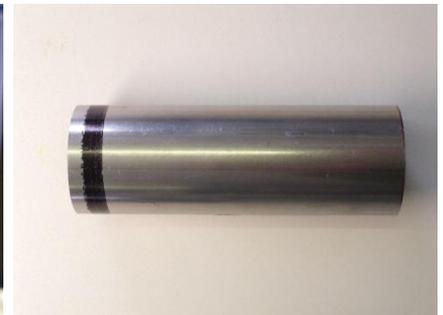




1. Black ink mark control on metal tubes

On metal tubes, black marks will be applied with an ink jet printer. Sometimes the position of the ink mark is not on the right place or the ink coverage is not sufficient. A **SPECTRO-3-FIO-CL** in combination with an optical fiber type **R-S-R2.1-(6x1)-1200-67°** and an optical frontend **KL-8-R2.1** or alternatively the optical fiber type **R-S-A2.0-(2.5)-1200-67°** plus an optical frontend **KL-3-A2.0** delivers proper test results. As shown in the screen shots, the white spot will be stronger absorbed from the black color mark compared to



the metal surface. Even a color shift can be observed. The distance from the optical front end to the object is around 11mm and the spot size is approximately 1mm (diameter) or 4x0.7mm².

