



1 kolibri CORDLESS.

2 kolibri MULTI.

3 kolibri ROBOT.

4 kolibri 1500.

## SELF-CALIBRATING MULTI-VIEW 3D-MEASUREMENT SYSTEMS SYSTEM FAMILY kolibri

### 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](http://www.iof.fraunhofer.de)

#### Measurement principle

- Fringe projection from different directions with two fringe sequences rotated by 90° to each other
- Automatic full body measurement while using simultaneous active moving sensors and fixed cameras

#### Features

- No use of adhesive markers or matching procedures
- Self calibration of the measurement system, compensation of environmental effects
- Measurement range: 10 mm up to 5 m
- Number of views: unrestricted
- Measurement uncertainty:  
0.5 µm ... 150 µm
- Measurement time: 0.2s – 10 min (dependent on the measurement setup)
- Automatic measurement
- Mobile and stationary system solutions

#### Our Offer

- Development and delivery of measurement systems according to the client specification
- System development for quality inspection, rapid prototyping, reverse engineering, 3D-scanning, medicine, virtual reality and further
- Integration in industrial processes
- Measurement services
- Studies and consultation

#### Systems

- kolibri CORDLESS – optical hand-held cordless 3D-sensor
- kolibri MULTI – optical 3D-multi-sensor-system with variable resolution
- kolibri ROBOT – robot-mounted 3D-sensor
- kolibri 1500 – automatic self-calibrating 3D-measurement system for large objects