INNOVATIVE TECHNOLOGY

SOLUTIONS FOR THE FACTORY OF THE FUTURE

TPSH GATE INNOV GROUP

HYBRID 3D MEASUREMENT SYSTEM
100% AUTOMATIC SOLUTION FOR QUALITY CONTROL

We have developed a **hybrid measurement system (confocal and laser line) with very high speed robotics (4 to 12m/s)** allowing on-line quality control of 100% of the production.

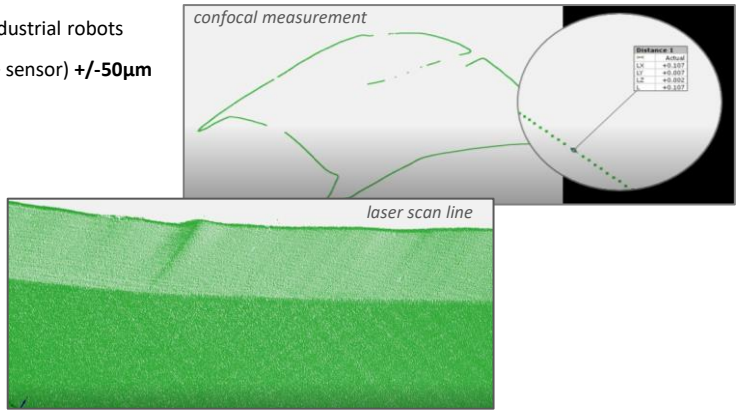
In multi-material applications (glass, metal, glass, plastic "), this system allows to scan in 3D the whole of the part surface (metal or plastic) and **both sides of the glass at the same time and to detect air gap defects in laminated glass.**

The objective is to **analyze dimensional, geometric and form of all types of industrial products with a mix of opaque materials and transparencies at high speed.**

It is a turnkey system, fast, accurate, customizable, easily integrated into any industrial environment, delivered with a dedicated HMI to guarantee improved inspection times.

Measuring speed up to 12m/s and the following features:

- ☑ Real-time robot ABB, KUKA, Staublï + hybrid "confocal and line laser" sensor (glass, plastic, composite, bare and painted sheet metal, all types of metals, etc.)
- ☑ Development of a calibration principle applicable to industrial robots
- ☑ Global repeatability of the measurement chain (robot+ sensor) **+/-50µm**
- ☑ Robots with SIEMENS 840D rack + point sensors
- ☑ Robot position sent every **3 to 4ms**
- ☑ Confocal sensor resolution : 200nm
  - ➲ Measuring depth of field 24 mm
  - ➲ Working distance 50mm
- ☑ Line laser sensor resolution : 5µm
  - ➲ Measuring depth of field 120 mm
  - ➲ Working distance 240mm



Very high speed 3D control and other advantages:

- ☑ High-speed 3D dense point cloud scanning
- ☑ Thickness measurement on transparent form
- ☑ On-line measurement of **100% of the production in line rate**
- ☑ High density of measuring points at high speed
- ☑ Automated inspection report for each measurement

Traceability of results on 100% of products is one of the benefits of this technology:

- ☑ **100% production control**
- ☑ On-line control at production rate
- ☑ Optimization of human resources
- ☑ Quick results by point cloud and key figure
- ☑ Custom definition of the selected precision (XYZ axes)

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