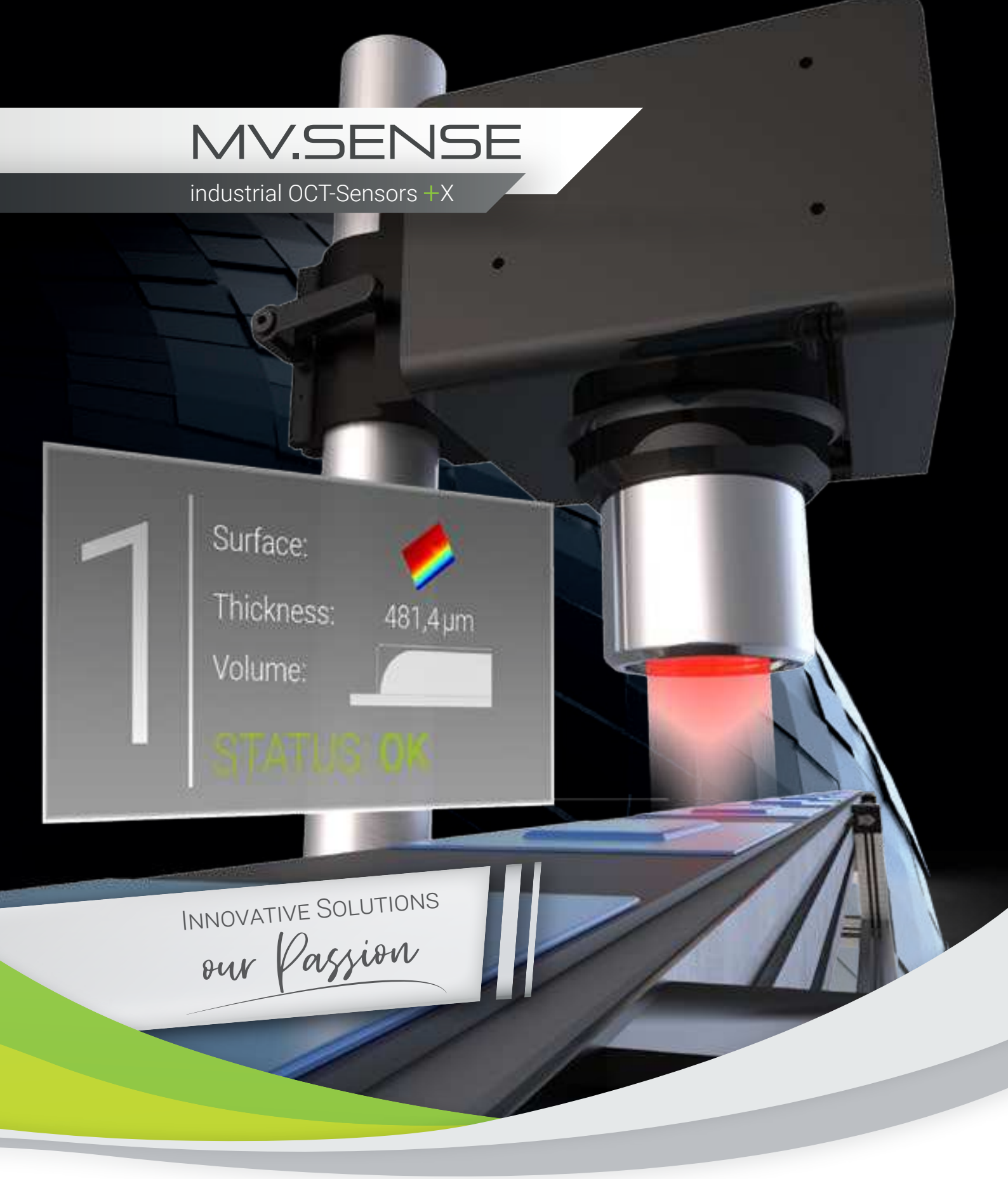
# MV.SENSE

industrial OCT-Sensors +X




INNOVATIVE SOLUTIONS
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MV.SENSE

# We deliver industrial OCT sensors for your Application.

Our sensors are based on the principle of white-light interferometry with the advantage of a fast spot measurement. Thus, we combine the high precision of a classic white light interferometer with the flexibility and production capability of light section sensors. Different reflection properties allow testing of multilayer and translucent materials.

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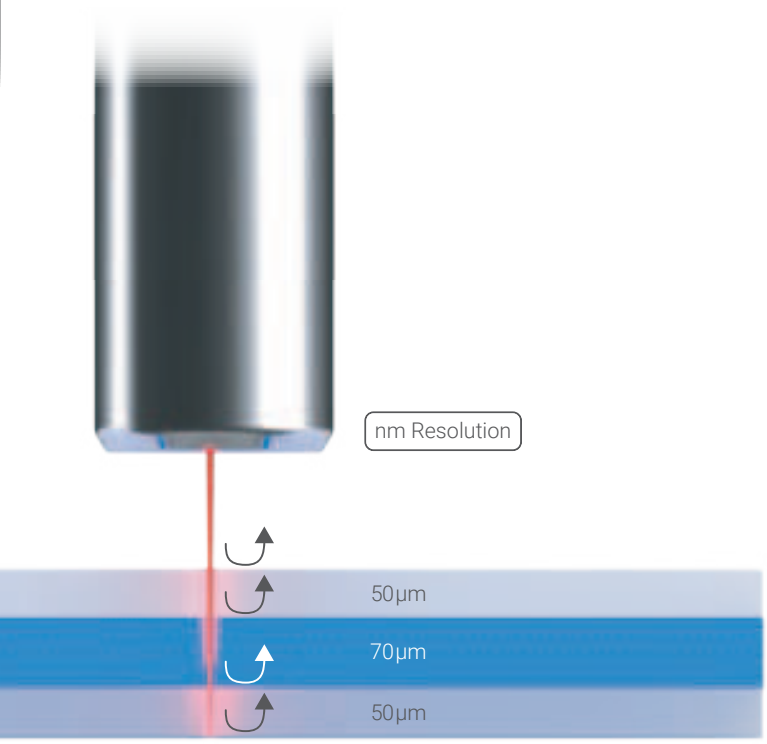
# industrial
# OCT-Sensors +X



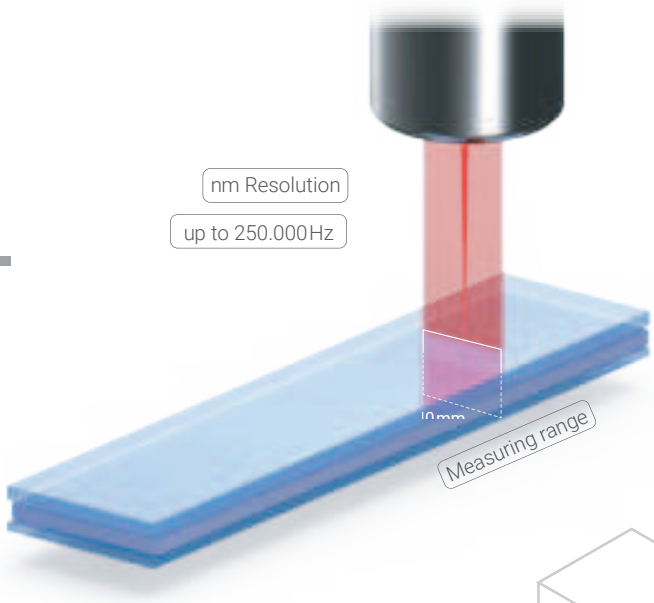

## TECHNOLOGY AND SCANDIMENSION

Depending on the application we offer the suitable sensor for your application. Basically, it can be measured in 1D, 2D and in 3D. The measurement takes place without additional axes and kinematics, as the beam shaping is carried out in the respective sensor and thus offers maximum flexibility.

## RESOLUTION, MEASURING RANGE AND VELOCITY

Our white light sensors are suitable for testing in the field of 3D micrometrics. Depending on their properties, resolutions in the single-digit nanometer range are achieved for surfaces and layer thicknesses. Layer thicknesses can be resolved from approx. 1µm.

Depending on the configuration, selective measurement rates of up to 250 kHz can be reached. The specifications of our sensors and controllers can be found on the last pages of this brochure.



# One Technology - many applications


The MV.SENSE interferometric sensors are specially designed for industrial use.

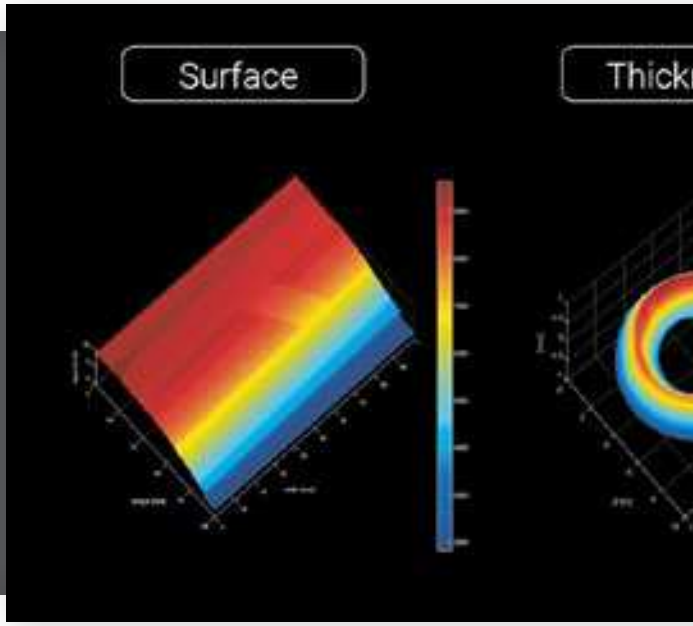
Whether surface inspection or layer thickness measurement of translucent materials or volumetric analysis - the various scanning functions result in a variety of applications, e.g. in the packaging technology, automotive, pharmaceutical and medical technology sectors.

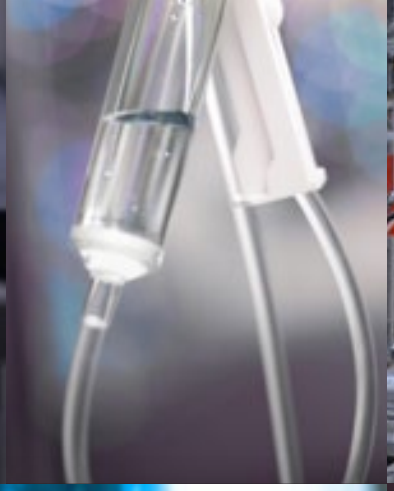
Are you looking for an end-to-end solution?
MABRI.VISION offers turnkey solutions for your application. We take care of everything: system design, construction, control cabinet construction, cabling and programming of the interfaces.

## SCANFUNCTIONS

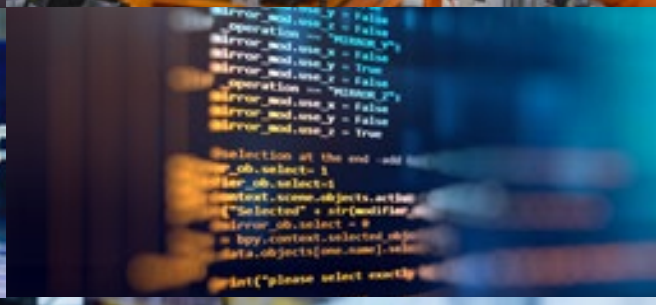
One sensor - many possibilities. Our OCT sensors enable various scanning functions.

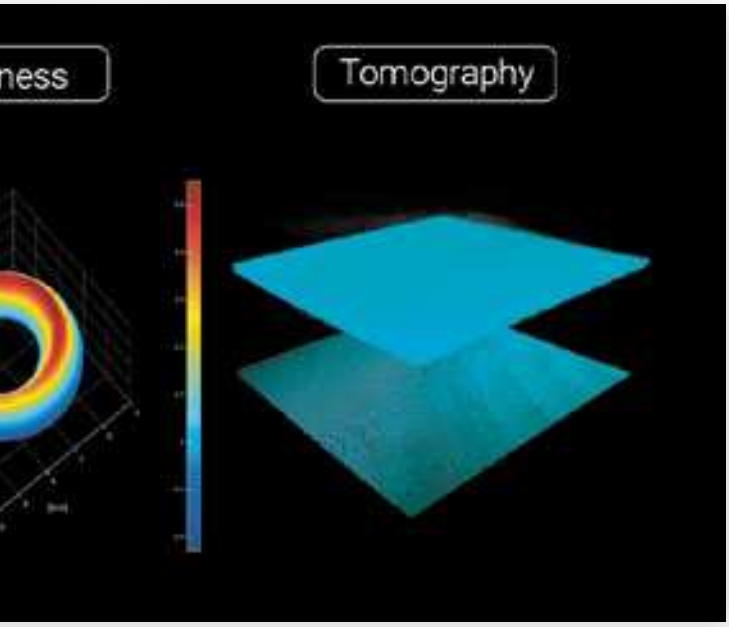
Through the combination of controller, sensor and software, our technology enables a high-precision measurement of surfaces, distances, layer thicknesses and volumes or structures inside the material.
The respective measurement mode depends on your application.










ness
Tomography

**Industrial OCT sensors + X**. With MV.SENSE we offer a complete OCT-solution: from the planning of automated tests to the matching software solutions to the clearly arranged visualization of the collected data, we deliver all the necessary components for your machine vision solution from a single source.

**OCT stands for Optical Coherence Tomography and refers to an imaging process for the generation of 1D, 2D and 3D images.**

## + AUTOMATION

Production lives from efficient processes. That's why we offer the right automation modules for our MV.SENSE sensors.

Interfaces are implemented according to customer specifications. We can integrate all common hardware and software interfaces according to your requirements via the appropriate PLC components.

By combining suitable handling systems and conveyor technology, our inspection processes can be integrated seamlessly into your production.

Do you need a robotic sensor or pick-and-place solution? We are happy to prepare a suitable concept.

## + SOFTWARE SOLUTIONS

Our MV.IMAGING software framework offers maximum flexibility. In addition to basic functions such as sensor status, recording, evaluation and storage of measurement data, individual software packages are available for various applications.

Features such as user management, databases, audit trail functions, batch reports, remote maintenance, touch functionality and data visualization are integrated according to your requirements. These are constantly being expanded by us and adapted to the applications of our customers. For integration solutions, an SDK is available. This enables the development of own applications under .NET, C / C ++, LabVIEW and Python.

# More than just a Sensor

## MACHINE VISION

Industrial inspection processes depends on clear results - the component is OK or NOK. That's why we combine our OCT sensors with industrial machine vision platforms to efficiently identify and classify features or defects.

In addition to our MV.SENSE sensors, we also use matrix and line scan cameras as well as profile sensors for implementing vision solutions. Dimensional accuracy, presence, defect detection, pores, voids, wobble amplitude, position detection, 3D shape measurement and object recognition are among our testing tasks.

## QUALITY AND PROCESSES

Our database interfaces offer you the necessary link for future-oriented production.

Optimize your quality assurance and use our measurement data for process control and efficient optimization. Timing graphs, statistics, process metrics, and batch reports are implemented as needed.

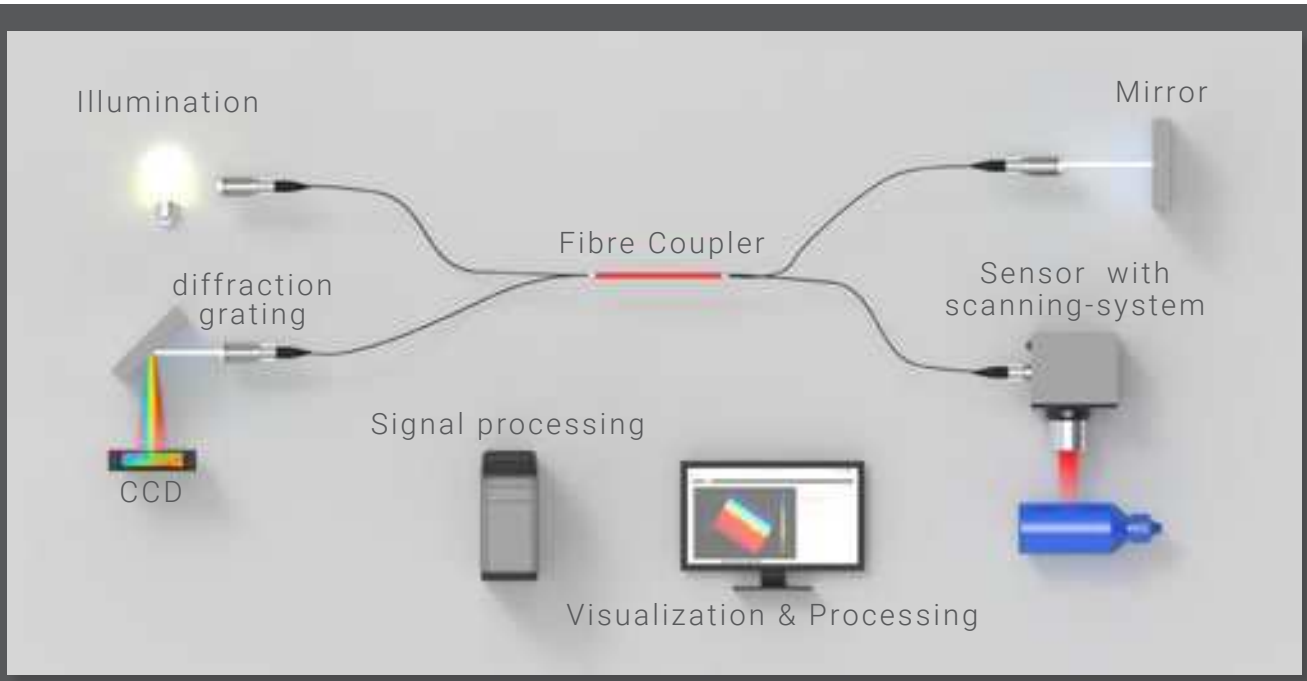
We are happy to advise you on the planning and optimization of your testing processes.

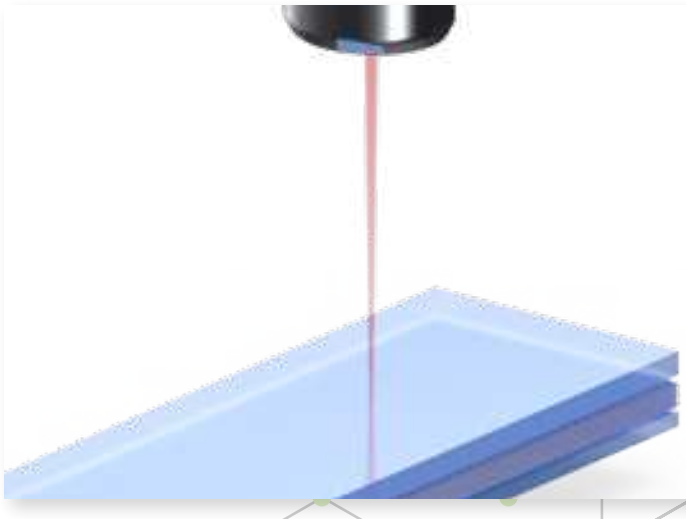
# Technology

## PRINCIPLE OF FUNCTION

The core of our sensor technology is the use of a broadband light source with a spectral evaluation unit. The backscattered light from the sample interferes with a given reference distance.

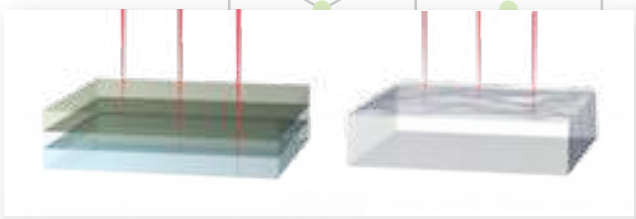
The short-coherent property of the light results in absolute distance measurement values. Several measuring points can be combined to form a picture.





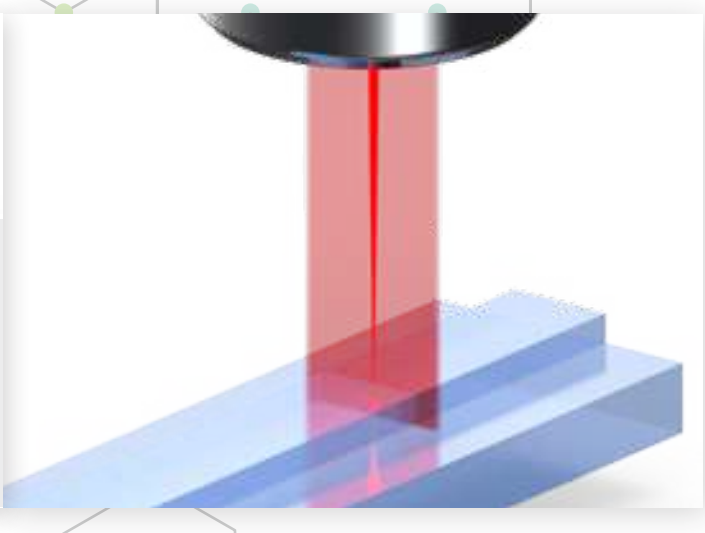
## 1D-Measurement

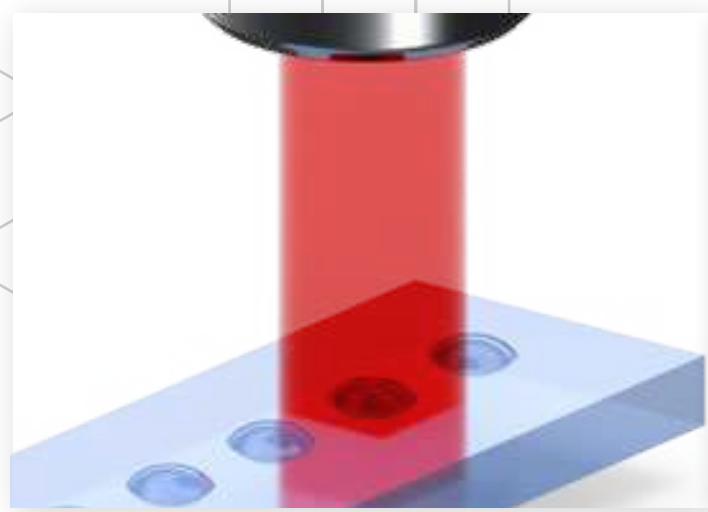
One-dimensional measurements use a point sensor. Additional sensors can be used in parallel to record additional parameters.

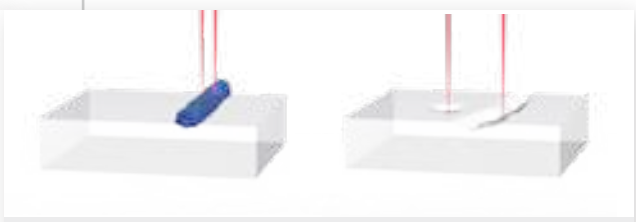


## 2D-Measurement

For two-dimensional measurement, we combine point and area sensors for testing multilayers and surface textures.





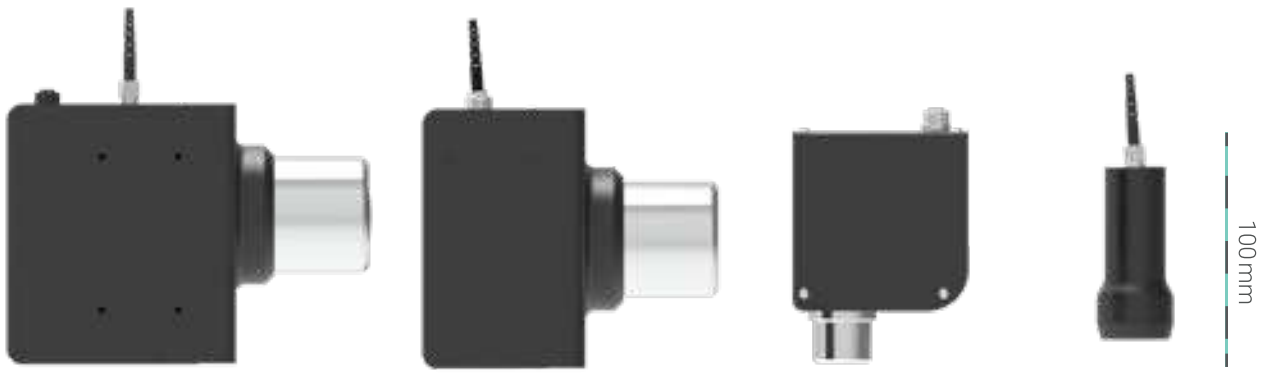


## 3D-Measurement

As an extension to the 2D measurement, with 3D measurements it is possible to analyze e.g. the Volume of glue beads or the size of defects.

# SPECIFICATIONS

| SENSOR | SXi-70 | SXi-250 | SXi-900 | SXi-1500 | S1i-18 | S1e-37 |
|---|---|---|---|---|---|---|
| FEATURES | | • 2D-Line-Scanner<br>• Large measuring range<br>• Cross-representation | | | • Point sensors<br>• Thickness measurement<br>• Compact | |
| MEASURING DISTANCE | 7,5 mm | 25 mm | 100 mm | 150 mm | 18 mm | 37 mm |
| LATERAL MEASURING RANGE | 5 mm | 11 mm | 40 mm | 70 mm | - | - |
| SPOT SIZE | 7 µm | 13 µm | 17,5 µm | 22 µm | 11,5 µm | 14,7 µm |
| DISTANCES | + | + | + | - | + | + |
| THICKNESS | + | + | + | - | + | + |
| MULTILAYERS | + | + | + | - | + | + |
| 2D SCAN / 3D SCAN | +/+ | +/+ | +/+ | +/+ | - | -- |
| CONTROLLER OPTIONS | B2i, C3i | | | | A1i, B2i, C3i | |
| MAX. 2D SCAN SPEED | 250 Hz (2°) | | | | - | - |
| SENSOR CABLE | Length: standard 2 m, on request up to 30 m | | | | | |




Can not find a suitable sensor? We also develop custom solutions for you!

| CONTROLLER | A1i | B2i | C3i |
|---|---|---|---|
| FEATURES | • Ultra high resolution<br>• Detection of thin layers | • High measuring rates<br>• High resolution | • Large measuring range<br>• Contrasting capture in transparent materials |
| MAX. MEASURING RATE | 80.000 / s | 250.000 / s | 146.000 / s |
| TYPICAL MEASUREMENT RATES | 30.000 / s | 120.000 / s | 70.000 / s |
| DEPTH MEASUREMENT RANGE | 0,3 mm | 2,3 mm | 8 mm |
| CENTRAL WAVELENGTH | 650 nm | 835 nm | 1280 nm |
| AXIAL RESOLUTION | 5 nm | 10 nm | 12 nm |
| MIN. LAYER THICKNESS | 2,2 µm | 5 µm | 15 µm |
| REPEATABILITY | 0,1 µm | 0,35 µm | 0,5 µm |
| EXTERNAL TRIGGER | + | + | + |
| 2D SCAN / 3D SCAN | +/+ | +/+ | +/+ |
| DISTANCES | - | + | + |
| LAYER THICKNESS / MULTILAYERS | +/+ | +/+ | +/+ |
| OPTIONAL RED TRACKING LASER | + | + | + |
| DIMENSIONS | 400 x 380 x 161 mm³ [W x D x H] | | |
| PC REQUIREMENTS | Windows 7 / 10, at least i3 CPU, at least 4 GB Ram, NVIDIA GPU depending on the purpose | | |

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