LMI TECHNOLOGIES

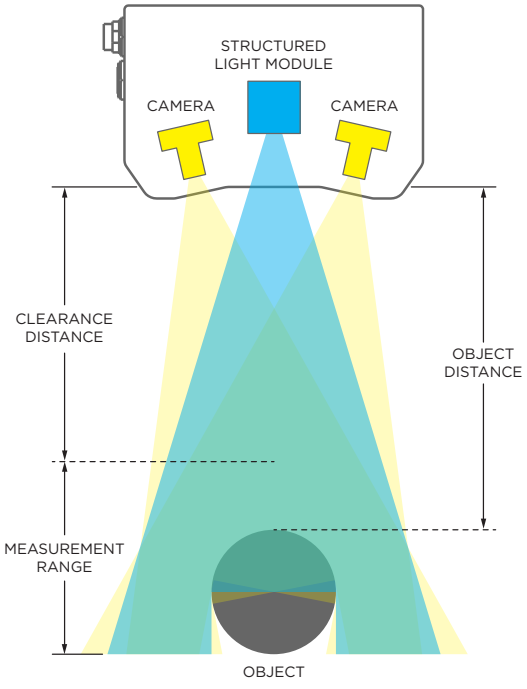
ENGINEERING POSSIBILITIES

STRUCTURED LIGHT

3D TECHNOLOGY SPOTLIGHT

HOW IT WORKS

Structured light scanners use a light source — such as laser or LED — to project a pattern onto a target surface. The distorted pattern due to shape is then acquired by a camera and used to reconstruct the object. Structured light 3D systems are designed around decoding a single pattern (textured projection) or a sequence of patterns (fringe projection). Textured patterns tend to deliver lower resolution 3D point clouds (down to 100um) while fringe patterns offer much higher resolution down to a micron.



The Structured Light Advantage

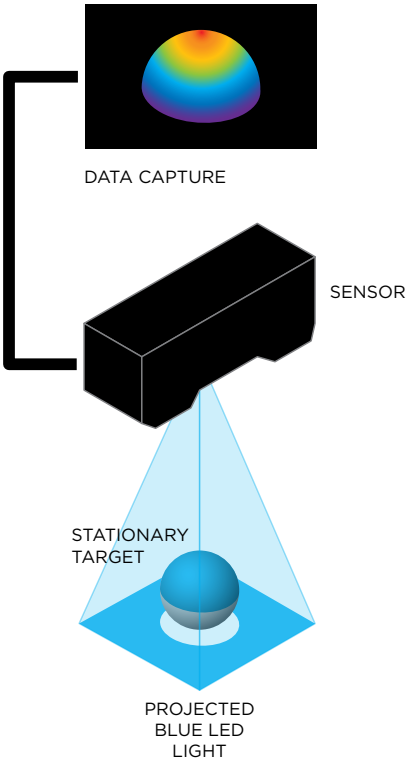
Structured light allows you to take a scan of the entire target surface and inspect multiple features simultaneously such as fasteners, holes, slots, studs, and surface gap and flush. This powerful 3D scanning technology ensures product quality levels are met during final product assembly, and is ideal for robotic or stationary inspection stations.

SMARTER INSPECTION FOR STATIONARY OBJECTS

STRUCTURED LIGHT is the optimal solution when the target object is stationary at the point of inspection.

Scanning Stationary Objects

Structured light scanners take a sequence of images with different patterns of light projected onto the object surface in order to create a full 3D point cloud. Objects must be stationary during image acquisition.



STRENGTHS	WEAKNESSES
• Easy to setup and integrate into existing systems • Acquires a full 3D point cloud in a single snapshot • Provides high degree of accuracy • No speckle effect • Fast when measuring objects with many low-curvature surfaces • Excellent lateral resolution along two axes • Ideal for robotic and stationary inspection systems • Easy sensor setup • Eye safe	• Cannot be used to scan highly reflective, mirror like surfaces • Lower intensity LED lighting can lead to longer exposure times and hence slower overall acquisition • Generally higher cost base than laser triangulation

INTERESTED IN LEARNING MORE ABOUT STRUCTURED LIGHT SOLUTIONS?

LET'S TALK POSSIBILITIES.
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