LS-450 Blue LED Pulsed Light Source

The **LS-450 Blue LED Pulsed Light Source** is a compact, low-cost light-emitting diode that produces pulsed or continuous spectral output at 470 nm -- the blue region -- for high-sensitivity emission fluorescence measurements. The LS-450 excitation source can be combined with other sampling optics for fluorescence applications.

Operation

1. Plug the wall transformer into a standard 110V outlet and into the back of the LS-450.
2. Screw an optical fiber onto the SMA connector on the front of the light source.

Using the Continuous Mode

1. Turn the switch on the back of the LS-450 to “contin.” The continuous mode simply means that the light coming from the LS-450 is continuous.
2. To turn the lamp off, simply change the position of the switch to "off."

Using the Pulsed Mode

1. Plug one end of the DB-15 accessory connector into the back of the LS-450 and the other end into the back of the S2000.
2. Turn the switch on the back of the LS-450 to “pulsed.” for pulsed mode of operation.
3. The pulsing of the LS-450 is controlled through the spectrometer. Remove your spectrometer from its housing. Do not tamper with the optical bench. (If you have more than one channel in your system, you may have to disconnect the channels from one another. The master spectrometer is always on the bottom of a multiple channel system.)
4. In the center of the green circuit board, near the optical bench, find Jumper Block 3, labeled JP3. Jumper Block 3 consists of 10 pins. The pins are labeled by rows: /16, /14, /12, /10 and 2. See the following chart for which pins must be jumpered according to how many pulses per second you need for the A/D converter you have interfaced to your S2000. (The default setting from the factory is /16)
   For example, if you have an ADC1000 A/D converter, you have four choices for how many pulses per second can come out of your LS-450: 976, 244, 60 and 15. If you select 244 pulses per second, place a jumper over the pins next to the /14 label.

S2000 JP3 Post #	DAQ700 Frequency (Hz)	ADC500 / SAD500 Frequency (Hz)	ADC1000 Frequency (Hz)
/16	98.0	488.0	976.0
/14	24.0	122.0	244.0
/12	6.1	30.0	60.0
/10	1.5	7.6	15.2

5. When using the pulsed flash mode, the user needs to ensure that a constant number of flashes occurs for every integration cycle. To achieve a constant number of flashes per integration cycle, the integration time must be a multiple of that shown in the table below. Integration times are set in the software. In OOIBase32, set the integration time in the acquisition dialog bar above the graph area (See the **OOIBase32 Operating Software Manual** for more information about the integration time.)

S2000 JP3 setting	Integration time for DAQ700 must be a multiple of	Integration time for ADC500 / SAD500 must be a multiple of	Integration time for ADC1000 must be a multiple of
/16	512	128	64
/14	128	32	16
/12	32	8	4
/10	8 (with a min. value of 24 ms)	4	4