

Installing the USB OptoScan monochromator in Slidebook

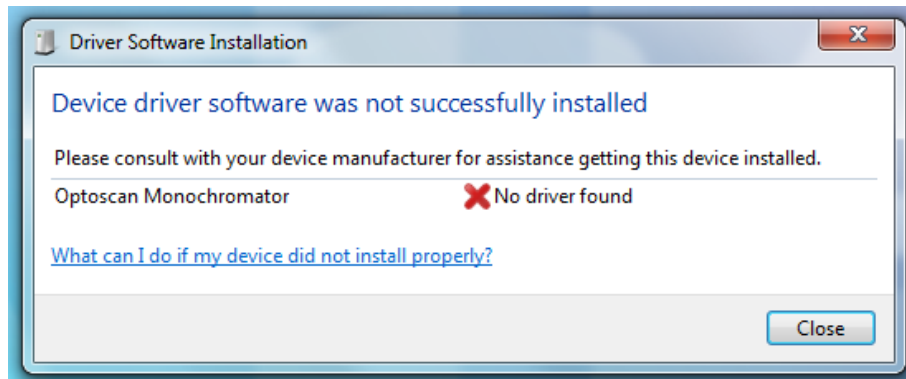
This guide details how to install and configure the Cairn OptoScan via USB drivers (Windows 64-bit) in the following software:

- *Slidebook* (Intelligent Imaging Innovations (3i))

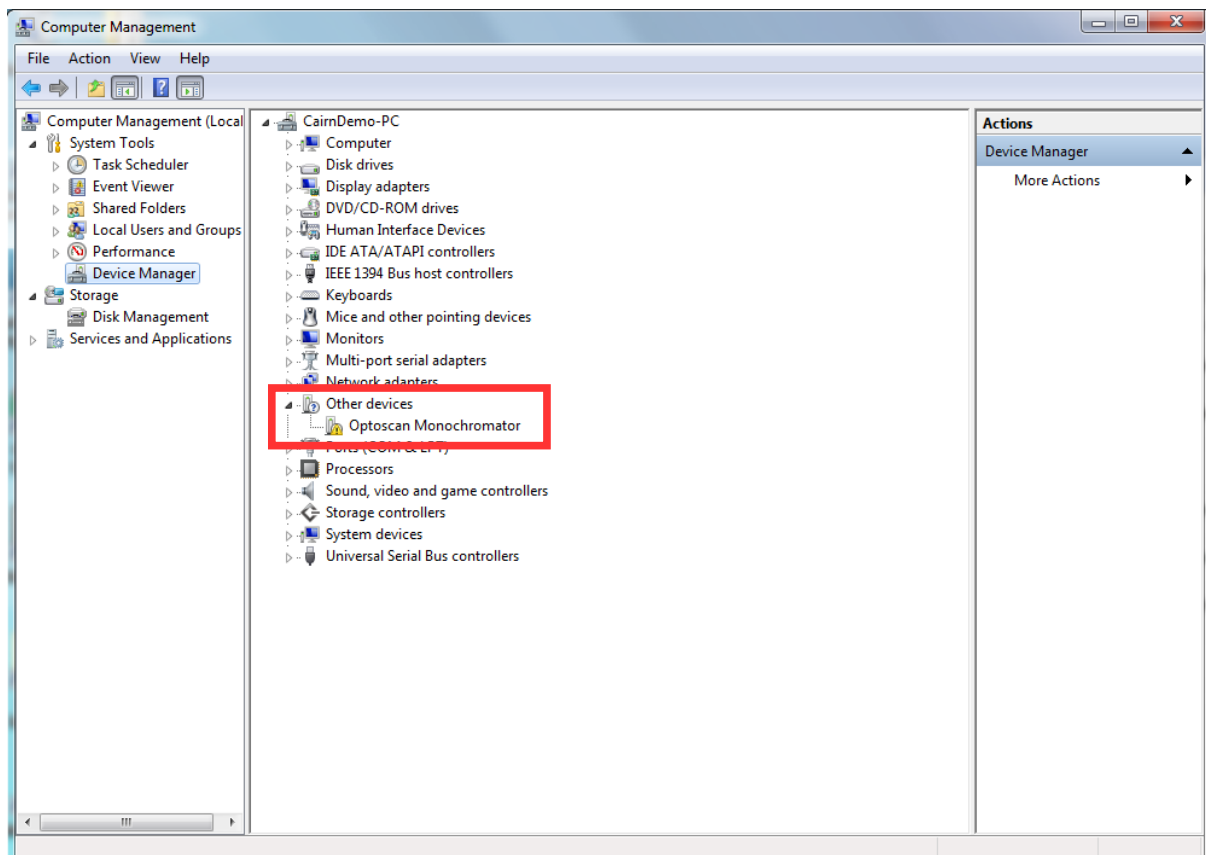
Please do not hesitate to contact us if you have any issues with installation or location of drivers.

A) Installing the OptoScan USB drivers

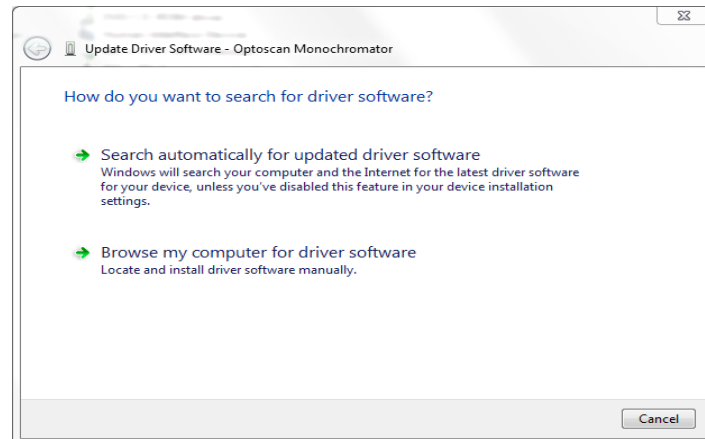
1. Connect all hardware and turn on the OptoScan power supply. The following message will appear:



2. The required USB drivers will be included with your order on a Cairn USB stick. Alternatively, these can be downloaded from the Software Support page on our website: <https://www.cairn-research.co.uk/support/software/>. Locate and unzip (if appropriate) the '**OptoScan USB Drivers 2012**' folder.
3. Open 'Device Manager' in Windows and right click on 'Optoscan Monochromator'. Select 'Update Driver Software'.



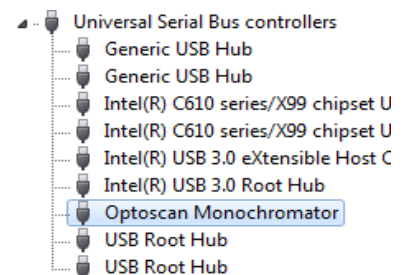
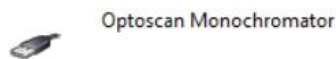
4. Select 'Browse my computer for driver software' and choose the saved 'OptoScan USB drivers' folder



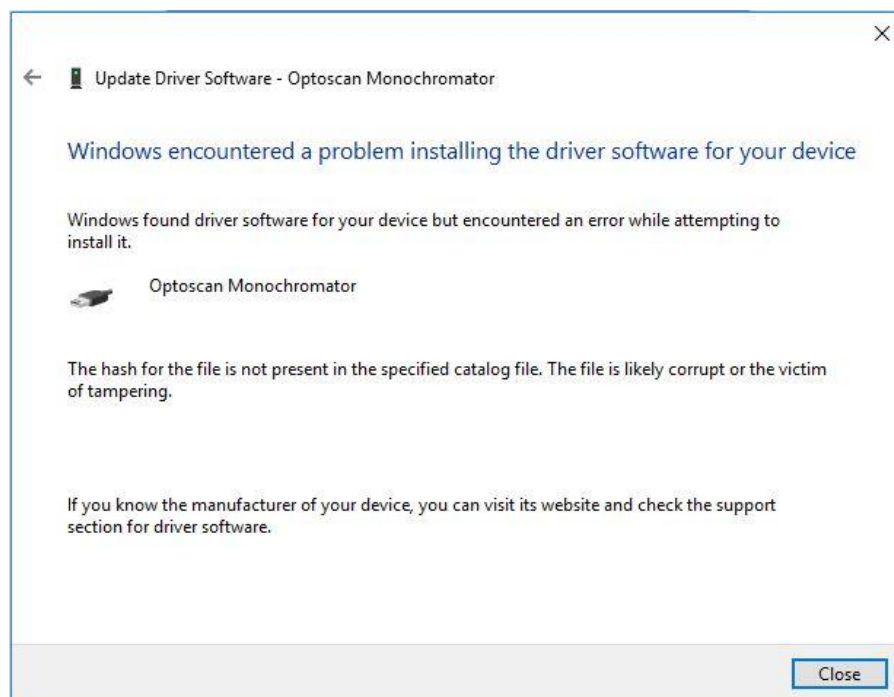
5. The following message should appear and the Optoscan will now be listed as a USB device in Device Manager:

Windows has successfully updated your driver software

Windows has finished installing the driver software for this device:



6. When using Windows 10, an additional setup procedure is required to satisfy Windows security settings. If so, the following error message will occur:



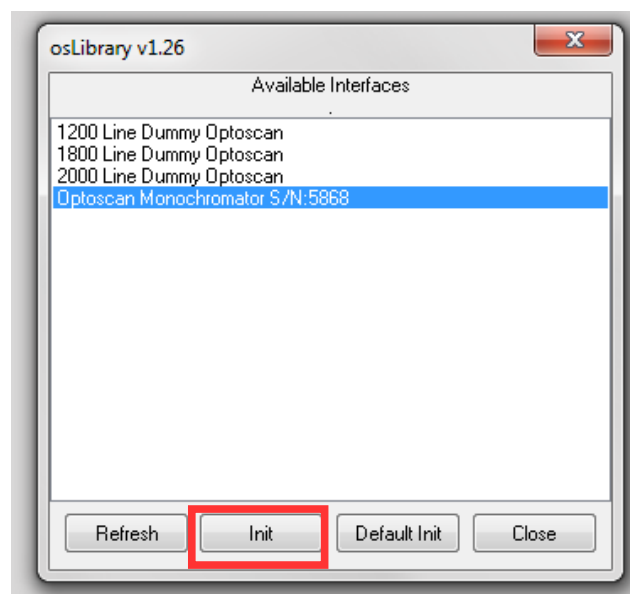
7. To resolve, restart the PC whilst holding down the shift key. When Windows restarts complete the following:
Options > Troubleshoot > Advanced Options > Startup settings
Click 'Restart', select F7 when prompted.
USB installation should now be successful.

B) Testing the USB OptoScan in osDAC (Independent Cairn control software)

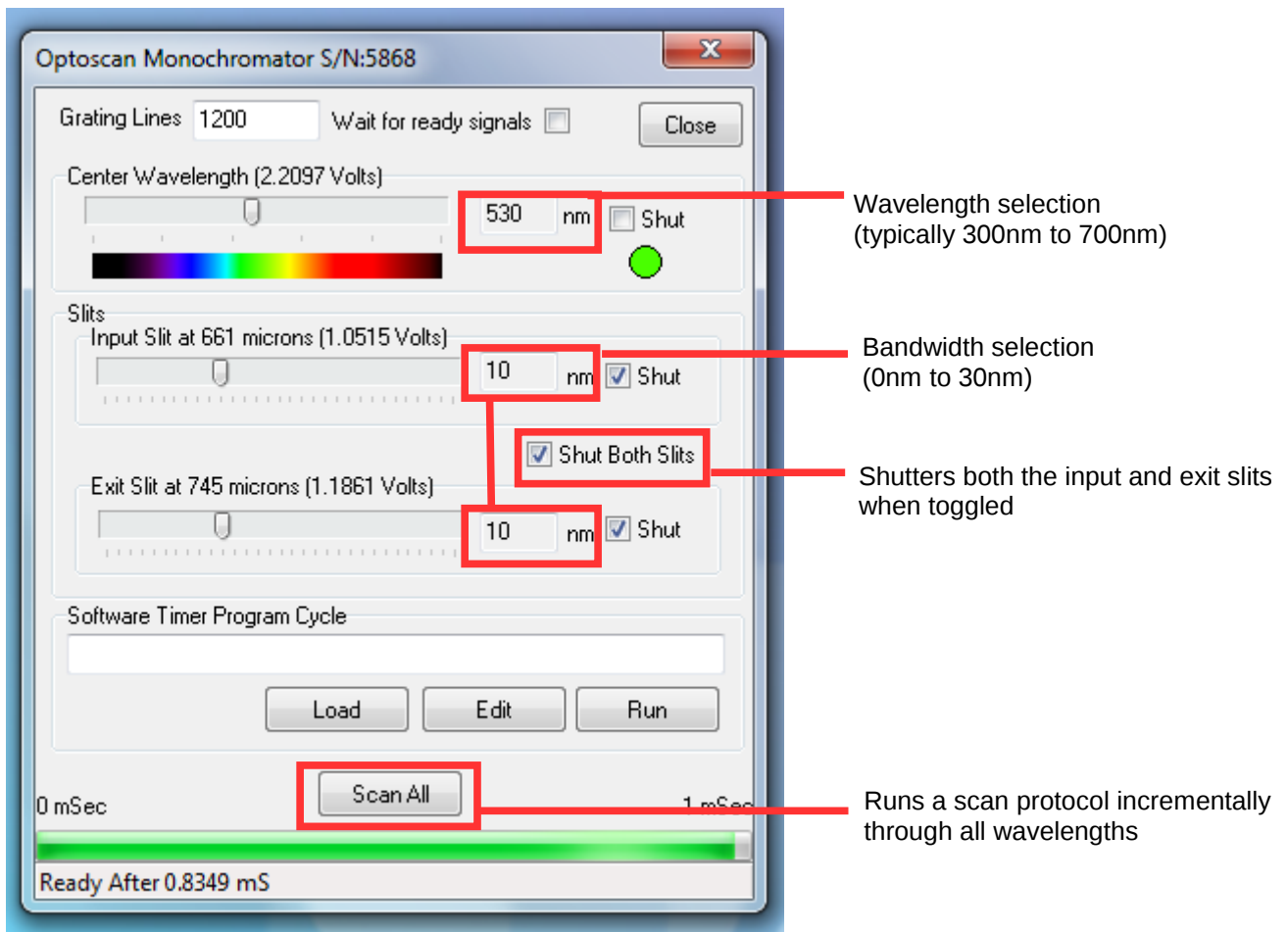
1. Locate the osDAC software, which will also be included on a USB stick or can be found on our Software Support page: <https://www.cairn-research.co.uk/support/software/>
Locate and unzip (if appropriate) the folder '**OptoScan test program**' - 64-bit and 32-bit versions are included.
2. Run the Application 'osDAC'.
(It is also useful to create a shortcut to the application on your desktop)

Name	Date modified	Type	Size
 osDAC	19/11/2015 09:52	Application	2,173 KB
 osDACDummy.dll	19/11/2015 09:52	Application extens...	603 KB
 osDACUSB.dll	19/11/2015 09:52	Application extens...	222 KB
 osLibrary.dll	19/11/2015 09:52	Application extens...	1,611 KB
 README	19/11/2015 09:52	Text Document	1 KB

3. Providing the connection has been successful, the serial number of the attached unit will be selectable.
Click on 'Init'
Please note: the 'Dummy' programmes provide a simulated osDAC interface with no hardware control



4. Test the OptoScan connection by entering a centre wavelength and appropriate bandwidth:

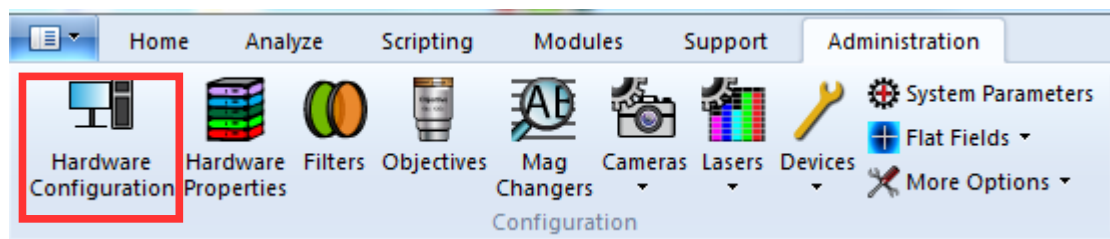


C) Hardware installation in Slidebook

1. Copy the following .dll files from the previously downloaded '**Optoscan 64bit test program**' (see point B1 above):
 - osDACUSB.dll
 - osLibrary.dll

Name	Date modified	Type	Size
 osDAC	19/11/2015 09:52	Application	2,173 KB
 osDACDummy.dll	19/11/2015 09:52	Application extens...	603 KB
 osDACUSB.dll	19/11/2015 09:52	Application extens...	222 KB
 osLibrary.dll	19/11/2015 09:52	Application extens...	1,611 KB
 Readme	19/11/2015 09:52	Text Document	1 KB

2. Paste the two .dll files in the Slidebook install folder, typically found here:
C:\Program Files\Intelligent Imaging Innovations, Inc\SlideBook 6.0
3. Turn on the OptoScan power supply and open Slidebook.
In the 'Administration' tab select 'Hardware Configuration'



4. From the hardware drop-down list, select 'Cairn Optoscan' for the following parameters:
- Excitation Wheel
 - Shutter
 - ND Selection

Hardware Configuration

System name: Last modified: 11/19/2015 10:56

Fluorescence Lightpath

Excitation wheel: Cairn Optoscan at: Off

Filter turret: None at: Off

Emission wheel: None at: Off

Shutter: Cairn Optoscan at: Off

ND Selection: Cairn Optoscan at: Off

Alternative Source: None at: Off

Laser Power: None at: Off

Cameras

Camera 1: No Camera

Camera 2: No Camera

Camera 3: No Camera

Camera 4: No Camera

Stage

XY Stage: None at: Off

Primary Z Stage: None at: Off

Auxiliary Z Stage: None at: Off

Transmitted Lightpath

Shutter: None at: Off

Lamp: None at: Off

LCD/BF Filter: None at: Off

Advanced Lightpath

Auxiliary ND: None at: Off

Auxiliary wheel 1: None at: Off

Auxiliary wheel 2: None at: Off

Auxiliary wheel 3: None at: Off

Auxiliary wheel 4: None at: Off

Auxiliary wheel 5: None at: Off

Auxiliary wheel 6: None at: Off

Auxiliary wheel 7: None at: Off

Photomanipulation / FRAP: None at: Off

Light sheet: None at: Off

Microscope Automation

Objective Turret: None at: Off

Mag. Changer: None at: Off

Ocular/Photo: None at: Off

CCD/Video: None at: Off

SA Correction: None at: Off

Pinhole Control: None at: Off

Beam Expansion: None at: Off

Motorized TIRF

TIRF slider: None at: Off

Temperature / Environment

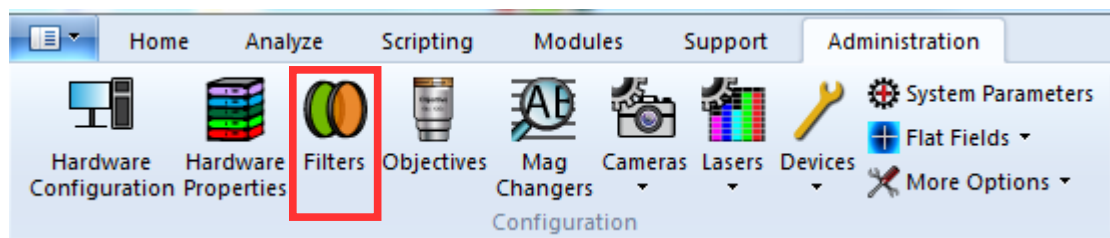
Incubator: None at: Off

Laser Temperature: None at: Off

Laser Power Meter: None at: Off

Demo ☐ Diagnostic Mode OK Cancel

5. Select 'Filters' in the Administration tab to configure illumination settings



6. Within the Filter Configuration Parameters window, name your illumination setting appropriately and select the centre wavelength in the 'Excitation wheel position' parameter. 10nm increments are selectable, with '30' being 300nm and '80' 800nm respectively. In the FITC example below, 48 represents an excitation wavelength of 480nm.

Filter Configuration Parameters

Filter configuration: FITC Imaging mode: Not defined

Parameters

Name: FITC

Light Source

☒ Fluorescence:

☐ Transmitted:

Mode: Unknown

☐ Prompt if mode is not available for current objective

☐ Alternate Source:

Position: Unmounted

Wavelength

☐ Excitation wavelength (nm): 0 ☐ Multi-wavelength

☒ Emission wavelength (nm): 528

Filter set: Fixed

Excitation wheel position (Cairn Optoscan): 48

Internal turret position (NA): Unmounted

Emission wheel position (NA): Unmounted

LCD/BF filter position (NA): Unmounted

Auxiliary filter wheel 1 position (NA): Unmounted

Auxiliary filter wheel 2 position (NA): Unmounted

Auxiliary filter wheel 3 position (NA): Unmounted

Auxiliary filter wheel 4 position (NA): Unmounted

Auxiliary filter wheel 5 position (NA): Unmounted

Auxiliary filter wheel 6 position (NA): Unmounted

Auxiliary filter wheel 7 position (NA): Unmounted

Camera: Any

Associated Channel Type

Independent

Ratio 1 Numerator

Ratio 1 Denominator

Ratio 2 Numerator

Ratio 2 Denominator

RGB Color

FRET Donor

FRET Acceptor

FRET Transfer

Virtual RGB (Red)

Virtual RGB (Green)

Virtual RGB (Blue)

FRET Donor Prebleach

FRET Donor Postbleach

Fluorescence Lifetime

Photomanipulation

Default Color Display

☐ None

☐ Red

☒ Green

☐ Blue

☐ Pseudocolor (Color)

☐ Pseudocolor (Intensity)

☐ RGB Settings...

☐ Monochrome

☐ User-defined:

☐ Wavelength

☐ Requires UV objective

Go

Use currently selected camera

Add

Remove

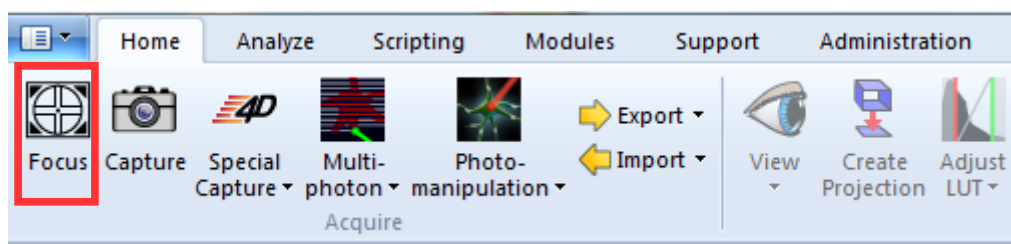
Duplicate

Reorder...

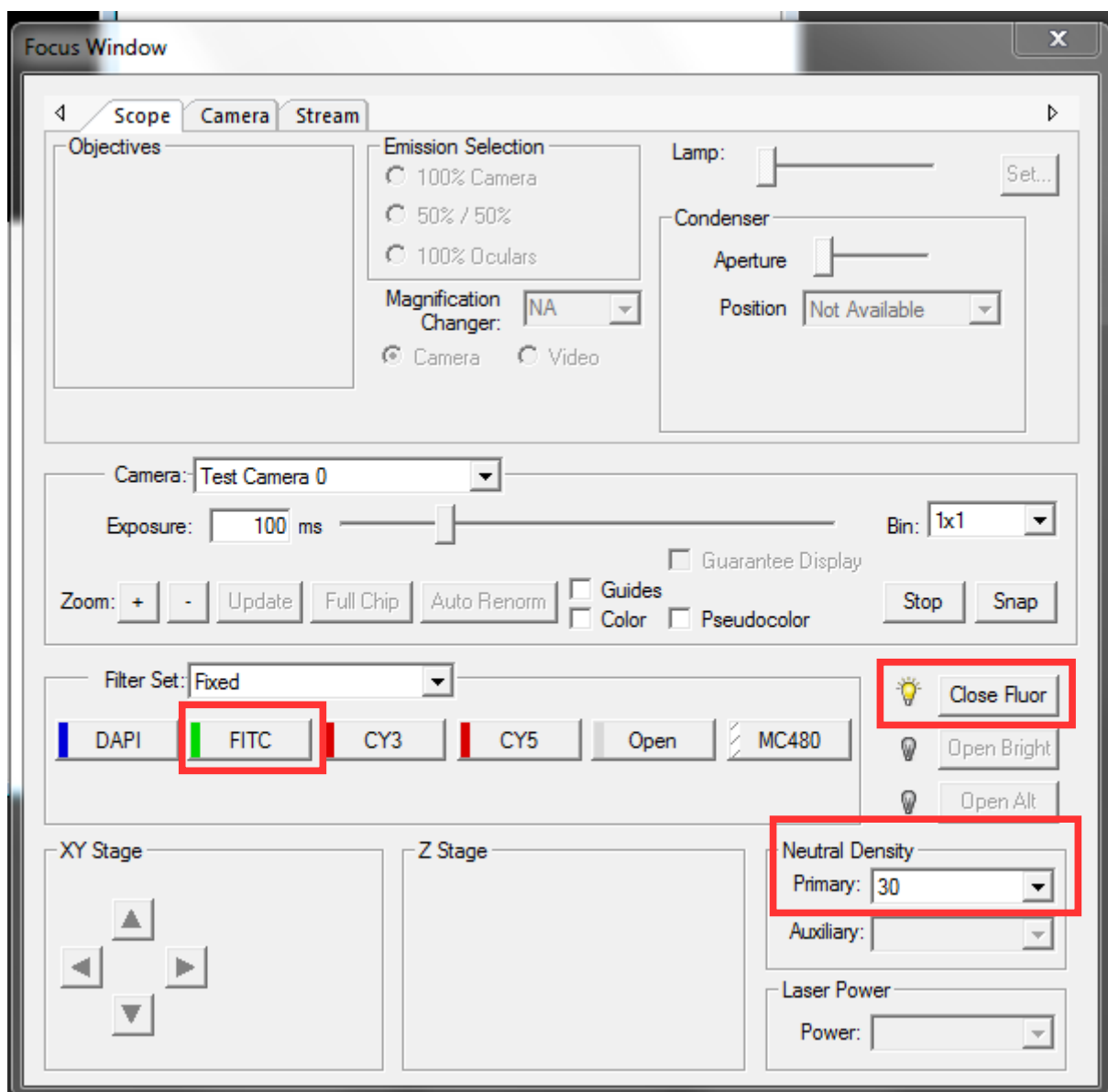
Cancel

OK

7. Select 'Focus' in the Home tab to select the pre-determined illumination settings



8. Select the desired illumination channel
Determine the bandwidth in the 'Neutral Density' setting (0nm to 30nm)
Click the 'Open Fluor' button to toggle between shutter open/closed – an audible 'click' will be heard when the shutter opens / closes.



9. Configure your experiment further in the 'Capture' option as per the Slidebook software guidelines.

*For further assistance, please do not hesitate to contact our Tech support team:
tech@cairn-research.co.uk + 44 (0)1795 590140*