

Saber3D™ Compact 3D Vision

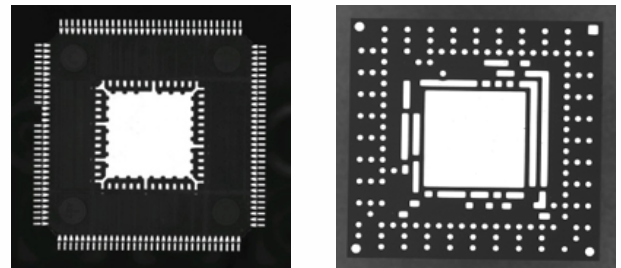
All-in-one 3D inspection module

Accurate. Compact. Integrated.

The **Saber3D™ Series** is the latest major advancement Coherix is offering for semiconductor inspection & metrology. Coherix provides high-speed, in-line inspection products for the electronics and semiconductor industries, eliminating the need for handlers to stop parts for inspection. This solution streamlines the process, increases throughput and enhances accuracy.

Saber measures semiconductor packages optically on-the-fly. This high definition vision system performs 3D measurements with package quality inspection options, processes them internally without the need for external computing resources! Saber incorporates a similar state-of-the-art LED lighting system with multiple cameras similar to the 3DX™.

The image processing is carried out by Coherix proprietary i-Cite™ software, providing a wide range of tools for better process control and



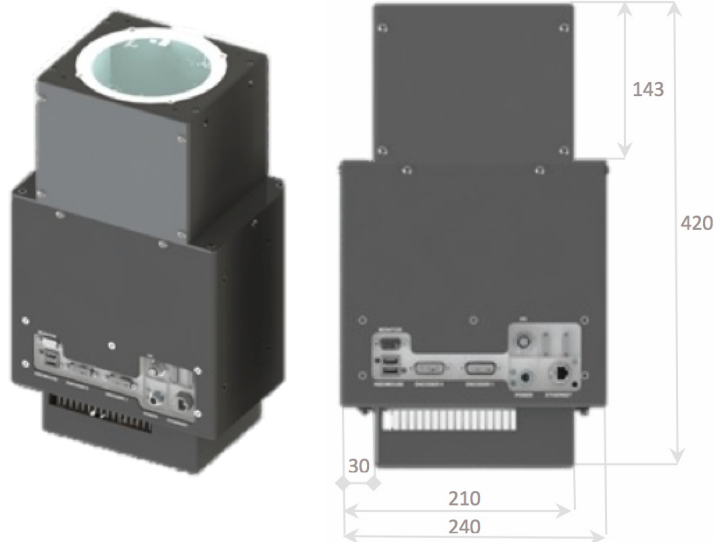
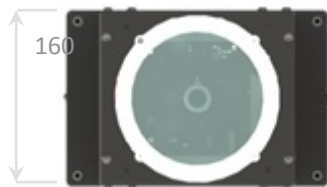
- **3D high-definition, multi-camera triangulation technology**
- **Snapshot area measurements - no lasers, no line scanning**
- **Multi-spectral LED strobe lighting**
- **Simultaneous multi-part & ROI capability increases throughput**
- **Latest configuration of Leaded, BGA & QFN package styles supported**
- **No hardware change-over required between package types**
- **No external computing resources required**

Coherix®

Saber3D™ Compact 3D Vision

Technical Specifications

| | |
|------------------------|--|
| Field of view: | 35 x 35 mm |
| Camera resolution: | 4 MP |
| Multi-part inspection: | Yes |
| Exposure time: | 50 μ s |
| Image trigger: | XY dual internal strobe |
| Inspection motion: | Variable to 150 mm/sec |
| Region of interest: | User settable - full range |
| Illumination: | Solid state LED w/ internal strobe control |
| Module weight: | 6.5 kg (14.3 lbs) |
| Power consumption: | 60 watts @ 24 VDC |



*Dimensions in millimeters

Typical BGA/CSP Accuracy

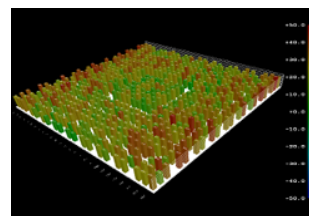
| | |
|-------------------------|-----------|
| Ball co-planarity: | 6 μ m |
| Ball pitch: | 5 μ m |
| Ball offset: | 5 μ m |
| Ball height: | 8 μ m |
| Ball width: | 8 μ m |
| Grid to package offset: | 8 μ m |
| Warpage: | 6 μ m |

Typical Leaded Accuracy

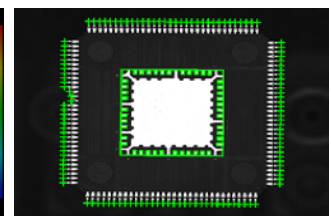
| | |
|----------------------|------------|
| Leaded co-planarity: | 6 μ m |
| Lead pitch: | 5 μ m |
| Lead slant: | 5 μ m |
| Body standoff: | 8 μ m |
| Lead width: | 6 μ m |
| Length deviation: | 6 μ m |
| Lead span: | 6 μ m |
| Terminal dimension: | 10 μ m |

Typical QFN Accuracy

| | |
|----------------|--------------|
| Body X/Y: | 12 μ m |
| Pad size: | 12 μ m |
| Pad offset: | 10 μ m |
| Grid offset: | 12 μ m |
| Pad pitch: | 8 μ m |
| Parallelism: | 0.75 degrees |
| Orthogonality: | 0.75 degrees |



3D absolute ball height



Hybrid device inspection result