RGB Color Imaging using the LIDA Light Engine and NIS Elements

Set Up

1. Connect the LIDA to its DC power supply.

2. Connect the LIDA Light Engine to the transillumination port of the microscope. Ensure that the LIDA is securely fastened by the set screw.

3. Link the LIDA to the computer via a USB A to USB A cable (Lumencor29-10057).

4. Connect the DB15 connector of the Lumencor 4-channel breakout cable (Lumencor29-10081) to the port marked "TTL" on the rear panel of the LIDA.

5. Connect the GATE/SEQ lead of the 29-10081 breakout cable to the camera (shown in Figure 1.)

6. Connect the camera to the computer.

7. Turn the control knob on the LIDA to "ext" and turn the camera on.

Camera	Connection
Hamamatsu ORCA-Flash	Connect camera port **Timing 1** to GATE/SEQ lead using an SMB-to-BNC (M) cable# and a BNC (F)-to-BNC (F) adapter
Andor Zyla	Connect the multi I/O timing cable# to the DB15 camera port. Connect the **FIRE** lead of the multi I/O timing cable to the GATE/SEQ lead using a BNC (F)-to-BNC (F) adapter
# Cable supplied with the camera	

Figure 1.

Operation

1. Run NIS Elements. According to which camera is being used, select Hamamatsu with RGB Illumination or Andor Neo/ Zyla with RGB Illumination in the driver selection dialog box (Figure 2).
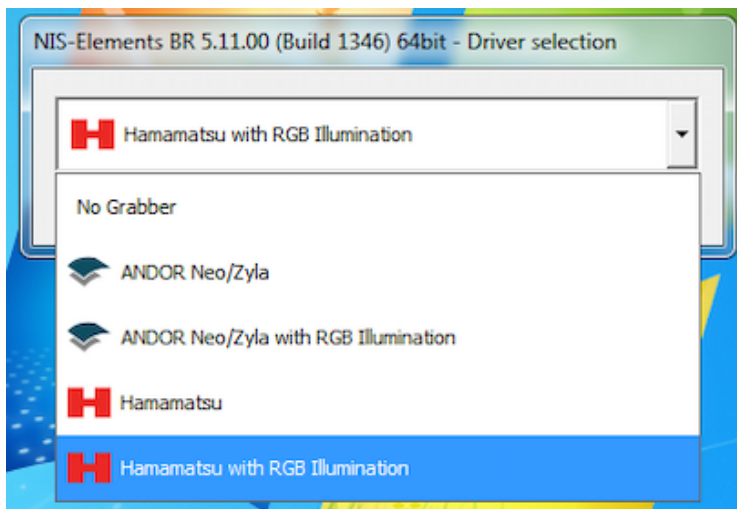

Figure 2. Camera driver section

2. Ensure that the LIDA is connected in the device manager of NIS Elements

• Go to Devices>Device manager (Figure 3A)

• If LIDA is not present in the list, click Add and select Lumencor LIDA (Figure 3B)

• If LIDA is present and connection icon is broken, click Connection Parameters and ensure that correct COM PORT is assigned (Figure 3C)
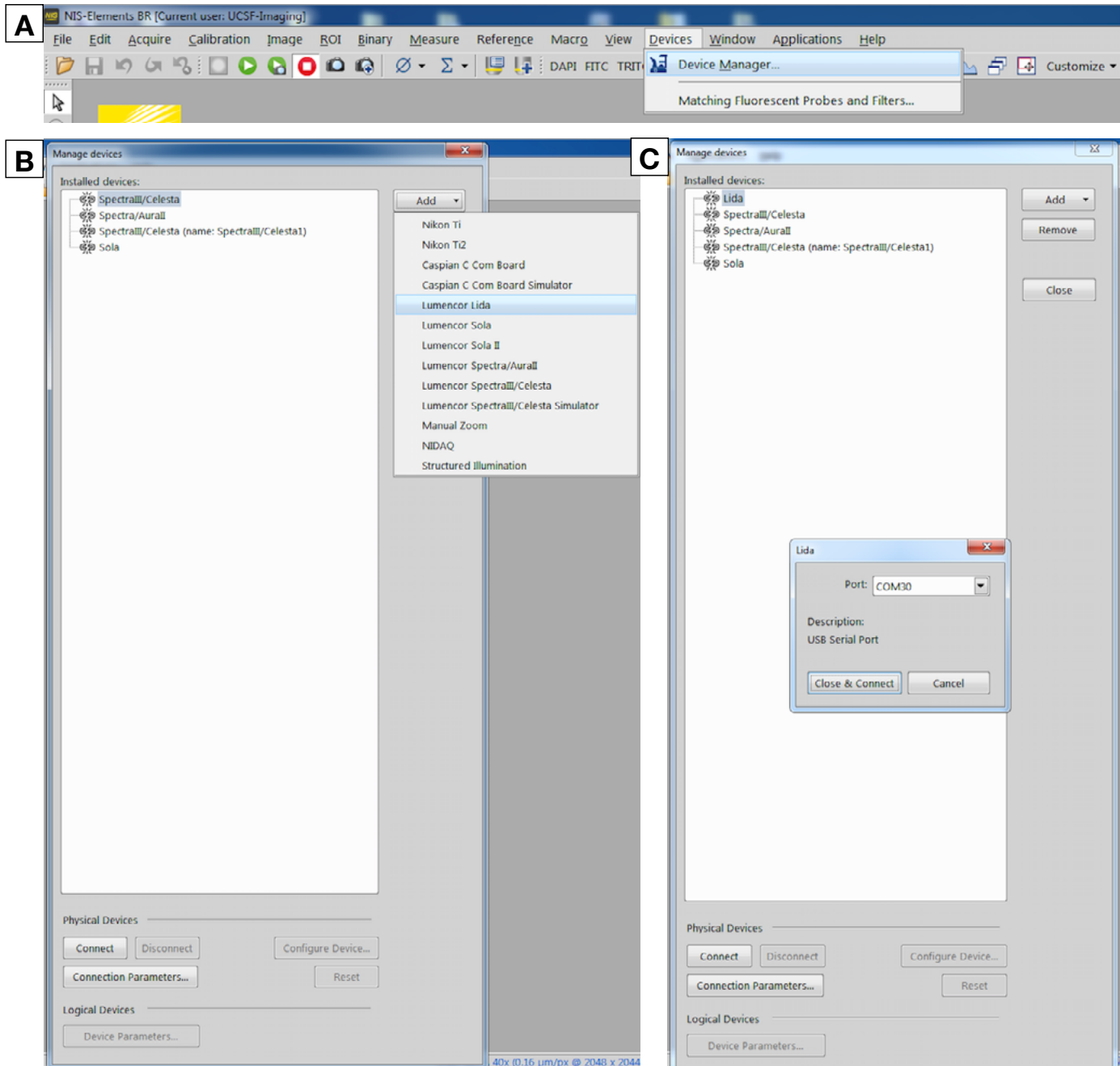

Figure 3. A) To access the device manager go to Devices> Device manager. B) When LIDA is not present in Device Manager, click Add and select Lumencor LIDA. C) If LIDA is present in device manager and connection is broken, click Connection Parameters and select the appropriate COM port assignment for the LIDA Light Engine.
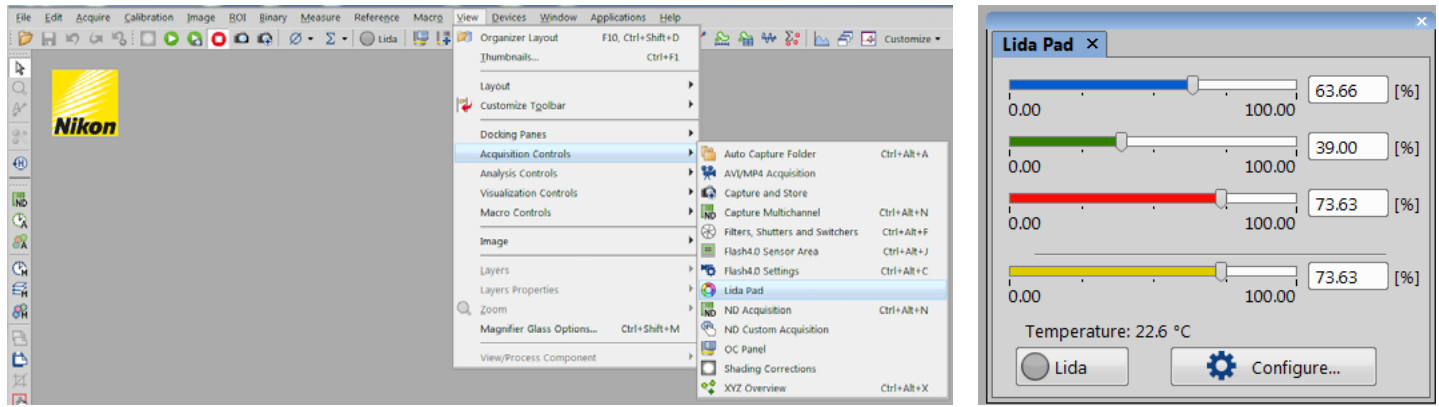
Figure 4. (Left) How to access the Lida control pad: View> Acquisition Controls > Lida Pad. (Right) Lida control pad.

3. Light output on/off and red, green and blue output intensity (0–100) are controlled by the LIDA control

4. To show the camera control settings, go to View > Acquisition Control > Flash 4.0 Settings. Select the COLOR button on the camera control pad (Figure 5).
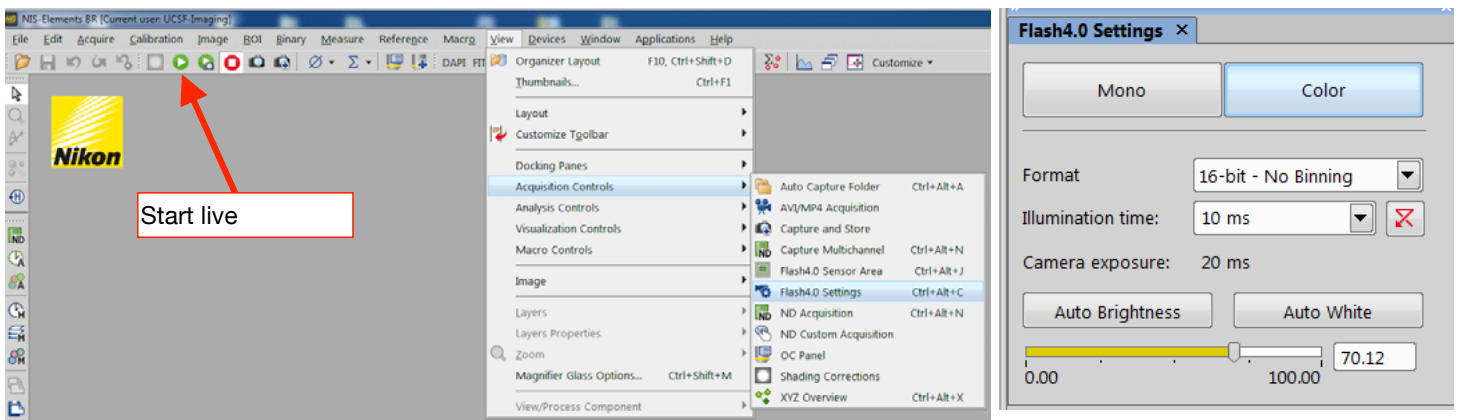

Figure 5. (Left) How to access the Camera settings: View> Acquisition Controls > Flash 4.0 Settings. (Right) Camera control pad.

5. Place the specimen on the microscope stage, ensure that no fluorescence filters are in the light path and move to a completely transparent field of view.

6. Click the Auto White button. The relative intensities of the red, green and blue light sources (Figure 3) will be automatically adjusted for optimal color rendition.

7. Move the specimen to place the field of view of interest under or above the objective. Start live acquisition (Figure 4). System will then acquire and display near real-time color images.