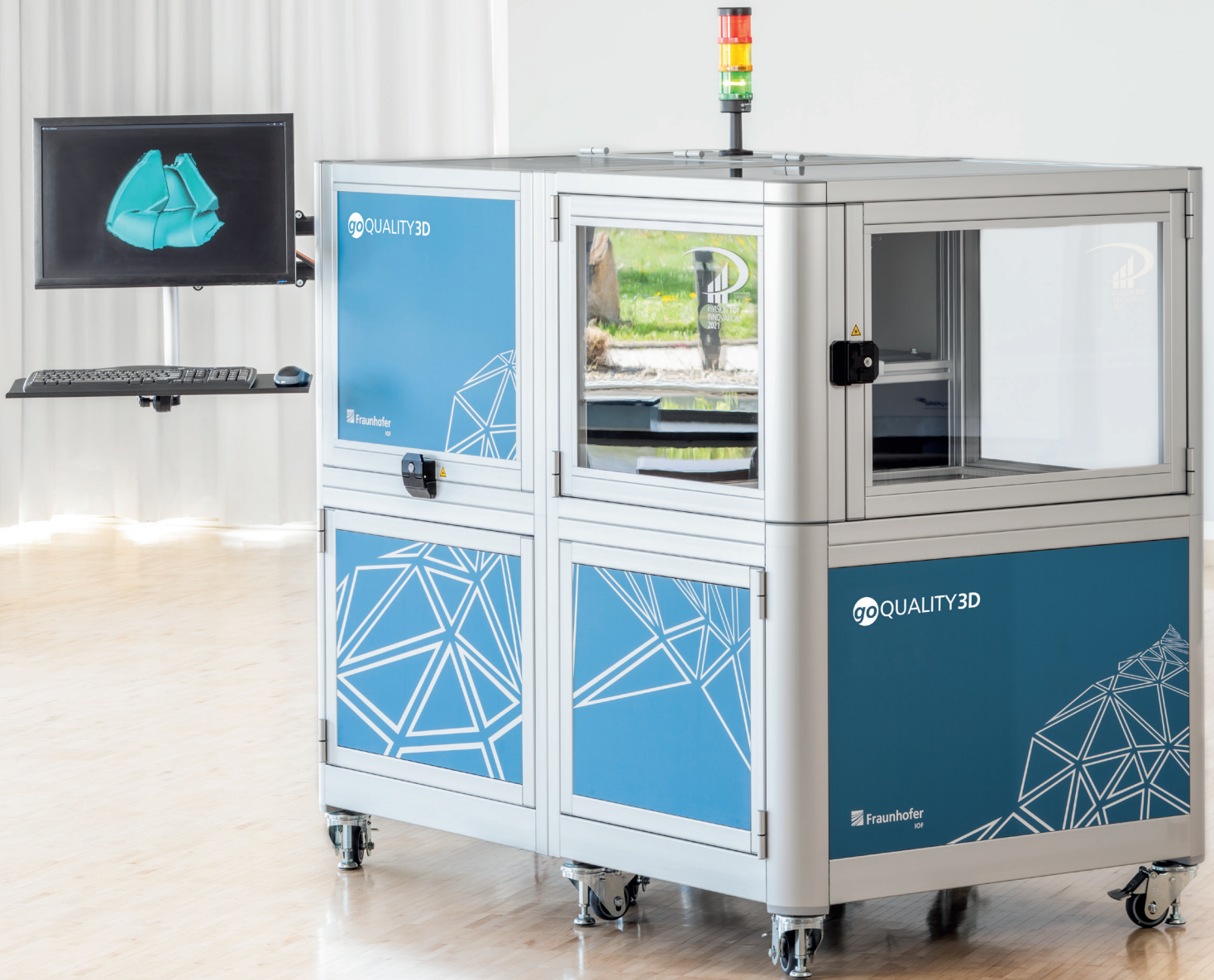


Fraunhofer Institute for Applied
Optics and Precision Engineering IOF



3D sensing of transparent objects

Quality assurance of products with
uncooperative surfaces

3D sensing of transparent objects

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Top: Measurement principle of the goQUALITY3D scanner.

Applications

- Quality control of transparent objects
- Digitization of transparent art and cultural assets
- Machine vision for industrial robots, e. g., bin picking

Measurement principle

- Triangulation-based 3D measurement system with active thermal irradiation
- Projection of single thermal fringe in the long-wave infrared
- Synchronous image acquisition by two thermal cameras

System parameters

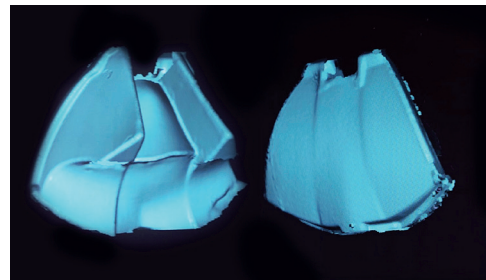
- Recording time per:
 - single view: 0.5 s...4 s
 - 360° view: < 1 min
- Measurement accuracy: 10...50 µm
- Measurement distance: 500 mm (customizable)
- Measurement field: 180 × 140 mm² (customizable)

Features

- Flexible projection system for different requirements
- Integrated turntable for all-around 3D measurements
- Data processing with established 3D analysis tools

Our offer

- Realization of custom-specific 3D measurement systems for uncooperative objects
- Execution of 3D measurement tasks



Measured 3D point cloud of a freeform optic made of transparent PMMA.

goQUALITY3D

Contact

Department Imaging and Sensing

Head of Department

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

Scientific Group 3D Measurement

Dr. Stefan Heist
Phone: +49 3641 807-214
stefan.heist@iof.fraunhofer.de

Fraunhofer IOF
Albert-Einstein-Strasse 7
07745 Jena
Germany
www.iof.fraunhofer.de



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