SculpX IMAGING

SculpX SX3D

the economical 3D machine vision system – perfect for small and micro components

COST-EFFICIENT 3D INSPECTION WITH DECENTRALIZED HARDWARE AND AI ACCELERATION

Our cutting-edge, Industry 4.0 ready SX3D family delivers a cost-effective, precise measurement and quality control solution. It achieves this by providing complex and accurate 3D information for every pixel in the image with high precision. This innovative approach is particularly suitable for handling complex, small and micro components and objects, surpassing the limitations of traditional, bulky, complex and costly 3D technologies - all in a compact and affordable package.

With SculpX SX3D Family using an up to 195mm wide measurement field, it is possible not only to analyze 2D and 3D RGB or monochrome data and the measurement principle delivers a complete three-dimensional caption of the object's geometry. The data obtained allows detecting anomalies, co-planarity, height details, inclination of layers, volume etc. Different camera variants of cyclone 3D Sensors are available. SculpX SX3D is designed to seamlessly integrate depth sensing and machine vision into your production line or a dedicated inspection machine.

Sensor - Technical Spec in a nutshell

- Field of View 18-85deg
- Depth Range 40-1210mm
- Monochrome, RGB, IR
- Precision up to 6µm (@ FOV 5x4mm²)
- Depth Map resolution 1.4MPix with up to 30fps
- Dimensions (LxHxW[mm³]) L x 30 x 30
  (L depends on configuration)

SculpX **SX3D**

Configurable according to application requirements

- Field of View
- Working Distance
- Depth Range

Processing Unit - Technical Spec in a nutshell

- Configurable according to application requirements
- AI–acceleration, 2D/3D inspection engine
- Interface: Web GUI; OPC-UA, GPIOs, PLC
  (Industrial Ethernet & Fieldbus)

SculpX **edge System**

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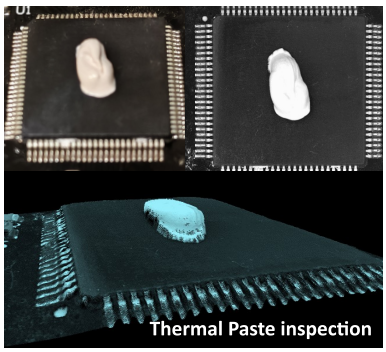
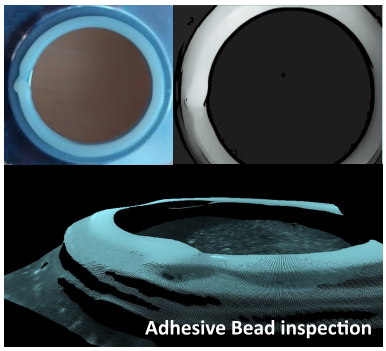
Application Examples for SculpX SX3D - inspection with high resolution in small visual fields, such as:



SX3D - Adhesive, Sealants and Thermal Paste Inspection

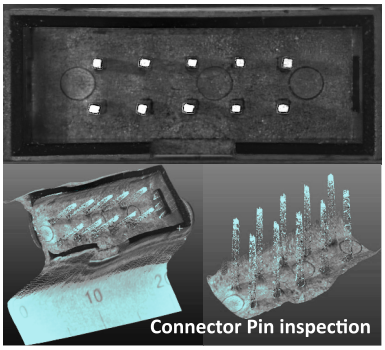
Detect anomalies, measure the width, position, and continuity of the bead application but also it´s height. This provides insights into the applied material volume. This system is designed to be seamlessly integrated into a production line or a dedicated inspection machine.

- Contactless and precise 2D and 3D measurement and visualization
- Control of shape and position of adhesive bead
- Inspection of skips (gaps), height, width and volume
- Control of inner and outer contour
- Application continuity check
- Volumetric control of dispensing system/adhesive bead



SX3D - Pin, Screw, Rivet Inspection

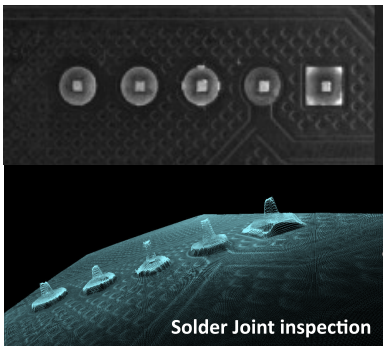
Measuring pin, screw, rivet position and height, identifying missing or bended pins and incorrect connector types, counting pins within a specific area, and assessing pin coplanarity.



- Contactless and precise 2D and 3D measurement and visualization
- Validate correct x/y/z placement of pins, screws or rivets
- Control of shape and position of pins, screws or rivets
- Control of inner and outer contour of connector
- Measurements of full connector surface area and its pins
- Flaw on the connectors

SX3D - Solder joint inspection

Inspection of solder joint for various defects such as solder bridges, insufficient solder, excess solder, solder balls, and misaligned components. Furthermore, determination of solder volume and meniscus.



- Contactless and precise 2D and 3D measurement and visualization
- Identification of defects like e.g. solder bridges, balls, insufficient solder joints or excessed solder
- Identification of missing or misaligned components
- Measurment of solder volume and meniscus

CHALLENGE US

Discover the power of precision with our state-of-the-art 3D scanning technology at our Lab. Avail yourself of complimentary material scanning for insightful inspections tailored to enhance your applications. Wondering if our system is the perfect fit for your needs? Allow us to provide you with a definitive answer - empowering your journey with cost-efficient and cutting-edge solutions.

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