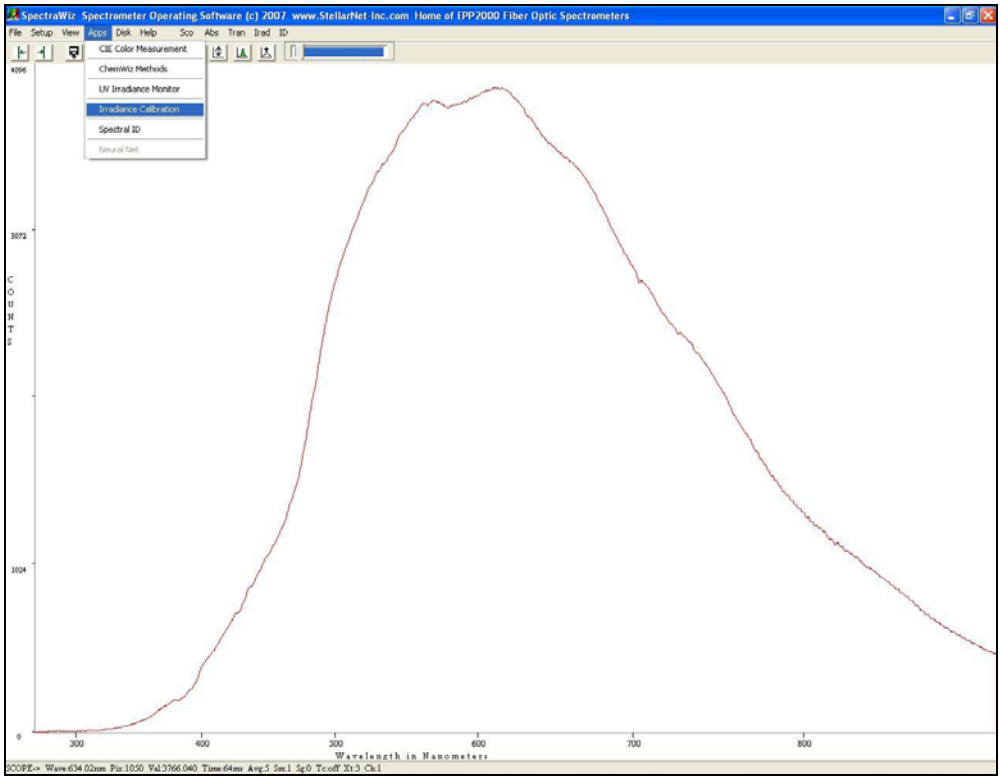
Tutorial: Irradiance Calibration using SpectraWiz®:

1) Ensure all calibration coefficients and interface port and detector settings are correct for the StellarNet spectrometer being used for calibration.

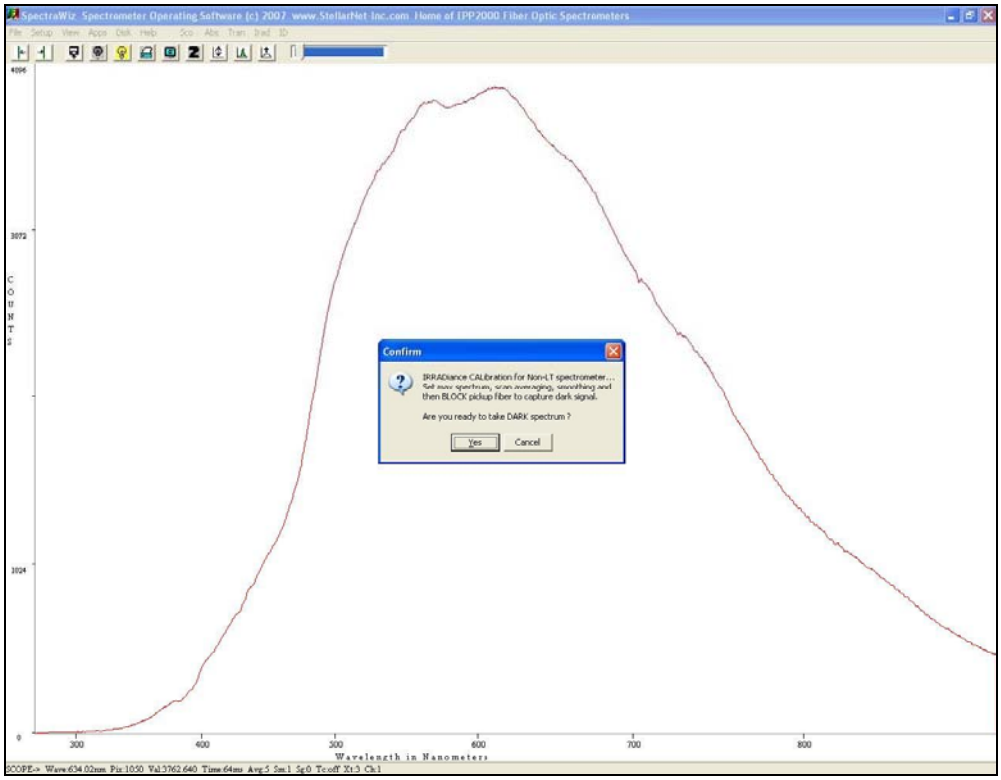
2) While in Scope mode, point the cosine receptor or integrating sphere at the calibrated light source.

3) Adjust the integration time and averaging levels to maximize the light output of the source (~4000 counts at peak height).

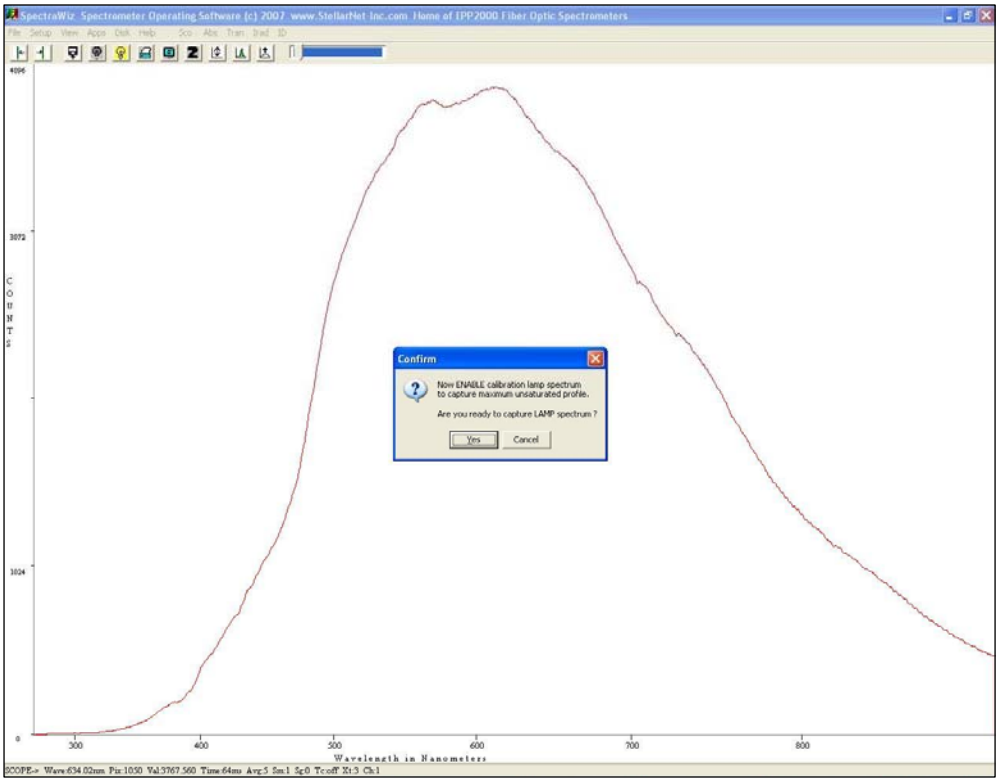
4) Select the Irradiance Application by going to Apps → Irradiance Calibration.



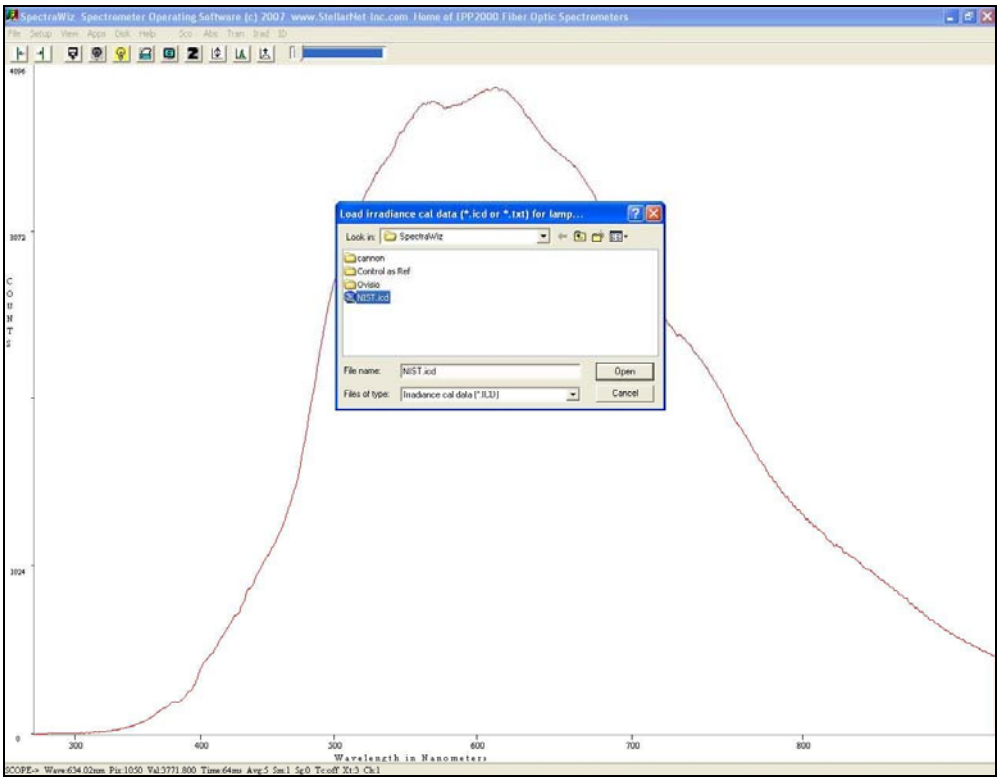
5) Block the light to the collection optics and click OK to take a dark (background) spectrum.



6) Unblock the light and click OK after the spectrum on screen is again maximized to capture the lamp profile.

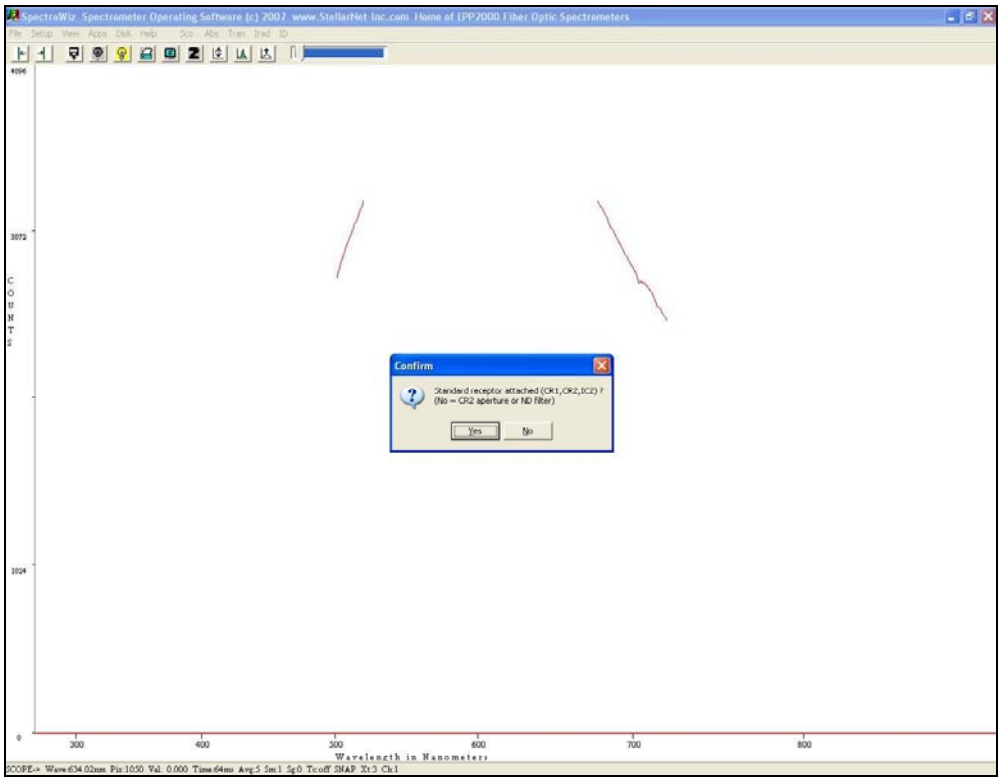


7) The software will then prompt you for the lamp calibration file, with the extension ".ICD." This file should be supplied with the lamp, giving a 2-column format of the wavelength and compensated power values in (W/m^2).

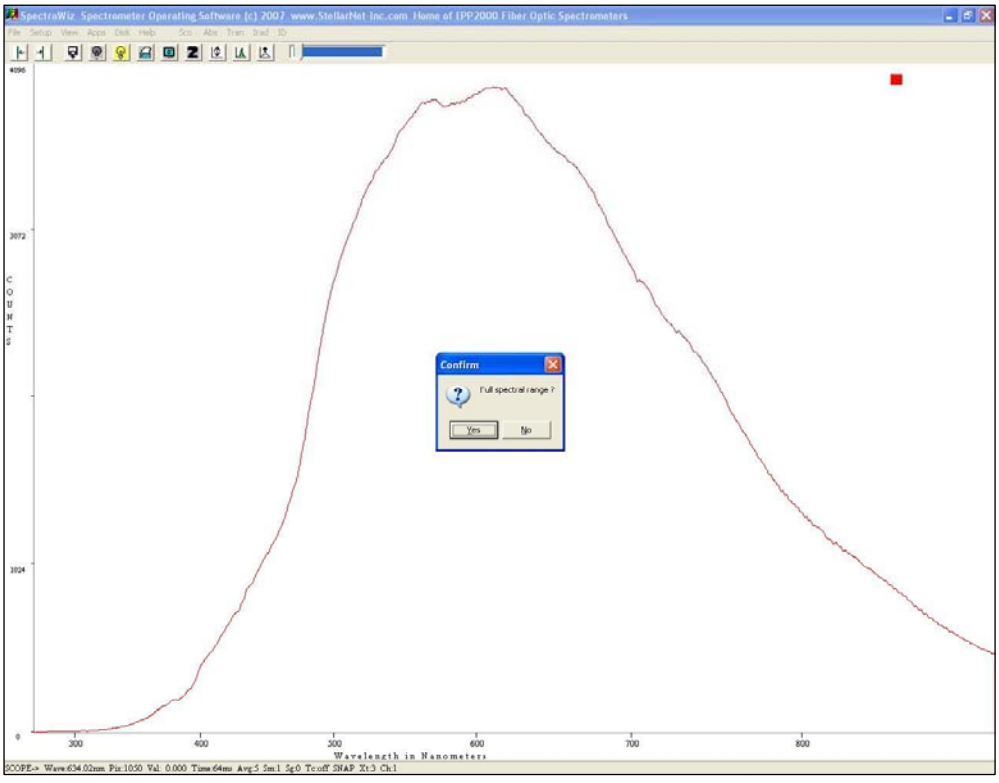


NOTE: If you do not have a calibration file for the lamp, you can use the NIST.ICD file contained in the SpectraWiz directory. This will give an approximate calibration for demonstration purposes.

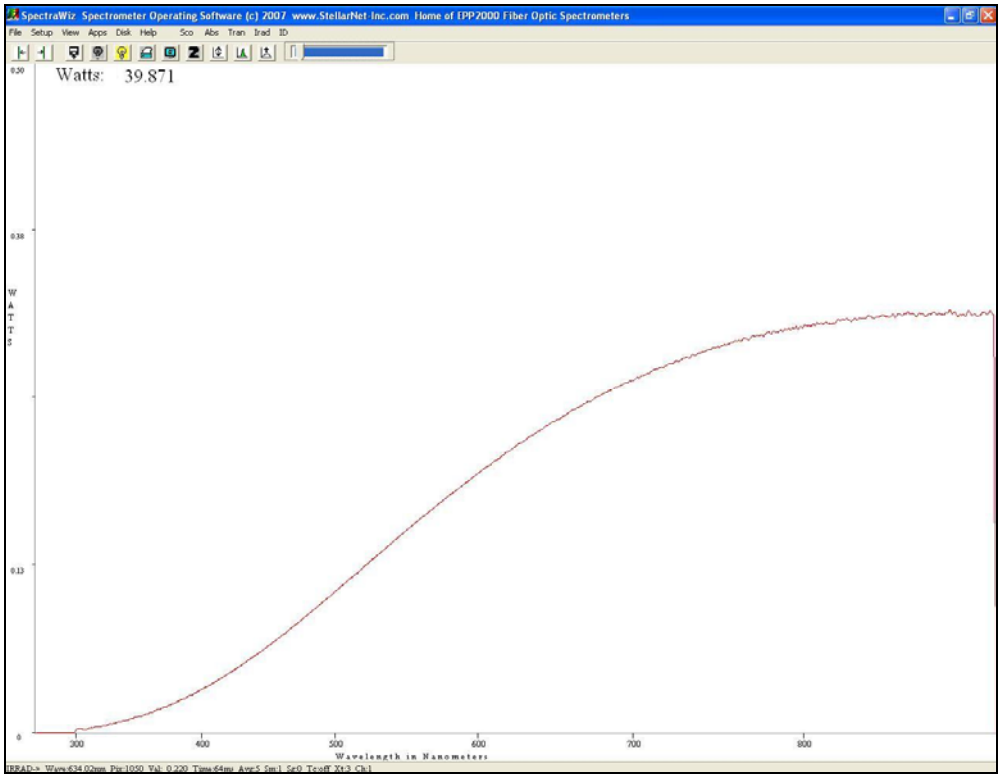
8) Another prompt will appear asking if a standard collection optic is installed (click YES) or if a neutral density filter /aperture have been installed, click NO and then enter the value of the filter.



9) You will then be asked if you would like to capture the entire spectrum (click YES) or a specified range (which the starting and stopping wavelengths can be entered on the next prompt).



10) SpectraWiz will then switch to IRAD mode and display the calibrated output of the light source, with the W/m2 value in the upper left-hand corner.



11) Now that that the system is calibrated, it is best to copy the following files to a disk in case the calibration files are overwritten: sw.ini, SWDark1, and SW1.icf.