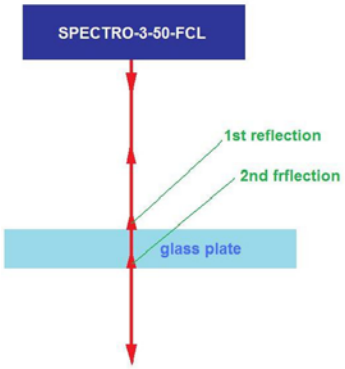
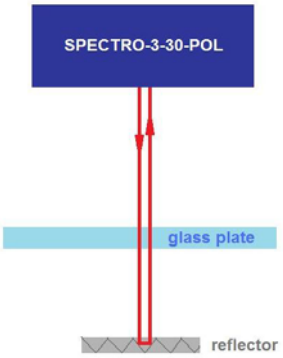
1. Color differentiation of tinted and colored glass plates

During the subsequent processing of glass plates the different tinted and colored glasses must be controlled and discerned. In principle there are three different optical methods available to differentiate the twelve different glasses:

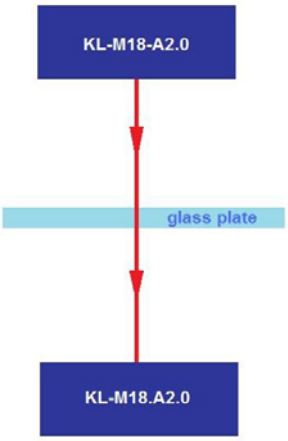
- Direct reflection: **SPECTRO-3-50-FCL** is directed perpendicular to the respective glass plate and the direct reflection from the glass plate will be measured. At this the upper surface delivers no information about the glass type, while the reflection on the lower surface of the glass plate informs about the light absorption due to glass.



- Using polarized white light from the **SPECTRO-3-30-POL** in connection with a reflector. Due to the polarization filter the light reflection on the upper and lower surface of the glass plate does not influence the measurement. Only the light reflected from the external reflector can pass the receiver optics. Thus the white light has to pass twice to glass plate and will be absorbed to some extent.



- With the **SPECTRO-3-FIO-CL** in connection with the through beam fiber **D-S-A2.0-(2.5)-1200-67°** and two optical frontends **KL-M18-A2.0** a through beam measurement system is available. At this the white light passes only in one direction the glass plate. Thus compared to the “polarization method” the physical effect is mottled.

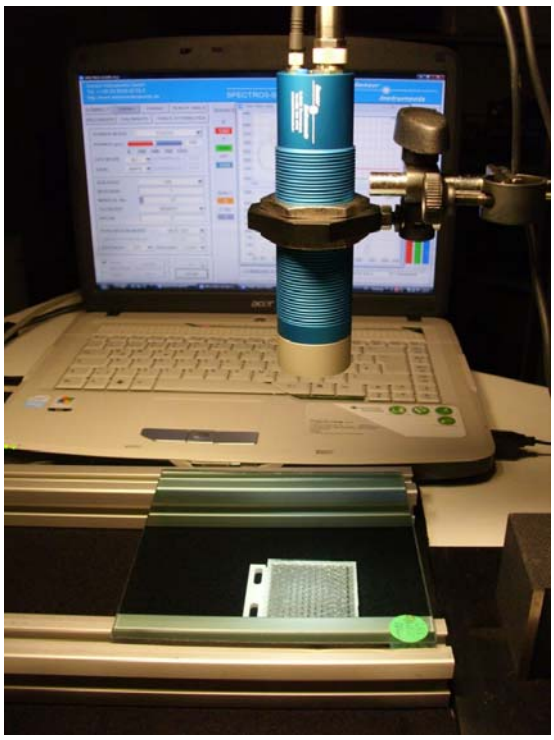


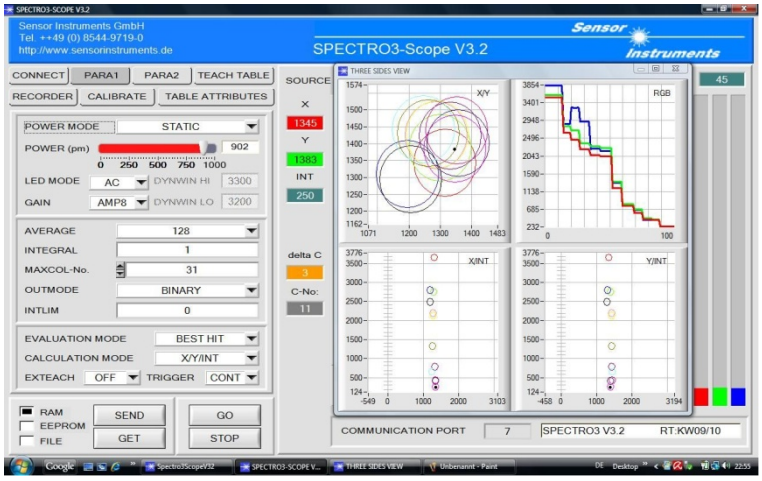
For deeper investigations the **SPECTRO-3-30-POL** in combination with the **reflector** as well as **SPECTRO-3-FIO-CL** in connection with the **D-**

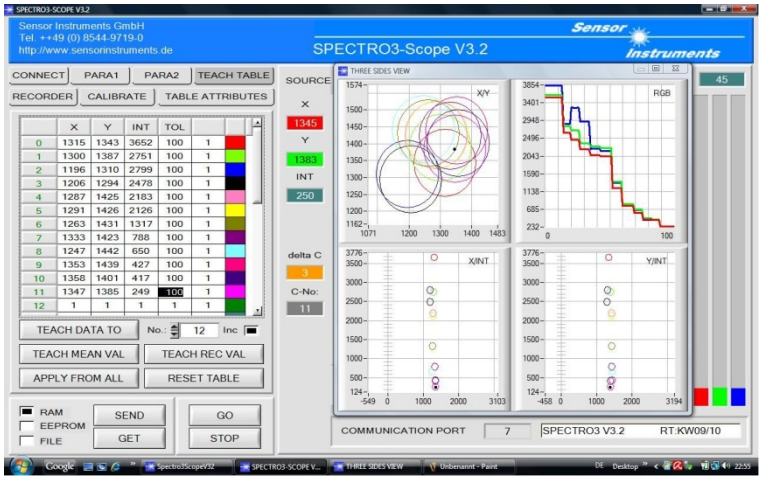
S-A2.0-(2.5)-1200-67° and with two of the frontends **KL-M18-A2.0** will be used.

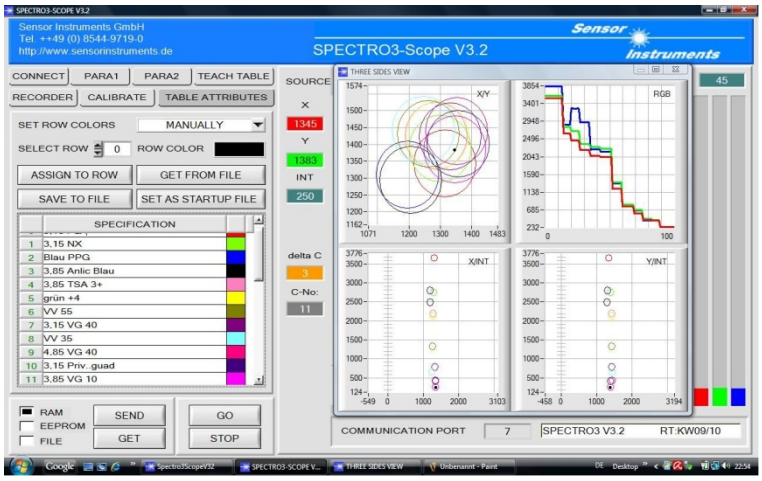
1.1 Working with polarized white light: SPECTRO-3-30-POL in connection with a reflector

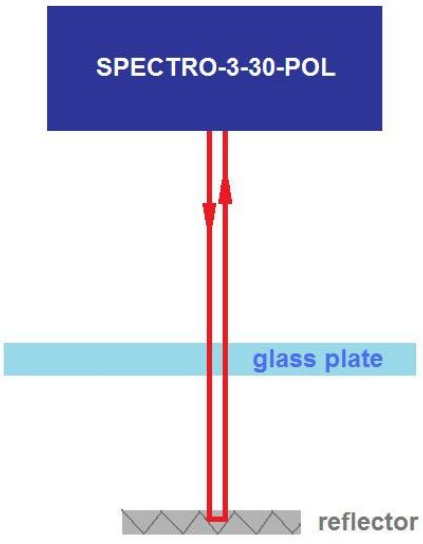
The distance from the **SPECTRO-3-30-POL** to the glass plate is approximately 100 mm and from the glass plate to the reflector another 50 mm.
As shown in the screen shots this method delivers correct results and a proper differentiation of the glass plates











1.2 Using the through beam system SPECTRO-3-FIO-CL in connection with D-S-A2.0-(2.5)-1200-67° and two KL-M18-A2.0

The distance from the transmitter frontend **KL-M18-A2.0** to the glass plate is around 50 mm and the distance from the glass plate to the receiver frontend **KL-M18-A2.0** another 30 mm.
Even this method delivers an acceptable result as shown in the screen shots.