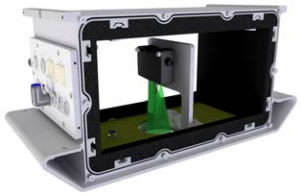
Calipro DML-S-L

Overview



The Calipro DML-S-L sensor is the newest member of the family of laser thickness measurement sensors in Mahlo'sQualiscan QMS-12 quality measurement system. It is particularly suitable for measurements of porous materials such as foam, non-woven fabric, etc.

Fig. 1: Calipro DML-S-L

Measuring principle

The Calipro DML-S-L sensor works according to the laser triangulation principle. A special optical system expands a laser beam into a line and projects it onto the surface of the target. The reflected light of this laser line is imaged onto a matrix via the multiple lens system. A controller calculates the height to each individual measuring point from this matrix image. According to the selected function avg/max/min/delta the measured value is calculated. There are two sensor versions with different measuring ranges: 50mm and 400mm

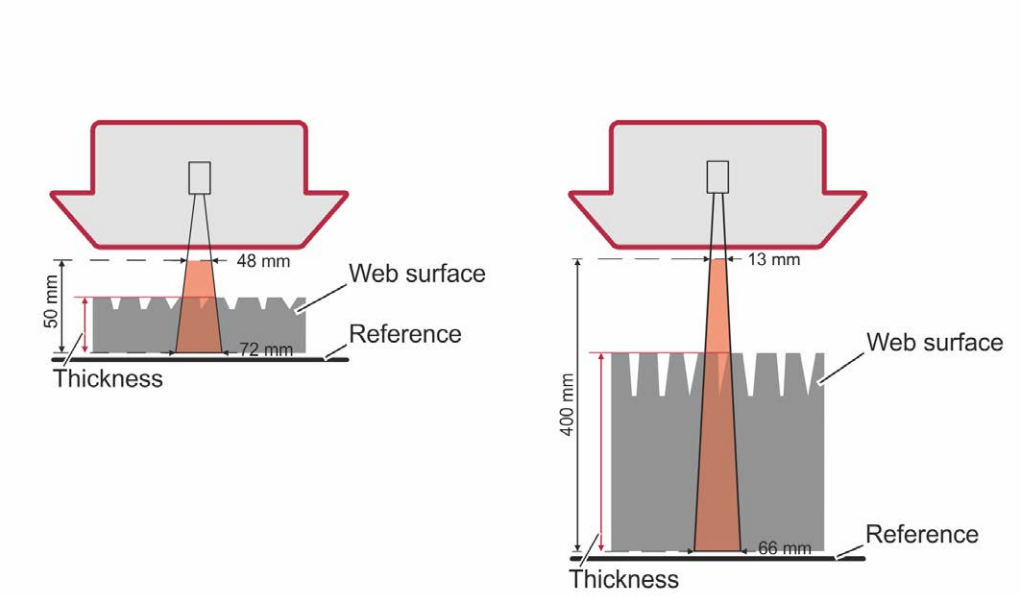


Fig. 2: Calipro DML-S-L Measuring principle

Product-Highlights

- Especially suitable for porous materials, e.g. foam, non-woven, etc.
- Compensation of open structured surfaces by line laser
- Largely independent of the material surface (rough, smooth, ...)
- Very wide measuring spot, therefore very stable measurement
- Only a very small wrap angle of the reference roll required
- No falsification of the material thickness due to the low wrap

Example of Application

A typical example for the use of the Calipro DML-S-L is the thickness measurement during flame lamination of car upholstery materials with foam. A laser sensor with a point-shaped measuring spot would measure into the pores and thus strongly falsify the measured value. The situation is similar with very voluminous non-woven fabrics. The wide measuring spot of the Calipro DML-S-L on the other hand, provides very accurate measured values.

Technical data

Variant	50	400	Value
Measuring range	0 - 50	0 - 400	mm
Measuring gap, maximum	45	395	mm
Length, Laserline	48 - 72	13 - 66	mm
Resolution, Sensor	4 - 8	8 - 28	µm
Measurement accuracy, Traverse	depending on the roll concentricity		
Measurement accuracy, Sensor	approx. factor 10 of the sensor resolution		