



# LASER TRIANGULATION

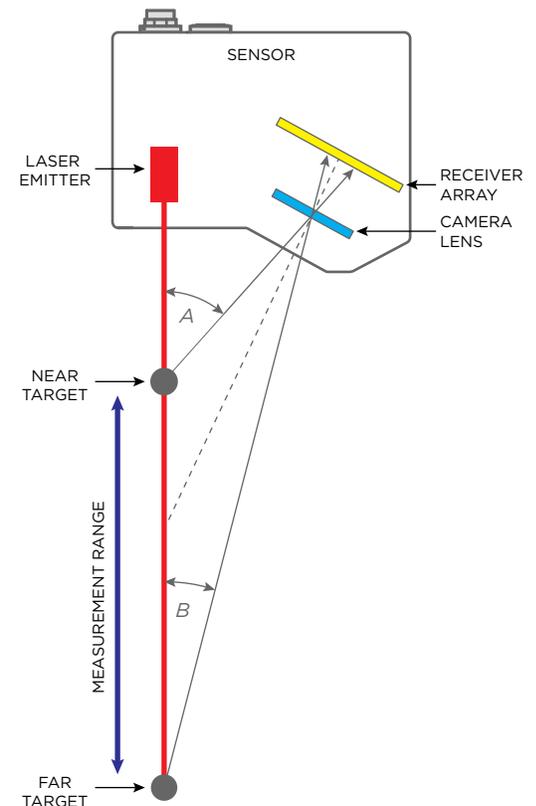
## 3D TECHNOLOGY SPOTLIGHT

### HOW IT WORKS

A 3D laser scanner projects a laser line onto the surface of an object, and the reflection of that line on the object's surface is captured by a camera. Through a process of triangulation, the distance of each surface point is computed to obtain a 3D profile or contour of the object's shape.

#### The Laser Triangulation Advantage

Lasers emit light through optical amplification that offers intense lighting with greater efficiency. This means that lasers can emit very small, precisely focused beams that deliver enough intensity to reduce exposure times required by a camera where object motion blur can effectively be eliminated.

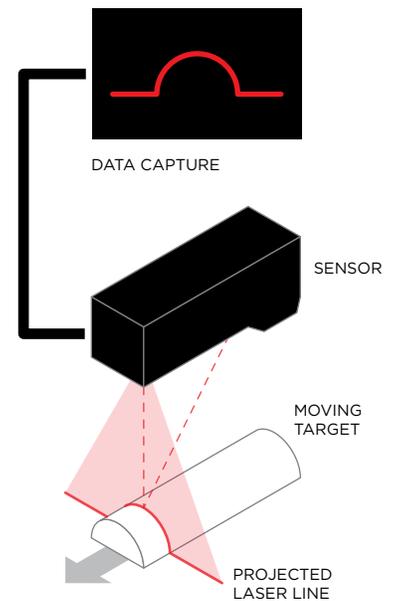


# SMARTER INSPECTION FOR MOVING OBJECTS

**LASER TRIANGULATION** is the optimal solution when the target object is in motion, as on a conveyor or transfer line.

## Scanning Moving Objects

Laser line triangulation scanners are able to collect a series of profiles from the laser line as the object moves past the sensor's field-of-view. 3D smart sensors with built-in software can then be used to automatically assemble the multiple profiles into a complete 3D map of the object surface — separating objects which do not touch into discrete surfaces for inspection.



### THE BENEFITS

- Useful for acquiring high speed 3D profiles
- Effective in inspecting surfaces with varying texture, color and reflectivity as well as soft, wet or delicate surfaces where contact is not possible
- Can be used in virtually any lighting condition
- Narrow bandwidth optical filter positioned in front of the imager effectively eliminates ambient light
- Provides excellent depth resolution to measure detailed features, compound curves, cracks, scratches, texture, roughness, etc.

### LIMITATIONS

- “Speckle” effect poses limitations on resolution and accuracy (down to a few microns)
- Laser light should be used with precaution (lasers are generally not eye safe unless power is < 1mW)

**INTERESTED IN LEARNING MORE ABOUT LASER TRIANGULATION SOLUTIONS?**

**LET'S TALK POSSIBILITIES.**  
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