Press information from Sensor Instruments

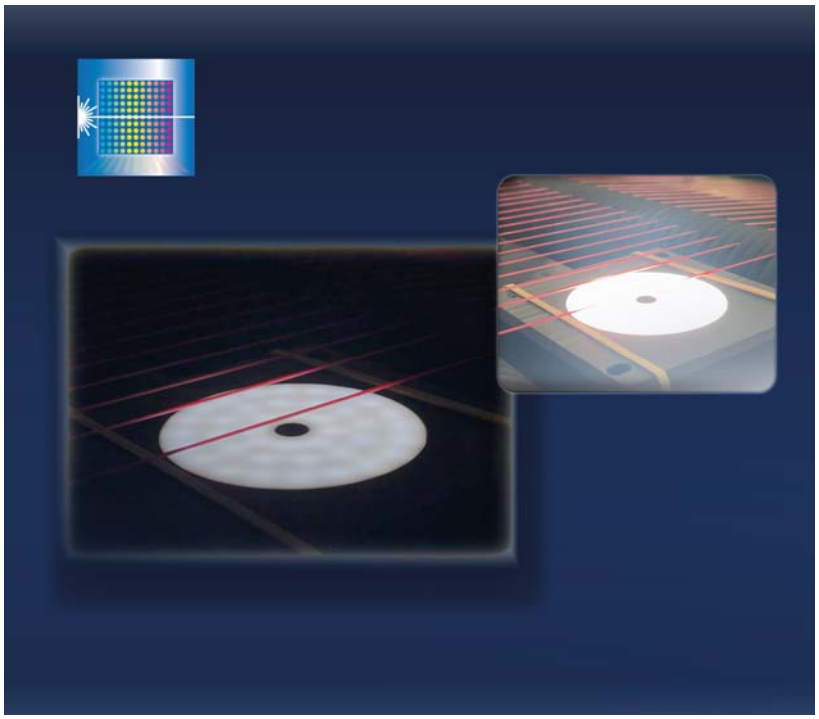
March 2020

Do not overstep the red line

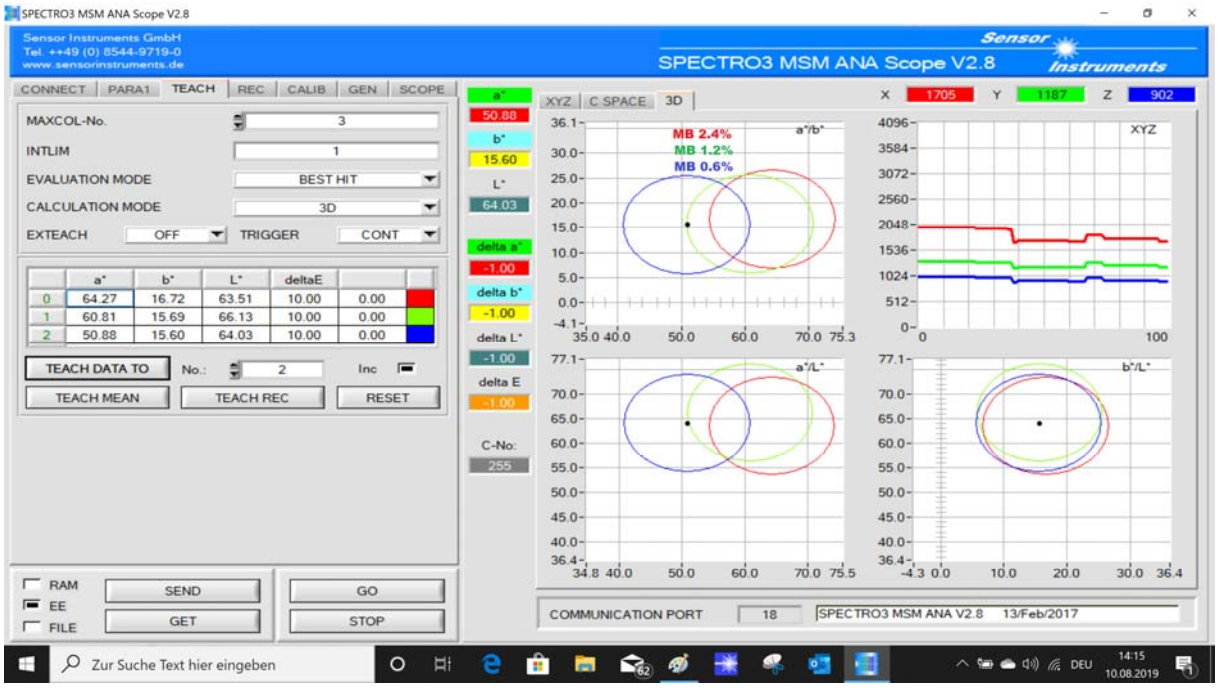
04/03/2020. Sensor Instruments GmbH: Plastic wires with various thicknesses, colors, forms and surface properties are used for a range of different purposes. Examples include tennis rackets with polyester monofilaments; the triangular profile of the racket strings produces greater spin. Flat material is most suitable for the monofilaments used in the production of large plastic bags (big bags). Transport filter belts used in the wet areas of paper production are made of round plastic monofilaments; the plastic wires used in toothbrushes have abrasive material added to them. Plastic monofilaments are now also used in 3-D printing procedures. This process also uses round wires with various diameters. In addition to the form, color consistency is decisive, as color deviations in plastics are often interpreted as quality inconsistencies. Woven products such as plastic sieves, big bags and tennis rackets are especially prone to this phenomenon as even very small color nuances (usually from a color difference of dE=1) are perceptible. Manufacturers need to inspect the color of the monofilaments during production, i.e. inline. The object size, form and gloss of the plastic monofilaments have previously impeded the use of inline color measuring devices, especially as a color deviation of > dE = 0.7 needs to be detected reliably.

The **SPECTRO-3-12-DIF-MSM-ANA-DL** color measuring sensor from Sensor Instruments GmbH is an inline sensor with both the requisite color resolution (< dE=0.3) and the ability to be optimally parametrized to the respective object size and color. The diffuse measurement procedure compensates for the gloss effect of the respective microfilament, permitting almost gloss-independent color measurement.

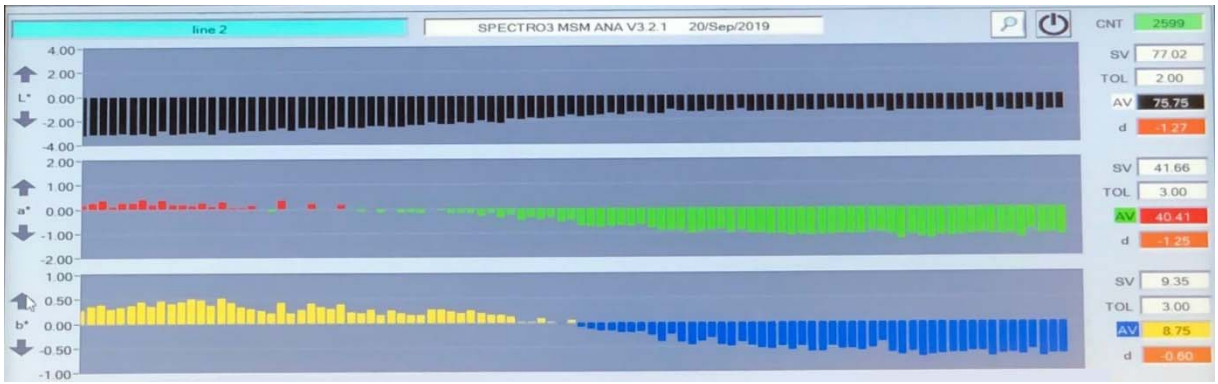
Data transfer of the color values in performed via a digital series interface (USB or Ethernet) and is the color characteristic is displayed on a Windows® interface. The **SPECTRO3-MSM-Monitoring** software displays the color deviation dL*, da* and db* in the form of a histogram bar; if the set tolerance thresholds are exceeded, the respective histogram field will be framed in red. The system operator can thus use this trend display to intervene early in the process and increase or reduce the metering of the “master batches”. Moreover, the color values (L*, a* and b*) and the date, time and production data such as operator name, article number and job number can be stored on a file. The QA can then evaluate the data of the respective file using e.g. Word® or Excel®.



Inline color control of monofilaments with the SPECTRO-3-12-DIF-MSM-ANA-DL color measuring sensor. The diffuse measurement procedure of the SPECTRO-3-12-DIF-MSM-ANA-DL compensates for the gloss effect of the respective monofilaments.



Optimal parametrization of the color measuring sensor to the respective object size and color using the Windows®-Software SPECTRO-3-MSM-ANA-Scope.



The Windows® software SPECTRO3-MSM-Monitoring shows the color deviation in a histogram bar.

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