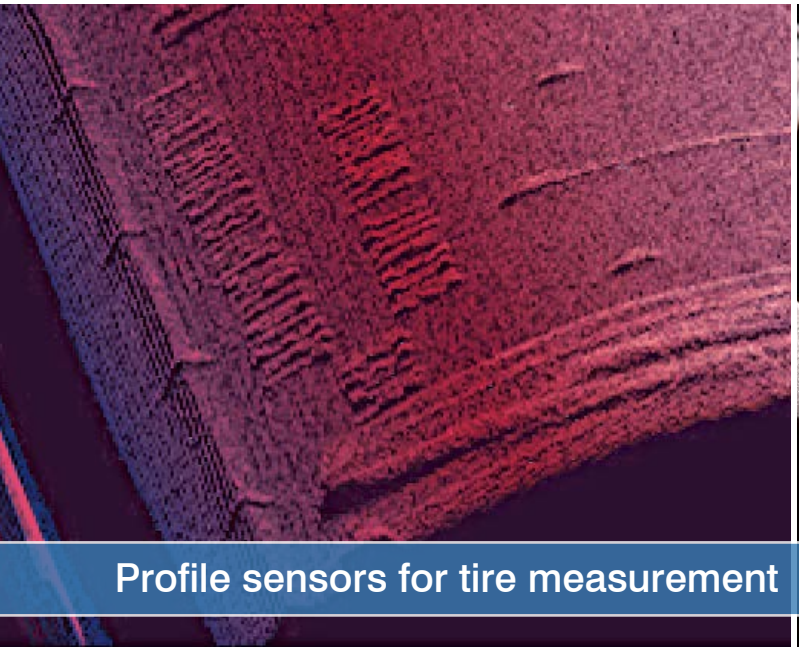
A131

Laser scanners

scanCONTROL

MICRO-EPSILON



Profile sensors for tire measurement

Tire characteristics are of central importance for safety, driving behaviour and comfort of modern vehicles. 100 per cent inspection of tires is necessary during production in order to ensure continuously high quality. As well as dynamic stress tests, the detection of bumps, depressions and run-out are essential.

In order to ensure high cycle times, measurements can only take place in a non-contact manner, i.e. the sensor cannot come into direct contact with the tire. The scanCONTROL profile sensor is a new solution for tire inspection using a laser line on which many measurement points are detected.

Advantages

- Measurement of profile instead of points
- High accuracy and reliability
- Highest measurement rate
- Up to 500Hz laser class 2
- Laser class 3B for poorly reflecting surfaces

Requirements for the measurement system

- Measuring range in Z-axis (depth): approx. 200mm
- Measuring range in X-axis (width): approx. 50mm
- Large offset distance: approx. 230mm (safety distance to protect the sensor from damage caused by bursting tires)
- Resolution in Z-axis: approx. 15µm
- Dynamics:
  500 profiles/s each with 256 measuring points;
  1000 profiles/s each with 128 measuring points;
  2000 profiles/s each with 64 measuring points

System design

- Three sensors type LLT2800-100
- Driver for integration into customer-specific software programs
- Customer evaluation software at the test bench