



# **Dual Wavelength GUI**

## **USER GUIDE**

## Connecting the Laser:

- I. To Connect the laser, plug the USB A into the top port on back panel and plug the other end of the cable into your device. Note: The cable going from laser to computer needs to be plugged into the top port or an error will occur.
- II. The bottom USB A port can be used to connect the laser to a spectrometer or other device.

## Selecting the Laser

- I. Select a COM port in the "Select a Laser" drop down. Once a laser has been selected click Connect. The indicator to the right will turn **GREEN** when the laser is connected.
- II. Follow the same directions to connect a second laser.
- III. The laser details will auto fill in with the Serial Number, Wavelength, & Model.
- IV. Repeat steps I, II, III on right side to connect second laser

IPS\_Concatenation\_Laser\_Controller

Main Concatenation

Switching one Laser will cause the other Laser to shut off

**Laser1**

-Select a Laser - Connect Disconnect Disconnected

Please Select a COM port

Laser Details: SerialNo Wavelength Model

Laser Enable Laser OFF

Actual Drive Current Power

----- mA ----- mW

PhotoDiode Readout Laser Temperature

----- mV ----- °C

**Laser2**

-Select a Laser - Connect Disconnect Disconnected

Please Select a COM port

Laser Details: SerialNo Wavelength Model

Laser Enable Laser OFF

Actual Drive Current Power

----- mA ----- mW

PhotoDiode Readout Laser Temperature

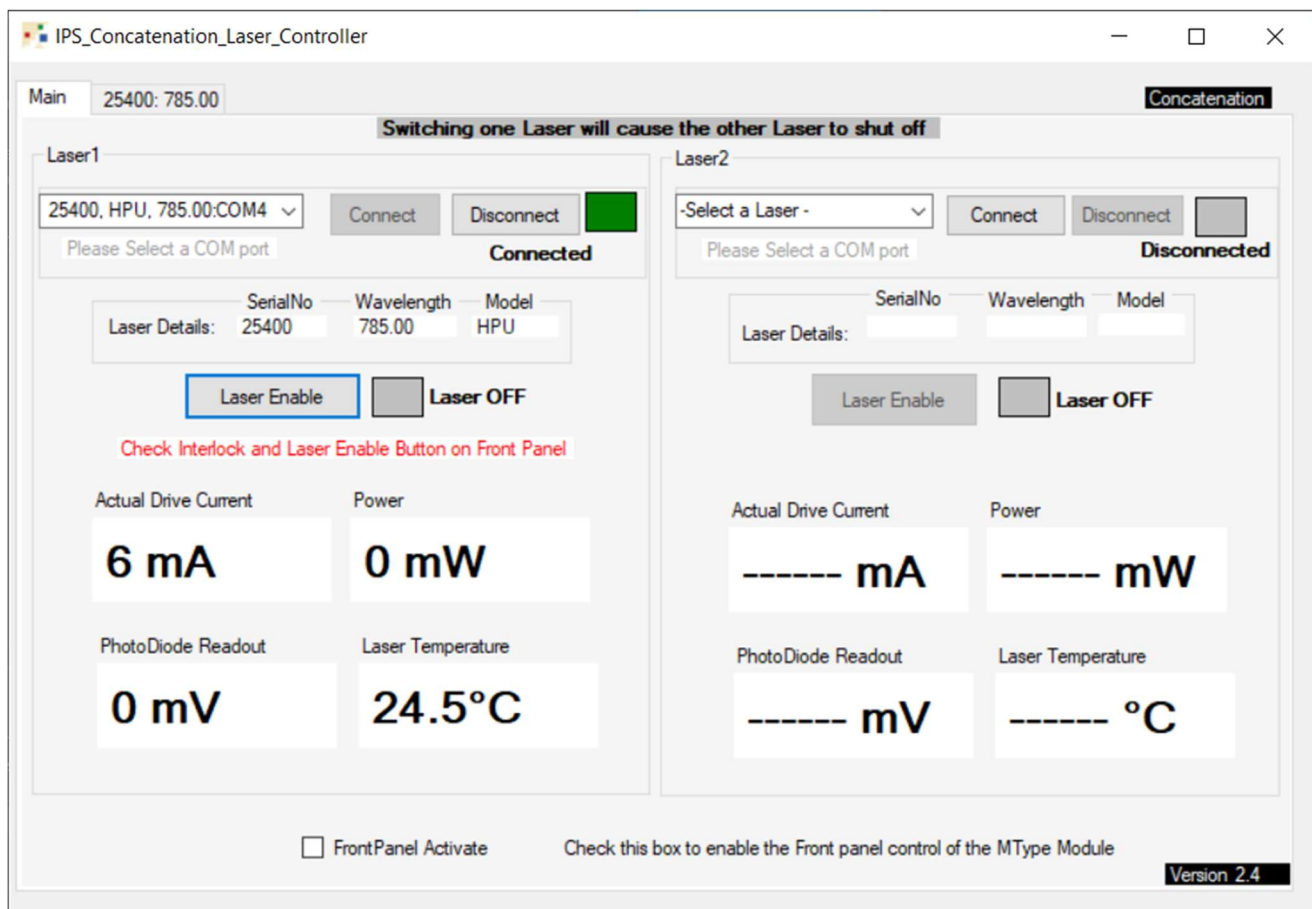
----- mV ----- °C

☐ FrontPanel Activate Check this box to enable the Front panel control of the MType Module

Version 2.4

## Turning the Laser on

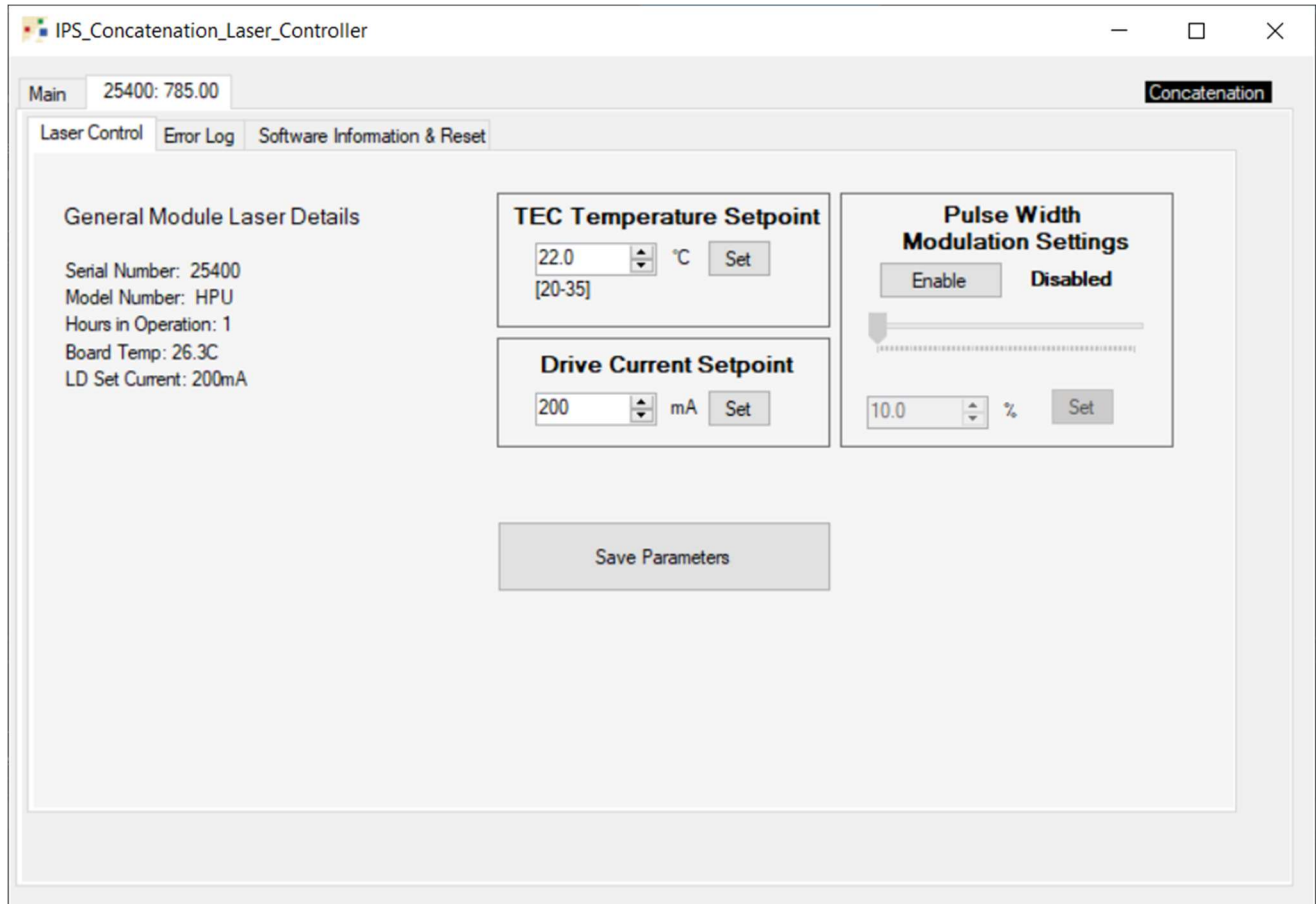
- I. In order to place the laser module in operational mode the “Laser Enable” button on the front panel must be pressed. A **RED** “Laser On” LED will illuminate indicating that the laser module is ready. (When operating without the GUI the laser will come on in this condition. However, when the laser is operating through the GUI the software control will govern the laser on state.)
- II. Identify the laser to enable and click the corresponding button labeled “Laser ON”. The indicator to the right will turn **GREEN** when the laser is connected and the laser will turn on.
  - a. NOTE: If the **“Front Panel Activate”** Check Box at the bottom is checked, the software graphical user interface (GUI) will be disabled. This allows the laser to be adjusted in manual mode via the controls on the front of the module.
  - b. If the interlock on the laser module is open, the laser will not turn on and an error message will be shown on the GUI.



- III. You will only be able to turn one laser on at a time. Clicking the “Laser Enable” button of the desired wavelength will toggle the laser on state from the current wavelength to the new wavelength. ( If both lasers need to be operations concurrently contact IPS for instructions.)

## Controlling the Laser:

- I. Tabs to access the Main Screen and each Laser Serial Number's specific data are located at the top of the GUI. Select the appropriate tab to view and adjust parameters.
- II. Selecting a laser serial number tab will display additional tabs for Laser Control, Error log, and Software Information & Reset.



## Setting the Laser Parameters:

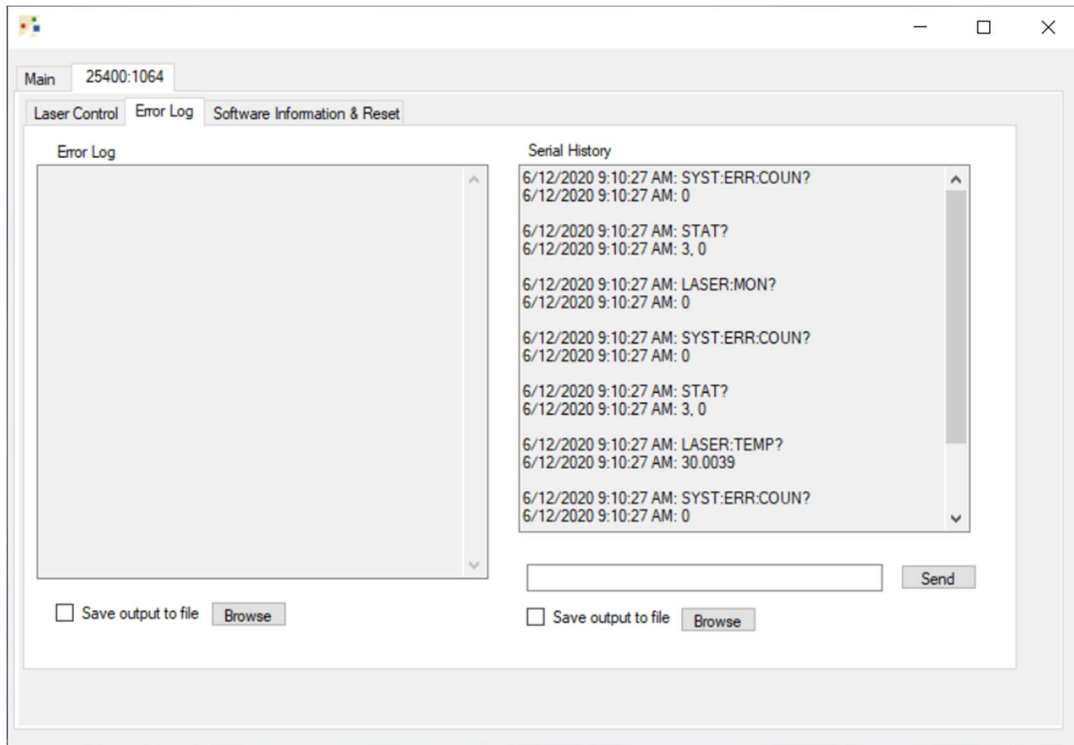
- I. The “Laser Control” tab allows for the adjustment of Laser TEC Temperature, Drive Current, & Pulse Width Modulation (PWM)
- II. NOTE: When enabling PWM the “Laser Enable” switch on the front panel of the module must be toggled off then on again for safety purposes. (This operation only needs to be done once each time the laser is power cycled. This does not need to be done in between power cycles.)
- III. Temporary changes to drive current, TEC temp set point, and PWM can be made at any time “on the fly”. Changes can be saved permanently by clicking “Save Parameters”. These settings can be reset to factory defaults by clicking the RED “Reset” Button. (Reference Section [“Software Information & Reset”](#))
- IV. Once “Save Parameters” is clicked the values will be permanently saved until a reset is done. These values will be saved even when power is removed from the unit.

The screenshot displays the 'IPS\_Concatenation\_Laser\_Controller' application window. At the top, there's a status bar with 'Main' and '25400: 785.00'. Below this is a tabbed interface with 'Laser Control', 'Error Log', and 'Software Information & Reset'. The 'Laser Control' tab is active, showing 'General Module Laser Details' on the left: Serial Number: 25400, Model Number: HPU, Hours in Operation: 1, Board Temp: 26.3C, and LD Set Current: 200mA. On the right, there are three main control panels. The first is 'TEC Temperature Setpoint' with a value of 22.0 °C and a range of [20-35]. The second is 'Drive Current Setpoint' with a value of 200 mA. The third is 'Pulse Width Modulation Settings' with a toggle switch set to 'Enabled' and a value of 10.0 %. A 'Save Parameters' button is located at the bottom center of the control area.

Parameter	Value	Unit	Range
TEC Temperature Setpoint	22.0	°C	[20-35]
Drive Current Setpoint	200	mA	
Pulse Width Modulation Settings	10.0	%	

## Error Log & History:

- I. Under tab “Error Log” the Error Log and Laser History is displayed.
- II. Both the Error Log and the Serial History can be saved by checking the box next to “save output to file” then clicking Browse and choosing the file path.



- III. The “Module Operation Guide” may contain additional commands that are not included in this GUI. To utilize these commands, enter the command string in the field below “Serial History” and hit SEND. You can also use this field to test command codes when programming your own laser control software.

## Software Information & Reset:

- I. The Power Calibration Data for U-Type, L-Type, and M-Type modules will be located under the tab “Software Information & Reset”. (This data will not be available for the D-Type and Tethered Head D-Type Modules).
  - a. Users may enter their own power calibration data in the table provided up to nine values. (Monitor value is in mV and the Power values is in mW) The Monitor Value for a particular drive current setting is located on the “Main” tab of the GUI and is labeled “Photodiode Readout”. The Power Value should be taken from a calibrated power meter.
  - b. The changes made in this table will be reflected in the power readout display on the “Main” tab.
- II. To reset to factory settings, click the **RED** reset button.
- III. The factory defaults are detailed immediately below the reset button.

