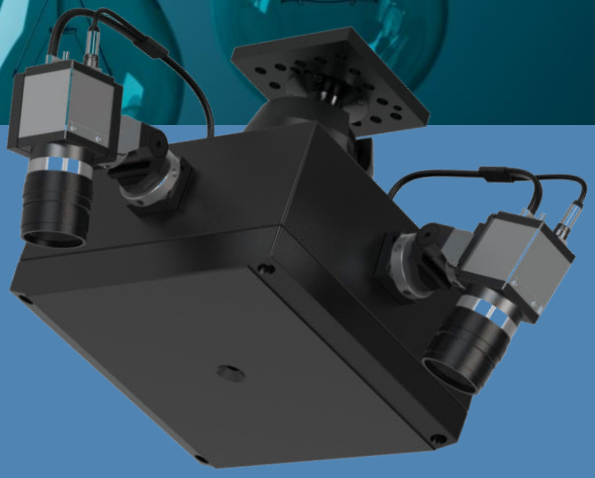
Saccade-MD



WORLD'S FIRST FLEXIBLE MULTI-DIRECTIONAL
3D SCANNING CAMERA

- Focus on fine features with ultra-high resolution
- Variable scanning density and direction
- Locally optimized scanning
- Fast and inline 3D sensor with CMM precision
- Effortless setup by a non-expert

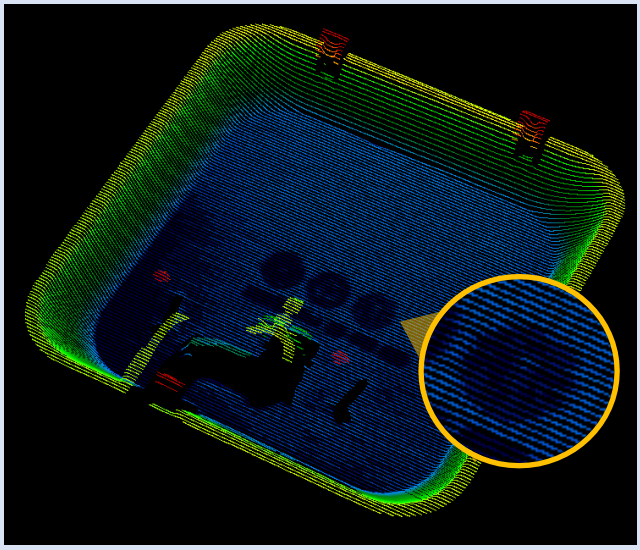
Why Saccade

Variable point density

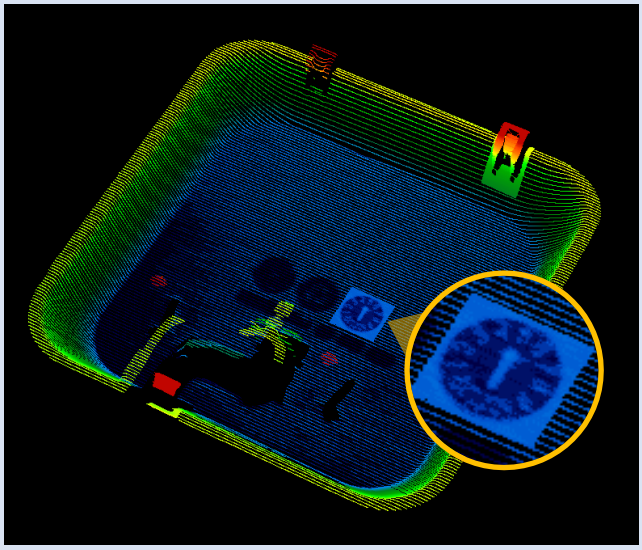
Industrial applications require accurate measurement / localization of 3D features – 3D edges, holes, trenches, pins or walls.

Typical 3D sensors (laser profilometers & structured light cameras) offer uniform resolution in the field of view. This resolution either insufficient for edge localization or excessive for smooth surfaces.

Saccade Vision sensors allow optimal feature-based resolution and point density.



Typical 3D sensor with uniform resolution

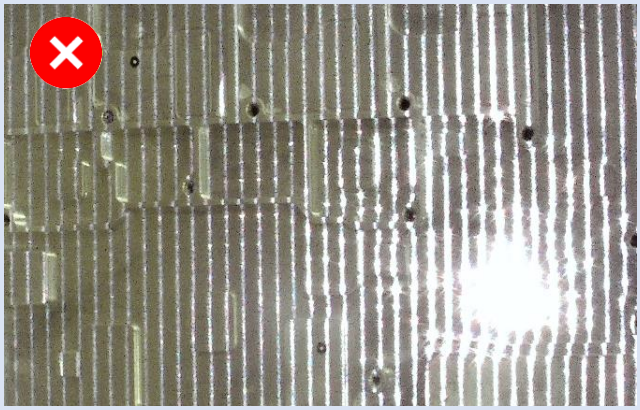


Saccade Vision sensor: high resolution only were needed

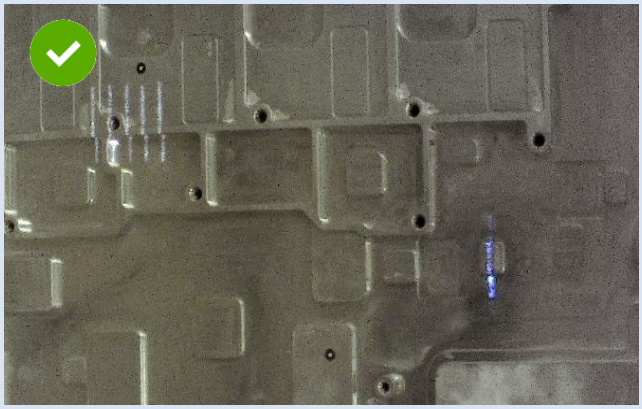
Focus only on important locations

Typically in 3D sensors (both profilometers and snapshot sensors) the whole field-of-view is illuminated uniformly. In many cases this results in point cloud dropouts and requires sophisticated HDR algorithms.

Saccade vision allows illumination optimization separately for every small feature.



Typical 3D sensor with structured light on highly specular surface



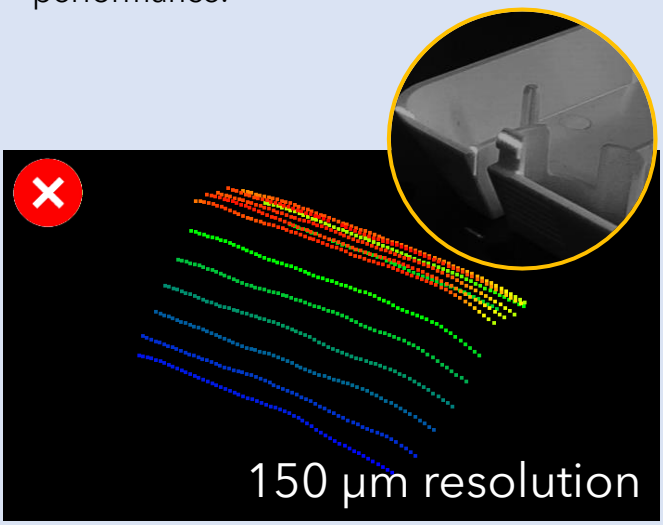
Saccade Vision: Illumination optimized per small feature

Why Saccade

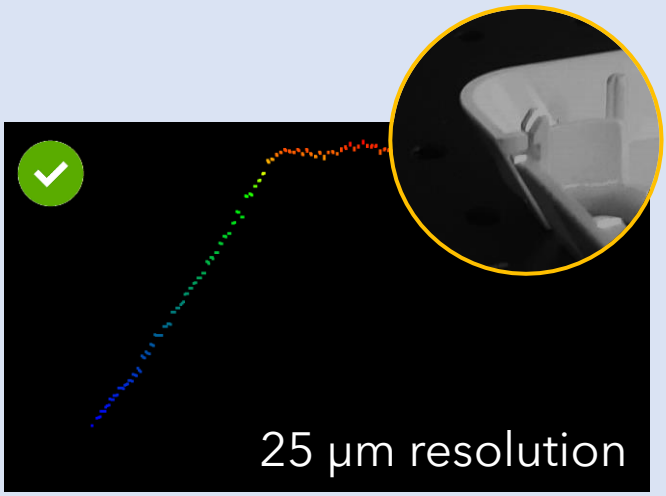
Scanning is optimized locally per feature

In profilometers and structured light cameras, the orientation of structured light / scanning direction is fixed. In many cases this results in under-sampling of small features.

Saccade vision optimizes the illumination pattern per small feature, resulting in optimal performance.



Local feature scanned in a suboptimal direction

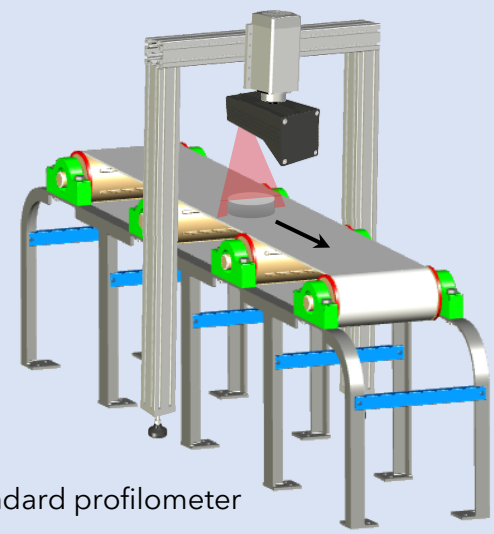


Local feature scanned in an optimal direction

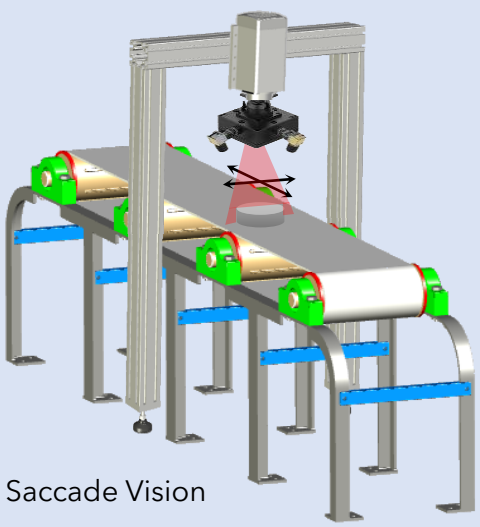
Precise measurement of stationary parts

High precision and accuracy
When precise measurements are required, scanning with standard profilometer adds measurement error due to vibration and imprecise motion.
Saccade Vision sensor provides profilometer precision on stationary object, eliminating vibration errors.

Simple integration
Standard profilometer requires a moving belt and encoder synchronization.
Saccade sensor can scan static sample – no need to synchronize the encoder.



Standard profilometer



Saccade Vision

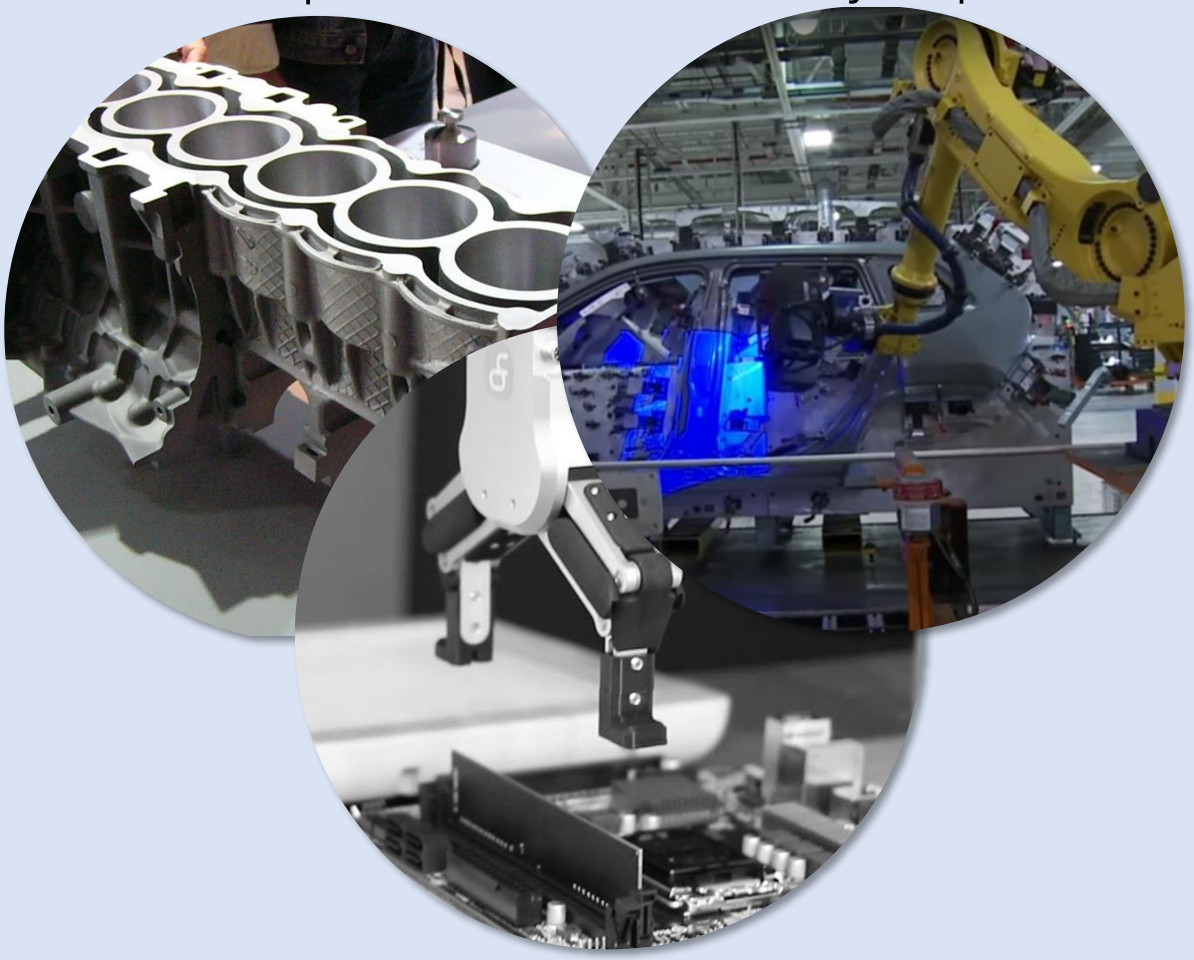
What machine vision integrators say:

"Varying performance at different directions is a real problem"

"If I could, I would rather do an accurate profiling on stationary parts"

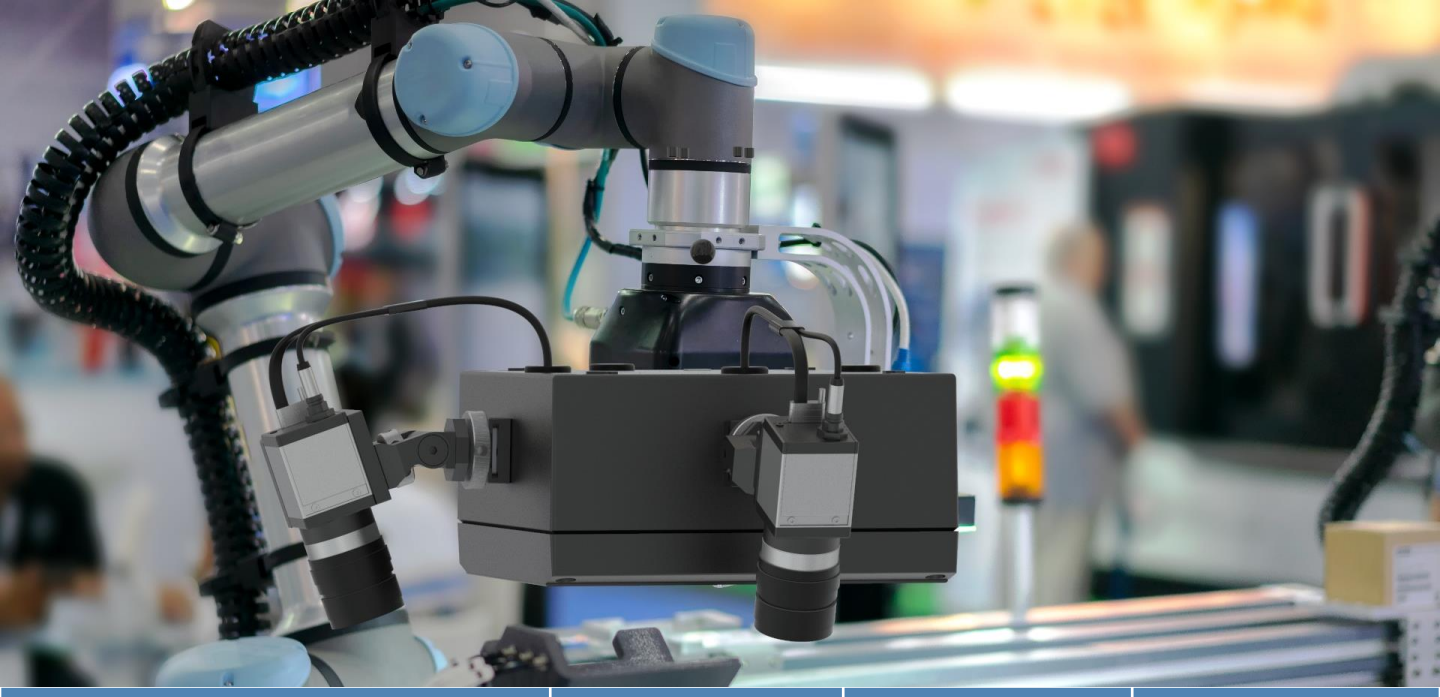
Parts Inspection

Assembly Inspection



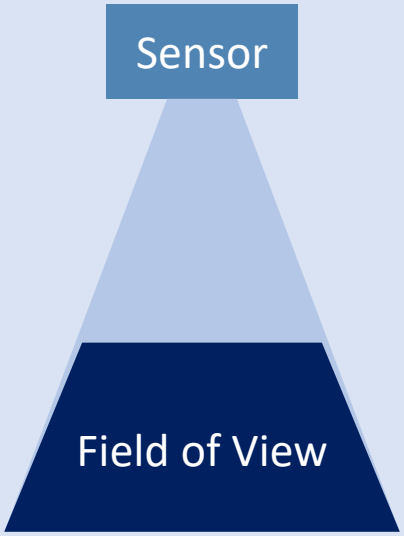
Precise Robot Navigation

Fast Inline 3D Inspection with CMM performance



Main Specifications*	Saccade-MD80	Saccade-MD150	Saccade-MD300
3D data points per frame	Local resolution equivalent to 100-million-point density		
Angular Scan Resolution	0.003˚		
Field Of View (mm)	44 - 80	82 - 150	164 - 300
Optimal Scanning Distance (mm)	130	250	500
Local XY Resolution (µm)	7 - 12	10 - 18	18 - 30
Z Resolution (µm)	15	22	40
Z Repeatability (µm)	0.8		
Robustness (ambient light, contrast, color)	Dark Materials, Shiny Materials		
Part positioning	Position-agnostic performance		
Speed	Up to 500 local measurements per second		

* Preliminary specifications



Saccade Vision

Focus on what really matters

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