

Smart Vision Lights LED Based Structured Lighting Provides Truly Precise Measurement



InoSys, Inc. was hired to develop a measurement system to inspect features on a perforated plate using Machine Vision. Flatness was a required measurement. Different parts varied from 0.001" to 0.050" thick with a flatness tolerance within 0.001".

Rich Schwarzbach of InoSys utilized a CCD camera and a common "Non Gaussian" red line laser. Mottling and poor uniformity across the width of the line, could not provide repeatable measurements. Software techniques improved results, but could only achieve a best of +/- .001". A pricey blue line laser was evaluated next. The manufacturer specified it would generate the least amount of interference with the thinnest line, increasing the accuracy. Although it was significantly better than the red laser, it provided insufficient results. Lastly, a white SP30 LED based single line generator from Smart Vision Lights was evaluated. The SP30 LED projector uses etch-masked patterns and optics to provide a focused structured light. This LED based structured lighting has many advantages over its laser-driven counterparts. The SP30 provides much crisper images, with sharper edges, and more uniform illumination without the blurred edges, decay, and speckling present in laser emitters.

Results of these tests showed z-axis measurements over 0.001" to 0.050" well within 0.001". The range of maximum deviations of any single reading from true was +/- 0.0003 linear through the entire measurement set and was spot on in differentiating gage blocks of 0.001". It demonstrated truly spectacular results.



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STRUCTURED LED LIGHTING



smart vision lights

- Any pattern possible
- High resolution for precise measurement
- Superior images compared to laser emitters
- Strobe Capability
- All colors and wavelengths available including IR



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