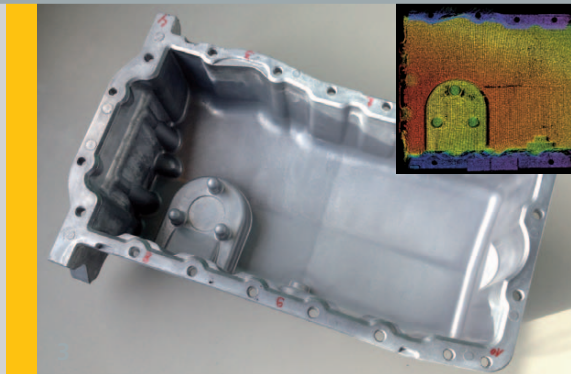


1



2



- 1 Image of array projection unit.
- 2 Sensor head.
- 3 Measurement example cast part.

HIGH-SPEED 3D MEASUREMENT WITH LED-BASED MULTIAPERTURE FRINGE PROJECTION

Fraunhofer Institute for Applied Optics and Precision Engineering IOF

Albert-Einstein-Straße 7
07745 Jena

Director
Prof. Dr. Andreas Tünnermann

Department Optical Systems
Head of Department
Dr. Gunther Notni

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

www.iof.fraunhofer.de

Measurement Principle

- LED-based multi-aperture fringe projection and stereoscopic image acquisition
- High-speed pattern projection due to LED switching time in ms range

Features

- Robust measurement system due to monolithic setup of the projection system
- Application dependent different kinds of pattern projection possible, also overlay of patterns
- Application dependent size increase / decrease of multiaperture projection system possible, combined with adjustment of luminous power

Our Offer

- Realization of custom-specific high-speed 3D measurement systems
- In-line 3D measurement techniques
- Process integration
- Execution of 3D measurement tasks, also in high dynamic situations

System Parameters

- Projector size: 13.5 x 15 x 2.5 cm³
- Power consumption: < 100 W
- Measurement distance: currently 100 cm (other on request)
- Pattern refresh rate: 400 Hz – 1 kHz
- 3D frame rate: 40 – 100 Hz