



1. Detection of color marks (register marks)

During the printing process of plastic foils for the food industry the color mark must be properly detected on each printing units. This is necessary for the synchronizing of the respective registers. The register marks (color marks) can be placed at arbitrary positions in the printing images or at the edge of the web within defined zones. The color marks must be detected precisely even at

high speed. The register marks can come with a certain inhomogeneity and the print as well as the plastic material is normally very glossy. The attached photos show an application with a register mark in the region of the normal print. With a color sensor type **SPECTRO-3-FIO-CL** in connection with an optical fiber type **R-S-R1.1-(3x0.5)-1200-67°** and an optical front end type **KL-5-R1.1** a proper detection of the color mark is possible. A rectangular white light spot of 2mm x 0.3mm is projected from the frontend at a distance of 11mm onto the plastic foil and thus the rectangular shape of the white light spot

compensates nearly the inhomogeneity of the color mark. Furthermore the high scan frequency of the color sensor up to 40kHz guarantees a precise detection even at high speed. In addition to the color mark the background color as well as the printed image was taught, too, but in principle, this application works also, if only the register mark will be taught.



