



Issue 1 Volume 1

Application Solutions

Automotive Industry

Multi-Camera, Binary Solution for Radiator Tab Detection

Problem: Customer must confirm presence of mounting tabs on the side of a radiator assembly in order to guarantee the proper installation of the radiator in a final assembly process. As with many automotive suppliers, inspection of parts to guarantee quality is important to prevent fines or return of entire production lots at the supplier's expense.

Solution: In this case, using Omron's F160 vision sensor setup to perform simple binary measurements provided the solution.



How it works:

Each tab in image 1 had to have its presence confirmed to make sure the radiator would not shift in the final assembly. Images 2 and 3 below show present and missing tabs.

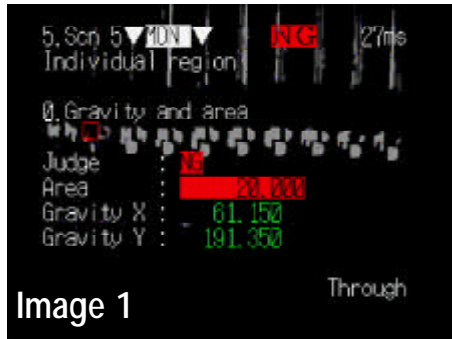


Image 1

By using a small binary area window over each tab, the pixel count can be used to confirm the presence of the tab. Lower cost high-frequency fluorescent lighting was used to light the radiator tabs. An F160 high-speed vision sensor was used to enable all of the tabs to be measured within the time frame required by the customer. Two cameras were used with the F160 to allow the high number of tabs to be imaged by a single vision sensor.

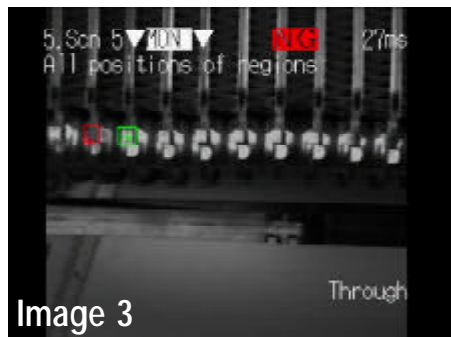


Image 3



Image 2

For more information on Omron's line of Machine Vision solutions, visit the [website](#).