



- 1 Sensor head.
- 2 Measurement example Airbag.
- 3 3D point cloud.

HIGH-SPEED 3D-MEASUREMENT SYSTEM

Fraunhofer Institute for Applied Optics and Precision Engineering IOF

Albert-Einstein-Straße 7
07745 Jena, Germany

Director
Prof. Dr. Andreas Tünnermann

**Head of Business Unit Photonic
Sensors and Measuring Systems**
Prof. Dr. Gunther Notni

Contact
Dr. Peter Kühmstedt
Phone +49 3641 807-230
peter.kuehmstedt@iof.fraunhofer.de

www.iof.fraunhofer.de

Measurement principle

- triangulation-based 3D measurement system with active illumination
- stereo vision-based image acquisition using high-speed cameras
- high-speed projection of aperiodic fringe patterns

Features

- eye-safe due to incoherent projection
- opportunity of large measurement fields due to high-performance projection
- measurement of high dynamic scenes

Our Offer

- realization of custom-specific high-speed 3D measurement systems
- execution of 3D measurement tasks, in particular in highly dynamic situations

Exemplary Applications

- crash tests & deformation analysis
- study of human movement (kinesiology)
- large-scale measurement: aircraft and vehicle construction
- in-line 3D measurement techniques

System Parameters

- Measurement field: 500 x 500 mm² (possible up to several m²)
- Illuminance: 30 klx
- Measurement distance: 1000 mm (variable)
- Pattern refresh rate: up to 100 kHz
- 3D frame rate: up to 10 kHz