Quick Start Guide for Operating the pE-400^{max} in cellSens Dimension using pE-800sim Mode

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Contents

1. Introduction

The pE-400^{max} can be operated directly in cellSens Dimension software. For applications where complete synchronisation between the manual control pod and cellSens is required, CoolLED has created a software mode utilising the existing pE-800 Series drivers.

2. Requirements

Ensure the CoolLED LightBridge graphical user interface, pE-400^{max} firmware and Evident cellSens versions are compatible:

- LightBridge v1.4.5.0 or later
- Firmware 1.10.19 or later
- cellSens Dimension version 4.1 or later

To download and install the latest firmware and LightBridge versions, see Appendix.

3. Installing the pE-800 in cellSens Dimension

Note: due to this software mode utilising the pE-800 drivers, instructions within this section refer to the pE-800 rather than the pE-400^{max}.

1. During installation and setup of cellSens, when the 'Microscope Accessories Selection' screen appears (Figure 1), locate CoolLED in the 'Manufacturer' list and select the pE-800.

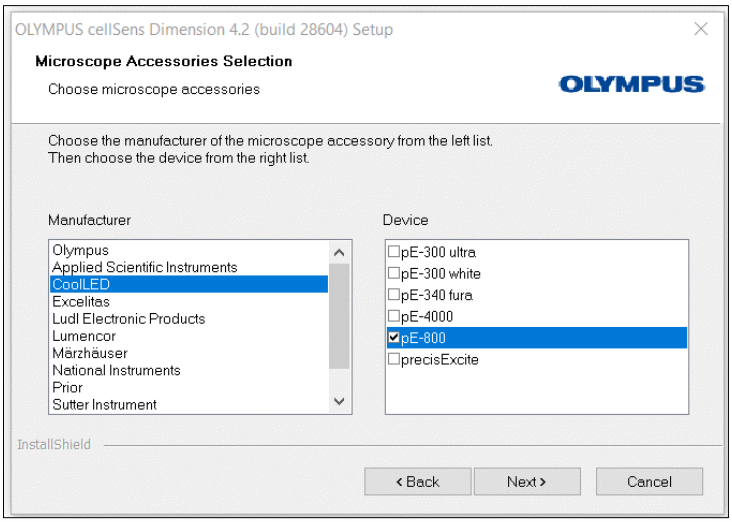

Figure 1: CoolLED devices listed in 'Microscope Accessories Selection'

1.1. To modify an existing cellSens installation, run the cellSens setup.exe file and modify the installation. Following the instructions will lead to the window shown in Figure 1, where the pE-800 can be selected.

4. Installing the pE-400^{max} on Your PC

If using Windows 10 or later, Windows automatically detects the hardware and installs the driver for the pE-400^{max}. For earlier Windows versions, please see Appendix, Setting up pE-400^{max} in Older Windows versions:.

5. Entering pE-800sim Mode

Entering pE-800sim mode is achieved either using LightBridge or the manual control pod.

Note: pE-800sim mode remains selected even when the Illumination System is switched off and back on.

5.1. Entering pE-800sim Mode using Manual Control Pod

1. Hold the 'mode' button on the manual control pod, until the ‘Settings’ screen appears (Figure 2).

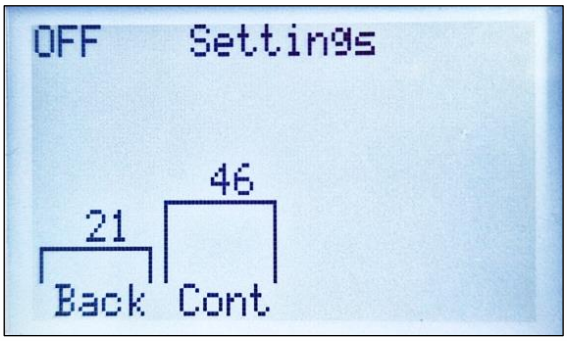

Figure 2: Settings screen accessed by holding ‘mode’ button of manual control pod

2. Before the ‘Settings’ screen closes, press the 'mode' button four times to reach the ‘Mode Selection’ screen (Figure 3). Scroll using the '+' or '-' buttons on the manual control pod and select the ‘pE-800sim’ option.

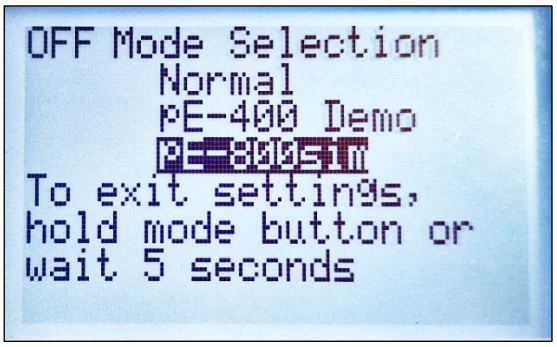

Figure 3: Selecting pE-800sim mode from manual control pod

3. Hold the 'mode' button or leave the screen for five seconds to set the pE-800sim mode.

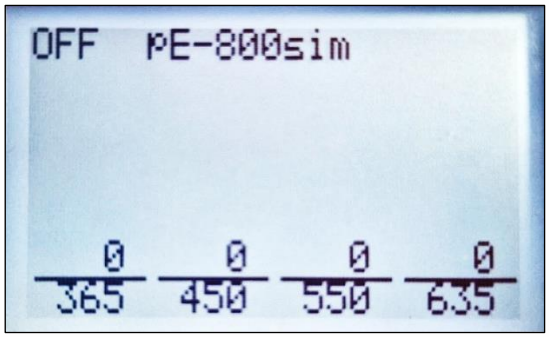

Figure 4: Manual control pod in pE-800sim mode

4. Start cellSens Dimension (jump to Section 6).

5. To exit pE-800sim mode, repeat step 1 to access the ‘Mode Selection’ screen, and use the '+' or '-' buttons to select ‘Normal’. We recommend switching the pE-400^{max} off and on again when switching between pE-800^{sim} and normal mode.

5.2. Entering pE-800sim Mode using LightBridge

1. Ensure the latest version of LightBridge is installed (at least v1.4.4.0). To download the latest version, see Downloading Latest Version of LightBridge

2. Launch LightBridge, and navigate to ‘Tools’, and ‘Switch to pE-800sim’ (Figure 5).

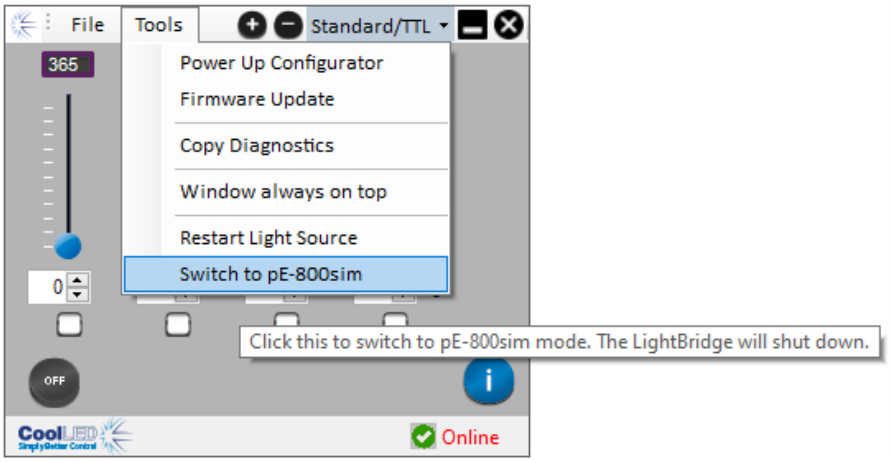

Figure 5: Accessing pE-800sim mode via LightBridge

3. When the warning Window appears (Figure 6), select ‘Yes’. LightBridge will now close.

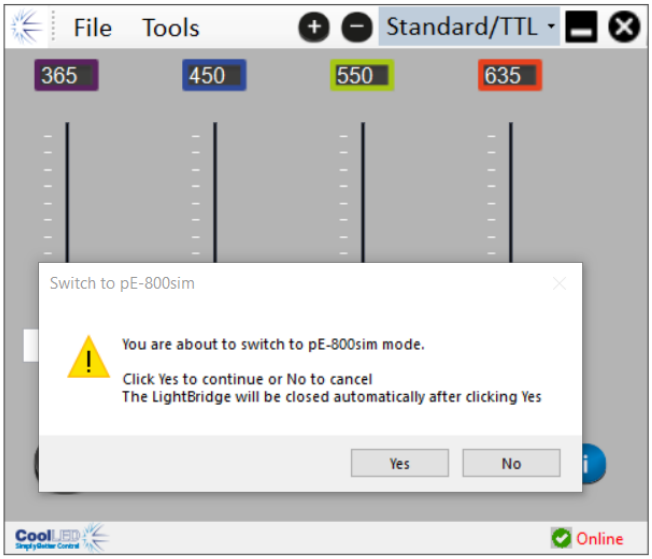

Figure 6: Entering pE-800sim mode via LightBridge

4. Start cellSens Dimension (jump to Section 6).

5. To exit pE-800sim mode, start LightBridge (Figure 7), and select ‘Yes’. We recommend switching the pE-400^{max} off and on again when switching between pE-800^{sim} and normal mode.

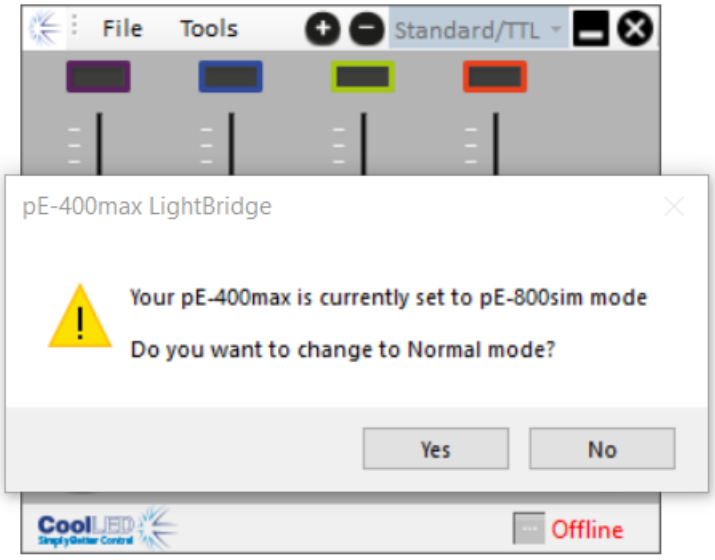

Figure 7: Exiting pE-800sim mode via LightBridge

6. Configuring the pE-400^{max} in cellSens

Note: The pE-400^{max} is now recognised by cellSens as the pE-800, and therefore the following instructions refer to the pE-800.

1. From the cellSens start up screen, navigate to the 'Device List'.

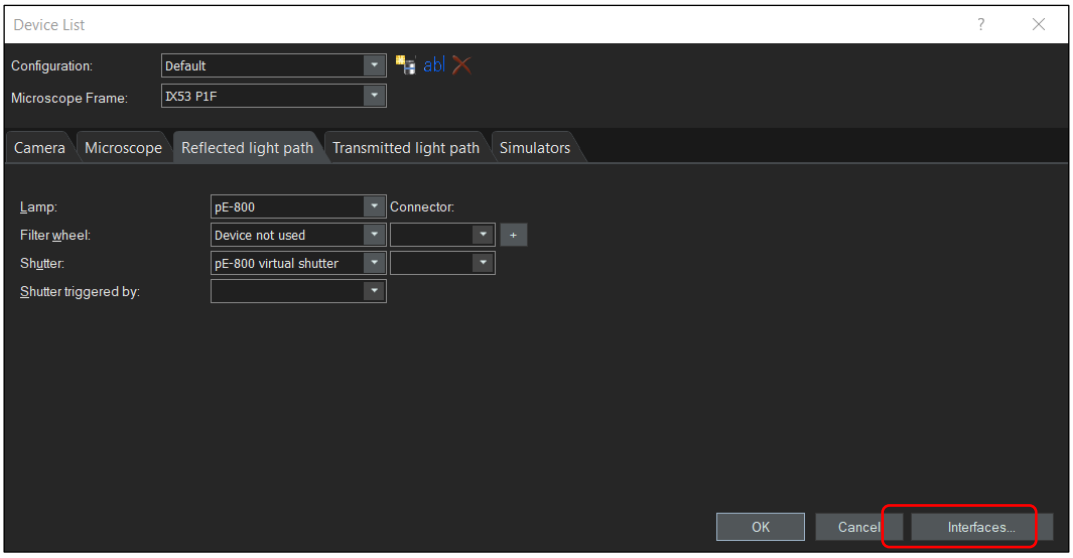

Figure 8: cellSens 'Device List'

2. Navigate to the 'Reflected light path' tab. In the 'Lamp' dropdown, select the pE-800; and in the 'Shutter' dropdown, select the 'pE-800 Virtual Shutter'.

3. On the same screen, click on 'Interfaces' (red box, Figure 8).

4. Ensure the COM port identified under ‘Interface’ matches the one assigned within the Windows Device Manager (Figure 9). If the COM port listed under ‘Interface’ is incorrect, change this to the COM port number shown in ‘Device Manager’.

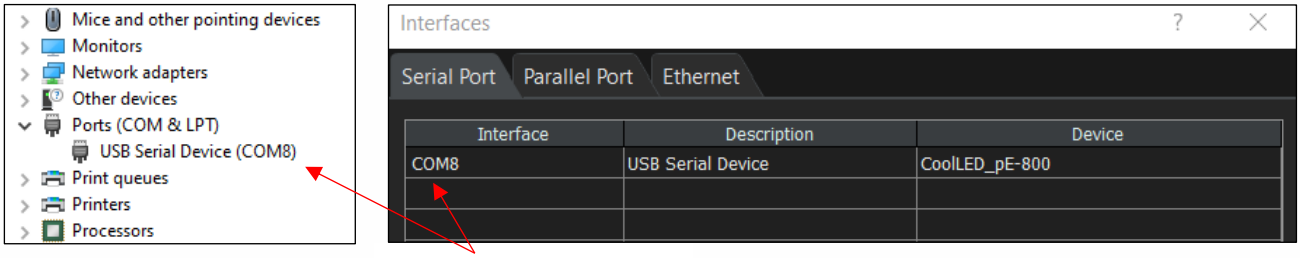

Figure 9: 'Interfaces' in cellSens. Ensure COM port number (e.g., COM8) matches Windows Device Manager

5. Return to the Start screen and click ‘Device Settings’. The Illumination System and shutter will now appear (Figure 10).

6. All eight channels of the pE-800 are shown, but only four of these are operational on the pE-400^{max}. To simplify the Microscope Control panel, deselect channels five to eight, and click OK.

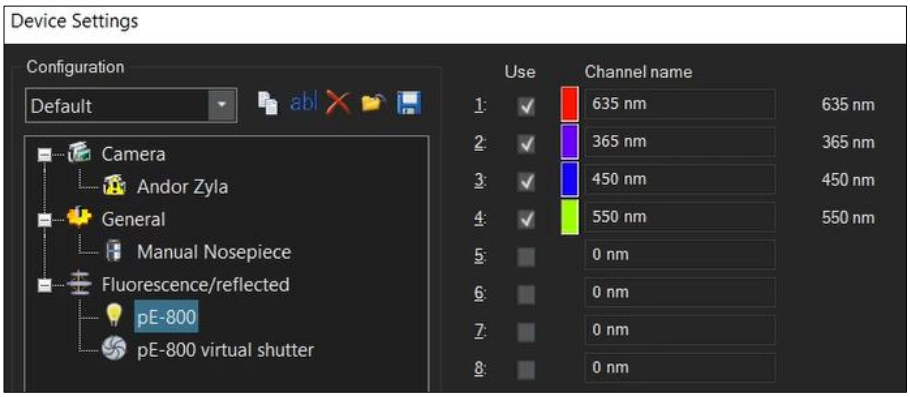

Figure 10: Selecting the pE-400^{max} channels in 'Device Settings'

7. The pE-400^{max} can now be controlled in the same way as the pE-800 in cellSens.

For examples of cellSens Dimension functionality with CoolLED Illumination Systems, please see Section 5 of the CoolLED Quick Start Guide for cellSens Dimension.

Note: If a pE-800 or pE-800^{fura} is also used on the same PC, ensure all eight channels are selected before cellSens is used with a pE-800 or pE-800^{fura}.

7. Appendix

7.1. Setting up pE-400^{max} in Older Windows versions:

The CoolLED pE-Driver is required for Windows versions pre-dating Windows 10.

1. Download the CoolLED pE-Driver file from the CoolLED website:

   https://www.coolled.com/support/imaging-software/#coolled-pe-driver

2. Save the files to a memorable location.

3. Connect the CoolLED Illumination System. When the driver required warning (yellow exclamation mark) appears, right click and 'update' the driver, pointing it to the .inf file in the previously downloaded driver folder.

4. Check the COM port assigned by navigating to Windows Device Manager (Search -> Device Manager). The pE-400^{max} should be listed under 'Ports (COM & LPT)' (Figure 11).

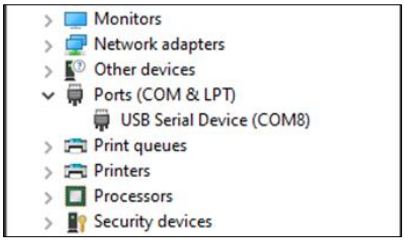

Figure 11: Device Manager with pE-400^{max} installed

7.2. Downloading Latest Version of LightBridge

The latest version of the CoolLED pE-400^{max} LightBridge graphical user interface is available for download on the CoolLED website.

- Before May 2025: www.coolled.com/wp-content/uploads/2025/02/LightBridge-3Jan-2025.zip
- From May 2025: pE-800sim-compatible versions of LightBridge will be available at www.coolled.com/support/imaging-software/#pe-400max-lightbridge.

7.3. Updating Firmware for pE-400^{max}

1. Check if CoolLED pE-400^{max} has compatible firmware version, which must be v1.10.14 or later. To view the firmware version, open pE-400^{max} LightBridge, navigate to the 'File' menu and click 'About' Figure 12.

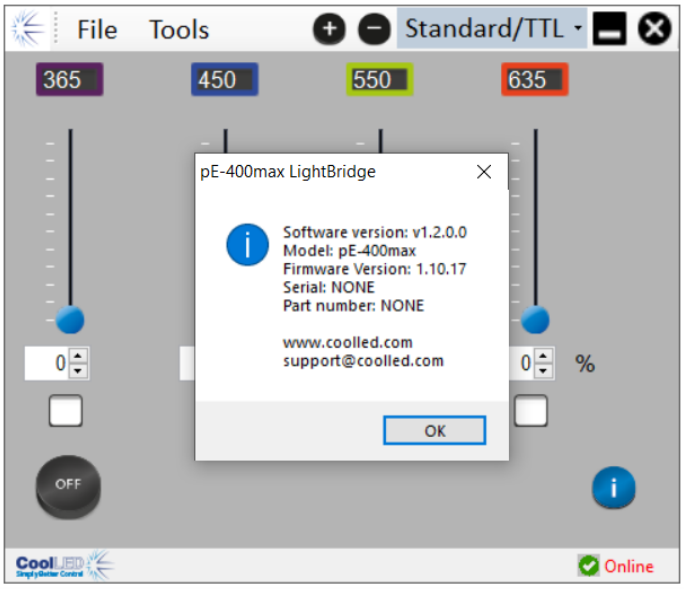

Figure 12: checking firmware version in pE-400^{max} LightBridge via File>About

2. If firmware requires updating, please contact Jo Whetstone (Jo.Whetstone@coolled.com).

   Note: In pE-800sim mode, control pod functionality is slightly altered to enable global synchronisation with cellSens: when individual channels are deselected, this forces the pod to 'off'. Outside of pE-800sim mode, LightBridge now also follows this logic (whereby channel deselection forces LightBridge into 'off' mode, and at least one channel must be selected to switch LightBridge 'on').

If you have any questions, please contact Jo.Whetstone@coolled.com