



Device Driver for Metamorph

Installation and Configuration



Imprint

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Printed in Germany 07/2016

Safety Rules



WARNING!

Read the safety precautions in this section before installing, powering, operating or servicing this product.

Symbols used in this manual

The following symbols are used to identify important safety information



WARNING! Laser/led emission is possible. Assure laser/led safety precautions.



CAUTION: Special attention to this point is necessary to meet health regulations and to avoid damage.



An important note to ensure an unproblematic operation.

Important safety information



This manual describes the installation and configuration of the Metamorph Device Drivers, only.

Before operating a laser or led system, read the user manual of the laser/led hardware carefully to prevent damages to human persons or animals, integrated devices and connected devices.

Always follow the local or IEC-safety rules (IEC 60825 / IEC 62471) during the operation of the system.



WARNING: laser and led systems emit visible or invisible continuous laser/led radiation. Our systems are equipped with different laser/led diodes and different output power.

ATTENTION: Do not look into a laser beam or into reflections of the beam from surfaces!

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1. Introduction

The Omicron Device Driver for Metamorph enables you to control a wide range of Omicron devices directly from the Metamorph microscopy software.

The device driver supports all Omicron devices that come with an USB-interface (xX-laser series and led products):

P h o x X L U x X L U x X+ B r i x X Led MOD Led HUB

2. Setup

2.1 System Requirements

Hardware:

The Metamorph device driver runs on all common PCs that are able to run the Metamorph software itself. For connecting the laser or led devices it needs a sufficient amount of free USB 2.0 ports (or higher).



For the Metamorph device driver it is necessary that all Omicron devices are connected to the PC by their USB ports. Legacy RS232 connections are not supported!

Supported operating systems:

Windows 10 (32bit/64bit) / Windows 8(.1) (32bit/64bit) / Windows 7 (32bit/64bit)

Supported Metamorph Versions:

The Omicron Device Driver is designed for the 32bit and 64bit Version of Metamorph.

Driver Version 2.0.0 is tested on Metamorph v 7.8.13.

2.2 USB Driver Installation

Before configuring the Omicron devices within Metamorph the prerequisite is that the Windows USB driver for omicron devices is installed properly and all connected devices are recognized by the operating system without errors.



To verify that all devices are communicating correctly we recommend installing the Omicron Control Center software (OCC).

For details, please refer to the "Omicron Control Center - Software Manual" located on the OCC installation medium in sub folder "Documentation".

The USB driver installer is located in sub folder "Drivers" of the OCC installation medium.



Updating an installed USB driver may affect other devices on your computer that are based on FTDI communication chips. (e.g. standard USB to RS232 adapter cables)



Please note that if updating the USB driver, existing virtual COM ports may be reassigned to the devices with a new numeration!

This is important especially if other devices that are connected to your PC are using COM ports. Updating the device driver may result in editing the configuration of these devices to the new COM port numbers.



The most recent version of the FTDI device driver installer you will always find at: <http://www.ftdichip.com/Drivers/D2XX.htm>.

- Before running the installer, please disconnect all USB devices from the PC.
- Ensure that you are logged in with administrator privileges.
- Right-click on the "Driver Installer for Omicron Devices (FTDI CDM v2.12.16 WHQL Certified)" and select "Run as Administrator".
- Confirm the UAC security message if prompted.
- Follow the instructions on the screen.

Alternatively, if your computer is connected to the internet you can just connect your Omicron device via USB to the computer and wait until windows installs the drivers by Windows Update.

2.3 Software Setup

The Metamorph device driver itself is located in a sub folder of the OCC installation medium called "Metamorph".

Depending on the type of your Metamorph installation, just copy the content of the sub folder "32bit" or "64bit" into a folder of your choice on your PC.

The two DLL files (OmicronMetaMorph.dll and OmicronXDevices.dll respectively OmicronMetaMorph64.dll and OmicronXDevices64.dll) need to stay beside in this folder.

Note: The OmicronMetaMorph(64).dll is the only file that needs to be selected inside the "Meta Imaging Series Administrator". The OmicronXDevices(64).dll will be called by the OmicronMetaMorph(64).dll.

2.4 Configuration

Before getting into the Metamorph configuration all Omicron devices need to be connected to the PC and work properly.

It is recommended to start the Omicron Control Center (OCC) to verify the devices.

Within the OCC you can handle basic device configurations and ensure that no device is in interlock state.



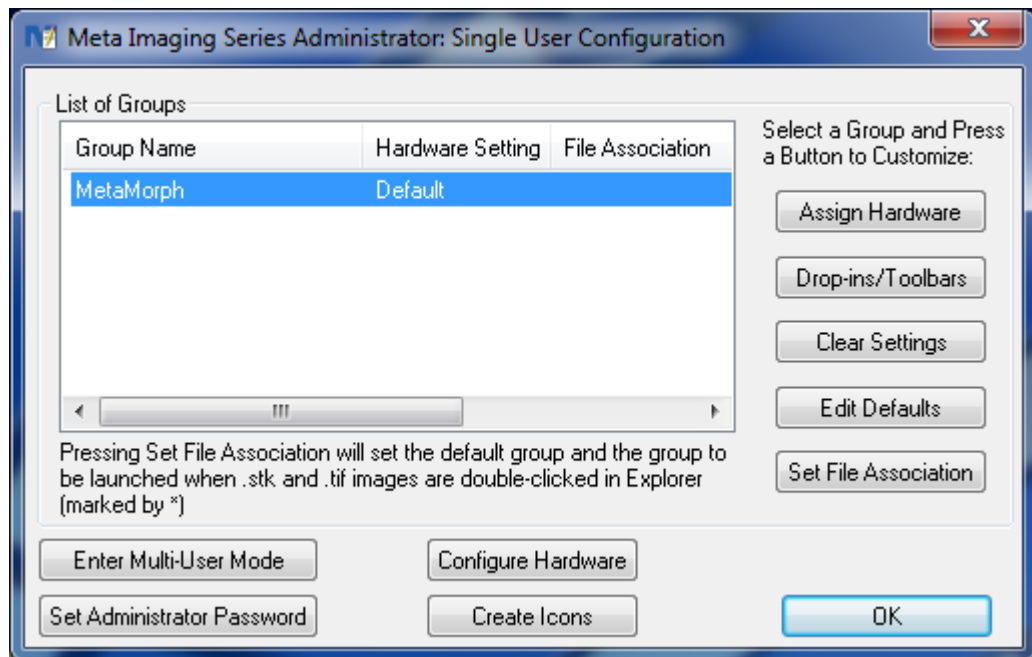
IMPORTANT: The OCC needs to be closed before starting Metamorph or its administration tool.

OCC and Metamorph can be used alternately anytime.

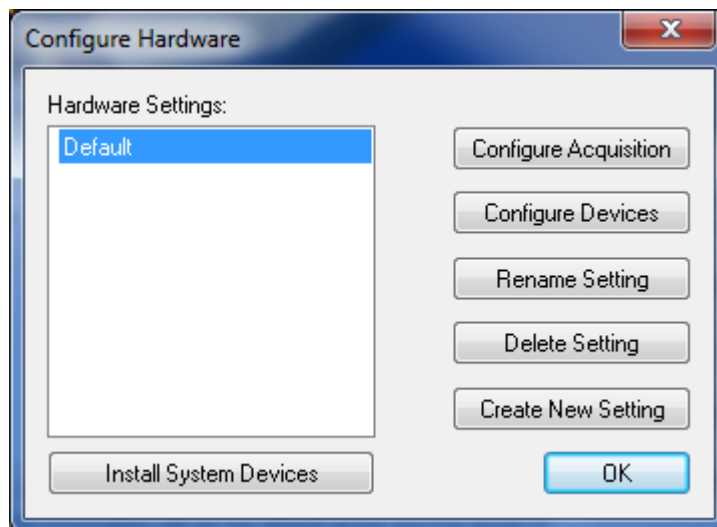


IMPORTANT: after you changed your device configuration by adding or removing an Omicron device to/from your computer you need to go through the following configuration:

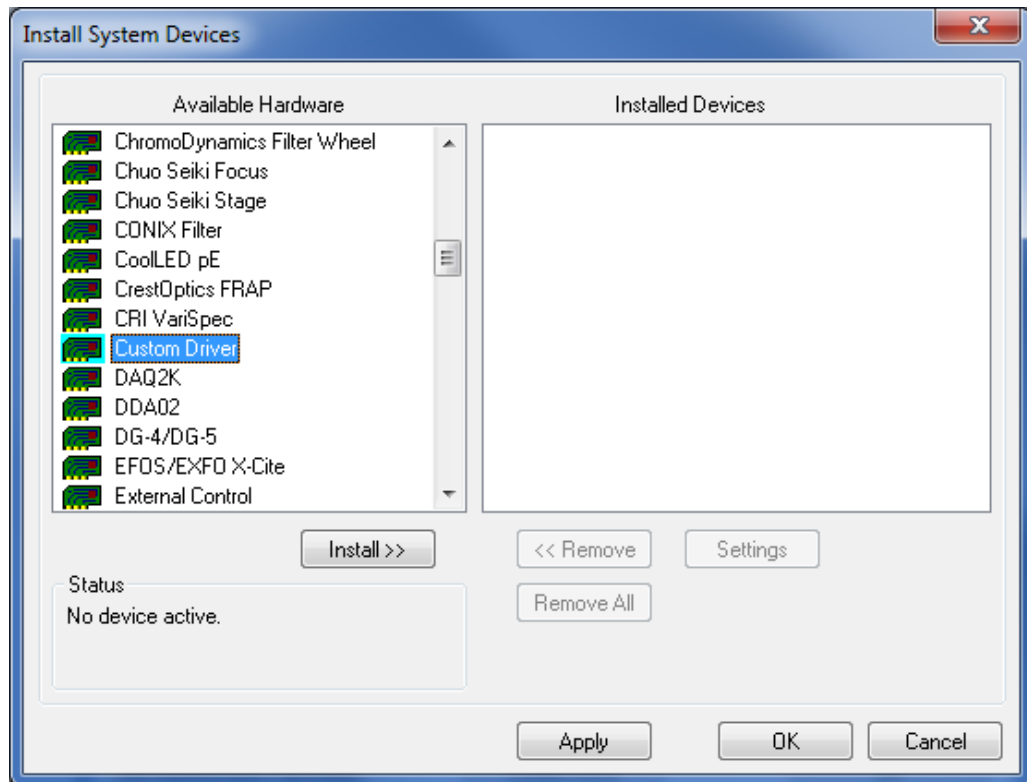
1. Start the “Meta Imaging Series Administrator” Application (mmadmin.exe).



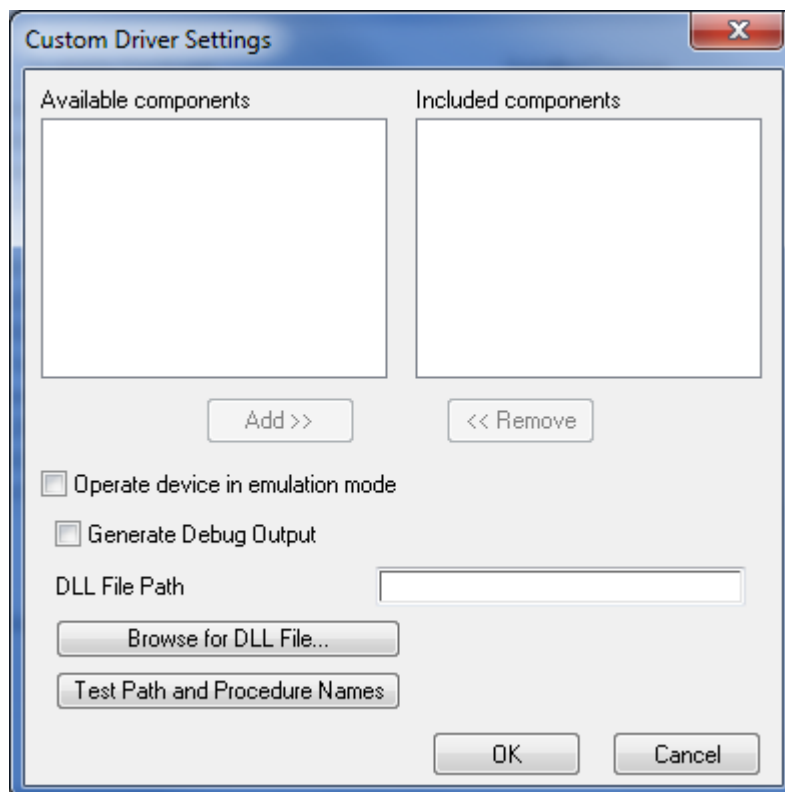
2. Click the “Configure Hardware” Button.
3. Select the Hardware Setting for which the Devices should be available.



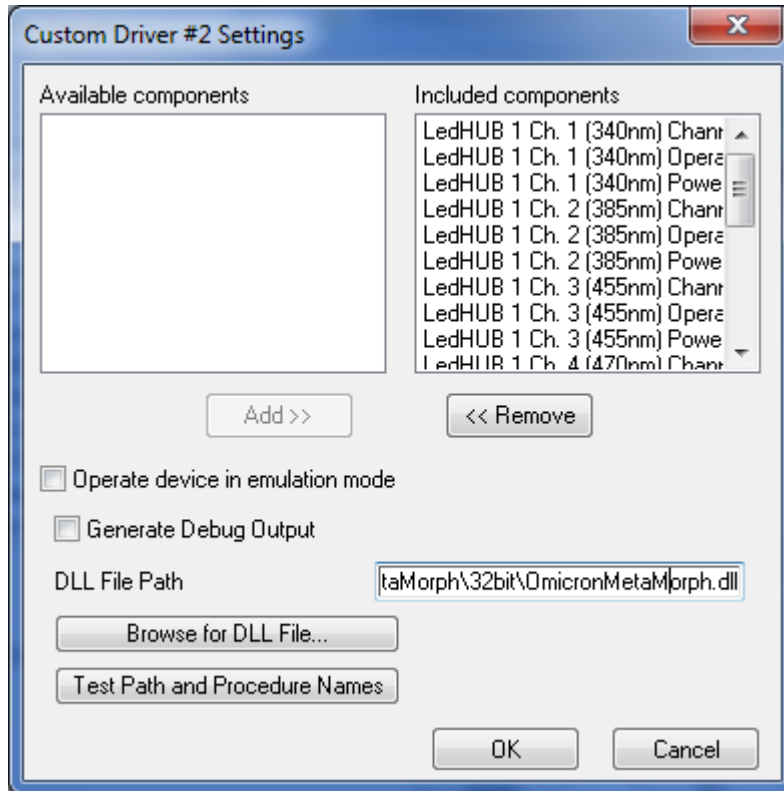
4. Click the “Install System Devices” button.



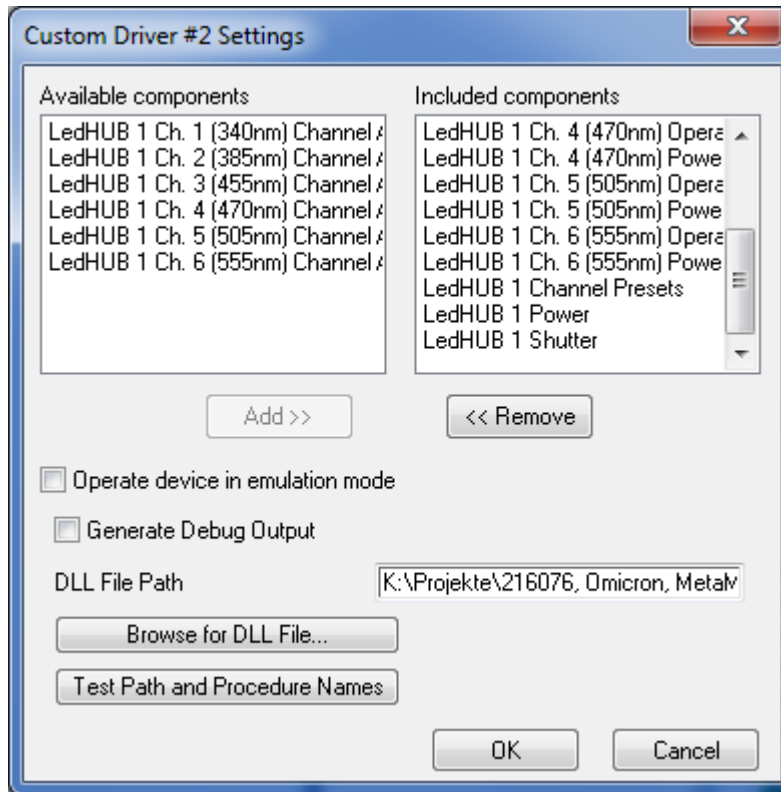
5. Select "Custom Driver" in the "Available Hardware" List and click the "Install>>" button.
6. Select the "Custom Driver" Item in the "Installed Devices" List and click the "Settings" button.



- Click the “Browse for DLL File...” button and navigate to the folder where the Omicron drivers are saved. For the 32bit Version of Metamorph use the “OmicronMetaMorph.dll” and for the 64bit Version the “OmicronMetaMorph64.dll”. After confirming the selection all available controls for the connected devices are shown in the “Included components” list.



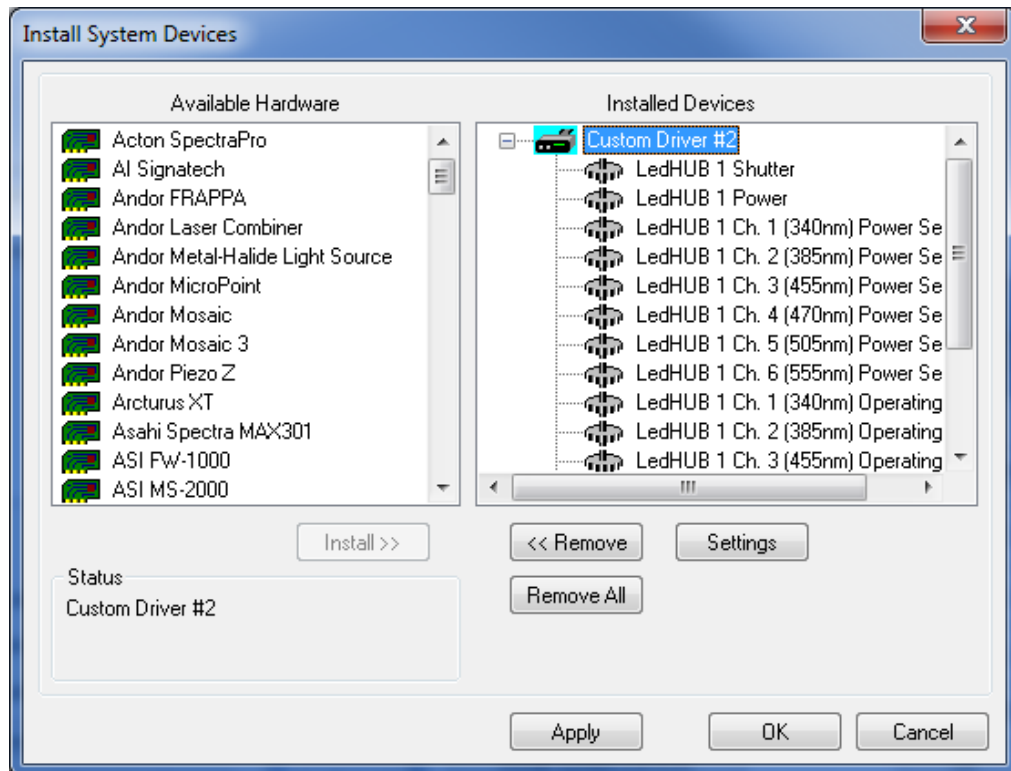
8. All components you want to use have to be listed in the “Included components” list. You may add and remove the components of your choice.



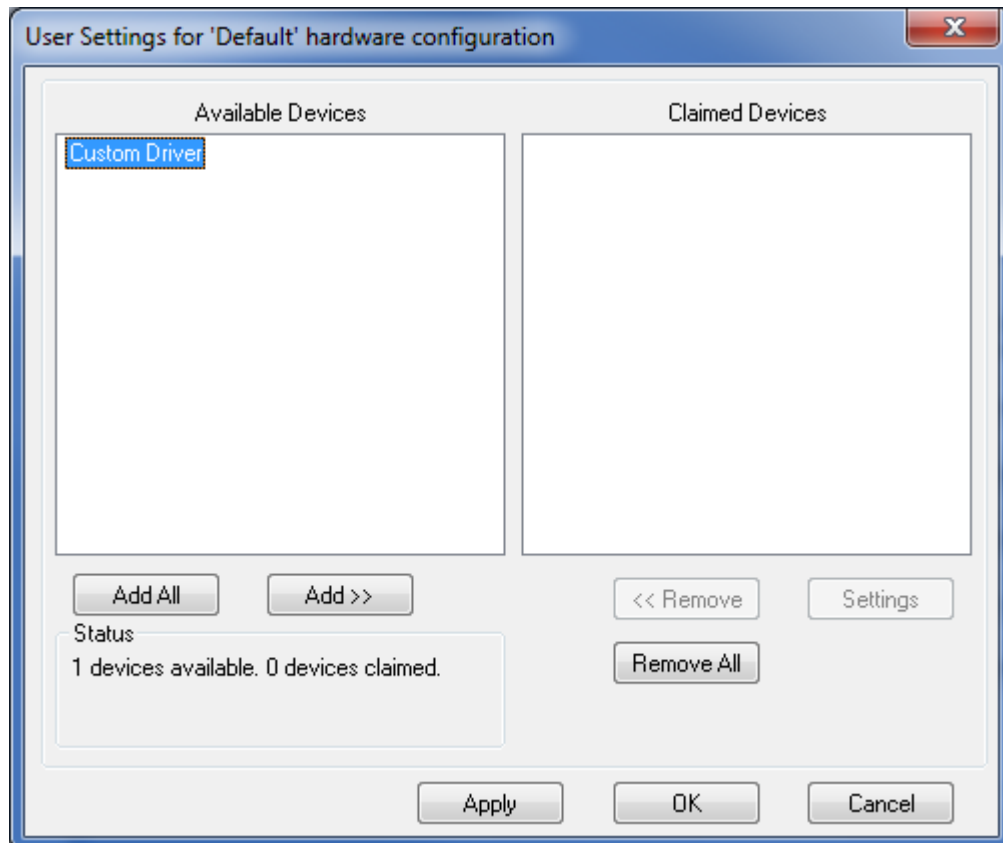
Note for LedHUBs: “Channel Presets” and the “Channel Active” components should be used mutual exclusive since they are controlling the same functionality:

- Use “Channel Presets” to quickly select single wavelengths inside Metamorph. (this is the fastest possibility to switch between wavelengths)
- Use 6x “Channel Active” shutters if you plan to enable more than one wavelength at a time.

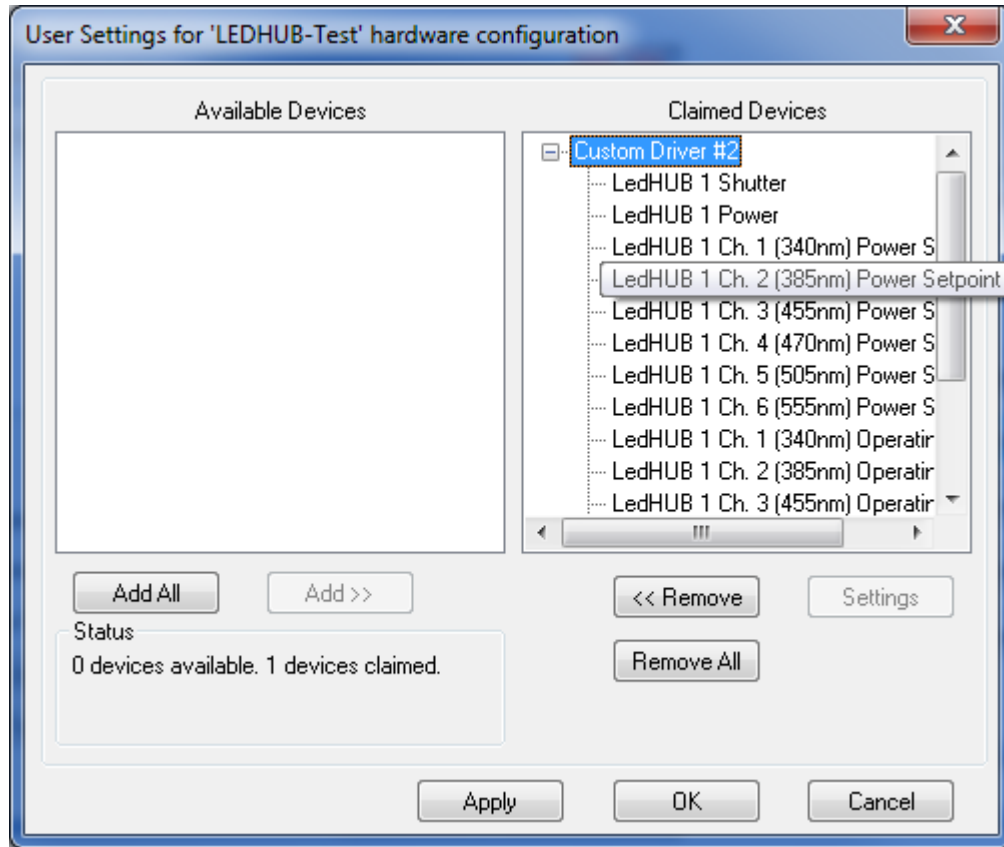
9. Confirm your selection with the “OK” button.



10. Click the “Apply” button and then the “OK” button.
11. In the “Configure Hardware” window, click the “Configure Devices” button.



12. Select the “Custom Driver” in the Available Devices” list and click the “Add>>” button.



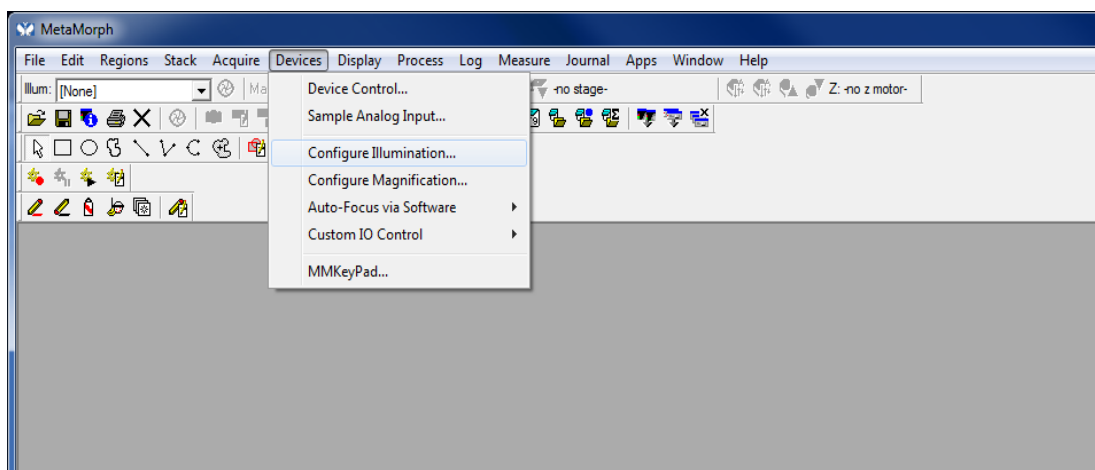
13. Click the “Apply” button and then the “OK” button.



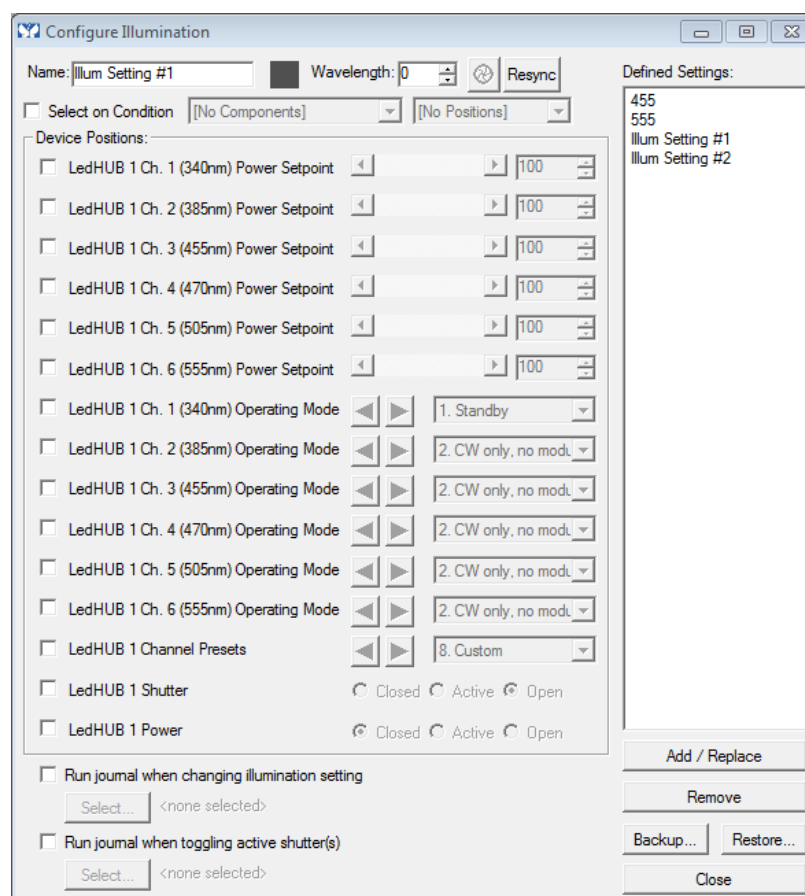
NOTE: Whenever you plug in a new Omicron device or unplug a connected device you need to reconfigure MetaMorph following these Instructions.

3. Use

As long as you do not change anything with the connected devices you can start MetaMorph for daily use and control your Omicron devices through the software.



Select “Configure Illumination...”



The following parameters are supported for Omicron devices:

- **Power Set Point:** adjustable in percentage.
- **Operating Mode:** selectable according to the device (should be “CW only” operation if you plan to control the device without additional external modulation inputs).
- **Power:** switch on/off the laser/led power (this should not be used as a frequently used shutter).
- **Shutter:** use as a shutter for the whole device

The following positions should be used mutual exclusive:

- **Channel Presets:** use to quickly select a single wavelength
- **Channel Active:** use as a shutter for each wavelength in order to select more than one wavelength simultaneously.