

Industrial Metrology



Multisensor Measuring Machines

ZEISS O-INSPECT



We make it visible.

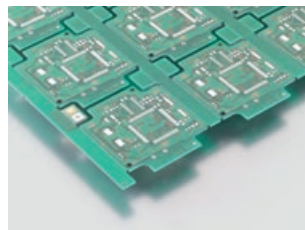


// O-INSPECT
MADE BY ZEISS

The moment you have all options at your fingertips to measure reliably.

This is the moment we work for.

O-INSPECT multisensor measuring machines from ZEISS enable you to optimally measure each characteristic – optically or by contact. An important feature: ZEISS O-INSPECT delivers reliable 3D accuracy compliant with ISO standards at a temperature range of 18-30°C.



The flexibility of ZEISS O-INSPECT makes it the ideal solution for inspection jobs in the medical technology, plastics technology, electronics and precision engineering industries

ZEISS O-INSPECT

Product family



ZEISS O-INSPECT 322

Measuring range [dm] 3/2/2

E0 from 1.6 μm



ZEISS O-INSPECT 543

Measuring range [dm] 5/4/3

E0 from 1.6 μm



ZEISS O-INSPECT 863

Measuring range [dm] 8/6/3

E0 from 1.9 μm



ZEISS

O-INSPECT

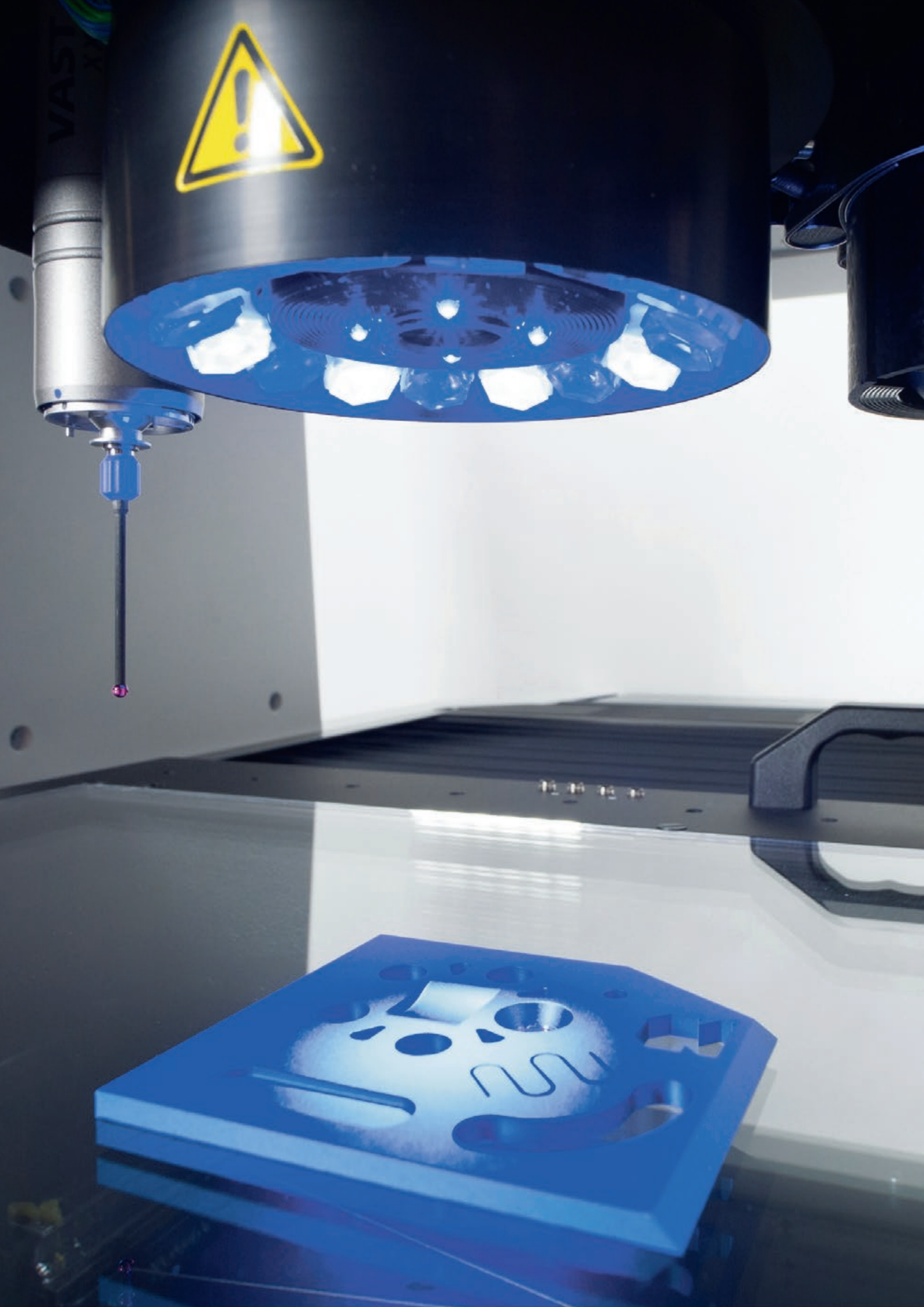
An expert in every discipline

ZEISS O-INSPECT provides premium sensors for leading-edge optical and contact performance – in full 3D without any limitations in the software. An added highlight: ZEISS CALYPSO software not only delivers results easily, but also simplifies the detection and identification of the causes of errors.

Highlights

- ZEISS VAST XXT contact scanning sensor:
minimal probing forces, smallest tipdiameters,
many measured points by sanning for form
inspections
- ZEISS Discovery.V12 lens:
large, distortion-free visual field
- Optional white light sensor allows the
measurement of small and sensitive surfaces
- ZEISS CALYPSO reference software:
live image and results in one view, 3D CAD
capability
- Pallet system with interface for automatic
temperature monitoring
- Optional rotary table for 360° measurements

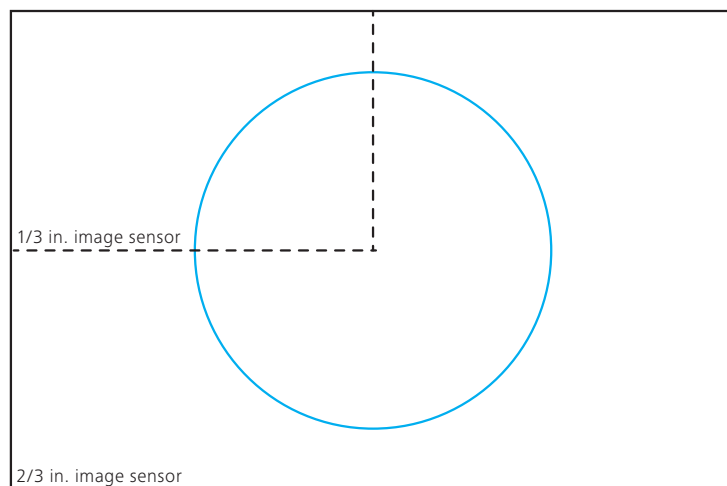




Large visual field, high image definition

ZEISS Discovery.V12 zoom lens

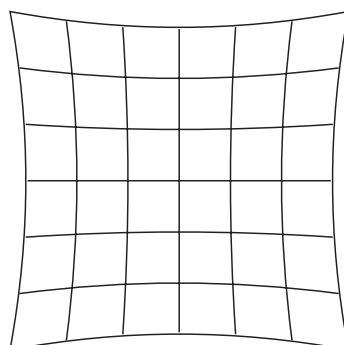
ZEISS Discovery.V12 comes from the ZEISS Microscopy division. Compared to standard lenses, it provides a 4x larger visual field and very good image definition also in the peripheral zones. The result: reduced measuring time and excellent accuracy.



The large visual field of ZEISS Discovery.V12 fully covers a 2/3 inch camera sensor. As a result, a borehole, for example, can be completely documented with a single image. A camera method and a composition of multiple images is therefore not required.

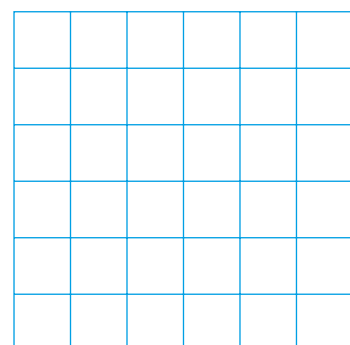
Standard lens:

Distortion in peripheral zone



ZEISS Discovery.V12:

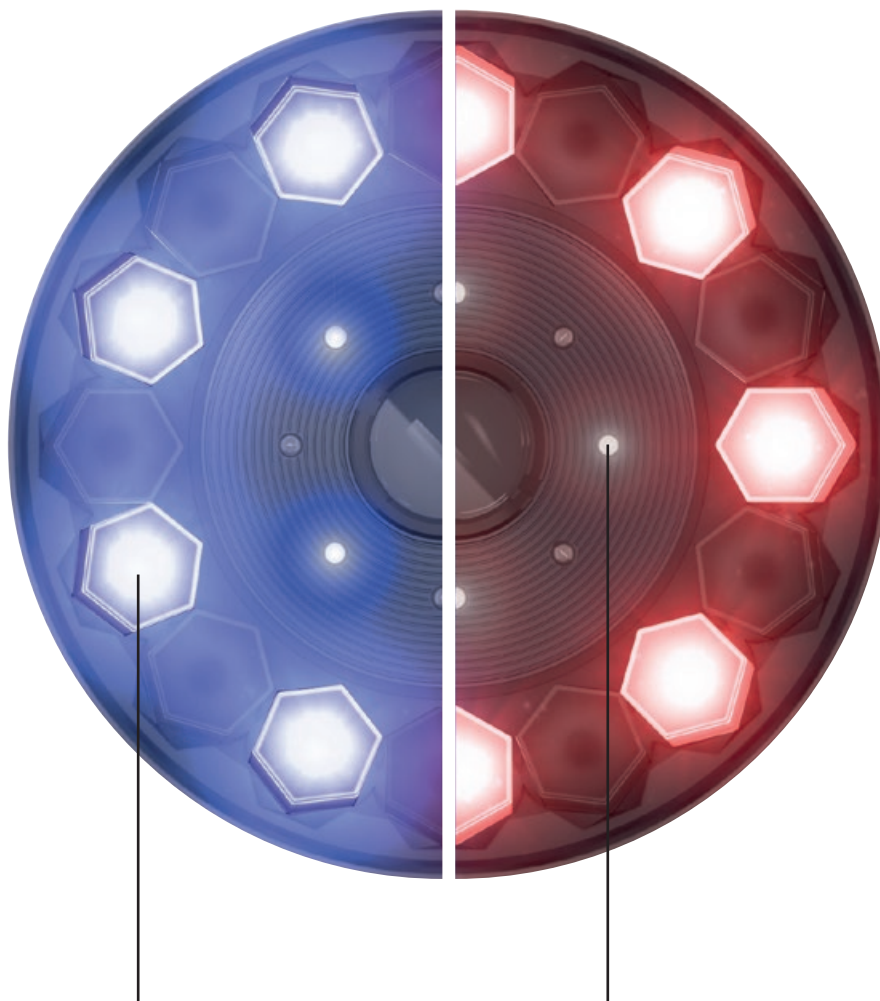
Practically distortion-free



Optimal contrast

The ZEISS O-INSPECT illumination system

A high-contrast image is necessary for precise results. ZEISS O-INSPECT features a highly variable illumination system for this purpose. Different forms, textures and surface colors can therefore be illuminated so that different lightning angles can be realized and edges become clearly visible.



Outer ring light in blue or red

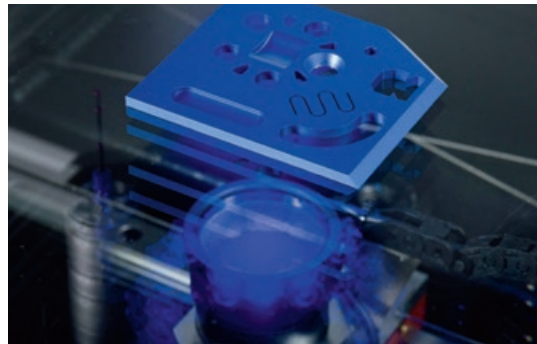
The outer ring light is comprised of eight blue and eight red LEDs that can be individually controlled. Together with the appropriate optics, the color LEDs enable the operator to filter out annoying ambient light and to illuminate colored materials with a high level of contrast.

Mini ring light in blue or red

The mini ring light increases contrast in the surface texture, thus improving focusing – for more precise measuring results.

Transmitted light

Transmitted light generates the strongest light-dark contrasts. For outer edges and cut-outs, it is therefore the ideal illumination solution.



Coaxial light

The depth of small boreholes can be illuminated using the coaxial light and exactly determined.



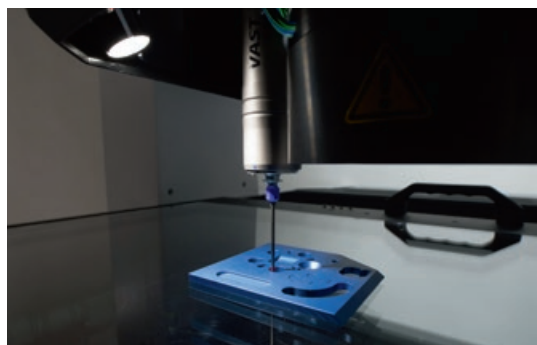
Coaxial laser pointer

The laser pointer in the center of the lens simplifies navigation during the programming process.



Optional measuring lab illumination

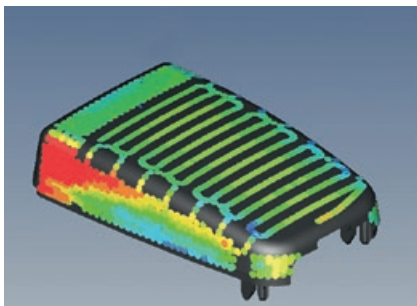
The optional measuring lab illumination allows measuring technicians to optimally view the test piece and stylus – regardless of ambient light.



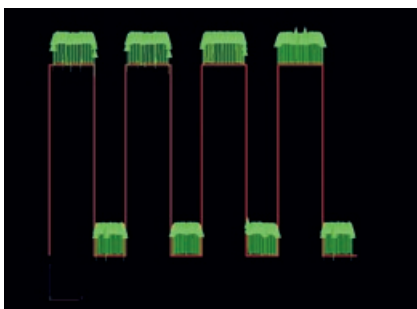
White light distance sensor

A white light distance sensor is available for all O-INSPECT models. It can be used to measure 3D structures optically and efficiently. Obtaining height information is based on the chromatic confocal principle. The advantage: the sensor does not

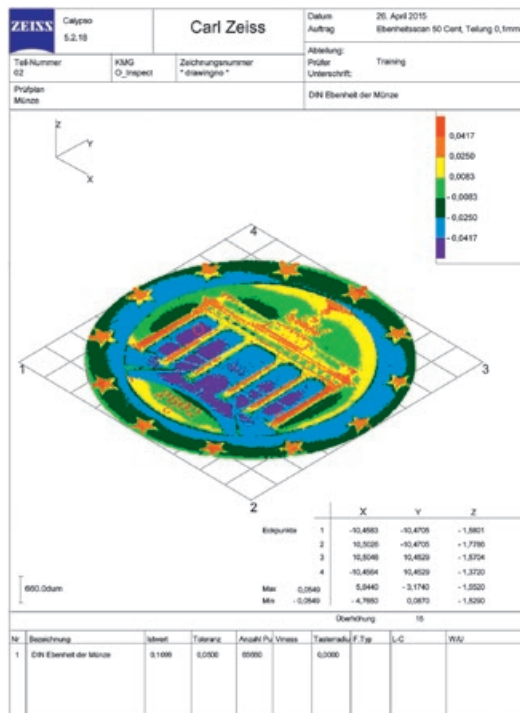
contain any moving mechanical parts and is therefore not particularly sensitive to interference and very durable



Plastic cover



Side view of a ribbed structure

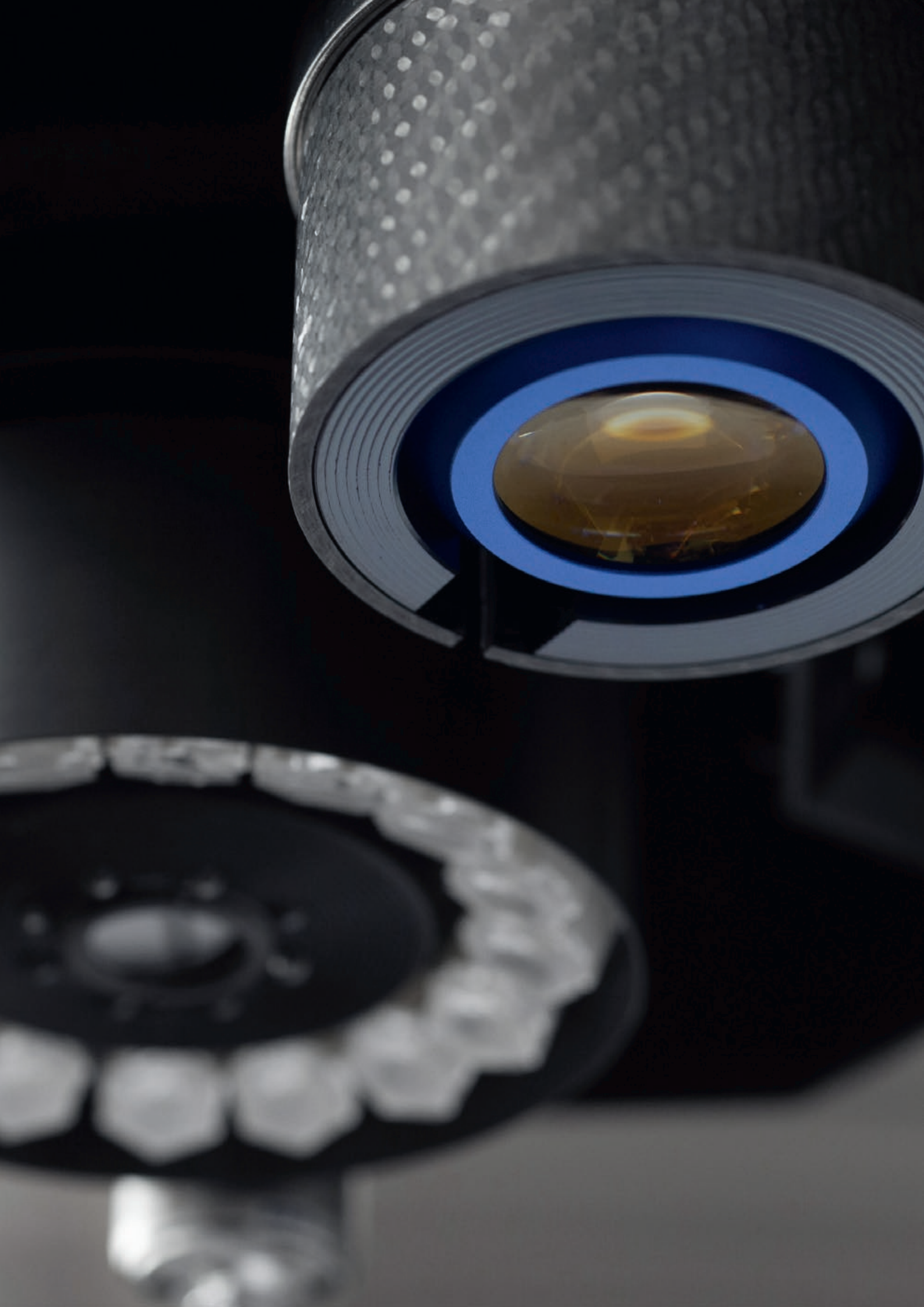


Flatness scan of a 50-cent coin

For glossy and matte surfaces

The white light distance sensor can be used to inspect reflecting or transparent objects such as glass and highly absorbent, matte surfaces.

3D structures can be optically captured with the white light distance sensor



More measured points, more information

ZEISS VAST XXT scanning sensor

With the ZEISS VAST XXT, O-INSPECT from ZEISS is equipped with a flexible, fast and highly precise contact sensor. This scanning sensor captures a considerable number of points in a single pass to enable informative statements on form and location. A speciality in this machine class.



ZEISS O-INSPECT allows scans with probing forces in the millinewton range in areas where other multisensor measuring machines only permit single-point measurements with relatively high probing forces. This enables true 3D measurements of thin-walled parts. Quickly and precisely.

Sensor variations

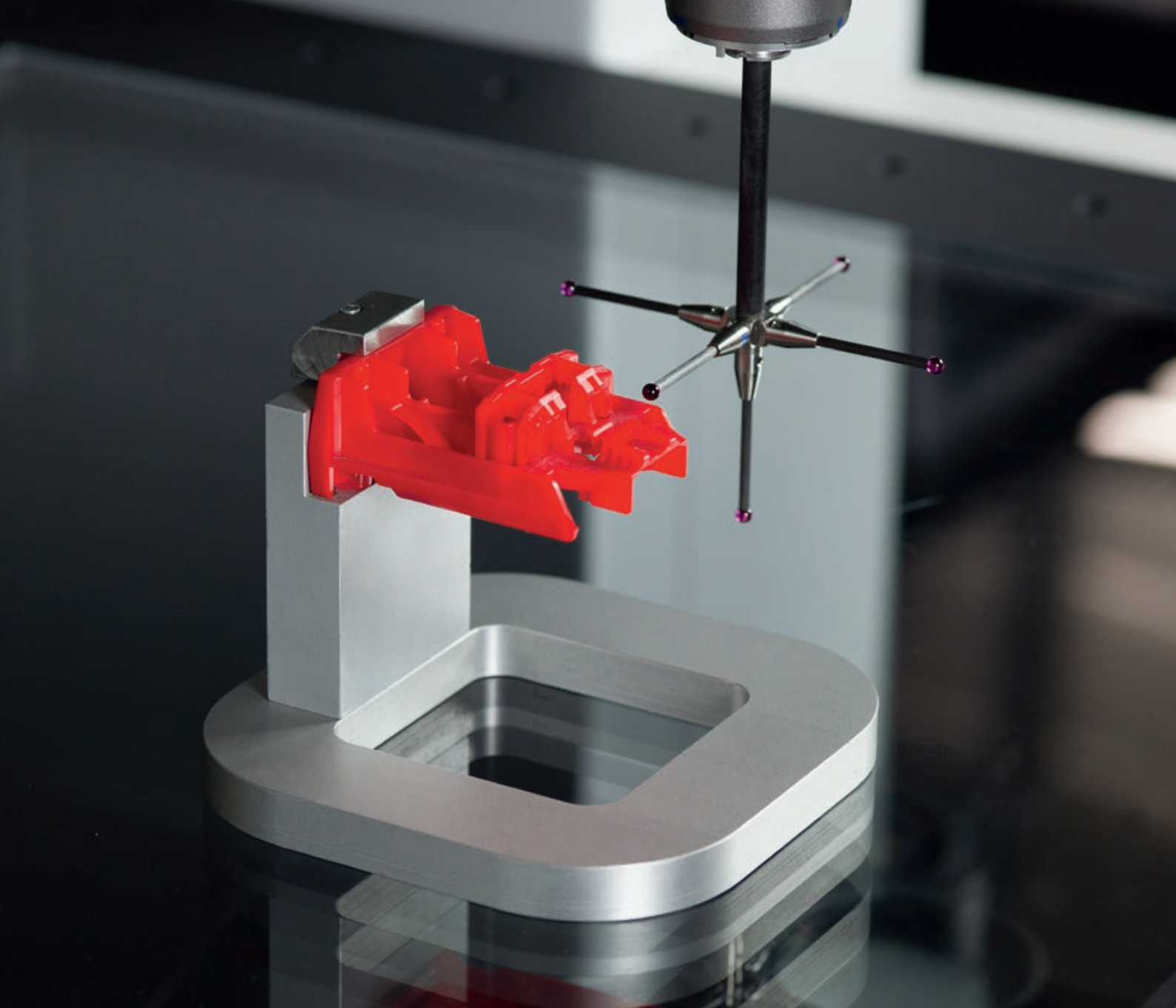
Two different sensors are available: the ZEISS VAST XXT TL1 features minimal measuring forces and is therefore ideal for scanning sensitive workpieces such as thin-walled, injection-molded plastic parts. The ZEISS VAST XXT TL3 accommodates higher stylus weights – for more flexibility with larger workpieces.

Free stylus selection

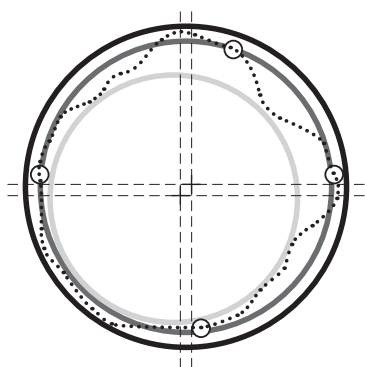
The ZEISS VAST XXT accommodates 30-125 mm styli, thus also enabling the convenient measurement of deep boreholes. Star styli with styli in three spatial directions and up to 65 mm projection ensure maximum flexibility. Measurements of even complex workpiece geometries can be made without changing the stylus.

Faster stylus change-out

The stylus is also automatically detected when a change-out occurs. Time-consuming recalibration is therefore not required.



With a star stylus, a stylus change-out is not required



— Minimum circumscribed circle determined using scanning values

— Compensating circle calculated from the 4 single points

— Maximum inscribed circle determined using scanning values

..... Form evaluation

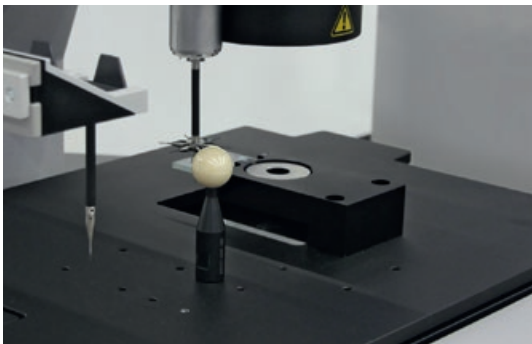
○ Single point (4-point measuring)

+ Different center point coordinates for minimum circumscribed/ maximum inscribed circle

Statements on the form and location of a feature can only be made with very many measuring points (scanning)

On the pallet, ready to measure

Convenience and reliability are vital to everyday measurements. The pallet system, calibration objects and fixtures for ZEISS O-INSPECT provide you with additional time and reliability. A special feature: the temperature of the workpiece on the pallet is automatically checked and is used for temperature compensation.



Calibration pallet

The RSH for ZEISS O-INSPECT, a glass artifact and an adjusting ring can be mounted to the calibration pallet. The entire pallet is then placed on the machine table for calibration, thus reducing the setup time.



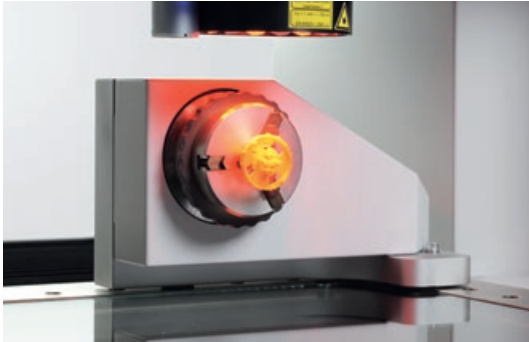
Glass pallet

The glass pallet is used for optical measurements made with transmitted light methods. It protects the glass table of the machine and enables the remote setup of test pieces with the rail clamping system.



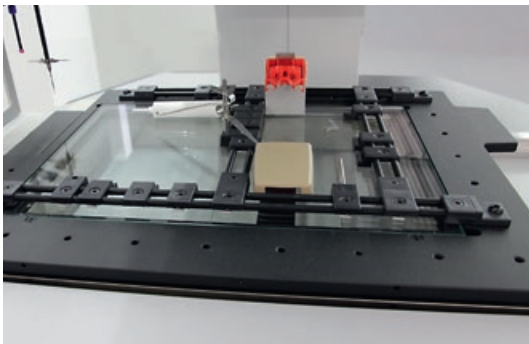
Hole grid pallet

The hole grid pallet supports all contact measuring methods and optical measurements using the reflected light method. Fixtures to clamp test pieces can be easily and reliably mounted to the hole grid.



Rotary table

The optional rotary table gives ZEISS O-INSPECT a programmable rotary axis, thus enabling the inspection of characteristics from all sides.



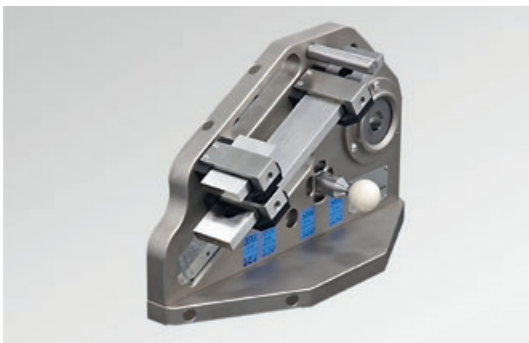
Rail clamping system

Correct positioning and clamping of workpieces are vital for their precise measurement. The rail clamping system allows you to quickly and easily set up positioning or clamping equipment for optical and contact measurements.



CARFIT CMK fixture kit

With the CARFIT CMF fixture kit, parts can be easily mounted in a defined location on the hole grid pallet. All standard CARFIT components are compatible with each other and can be delivered on short notice.



Multisensor check

The multisensor check is a procedure for the standard-compliant monitoring of coordinate measuring machines with contact and optical sensors. The universal, calibrated artifact comes with the associated control and evaluation software.

Ready: Make selection or take probings

Parameter for LED lighting

Current Setting:

iplit48

Available settings:

iplit48

New



Red

Blue

Single segments

all segments

1	<input type="text" value="78.0"/>	5	<input type="text" value="78.0"/>
2	<input type="text" value="78.0"/>	6	<input type="text" value="78.0"/>
3	<input type="text" value="78.0"/>	7	<input type="text" value="78.0"/>
4	<input type="text" value="78.0"/>	8	<input type="text" value="78.0"/>

Coaxial Light	<input type="text" value="0.0"/>
Mini-ring Light	<input type="text" value="0.0"/>
Back lighting	<input type="text" value="0.0"/>

OK

Cancel

Apply settings

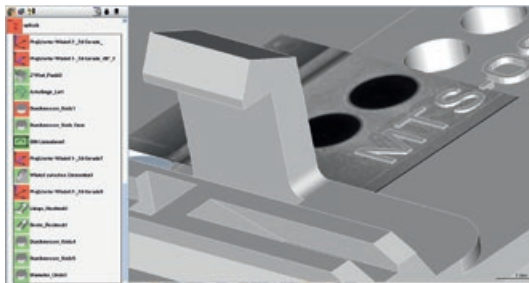
Seeing and understanding – with ZEISS CALYPSO

Camera image, CAD model and results in one view – ZEISS CALYPSO reference measuring software makes it happen. Its flexibility and simplicity puts it squarely in the center of all of industrial measuring technology.

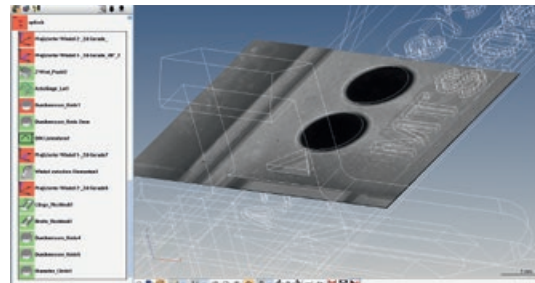
Together with ZEISS CALYPSO, ZEISS O-INSPECT opens up entirely new dimensions of visualization. You see the actual status, nominal display and deviations simultaneously, making it particularly easy to properly allocate and interpret the measuring results.

One software for all tasks

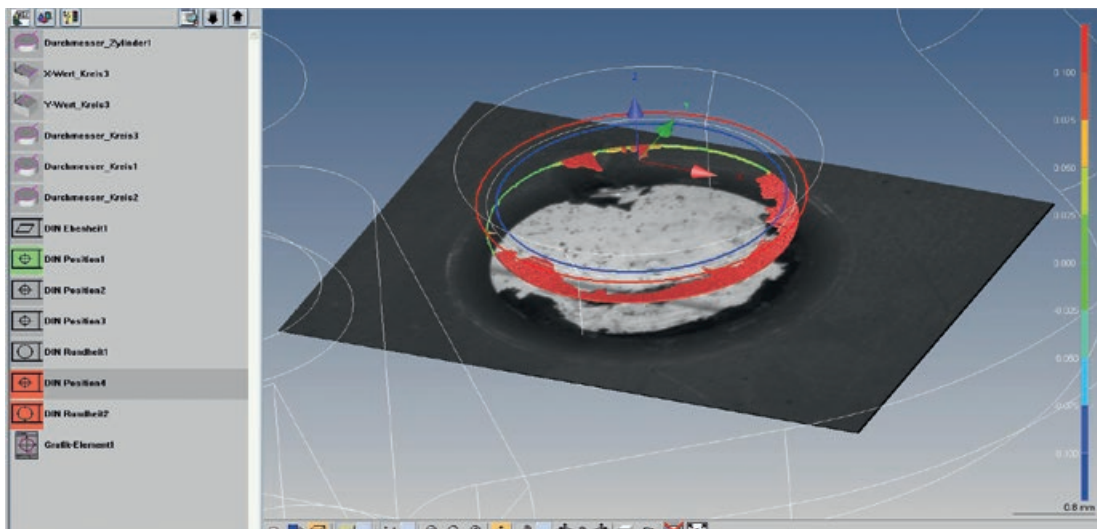
ZEISS O-INSPECT does not skimp with software either. With ZEISS CALYPSO, you have access to the same software used to operate our other coordinate measuring machines. ZEISS CALYPSO combines immense functionality and flexibility with a universal, intuitive operating concept. ZEISS CALYPSO allows you quickly and easily complete a wide range of measuring tasks with different sensors in the same way.



CAD surface model and camera image



CAD line model and camera image



CAD model, camera image, measurement strategy and deviations

Carl Zeiss

Industrielle Messtechnik GmbH

73446 Oberkochen / Germany

Sales: +49 7364 20-6336

Service: +49 7364 20-6337

Fax: +49 7364 20-3870

Email: info.metrology.de@zeiss.com

Internet: www.zeiss.de/imt

Carl Zeiss

Industrial Metrology, LLC

6250 Sycamore Lane North

Maple Grove, MN 55369/USA

Phone: +1 763 744-2400

Fax: +1 763 533-0219

Email: info.metrology.us@zeiss.com

Internet: www.zeiss.com/metrology