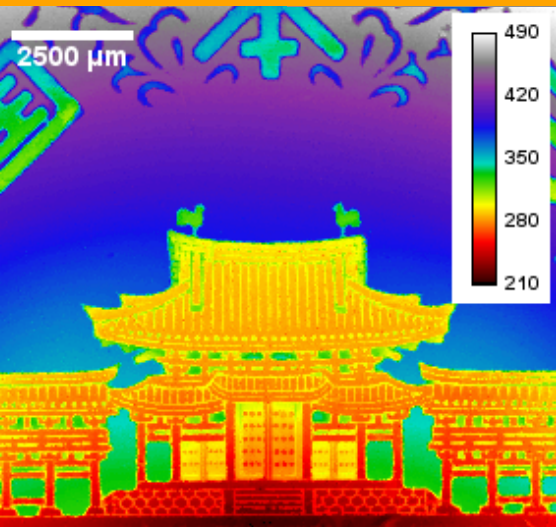## heliInspect™

H4

3D Inspection

2500 µm

490
420
350
280
210

topology validation of embossed metal

Applications

> co-planarity measurements

> geometrical feature control

> OEM integration

> in-line quality inspection

> statistical process control

Features

> surface topography

> volume tomography

> robust and fast

> sub-um resolution

> measures any surface

> software modules for rapid
  integration (Windows, Mac, Linux)
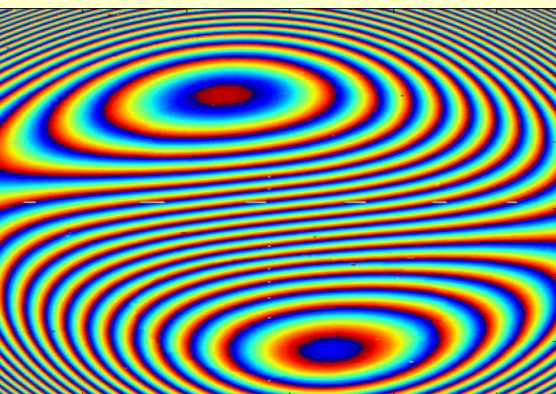
co-planarity of glass object
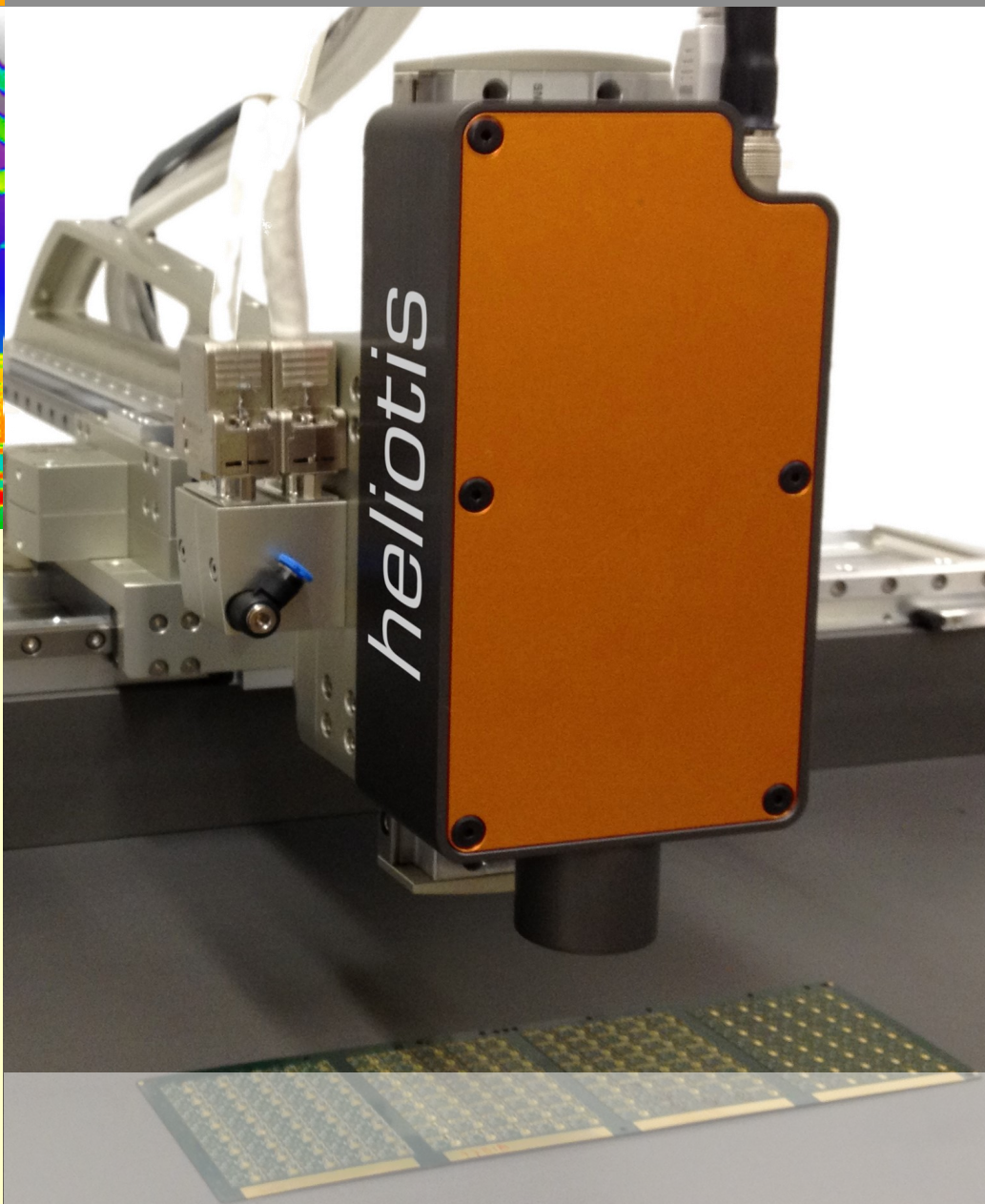
Metrology in Three Dimensions for Surfaces and Volumes

Equipped with the high-speed 3D imager heliSense™ S3 this brand new measurement module combines sub-micrometer surface metrology with large field of views. The heliInspect™ H4 operates as a non-contact white light interferometer (WLI) on almost any surface, including glass and metal.

The H4 is engineered for in-line applications requiring high throughput and robustness. Customized modules are available for equipment manufacturers.

As all Heliotis products, the module is manufactured in Switzerland for long lasting reliability.

H4DS0012

Metrology Module

3D sensor	patented smart pixel sensor heliSense™ S3 with in-pixel signal processing of up to 1 million 2D-slices per second
2D mode	live-view for navigation on sample (optional)
light source	standard: red power LED options: Superluminescent Light Emitting Diode (λ_{center} = 840 nm, $P_{optical}$ = 8 mW)
field of view	11.12 x 11.6 mm (standard configuration)
numerical aperture	0.1 (standard configuration)
working distance	16 mm (standard configuration)
vertical resolution	100 nm standard, 20 nm in phase mode
vertical scan speed	up to 50 mm per second
lateral resolution	40 µm (standard configuration)
reflectivity of sample	< 0.1% to 100%

Scan Module

Z-stage	80 mm vertical scan range; up to 100 mm per second; glass scale with 100 nm optical encoder

Software

heliCommander™	configuration and control of the system navigation via 2D live view (optional) graphical representation of 3D topography and profiles data processing and analysis data management and storage automation of measurement tasks (recipes)
heliSDK™	software development kits for C++, Python and LabView 2013, macros (ImageJ) (scanner control, 3D-camera configuration and readout, data processing algorithms)

Configuration example
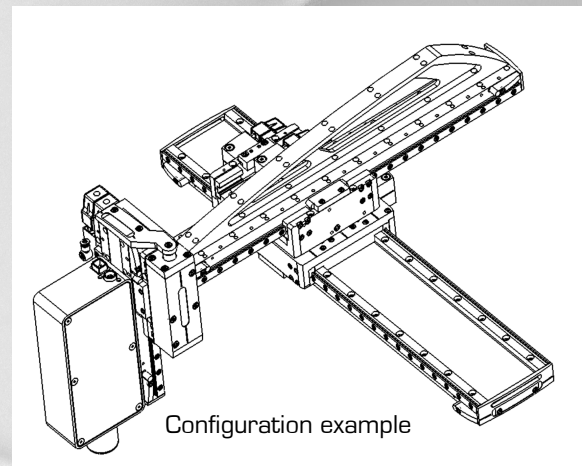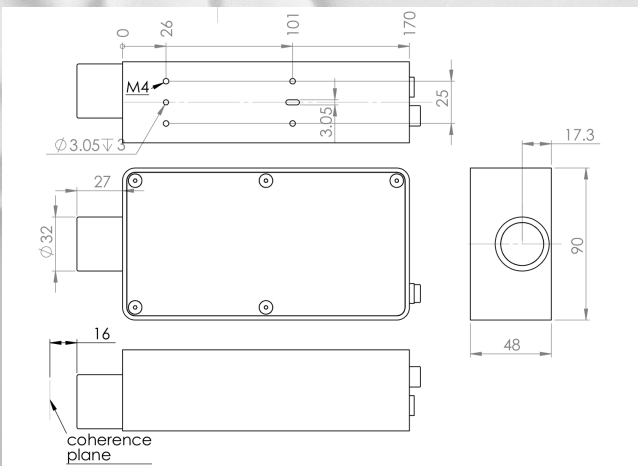
Grey scale coded 3D surface of a Swiss coin (10 Cents), measured with Heliotis' parallel OCT technique.