

The Peak Detector Tool

SAL3D Tools

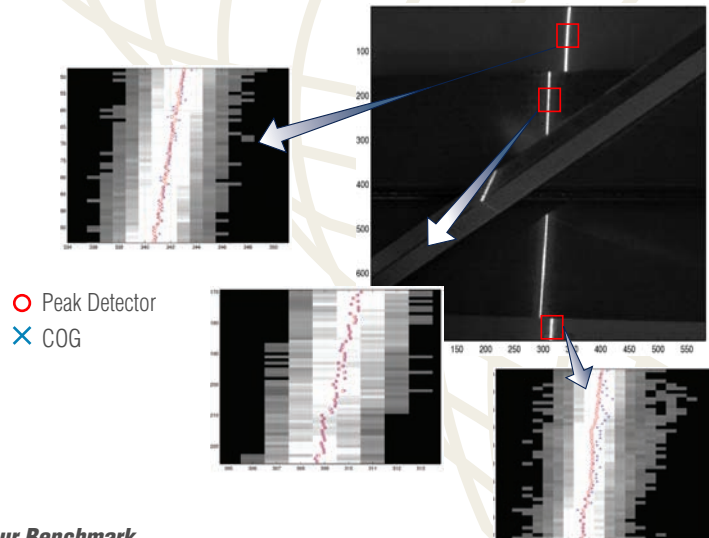
The **AQSENSE SAL3D Peak Detector Tool** provides unparalleled laser stripe detection for triangulation applications. With this new detection technique, height variations as small as 5 microns can be detected with 90 degrees between camera and laser, with a Field of View of 130mm.

Features:

- Up to 1/64th of a pixel detection
- Local maximum intensity detection
- Reliable with a wide range of surface materials
- Very smooth acquisition directly from the detector

Speed Tests

ROI size (pixels)	max. FPS*
2048x2048	10
1024x1024	41
300x1024	130
156x355	636



*Our Benchmark

Intel Pentium IV Core Duo E6320 @ 1.86GHz (the process is single core, though) · FSB 1066MHz · Cache L1 128KiB · Cache L2 4MiB
Motherboard Toledo i3010W (S5197) · 1GiB DDR2 of RAM · Windows XP SP 2

Smoothness Tests

- 10x smoother than COG-based 3D cameras*
- No post-processing required
- Smaller defects can be more easily detected
- Surface details appear clearly sharp



Using the Peak Detector



Using a COG-based 3D camera

*Experimental results after computing normal distance from detected points to stripe, scanning a flat surface.

Peak Detector Sample Code

```
// The threshold value is used to filter the Frame. Frame values
// below this threshold are not considered.
sal3d::PeakFinder finder (180.0f);
```

```
grabber.grab ();
while ( !endProcess () )
{
```

```
    grabber.wait ();
    sal3d::Frame frame (grabber.frame ());
    sal3d::Profile profile (finder (frame));
    // Enqueue the profile so another thread can process it.
    enqueueProfile (profile);
}
grabber.freeze ();
```

FPGA version Available for sensors or cameras. Please, ask info@aqsense.com