



# DOUBLE GEKON

## Measuring trolley for rail corrugation

The DOUBLE GEKON Trolley is a measuring device intended for contactless measuring of the corrugation of grooved and UIC rail. It can be used for rail head microgeometry assessment as a background for grinding works. Fully compatible with EN 13231-3.



The **DOUBLE GEKON Trolley** is able to measure a series of continuous track sections, evaluate the acquired data and compute the results being complied with the standard EN 13231-3. For the measurement, the **DOUBLE GEKON** uses two versines with laser sensors placed vertically to the longitudinal axis of the rail. The measurement can be taken any speed of range 0 - 7,2 km/h.

#### TROLLEY DESIGN

The **DOUBLE GEKON** consists of a hand-operated measuring unit and external computer (tablet or notebook). The measuring trolley includes laser sensors with the necessary drive and electronic units that transfer the acquired data to a computer. The correct position in the rail is ensured by wheels and rollers on both sides and a beam equipped with springs.

The complete trolley is lightweight and compact. It is very easy to remove the trolley and return it to the track in a few seconds. It is therefore possible to take the measurement on the track during uninterrupted traffic.

For transportation is the trolley easily dismantlable into two basic parts. Both parts and all equipment can be placed into the transport box with wheels.

#### MEASURING PRINCIPLE

The **DOUBLE GEKON Trolley** is equipped with measuring software. During the signal processing the following operations are performed:

- filtering of outlying peaks
- filtration by 375 mm wheel radius filter

After the measuring, collected primary data are transferred from the measuring computer into any PC computer.

**Evaluation software** computes all filtered data using following blocks for signal processing:

- calculation of the rail head longitudinal shape in ranges D1 - D5
- calculation of half overlap average spectrum
- calculation of peak-to-peak values
- calculation of effective (RMS) values
- calculation of third-octave spectral analyse

#### ON BOARD COMPUTER

The **DOUBLE GEKON Trolley** stores the acquired data into an on-board computer in special format. The software installed in the on-board computer images the course of the measured signal during the data acquisition and table of peak to peak percentage.

#### THE BASIC TECHNICAL DATA

Mass of the basic parts: 9 kg + 9 kg + 6 kg  
Total weight: 24 kg  
Transport box dimensions: 1140 mm x 643 mm x 419 mm  
Battery operation time: 4-8 hours  
Measuring speed: 0-2 m/s  
Scanning interval: 2 mm  
Sensor resolution: 1  $\mu$ m  
Accuracy 2  $\sigma$ :

D1 (10 - 30 mm): 0,5  $\mu$ m  
D2 (30 - 100 mm): 0,5  $\mu$ m  
D3 (100 - 300 mm): 1,0  $\mu$ m  
D4 (300 - 1000 mm): 3,0  $\mu$ m  
D5 (1000 - 3000 mm): 10,0  $\mu$ m



*For easier transportation the trolley can be easily fold*



Commercial railway research

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