DCIF Polarimeter Operating Instructions
Jasco P-1010

$$[\alpha]_\lambda^T = \alpha / l\, c$$

$[\alpha]$ = specific rotation (deg cm^2 g^{-1}, often reported as deg)
α = optical rotation
l = cell path length in decimeters
c = concentration in g ml^{-1}

1. Check that the lamp is on, look for a spot of light on the front left side.

2. Check the wavelength of the filter in use. 589nm is the standard, Sodium D line. The following filters are also available: 577, 546, 435, 365 nm.

3. Set the beam-width filter inside the sample compartment to 3 or 8 depending on the cell diameter.

4. Click the Spectra Manager desktop icon to open the acquisition program.

5. In the Spectra Manager window, in the Measurement section click on the Standard Icon. The Optical Rotation window should open.

6. In the Optical Rotation window, select **[Instruments] > [Start Analyzer].** Numbers should appear in the optical rotation box screen

7. Select **[Measurement] > [Zero Clear]** to Zero the instrument. The optical rotation box should read all zeros.

8. Inset the cell filled with your solvent and measure the optical rotation. Select **[Measurement] > [Start]** to open the Measurement Parameters Window. Check the parameters: Integration: 1s, Repeat: 10 scans, Interval :1s, Measurement Mode: optical rotation, uncheck the temperature box. Click **OK** The instrument will take 10 scans and output the average and statistical information. This blank value should be close to zero.

9. Inset the cell filled with your solvent & sample and measure the optical rotation. Select **[Measurement] > [Start]** to open the Measurement Parameters Window. Check the parameters: Integration: 1s, Repeat: 10 scans, Interval :1s, Measurement Mode: optical rotation, uncheck the temperature box. Click **OK** The instrument will take 10 scans and output the average and statistical information. Optical Rotation Measurement Limits: 0.0002° to ±90° If the red numbers disappear when the cell is inserted, the sample is absorbing too much light. Reduce the concentration and try again.

10. When you are finished, select **[Instruments] > [Stop Analyzer].**

11. Close program, Logoff the computer and sign the logbook.