



### 1. Measurement of length of metal collapsible tubes during the production process

During the production of metal tubes, the length of the tubes must be controlled, because of the previous cutting process of the tubes.

The accuracy of the metal tubes should be in a range of a tenth of a millimeter. The open end of the tube is positioned in a range of approximately 2 mm whereas the closed end of the tube varies dependent on the type of the tube (different types in different length will be produced). Due to the fact, that the position of the metal tube is varying, the position of both end of the object must be measured. The open end can be normally measured with a through beam system, but unfortunately there isn't space enough for such a system, thus a reflective device type **L-LAS-**

**RL-20-W** must be used. On the other side, the closed end, a laser displacement system type **L-LAS-LT-200** is an adequate unit. Both systems deliver an accuracy of a hundredth of a millimeter and thus sufficient for this application. The

measurement values of both of the sensors can be evaluated either from an external PLC or an external evaluating unit from Sensor Instruments. As shown in the attached screen shots, the distance on both end of the metal tube can be measured properly.



