

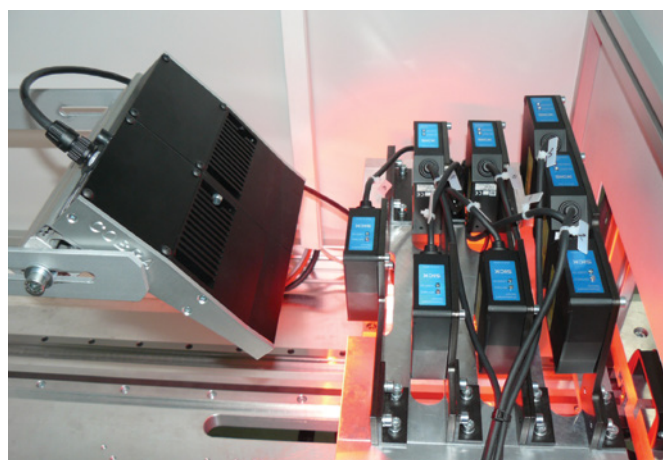


## OMS – Open Measurement System

In the engineering industry, manufacturers are forced to produce castings of complicated shapes with very thin walls in order to improve performance and reduce weight. And demands for the accuracy of such products are growing. High reliability and accuracy requirements become even higher for the measuring devices used in this field. What is now important is whether the device is reproducible and is able to take stable measurements in different operating conditions.

### › Complex 3D measurement of products

The OMS system is designed for precise measurements of aluminum castings, and other complicated shaped, molded products. The system is designed to 100% control the production process and replaces expensive and slow CMMs (coordinate measuring machines). The main principle behind OMS is to take accurate measurements of reference points and areas using the Cartesian coordinate system [X, Y, Z]. Due to the nature of production, our devices are able to check continually vast quantities of products with the high availability required, even in severe operating conditions; therefore, great emphasis is placed on the mechanical construction of the measuring device itself.



### › Advantages and Benefits

- High measurement precision and speed;
- Just one device measures the whole product;
- Full integration into the production process;
- Can be deployed even under difficult production conditions;
- Achieves 100% output quality;
- Provides comprehensive statistical treatment of results;
- Reduces capital costs invested into integrating multiple measurements in one device.

### Detection Capabilities

- Shape and dimensional characteristics of the products;
- Point measuring of coordinates in X, Y, Z space;
- Flatness and parallel operation on machined surfaces;
- Actual positions of the holes cast and machined;
- Diameters of holes machined;
- Relative and absolute positioning of cores in castings;
- Wall thickness of castings.

## › System parameters

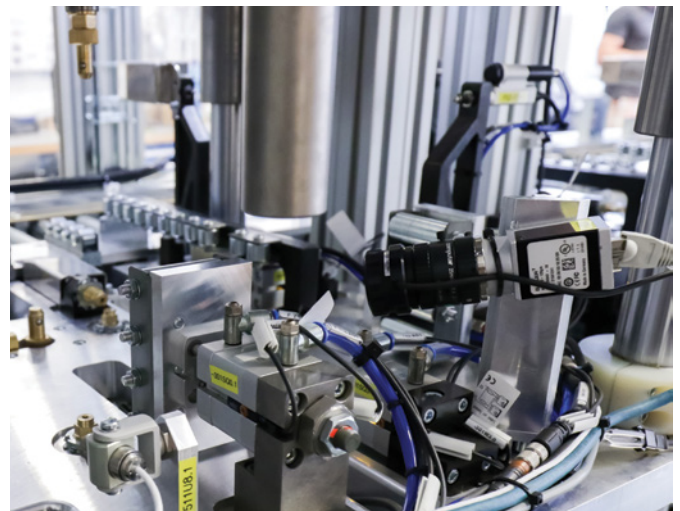
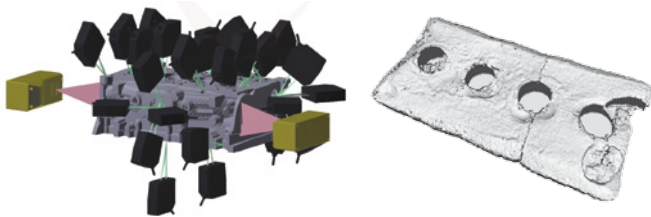
Maximum dimensions of products measured	900×700×700 mm (possible customization)
Achievable measurement accuracy	Measurement capability <10% in Gage R&R tests
Laser scanning	Up to 0.2 mm
Point laser measurement	Up to 0.1 mm
Touch probe mechanical measurement	Up to 0.03 mm
Cycle time	At least 20 sec, depending on the integration method
Number of measuring points	Unlimited

## › Method of Measurement

OMS is an open system allowing integration and single evaluation of 3D measurement data from various types of measurement systems in one measuring station. Based on the technology chosen, measurement takes place either during synchronized movement (laser systems) or from a static position in the fixture. The OMS system can process data from the following sources:

- Spot laser sensors;
- 3D scanners;
- Point contact sensors (LVDT or other);
- 2D camera systems.

All measurements are calibrated with each other into a common coordinate system. According to the exact specification of measurement and drawing tolerances defined using GDT, the system evaluates desired product characteristics and assesses its final quality. All measurements are stored in the database for further statistical processing.



## › Integration Options

OMS can be fully integrated into the production process. There are various mechanical designs according to the type of manufacturing process used. Major advantages are the modularity and option to integrate other types of inspections into a single device.

- Separated measuring device with manual loading;
- Inline device with conveyor-based handling;
- Robotically operates in an automatic cell;
- Integrates LightThru inspection, surface inspection, check of internal IIT threats and other measuring systems in one device.

