Spectral Products
Spectrometers · Spectrophotometers · Color Instruments · Spectrographs · Monochromators
111 Highland Drive · Putnam, CT · 06260 · USA
PHONE (860) 928-5834· FAX (860) 928-2676
http://www.spectralproducts.com

Issue:

How to use the absolute irradiance mode in SM32Pro

Reason:

The absolute irradiance mode requires the irradiance calibration file that was provided by SP along with the spectrometer. Without the irradiance calibration data, the software will not give proper irradiance measurement data. To get into the absolute irradiance mode, some configuration setup must be completed first.

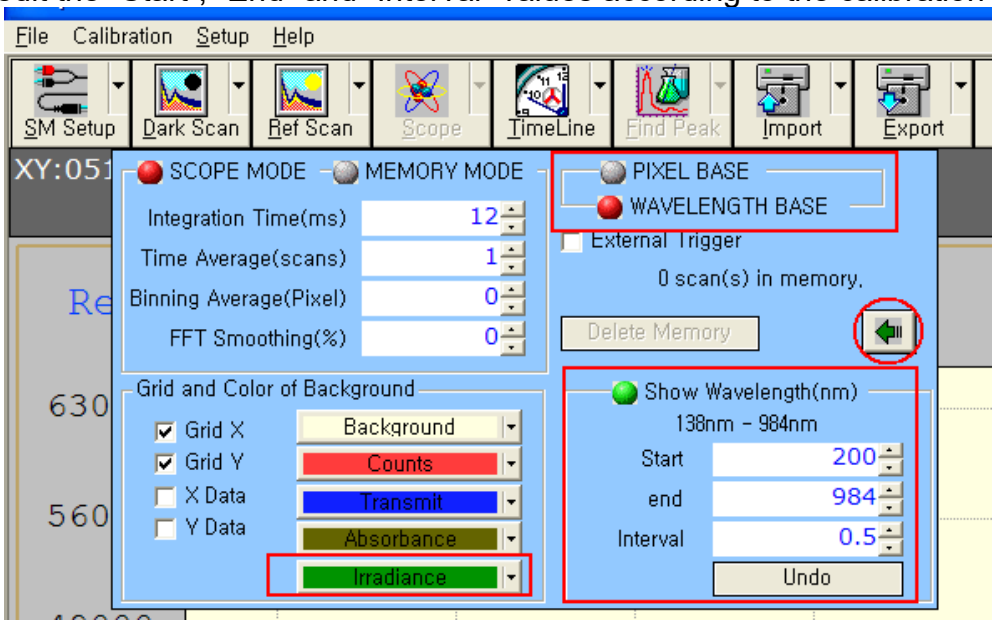
Procedure:

1. Absolute irradiance activation in the ini file

The spectrometer ini file, SM32Pro.ini contains the setup keyword to activate the absolute irradiance mode. If the spectrometer was radiometrically calibrated at SP, the proper keyword setting would have been entered into the ini file provided by SP. If the spectrometer was calibrated somewhere else, the user has to change the keyword setting value manually. Under the [Extend Options] in the ini file, change the current “InitPane” setting value to “12” to activate the absolute irradiance mode.

2. Change “Pixel base” mode to “Wavelength base” mode

After running SM32Pro, first, click the black arrow button next to the “SM Setup” toolbar” to change the mode. To activate the absolute irradiance mode, the display mode must be “Wavelength base” mode. Click the WAVELENGTH BASE radio button in the pop-up dialog. If you click the dark green button at the lower right corner, you can extend the dialog to set other values. After extending the window, click the “Show Wavelength(nm)” radio button and edit the “Start”, “End” and “Interval” values according to the calibration data range.



If you want to change the line color, click the color setting button.

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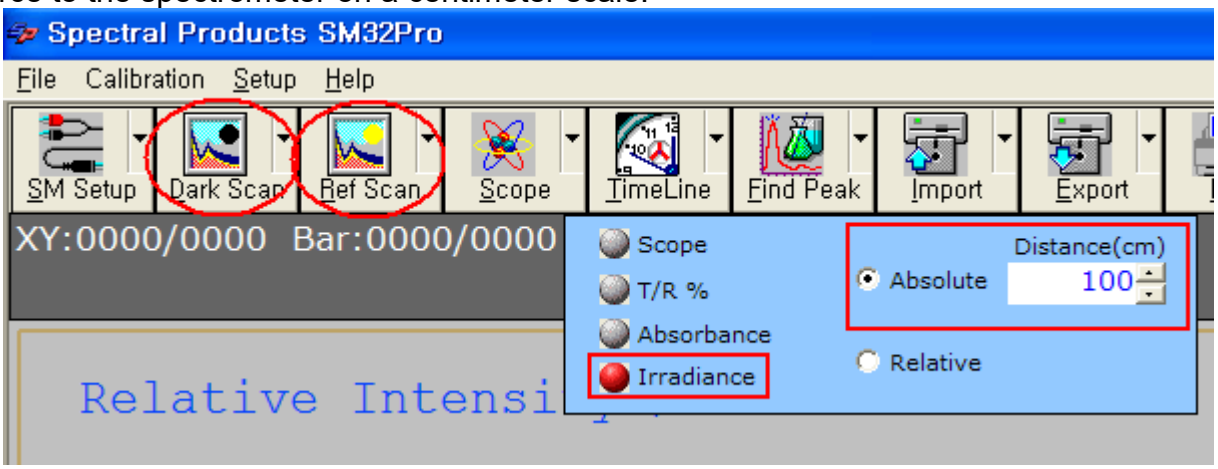
3. Activate the irradiance mode

After setting the values in the “SM Setup” toolbar, click the “Dark Scan” button next to the SM Setup button under the “dark” condition. “Dark Scan” is very important to set the baseline (0.0 irradiance) in the irradiance mode. Then Click the “Ref Scan” button next to the “Dark Scan”. This “Ref Scan” is important for the T/R mode or Absorbance mode but in irradiance mode, it is only used to activate the “Scope” button next to the “Ref Scan”. After the “Scope” button is activated, click the black arrow next to the “Scope” and choose the “Irradiance” radio button. The “Relative” and “Absolute” selection buttons will appear when the “Irradiance” is chosen. Click the “Absolute” button and set the distance from the light source to the spectrometer on a centimeter scale.



4. Set the Y-axis scale.

The current software version does not support the automatic Y scaling function. So the user should set the Y-axis scale manually. After closing SM32Pro, open the ini file (SM32Pro.ini) again and locate the “MaxI” keyword under the [Extend Options]. If there is no “MaxI” keyword, SM32Pro will set 6.0 (uW/cm^2/nm) as a default. If you want to change the Y-axis scale, enter the “MaxI” keyword and give some proper numbers, like “MaxI=10.0”. After saving the ini file, re-run the software and follow the 3rd step again.