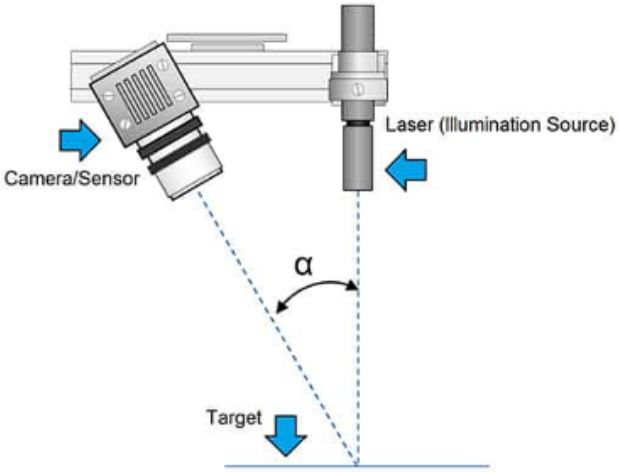
SEMICONDUCTOR

Precision Inspection through High-Resolution 3D Vision Technology

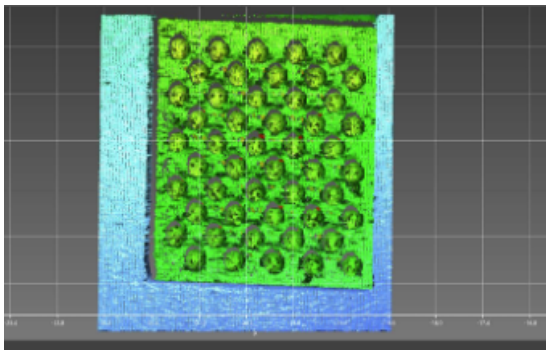
Problem Identified

The manufacturer faced challenges in achieving reliable inspection due to hardware limitations of the existing vision system. The current sensor resolution restricted the ability to capture fine details accurately. This limitation resulted in inconsistent detection of defects, particularly in the Y-axis and Z-axis. As a result, small but critical deviations in product quality risked being overlooked, potentially leading to downstream quality issues.



Solution Provided

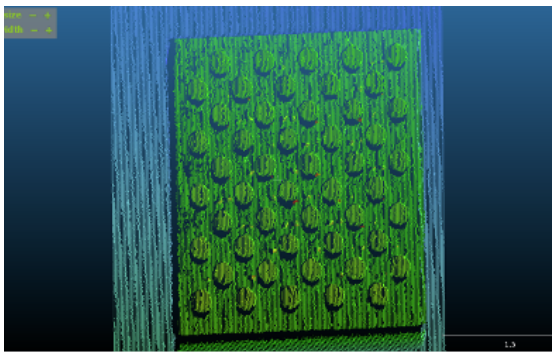
To address the issue, a next-generation 3D vision sensor with 4096 x 3072 resolution was introduced. This high-resolution sensor, sourced from leading machine vision technology providers significantly improved the accuracy and clarity of inspection results. The upgraded system enabled detailed visualization of product surfaces, capturing even the smallest deviations with greater precision. Unlike the previous setup, this solution ensured reliable detection while maintaining operational speed and automation compatibility



BEFORE

Results & Summary

Implementation of the upgraded 3D vision system resulted in measurable improvements in inspection performance. The higher sensor resolution provided sharper, more reliable data, eliminating the blind spots caused by the old hardware. Defective detection accuracy improved significantly, reducing the risk of quality escapes in the production line. The manufacturer reported greater confidence in quality assurance, which resulted in reduced rework, fewer rejects, and improved customer satisfaction.



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