1. Color- and contrast-control during the printing process of paper

During the printing of safety paper the color as well as the contrast should be controlled on two fields on the reference color stripe. It should be observed the brown part as well as the

gray part and a signal should be sent to the control unit if the contrast or the color

runs out of tolerance. For the tests a color sensor type **SPECTRO-3-FIO-JR** in connection with an optical fiber type **R-S-R2.1-(6x1)-1200-67°** and an optical frontend type **KL-8-R2.1** is used. The distance from the frontend to the paper is approximately 11mm. The white light spot size at this distance is around 4mm x 0.7mm. A proper detection of the gradient in the gray as well as in the brown range of the reference color mark is possible.