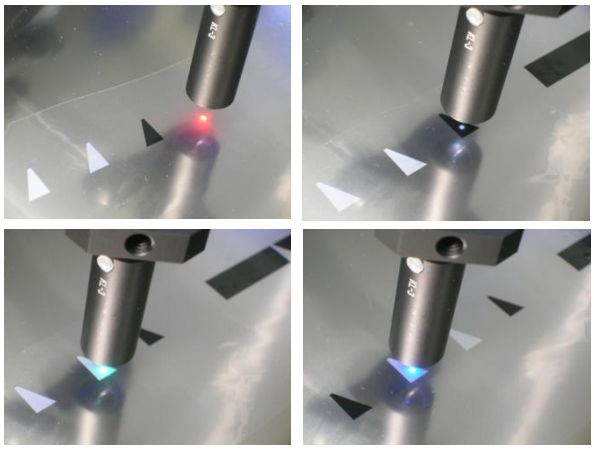
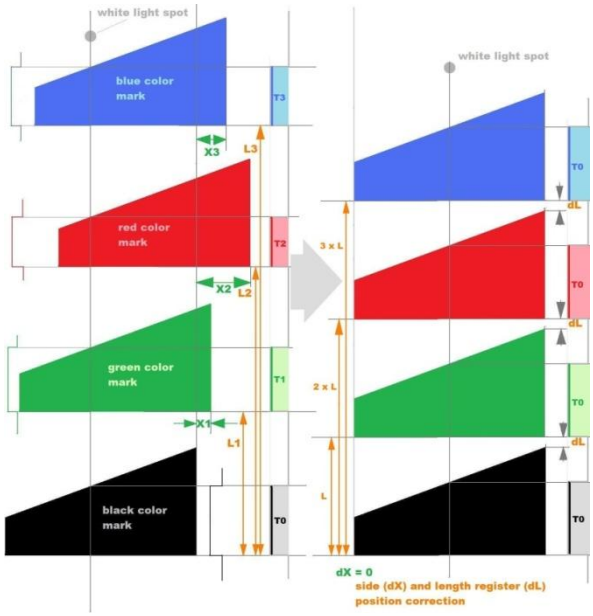
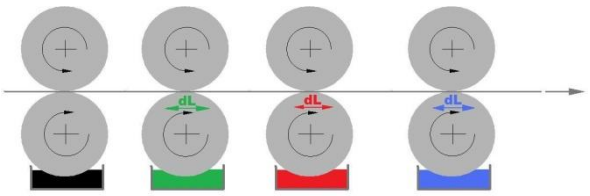
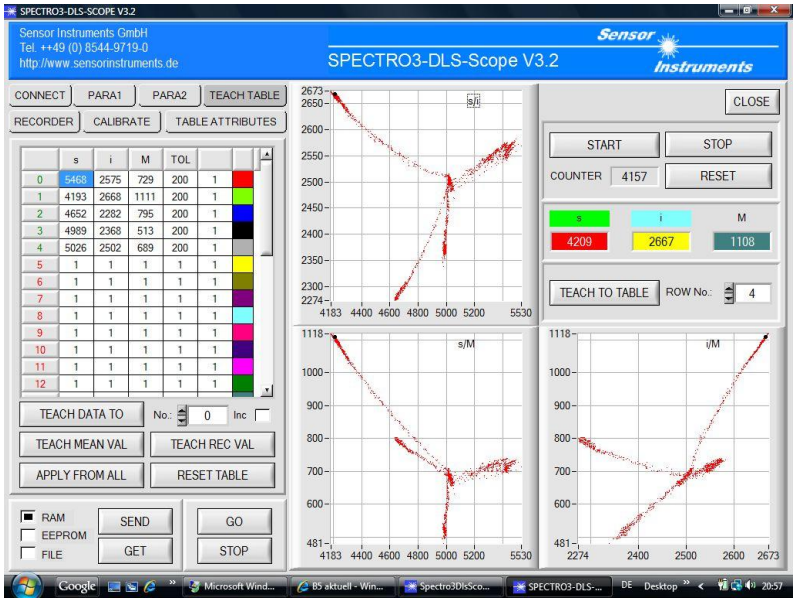
1. Color mark detection for side and longitudinal register control in the printing industry

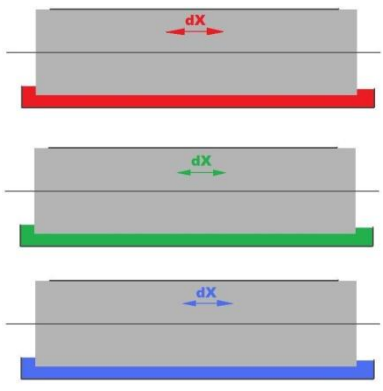
In the web offset printing trapezoid like color marks will be used for the side register as well as the longitudinal register control. For each color a color mark is used, at which all color marks will be synchronized to the black color mark. The trapezoid color mark informs about the longitudinal offset (L) as well as about the side offset (x), this information e.g. L1, L2, L3 will be used to adjust the longitudinal offset and x1, x2, x3 will be used to adjust the side offset of the green, red and blue color mark compared to the black color mark. With the **SPECTRO-3-FIO-VISUV** in connection with the external UV power LED **ELS-UV-1P**, the optical fiber **R-S-A2.0-(2.5)-1200-Y-22°/67°-UV** and the optical front end **KL-3-A2.0** a combination of a white light spot and an UV-spot will be focused at a distance of about 11mm to the object. Thus color marks (e.g. red, green, blue, black or cyan, magenta and yellow) as well as fluorescent marks (e.g. red, green or blue UV-fluorescent) can be detected. The **SPECTRO-3-FIO-VISUV** comes with the Windows® software **SPECTRO3-DLS-Scope V3.2**, which allows a record of scans in the special **TEACH REC VAL** mode. With this special mode, the software allows the operator to teach the color marks even during the run.

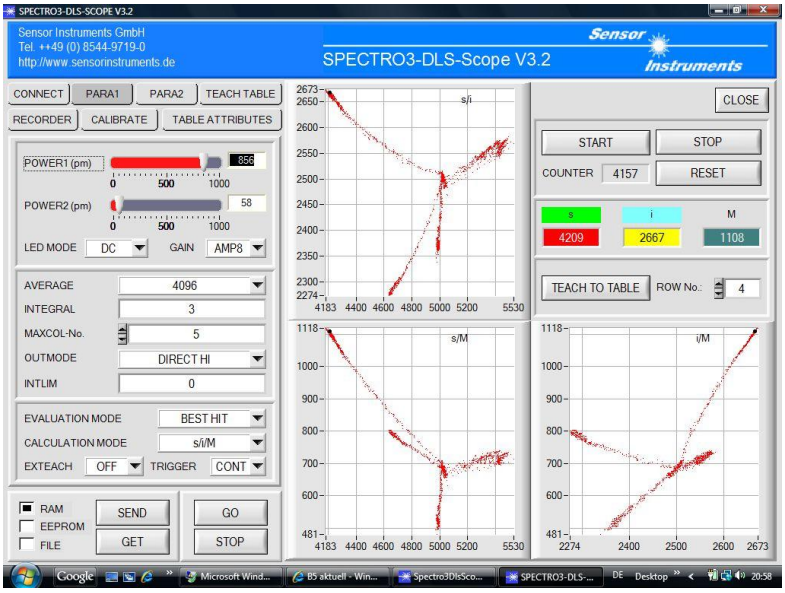


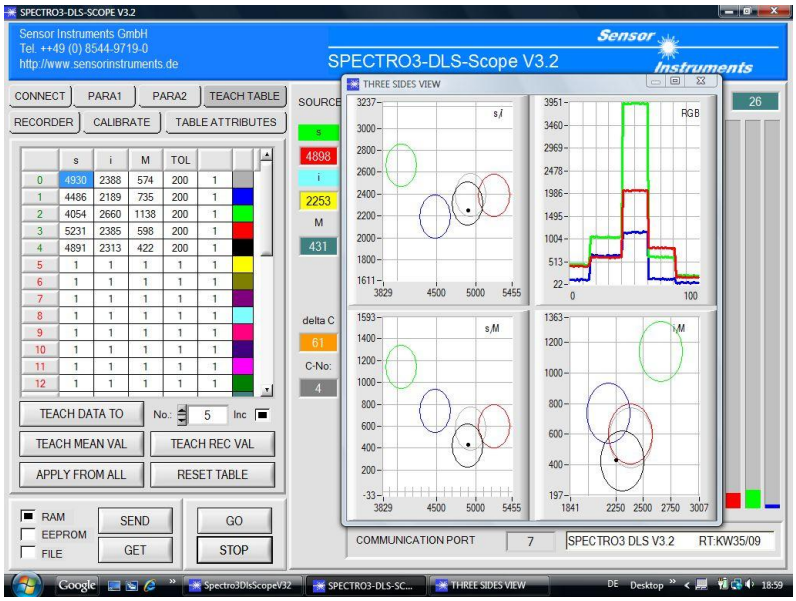


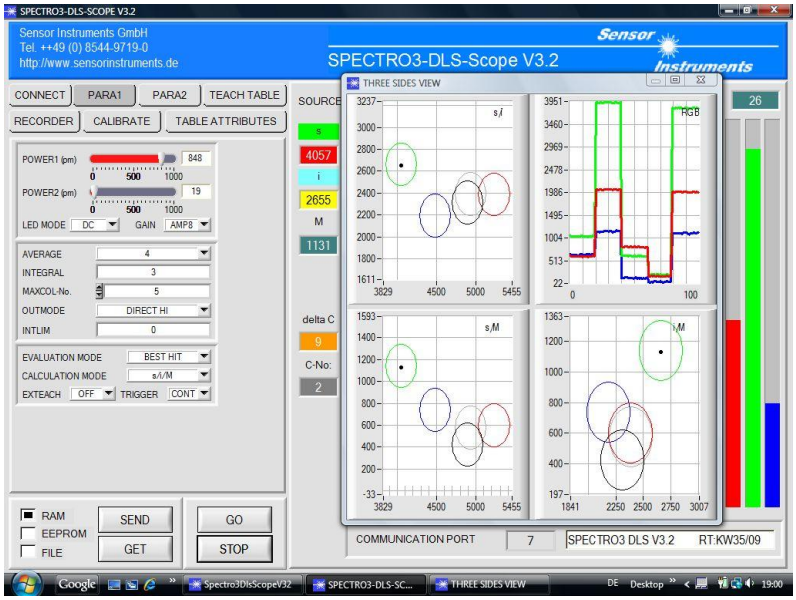







SPECTRO3-DLS-SCOPE V3.2
Sensor Instruments GmbH
Tel. ++49 (0) 8544-9719-0
http://www.sensorinstruments.de
SPECTRO3-DLS-Scope V3.2
Sensor Instruments
CONNECT
PARA1
PARA2
TEACH TABLE
RECORDER
CALIBRATE
TABLE ATTRIBUTES
CLOSE
START
STOP
COUNTER
4157
RESET
s
i
M
4209
2667
1108
TEACH TO TABLE
ROW No.:
4
POWER1 (pm)
POWER2 (pm)
LED MODE
DC
GAIN
AMP8
AVERAGE
4096
INTEGRAL
3
MAXCOL-No.
5
OUTMODE
DIRECT HI
INTLIM
0
EVALUATION MODE
BEST HIT
CALCULATION MODE
s/i/M
EXTEACH
OFF
TRIGGER
CONT
RAM
EEPROM
FILE
SEND
GET
GO
STOP
s/i
s/M
i/M


SPECTRO3-DLS-SCOPE V3.2
Sensor Instruments GmbH
Tel. ++49 (0) 8544-9719-0
http://www.sensorinstruments.de
SPECTRO3-DLS-Scope V3.2
Sensor Instruments
THREE SIDES VIEW
CONNECT
PARA1
PARA2
TEACH TABLE
RECORDER
CALIBRATE
TABLE ATTRIBUTES
SOURCE
26
s
4898
i
2253
M
431
delta C
61
C-No:
4
TEACH DATA TO
No.:
5
Inc
TEACH MEAN VAL
TEACH REC VAL
APPLY FROM ALL
RESET TABLE
RAM
EEPROM
FILE
SEND
GET
GO
STOP
COMMUNICATION PORT
7
SPECTRO3 DLS V3.2
RT:KW35/09
s/i
RGB
s/M
i/M


SPECTRO3-DLS-SCOPE V3.2
Sensor Instruments GmbH
Tel. ++49 (0) 8544-9719-0
http://www.sensorinstruments.de
SPECTRO3-DLS-Scope V3.2
Sensor Instruments
THREE SIDES VIEW
CONNECT
PARA1
PARA2
TEACH TABLE
RECORDER
CALIBRATE
TABLE ATTRIBUTES
SOURCE
26
s
4057
i
2655
M
1131
delta C
9
C-No:
2
POWER1 (pm)
POWER2 (pm)
LED MODE
DC
GAIN
AMP8
AVERAGE
4
INTEGRAL
3
MAXCOL-No.
5
OUTMODE
DIRECT HI
INTLIM
0
EVALUATION MODE
BEST HIT
CALCULATION MODE
s/i/M
EXTEACH
OFF
TRIGGER
CONT
RAM
EEPROM
FILE
SEND
GET
GO
STOP
COMMUNICATION PORT
7
SPECTRO3 DLS V3.2
RT:KW35/09
s/i
RGB
s/M
i/M