

## Evaluation of metrological properties of laser triangulation heads

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In the paper, the experimental results of the study on the static characteristics of the laser triangulation heads are presented. Laser triangulation heads are intended for measuring and checking position, dimensions, surface profile, vibrations and thickness. They determine the position of a target by measuring the light reflected from its surface.

In many applications based on laser triangulation sensors it is necessary to know the most important parameters of the laser sensor. Their most important parameters are measurement range, accuracy, resolution, repeatability and measurement frequency. These parameters describe the ability of the sensor to perform a specific measurement task. The special characteristics of the laser triangulation sensor must be taken into account for its use.

The authors, as a result of an assessment of metrological properties, also showed the effect of the material type and surface colour on the most important parameters of the sensor (Fig. 1). Analyzing the results of the research, conclusions can be presented on the accuracy and repeatability of measurements with laser methods, which is extremely important during inspections of real objects.



**Fig. 1.**  
Determination  
of statistical  
metrological  
properties of  
laser heads

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