



### 1. Quality control of cartridges

The quality of cartridges should be controlled. It has to be taken into account, that the reflectivity of the surface of the cartridges will be decreased with the increase of the usage of the cartridges. For this purpose a laser sensor type **L-LAS-GTM-256/16** is used. The surface of an unused cartridge delivers a high direct reflection, thus, the profile of the laser beam will minimal influenced. However, due to the diffuse surface of a used cartridge, the profile of the laser beam will be spread out as shown in the screen shots. The integral value of the normalized video signal of the reflected laser beam informs about the quality of the cartridge. The distance of the laser sensor to the surface of the cartridge is approximately 40mm and the angle to the vertical axis is around 12°.

