IREM-IV SYSTEM

SPECIFICATIONS

IREM-IV Camera
- 1016 x 1016pix LN2-Cooled MCT Array
- 18 micron pixel size
- 440 - 2500nm Spectral Range
- 6 Position Motorized Lens Turret
- 6 Position Dual Internal Cooled Filter/Aperture Wheels
- >20 Hour LN2 Hold time

System Dimensions
Microscope
- 810mm x 876mm x 813mm
- 160kg
Electronics Rack
- 610mm x 1283mm x 762mm
- 90kg

Motion System
- 25nm Resolution
- 100mm Range (x-y-z)
- Damped Vibration Isolation
- Motorized Sample Tip-Tilt Option

System Features
- Inverted Microscope Design
- Allows docking with all common testers
- Optional Wafer Probing Capability
- Optional Laser Sensor
- Measures DUT surface tilt/profile
- Modular Upgrade Path/Optical Expansion Port
- Suitable for integrating external laser scanner or other optical systems (Contact IRLabs)

AIRIS Software
Intuitive User Friendly Software with CAD Overlay, powerful image processing tools and project manager.

Available Lenses

<table>
<thead>
<tr>
<th>Magnification</th>
<th>1x</th>
<th>10x</th>
<th>20x</th>
<th>20x</th>
<th>20x</th>
<th>50x</th>
<th>100x</th>
<th>380x</th>
<th>380x</th>
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<tbody>
<tr>
<td>NA</td>
<td>0.05</td>
<td>0.26</td>
<td>0.50</td>
<td>0.60</td>
<td>0.40</td>
<td>0.70</td>
<td>0.70</td>
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<td>3.3</td>
</tr>
<tr>
<td>Working Distance</td>
<td>35.0mm</td>
<td>30.5mm</td>
<td>12.0mm</td>
<td>10.0mm</td>
<td>20.0mm</td>
<td>10.0mm</td>
<td>10.0mm</td>
<td>SIL</td>
<td>SIL</td>
</tr>
<tr>
<td>Field of View</td>
<td>18.432mm x 18.432mm</td>
<td>0.922mm x 0.922mm</td>
<td>0.922mm x 0.922mm</td>
<td>0.370mm x 0.370mm</td>
<td>0.184mm x 0.184mm</td>
<td>0.050mm x 0.050mm</td>
<td>0.050mm x 0.050mm</td>
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</tr>
</tbody>
</table>

The newly improved IREM-IV system is ready to solve your toughest infrared photon emission FA problems. For over 20 years, IRLabs has worked with the world's leading semiconductor companies to provide the most sensitive photon emission FA tools. Learn more about how IRLabs can provide a customized solution for you...

HIGHEST RESOLUTION
Debug 10 nm Process

MOST SENSITIVE
Image 400 mV Emissions

LARGEST FIELD OF VIEW
Custom Optics

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IREM-IV

ULTRA-LOW NOISE MCT (HgCdTe) CAMERA
The IREM-IV camera provides ultra-low noise extended wavelength PEM imaging, with proven emission imaging sensitivity on 10 nm devices operating at 400 mV. We design and build our own cameras for low-maintenance operation with superior features including a 6-position lens turret and LN2 hold time longer than 20 hours. An optical expansion port provides an upgrade path for external laser scanning OBIRCH, LADA, TIVA, and other imaging modes.

SIL 3.3 NA OBJECTIVE
The 3.3NA SIL objective is the latest in our family of custom designed lenses optimized to provide superior, diffraction-limited imaging over the entire field-of-view. Our patented self-aligning SIL tip automatically levels to conform to the local contour of the device under test. Our unique tip flexure design provides the lowest contact force in the industry, so it is suitable for imaging mounted devices or bare wafers. Contact IRLabs to arrange a demonstration using your device or wafer.

SURFACE PROFILE SENSOR
The integrated profile sensor measures device surface contour with height resolution better than 10 um. Localized surface tilting from turned-down edges or device bowing can be directly measured and compensated using the tip-tilt table integrated with our precision x-y-z camera stage. When combined with our self-aligning SIL tip, the result is trouble-free SIL imaging.

DUAL COOLED FILTER/APERTURE WHEELS
Extended wavelength PEM imaging is typically thermal background noise-limited. IREM-IV provides two internal cooled filter wheels so the optimum spectral filter or background limiting aperture is always available for any measurement scenario.

AIRIS Software

EASE OF USE – MAXIMIZED THROUGHPUT
Controlling the IREM system is easy with AIRIS software which also provides comprehensive image analysis and test project management tools:
- Navigate to any point on your sample by clicking on any open image
- Point database for rapid return to multiple points of interest
- Create large field-of-view, high resolution mosaic images
- Automate measurement tasks with AIRIS scripting

IRLabs works with customers to create customized solutions for their unique FA requirements. We offer comprehensive service and support plans to ensure maximum uptime and quality for your operations, including worldwide onsite service, preventative maintenance, training, and online or telephone technical support.

Project windows provide separate work areas for all your AIRIS data:
- Organize data and notes into project workspaces that can be reopened later.
- Create sticky notes anywhere in the project window with the click of a button. Use them to summarize results, test conditions, etc.

CUSTOMER SERVICE PARTNERSHIP
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