Philips Innovation Services announces the release of a compact flexible robotized system for fast high accuracy optical inspection of semiconductor devices called “High Speed Inspection” system. The new system has been extensively tested and is now successfully in use for fully automated quality control of automotive LED manufacturing.

**Exceptionally fast and high resolution**
Manufacturing for the automotive industry requires an extremely high reliability and fully automated error detection. The new High Speed Inspection system can easily handle the required high throughput of up to 14,000 diodes per hour in continuous 24/7 operation. It provides this operation on an exceptionally small 1 m² footprint, allowing application in virtually any production facility.

HSI resolution amounts to 1 µm. Each measurement covers an area of 1 mm². Optical focus is adjusted automatically for each measurement with an accuracy of 1 µm. The new system measures over 14,000 images per hour.

**Very practical for a variety of industries**
Apart from the car manufacturing industry, the High Speed Inspection system can find its application in many industries requiring fast and very precise optical quality control.

The algorithm and hardware for the fully automatic image recognition and image evaluation can be optimized for a wide variety of measurement requirements. The High Speed Inspection system can also handle different substrate sizes. It includes fully automatic cassette loading as well as unloading. Handling all measuring steps is provided via a central robot.

Uwe Hoffmann of Philips Innovation Services, explains: “We developed the first solution based on explicit customer requirements. The algorithm as well as system hardware will be exclusively tailored in close collaboration with every individual customer to their specific requirements.”

**System specifications**
- **Image capturing**: 5 measurements / second
- **Units per hour**: 14,000 uph
- **Resolution**: 1 µm
- **Accuracy in x, y, z**: ± 1 µm
- **Substrate size**: 2” - 200 mm
- **Handling**: Robot
cassette
- **Load and unload**: Cassette
- **Cleanroom footprint**: 1 m²

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