

Success Story – Automotive

Type of Customer

A multinational automotive supplier.

Our Customer's Requirements

Our customer needed fast, accurate and reliable inspection technology. It soon became clear that CyberOptics offered the best overall solution based on their extensive evaluation.

The company had experienced many issues with previous automated inspection solutions when examining complex headlight parts with multi-height boards. 2D AOI (Automated Optical Inspection) proved too inaccurate with high escape rates when 3D measurement was required, while the 3D AOI was complicated to use and therefore, required highly skilled operators.

Traceability was also a key factor when choosing the right solution for this complex production line. The ribbon bonding quality of the parts had to be monitored to establish a process trend and improve production efficiency.

Above all, the need to achieve high-speed inspection was critical for the company to reach the speeds required for mass production. However, an accurate solution was equally important to ensure the lowest possible escape rate and that defects could be detected early in the production process.

Our Solution – The CyberOptics SQ3000™ 3D AOI System

Combined Speed and Accuracy – The SQ3000 can identify defects in as little as 12 seconds, making it much faster than traditional CMM systems. For this customer, the machine was also configured with a motion-scheduling algorithm to obtain high quality 3D data from the multi-height boards, ensuring highly accurate results at production speed.

The SQ3000's high-resolution Multiple Reflection Sensor (MRS) technology also mitigated any measurement inaccuracies due to the multi-height board and shiny wafer die.

Inspection Coverage – In addition to the general SMT inspection, die bonding and ribbon bonding inspection was incorporated to ensure the SQ3000 delivered a highly comprehensive inspection solution. The die bonding inspection included lift, XY position, rotation and glue quality of the die, while the ribbon bonding inspection featured loop height, missing ribbon, lifted wafer (at LED or FPCB), no loop, ribbon swaying and heel crack. The XY coordinate system was also customized to align with the customer's unique design document.

[Continued >](#)



Ease-of-use – The SQ3000 requires minimum operator intervention to maintain the machine. Its easy programming functionality not only reduces the time required to set up the system but also reduces the operator training time required and therefore, the cost of ensuring a global work force can use the solution.

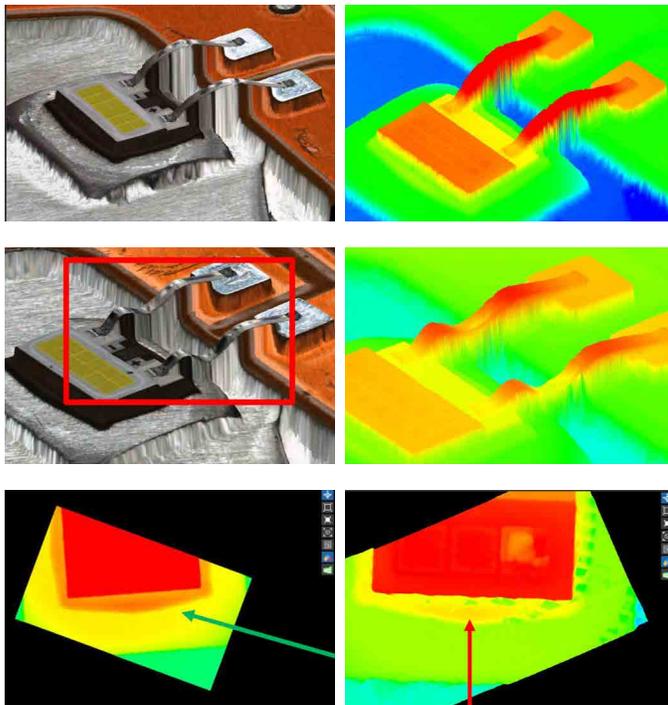
The SQ3000 is fully automated but also integrates seamlessly with the company's existing iTAC MES system to ensure the company's specific factory automation needs are met. In addition, the company has seen substantial cost savings with the SQ3000, based on factory automation within their financial justification.

Reliability – With the SQ3000, this company has achieved lower escape rates and a higher mean time between failures of the bonding inspected.

The Result

Since installing multiple SQ3000 systems, this customer has benefited from a more reliable, high-speed production line. The accuracy delivered by the SQ3000 has enabled this company to lower the escape rate and enjoy cost savings through early defect detection and reduced operator costs.

The company identified the SQ3000 as the best-in-class solution. The SQ3000 has not only improved the efficiency of its own operation, but customers have also provided positive feedback on the improved quality delivered to them as a result of this innovative technology investment.



For more information on CyberOptics products, services, or solutions, visit our website at www.cyberoptics.com.

CYBEROPTICS[®]

Contact CyberOptics today for more information

+1 800.366.9131 or +1 763.542.5000 | CSsales@cyberoptics.com | www.cyberoptics.com

Copyright © 2018-2019. CyberOptics Corporation. All rights reserved. Specifications subject to change without notice. 8026351 Rev B