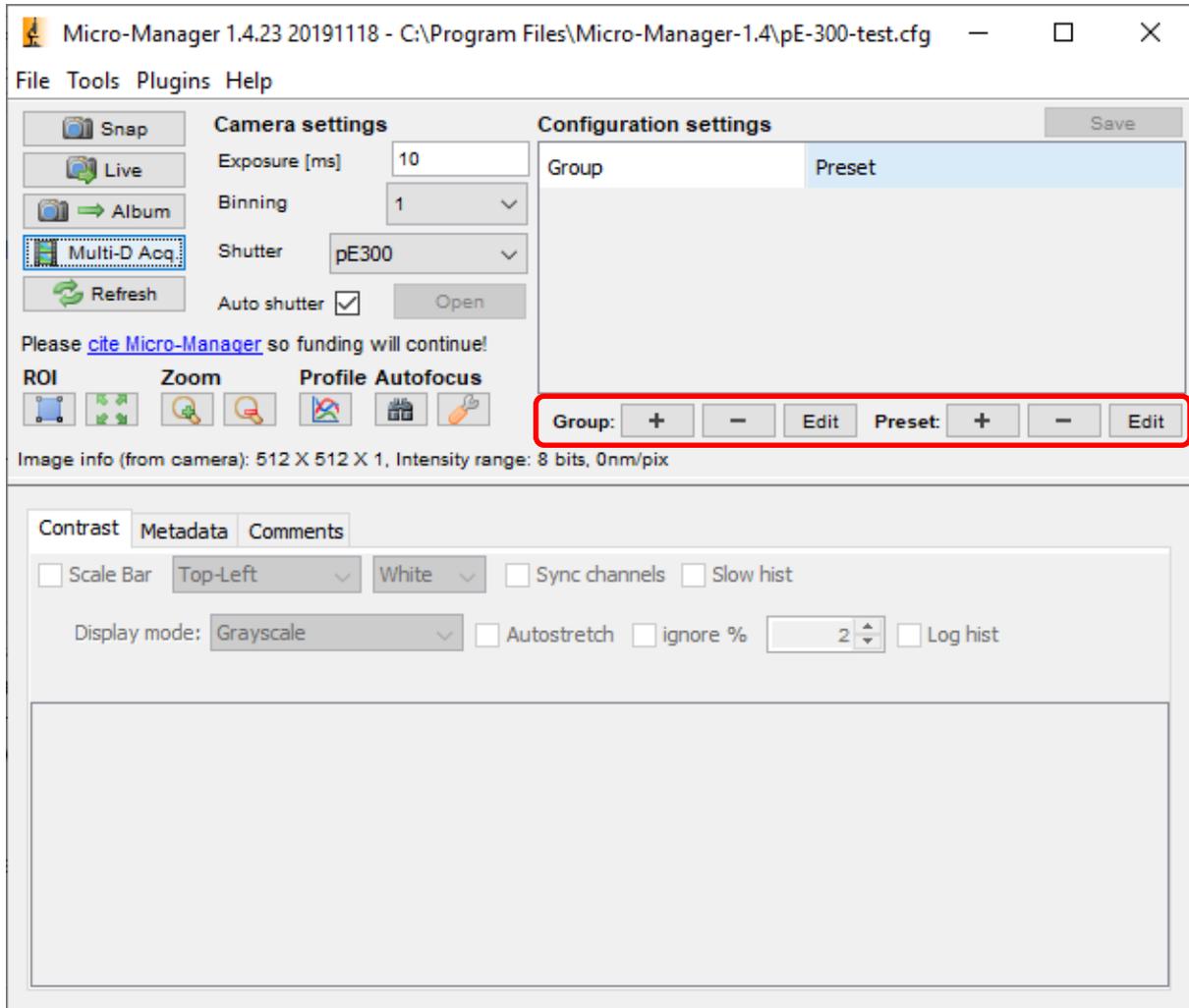


Figure 7. 'Group' and 'Preset' creation

Doing so will bring up the 'Group Editor' Screen (see below).

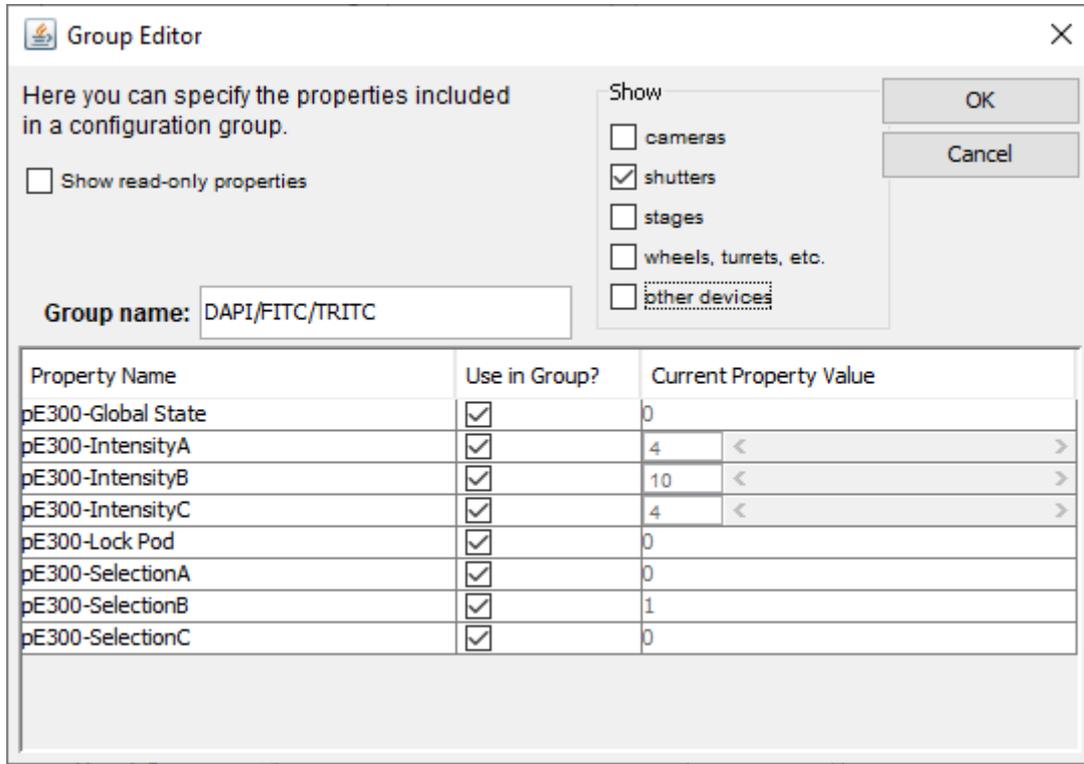


Figure 8. Group editor example for a pE-300 Series

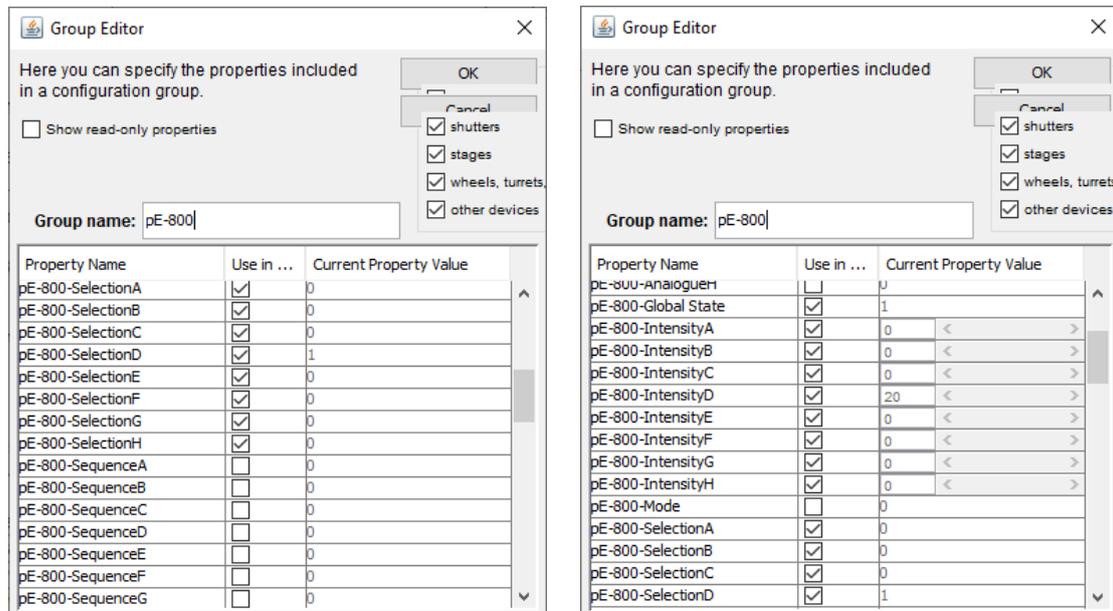


Figure 10. Group editor example for a pE-800 Series

- For the pE-800 Series the eight LEDs correspond to the eight different labels as below.



pE-800		pE-800 ^{fura}	
LED	Property Name	LED	Property Name
365 / 400 nm	SelectionA	500 nm	SelectionA
435 nm	SelectionB	550 nm	SelectionB
460 nm	SelectionC	580 nm	SelectionC
500 nm	SelectionD	635 nm	SelectionD
550 nm	SelectionH	470 nm	SelectionE
580 nm	SelectionG	435 nm	SelectionF
635 nm	SelectionF	380 nm	SelectionG
740 nm	SelectionE	340 nm	SelectionH

Figure 11. Property names for the eight different pE-800 and pE-800^{fura} LEDs

- After selecting the group of variables from this screen you can create presets for it using the second '[+]' icon. In some cases, the 'Preset Editor' (see below) may open after creating a group. In doing this you could, for example, create different presets for each wavelength you would like to use, enabling you to switch between them sequentially in 'Multi-Dimensional Acquisition'.

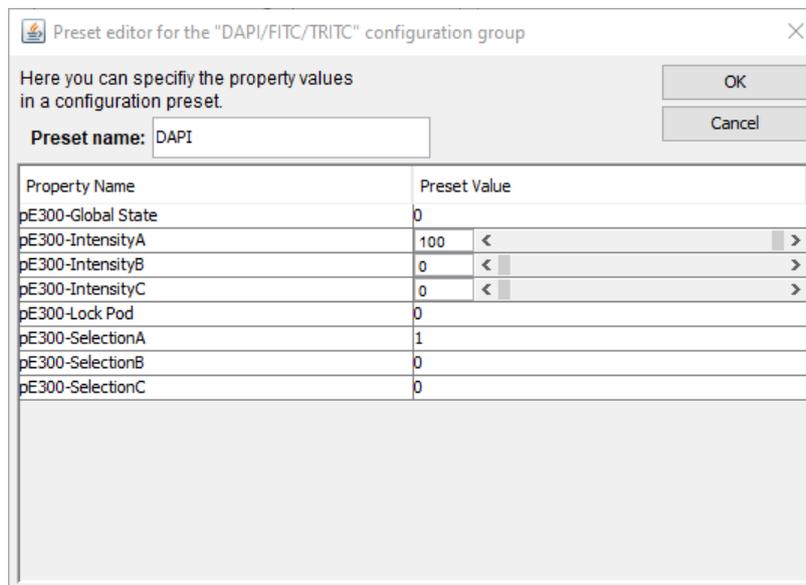


Figure 92. 'Preset Editor' example using the pE-300 Series

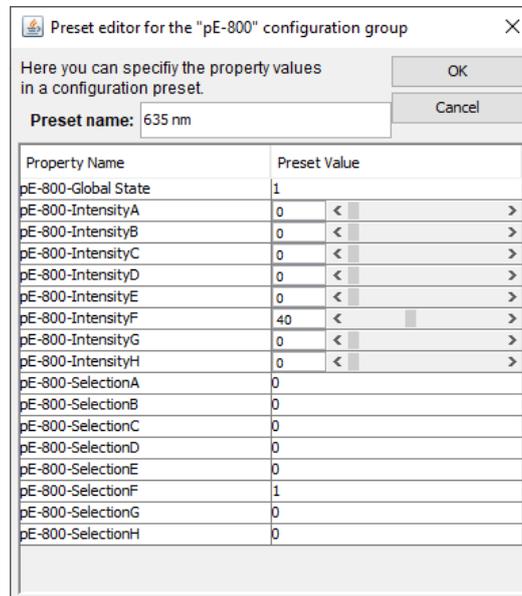
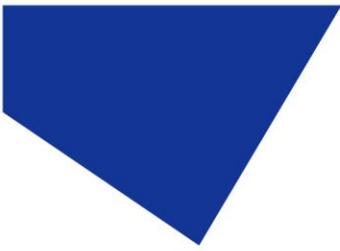


Figure 103. 'Preset Editor' example using the pE-800 Series for the 635 nm LED

Once all presets have been created they should appear in the drop-down menu.

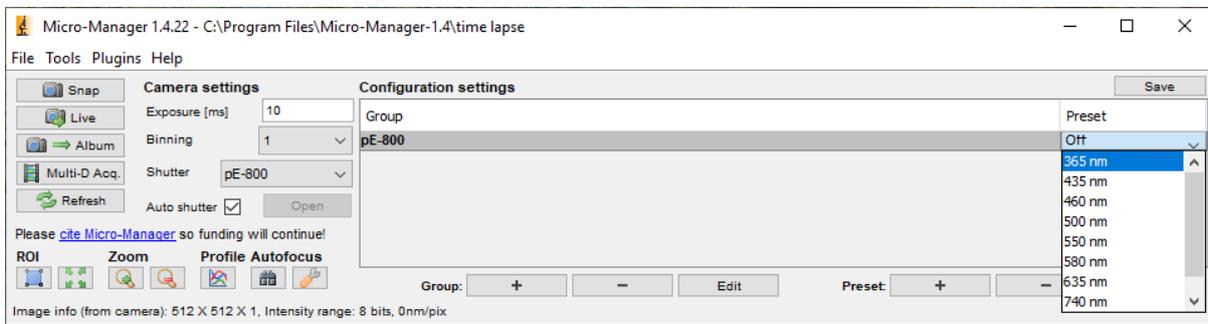


Figure 114. Drop-down list of presets created for a pE-800 Series

5 Examples of Software Functionality:

1. Multi-Dimensional Acquisition

In 'Multi-Dimensional Acquisition', it is possible to create a sequence of images by adding and selecting a group (in this example DAPI/FITC/TRITC) and then individually pressing 'New' to add each preset. When you then set your time parameters and click 'Acquire!', these wavelengths will switch sequentially.

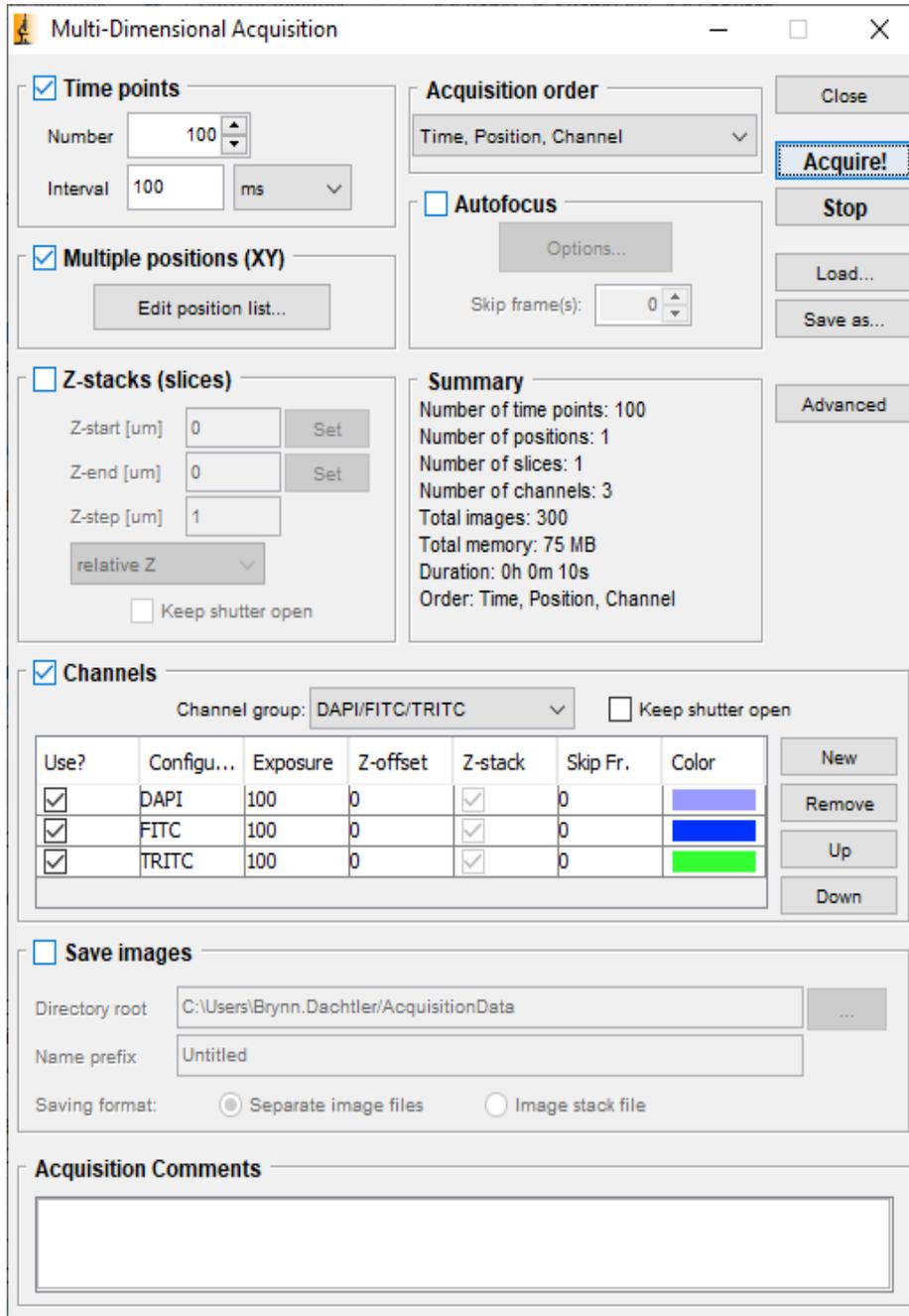
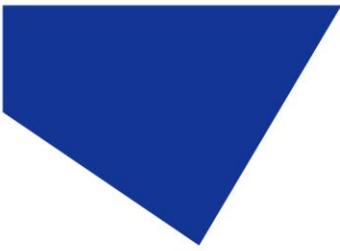


Figure 125. 'Multi-Dimensional Acquisition' setup



2. Live Intensity Variation

For Live Intensity Variation, you can create a 'group' with only one value; such as intensity with a slider, as shown below:

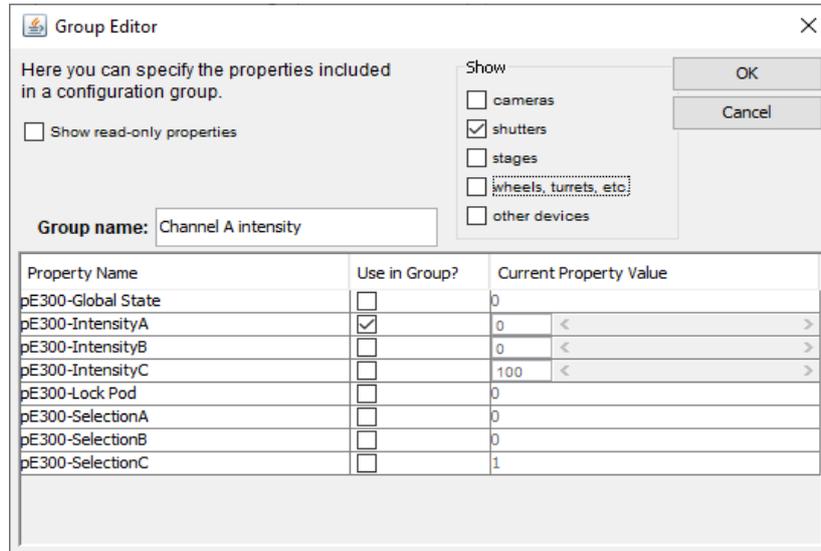


Figure 136. A possible configuration for Live Intensity Variation using a pE-300 Series

This can allow you to alter the intensity while in 'Live' mode, and still switch back to the values in the other group (for example the 'DAPI/FITC/TRITC' group shown below).

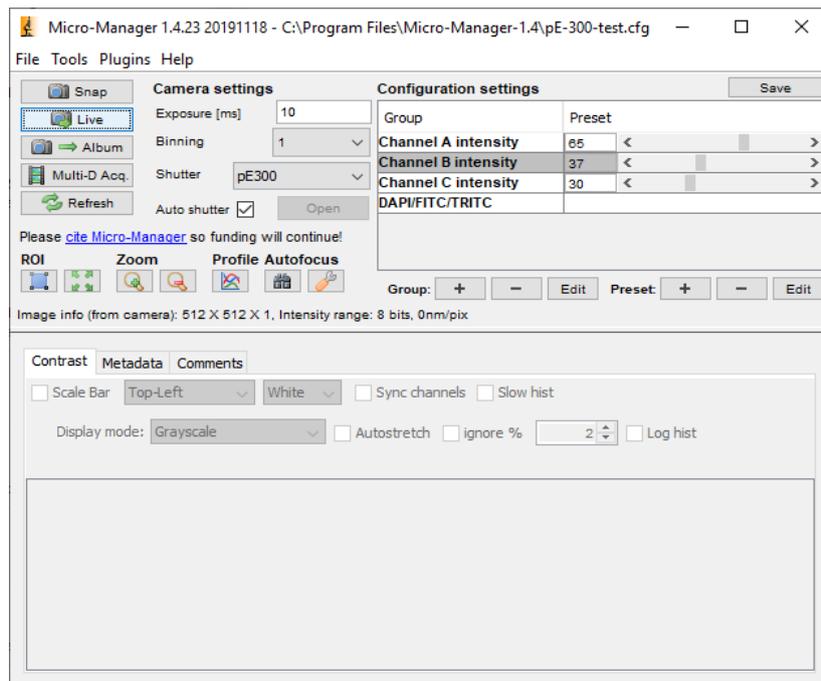


Figure 17. Live Intensity Variation examples