



High-speed 3D sensor

Shape measurement of (large) dynamic situations



Cover & Top: 3D sensor
goSPEED

High-speed 3D sensor

Shape measurement of (large) dynamic situations

Features

- Time-resolved measurement of high dynamic scenes
- Eye-safe due to incoherent projection
- Adaptable to different field of views
- Opportunity of large measurement fields due to high-intensity projection

Measuring 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

Applications

- Deformation analyses, e. g. crash tests
- Study of movements (kinesiology)
- Large-area measurement, e. g. aircraft and vehicle construction

System parameters

- 3D frame rate: up to 50 kHz
- Illuminance: up to 30 klx
- Measurement field: from $0.1 \times 0.1 \text{ m}^2$ to $1.5 \times 1.5 \text{ m}^2$
- Number of 3D points: up to 1024×1024 per 3D frame
- Measurement distance: 1.0 m (customizable)
- Software interface for machine integration

3D impact measurement during a side crash test



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