



1. Color differentiation of colored glass bottles

In the glass recycling industry it is necessary to separate the different colored bottles to get a correctly sorted material. There are different recycling companies on the market and they can be split into two groups: the companies which supply the glass factories and the others which provide the vineyards or the breweries. The glass factories are only interested in mono-fractions of cullet, whereas the wineries and the breweries are looking for mono-material, nearly 100% sorted and of course, whole bottles. Especially whole bottles can be checked with the color sensor

SPECTRO-3-FIO in combination with a through beam optical fiber type **D-S-A2.0-(2.5)-1200-67°** and an optical frontend **KL-M18-A2.0** at the transmitter side and a **KL-M34-A2.0** at the receiver side, respectively. If there is an external trigger available, e.g. with an ultrasonic through beam sensor, the sensor Windows® software **SPECTRO3-SCOPE** can be parameterized to external trigger EXT3, however, if there is not an external trigger available; the sensor software should be adjusted to the **SELF**

trigger mode. With the **SELF** trigger mode as well as with the **EXT3** trigger mode the software is searching for the biggest number of hits of the taught colors as long as the trigger is active. Immediately after the disappearance of the trigger signal, the color with the biggest number of hits will be switched to the output of the sensor and remains there until the disappearance of the next trigger signal. As shown in the screen shots the sensor delivers proper results and even close colors (e.g. a green bottle from a slightly different green bottle) can be distinguished and correctly sorted. The distance from the transmitter optical frontend **KL-M18-A2.0** to the bottles is approximately 30mm and the distance from the receiver optical frontend **KL-M34-A2.0** to the bottles is also around 30mm.

