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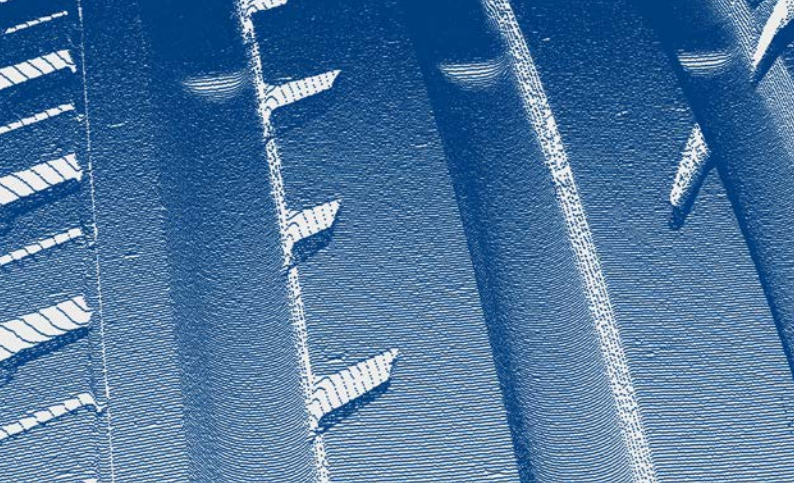
Development Center X-ray Technology
at Fraunhofer Institute for
Integrated Circuits IIS

TireChecker



**Quality control system
for finished tires**

www.iis.fraunhofer.de/ezrt

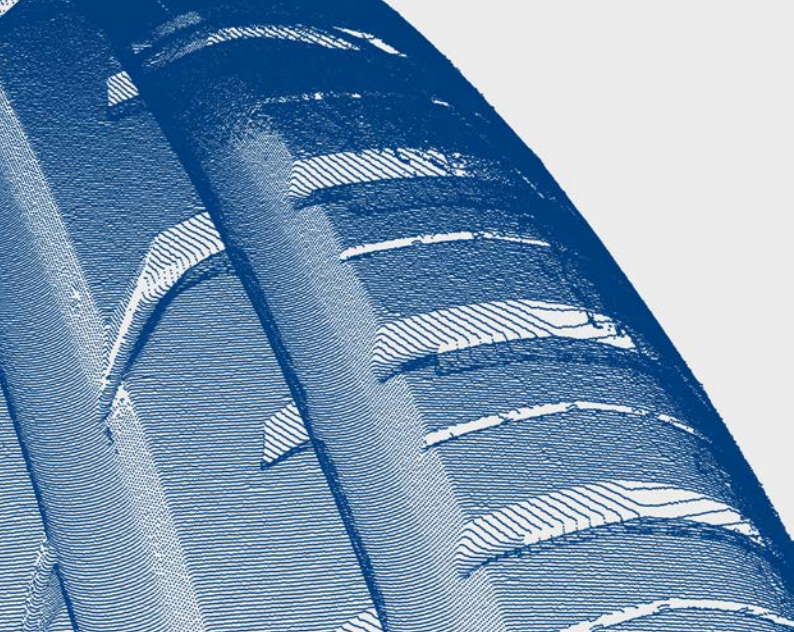


TireChecker allows complete geometry measurements at high speed

Motivation

The TireChecker quality control system is a standard solution when reliable inspection and precise measurement of high-quality tires for geometry and bulges is required. With more than 20 years of service, leading tire manufacturers worldwide trust the Tire-Checker as a proven solution for testing of tires. The system was developed at the Fraunhofer IIS in close cooperation with key tire manufacturers and testing equipment builders.

It is available integrated into turnkey systems or as an upgrade from our licensed partners. It is also available for licensing to offer testing machinery suppliers a cost effective solution for sheet-of-light geometry measurement.



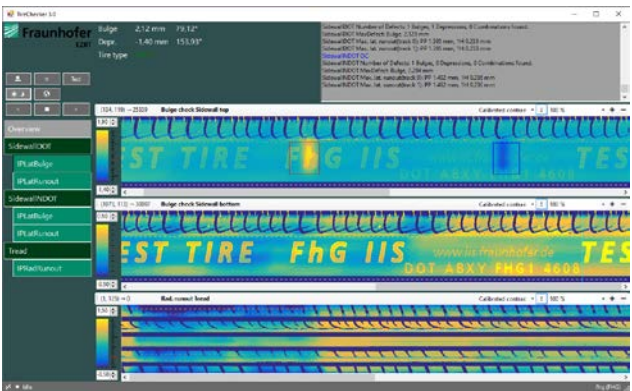
System Information

The TireChecker system uses contactless laser sheet-of-light sensors and custom image processing algorithms to measure all relevant geometric features of a tire precisely and quickly, keeping pace with today's production. The system's modular architecture allows flexible adaptation to virtually any geometric measurement task, environmental constraint and budgetary requirement. Anything from a simple system consisting of a single sidewall sensor to a full system covering the tire's entire surface is configurable. Bulge measurement is performed on the entire sidewall regardless of lettering or other surface features. Custom measurement algorithms can also be integrated into the software on request.

Existing laser sensor equipment can be utilized if required; design of customer specific sensors is available as well. Existing machinery can be upgraded with a TireChecker system or it can be designed into new tire testing machines, being customizable to fit different mechanical situations as well as capable of being integrated into a number of PLC architectures.



TireChecker System, Courtesy of Seichter GmbH



TireChecker user interface showing sidewall and tread data at a glance

Technical Data

Typical measurement speed

Tire rotation frequency	1 rps – 2 rps
Measurement frequency	2 kHz – 4 kHz

Example of a typical sidewall sensor

Measurement range

Measurement width (radial)	80 mm
Measurement height (axial)	50 mm
Measurement distance (axial)	50 mm

Measurement resolution

Height resolution (axial)	min. 30 μ m
Radial resolution	0.6 mm
Tangential resolution	0.5 mm – 1.0 mm

Example of a typical tread sensor

Measurement range

Measurement width (axial)	400 mm
Measurement height (radial)	50 mm
Measurement distance (radial)	300 mm


Measurement resolution

Height resolution (radial)	45 μ m
Axial resolution	1.5 mm
Tangential resolution	0.5 mm – 1.0 mm

All technical data including the housing dimensions and the measurement distance can be adapted within a wide range to the customer's specific requirements.

For detailed information,
please see our homepage:





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