ZEISS

Seeing beyond

The optical solution with the right touch

ZEISS O-INSPECT

Key Characteristics

Large visual field with high image definition
ZEISS Discovery.V12 camera sensors provide variable magnification, while new sensor options allow for increased resolution to capture the smallest details.

Quick and precise 3D tactile measurements
ZEISS VAST XXT opens up high-accuracy scanning by recording a large number of measurement points in a single movement. ZEISS VAST probing for shortened probing times at single measurement points. For sensitive workpiece surfaces we guarantee a minimum of probing forces.

Optical measurements for sensitive surfaces
ZEISS DotScan enables the non-contact capture of workpiece topography when you have sensitive, reflective or low-contrast surfaces.

3/2/2

5/4/3

8/6/3

Stable precision
Calibrated to MPE E0 (3D) ISO-10360, O-INSPECT promises reliability and ensures comparability worldwide, while delivering accurate volume data (1D, 2D, 3D – tactile and optical) - valuable in high compliance markets.

Strong 3D CAD software tailored to your application
ZEISS CALYPSO offers improved visualization options to save you time. CAD models can be displayed superimposed and possible deviations (ACTUAL to TARGET) can be seen quickly.

Professional and actionable reports
ZEISS PiWeb reporting plus offers one-click documentation and visualization of your measurement data, giving you useful insights into your parts and processes.

Time-saving accessories
The rotary table allows a programmable rotary axis to inspect characteristics from all sides. Coupled with an integrated pallet system that monitors temperature automatically, you achieve more reliable results across different positions in less time.

ZEISS O-INSPECT
The right ZEISS O-INSPECT for every field of application

ZEISS O-INSPECT 3/2/2
Measuring Volume: 12 dm³
Measuring Range: 300 x 200 x 200
MPE E0 (3D) = 2.4 + L / 150

ZEISS O-INSPECT 5/4/3
Measuring Volume: 60 dm³
Measuring Range: 500 x 400 x 300
MPE E0 (3D) = 1.9 + L / 250

ZEISS O-INSPECT 8/6/3
Measuring Volume: 144 dm³
Measuring Range: 800 x 600 x 300
MPE E0 (3D) = 2.2 + L / 250

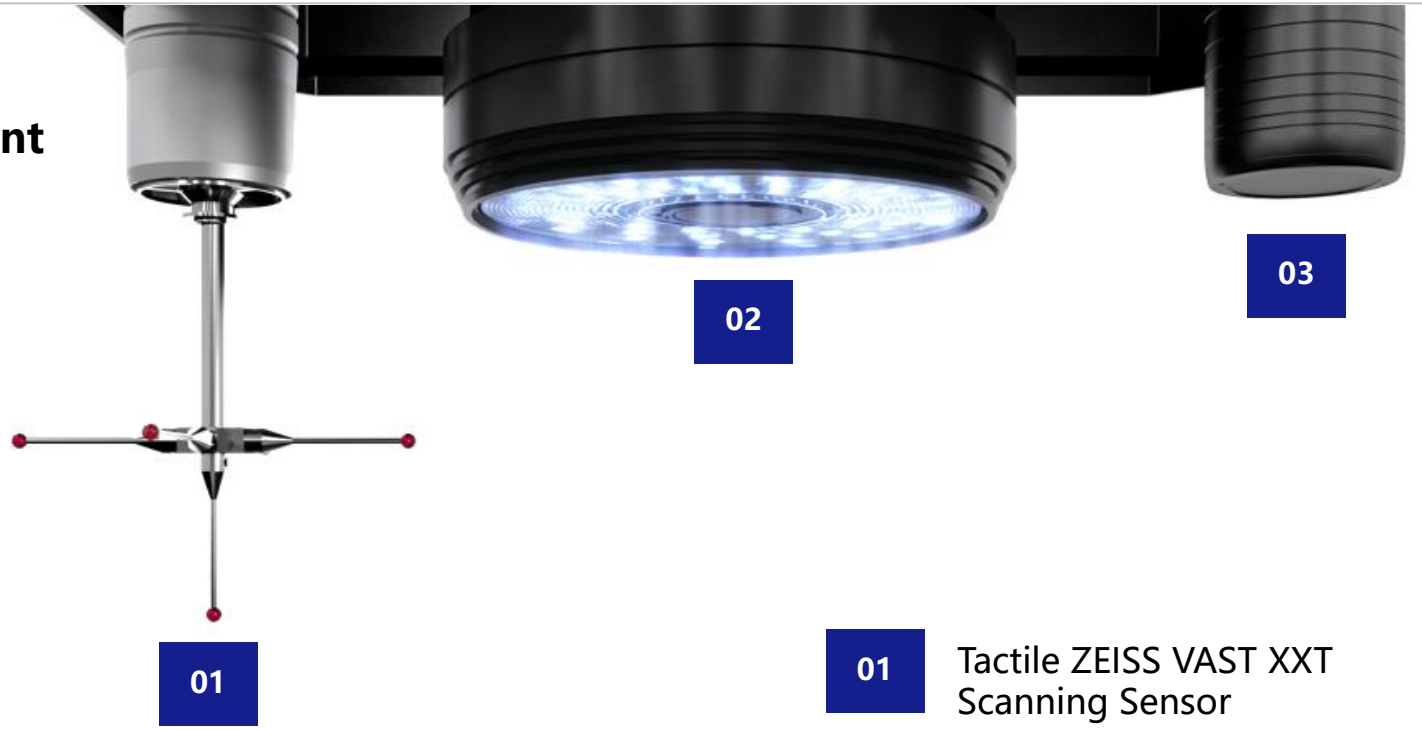
Multisensoric –
Optical and tactile

Switching from optical to tactile measurement

Quick and easy without changing manually the sensors or programming effort. Switching to the other sensor needs only fractions of a second and makes a sensor change redundant.

In addition, fix integrated sensors guarantee higher accuracy.

The benefits of multi-sensors
A multi-sensor machine like ZEISS O-INSPECT, which combines tactile and camera-based sensors, might be the solution, if you increasingly reach the limits of what's possible with pure tactile measurements.



01 Tactile ZEISS VAST XXT Scanning Sensor

02 Optical ZEISS Camera Sensor 12x Zoom-Optic

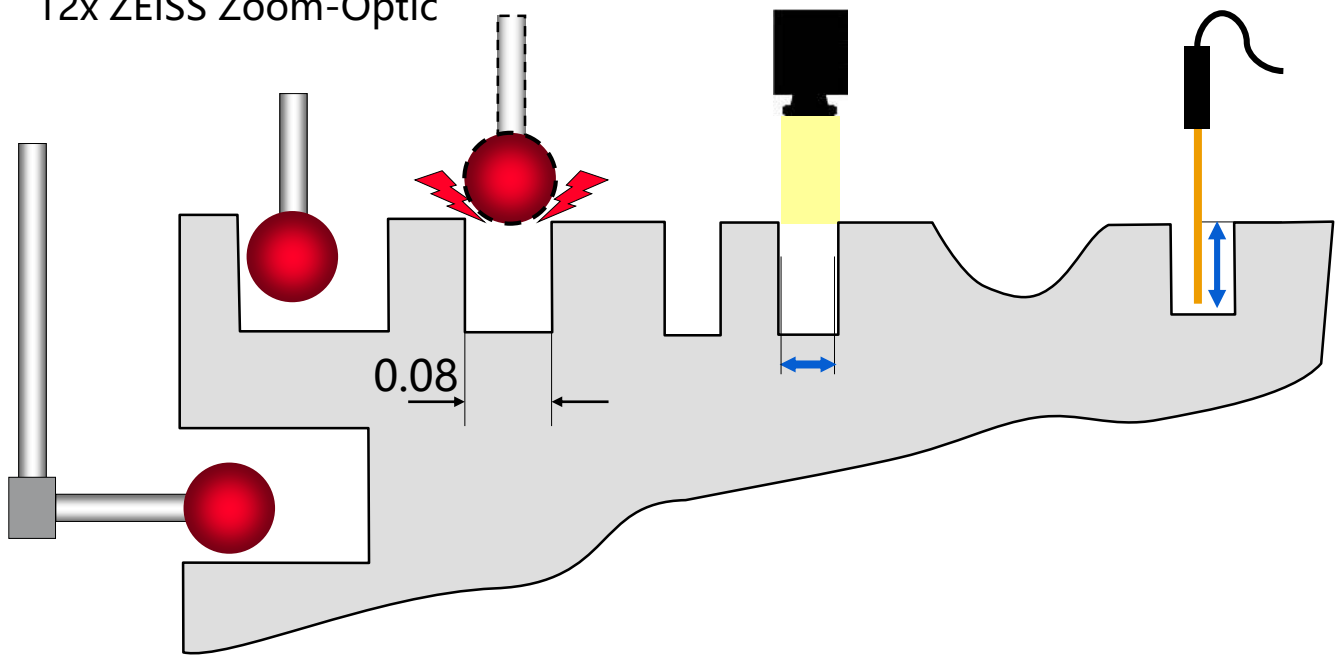
03 ZEISS DotScan Chromatic-confocal white light sensor

ZEISS O-INSPECT
Size and Accessibility of Features

Tactile Sensor (3D)
- Most flexible sensor
- Independent of surface reflection
- TL1 or TL3

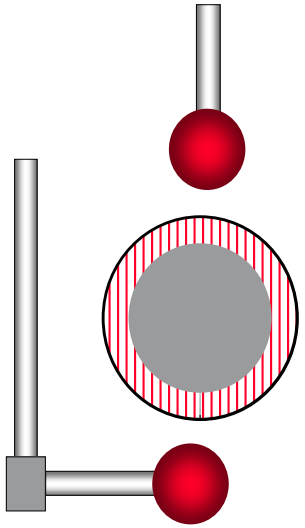
Camera Sensor (2D)
- ZEISS Discovery.V12 plus Ringlight
- 2D measurements in camera plane
- Acquisition of several features in one camera view
- Autofocus dependent on surface reflection
- 12x ZEISS Zoom-Optic

Confocal Sensor (1D)
- Distance measurements for tight structures
- White light sensor
- Preparation as default



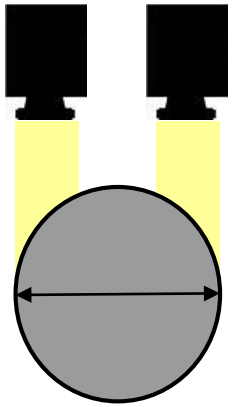
ZEISS O-INSPECT
Important Difference between tactile and optical sensors

Tactile sensor: 3D



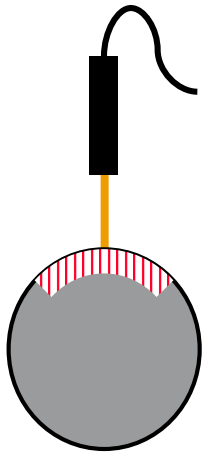
- Full information in all directions
- Surface reflection is not important
- Restricted in ruby-size

Camera: 2D



- Information in X and Y
- Reaches all features
- Rotation of workpiece might be needed

White light sensor: 1D



- Only information in Z-direction
- Reaches all features

ZEISS Discovery.V12
Large visual field & high image definition

Technical explanation

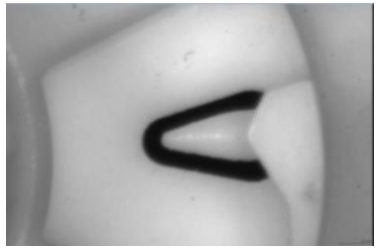
Compared to standard lenses, ZEISS Discovery.V12 provides a 4x larger field of view and very good image definition, even in the peripheral zones. The result: Excellent accuracy and a significant reduction in measuring time.

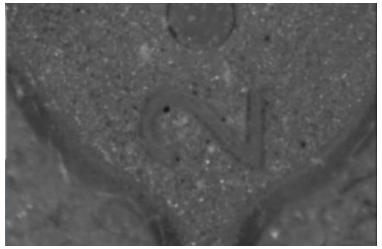
ZEISS O-INSPECT scout 160 and scout 240 options with an adapted lens for ZEISS ViScan Discovery.V12 zoom lens offers the possibility of an even higher optical resolution. The use of the alternative sensor units does not only provide a 1.6x or 2.4x higher optical resolution, it allows even a larger working distance between camera and component.

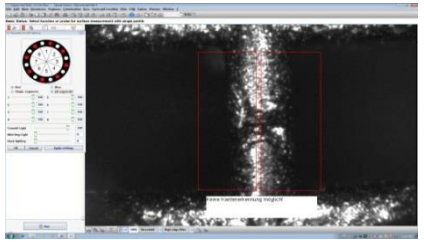
This also considerably extends the metrological

- New GigE CMOS-Camera, ~ 2,4 MegaPixel
- Higher troughput, shorter measurement time
- Enhanced edge detection
- **standard 100, 0,5x - 6,3x Zoom** --> for a **27"** inch screen **appr. 28 times – 342 times** magnification on screen
- **scout 160, 0,8x - 10x Zoom** --> for a **27"** inch screen **appr. 46 times – 560 times** magnification on screen
- **scout 240, 1,2x - 15x Zoom** --> for a **27"** inch screen **appr. 67 times – 875 times** magnification on screen

Competitor
1/3“inch
Cam

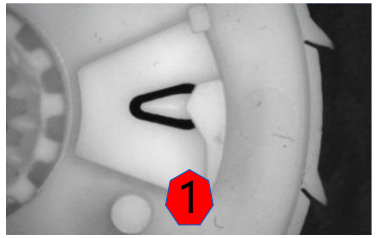




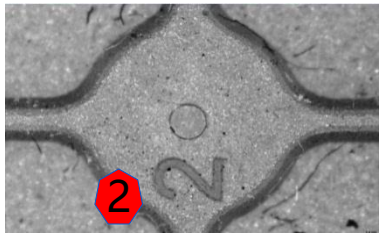


No edge detection possible

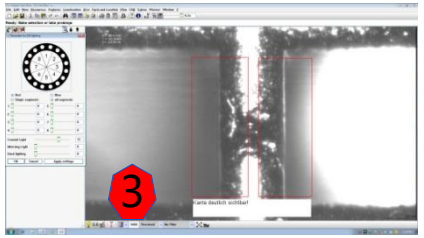
ZEISS O-INSPECT
ViScan III GigE
1/1.2“inch
Cam



4x bigger field of view



More details visible



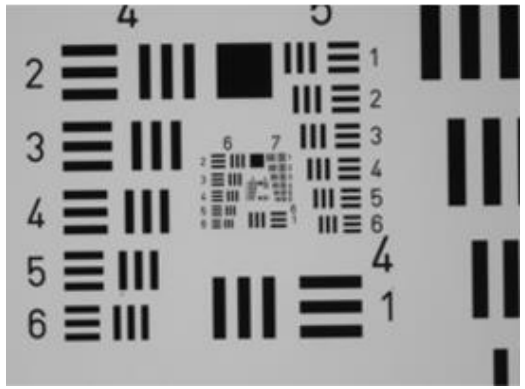
Improved light sensitivity

ZEISS Discovery.V12
Large visual field & high image definition for new opportunities

Image processing sensor with optional high resolution

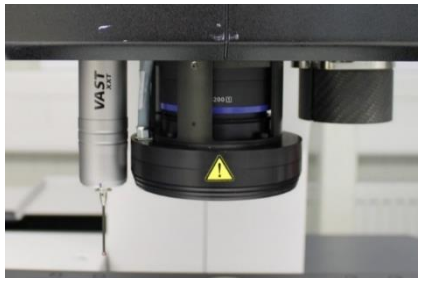
standard 100 / 0.5x – 6.3x: Good

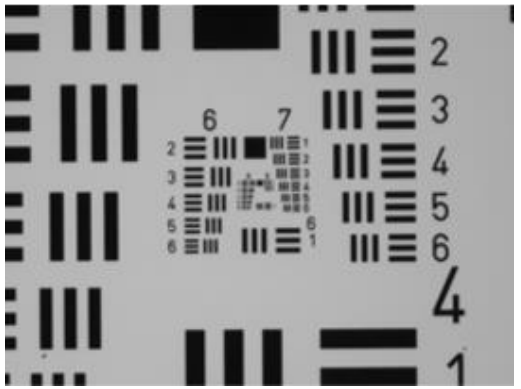
- Pixel size: ~ 1.0 µm
- Focal distance: ~ 87 mm
- FoV: ~ 1 x 1 mm²



scout 160 / 0.8x - 10x: Better

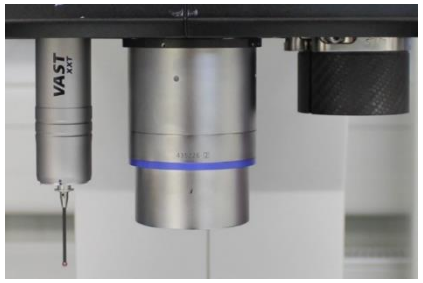
- Pixel size: ~ 0.6 µm
- Focal distance: ~ 55 mm
- FoV: ~ 0.6 x 0.6 mm²

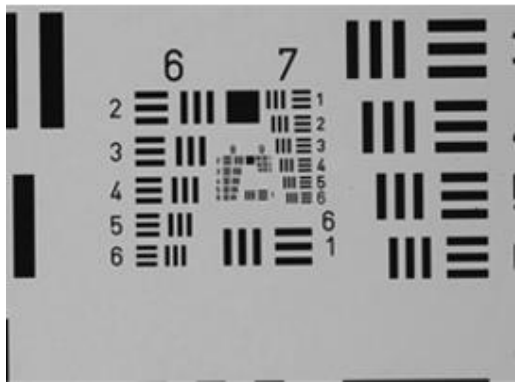




scout 240 / 1.2x - 15x: Best

- Pixel size: ~ 0.4 µm
- Focal distance: ~ 30 mm
- FoV: ~ 0.4 x 0.4 mm²





Optimal optical contrast
and future prepared

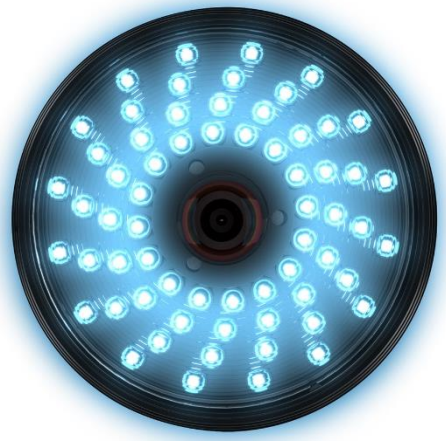
A high-contrast image is required for precise results. With outer and inner ringlight as well as integrated coaxial reflected light in red and blue and transmitted light, workpiece with various surface properties can be optimally measured. In addition the interface for the white light sensor ZEISS DotScan sensor does already exist. Therefore an upgrade is possible at any time.

Ringlight

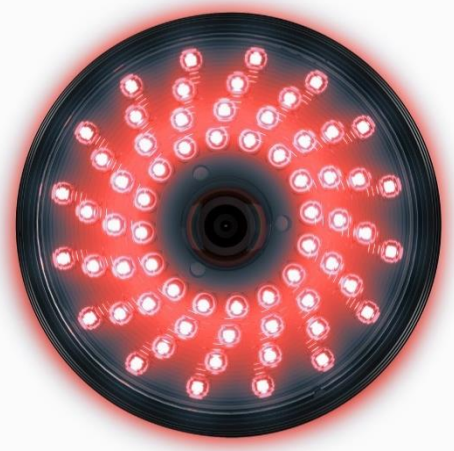
- Integrated Fresnel lens, better homogeneity, higher flexibility
- Inner and outer ring light, each with 8 segments, in red and blue
- Integrated diffuser adapter enables measurements of highly reflective surfaces

Why do we use blue and red light?

- Red surfaces reflect red light but absorb other colors.
- Example:



- Blue light gets absorbed
- Surface appears dark



- Red light gets reflected
- Surface appears bright

Seeing beyond