

# LCS- 4000 Series Analytical Probe Station With Laser Cutting System

**Data Sheet**

**microact, inc.**

The LCS-4000 Probe Station with Integrated Laser Cutting System gives the user maximum flexibility in semiconductor diagnostic cutting, failure analysis, trimming, marking and topside layer removal. All of these functions can be performed on a microscopic level, all on this one system which provides a high level of performance that is remarkably easy to use. The LCS-4000 is offered as a fully manual or semi-automated system and can easily be configured for a wide range of applications with a variety of design options and accessories available.

## Features

System integrates the Laser Cutting System for selectively removing material and making high-precision cuts

Designed for simultaneous DC and/or RF probing while trimming leads or removing defects from devices

Fully motorized system allows user to remotely position the sample stage, the platen AND the microscope independently while the system is entirely contained in a light-tight enclosure for safe and easy operation of the system

Standard configuration includes independent 100mm x 100mm range of motion for sample stage AND microscope (larger ranges available)

Multi-axis dual joystick controller provides easy operation of all motion components and can be customized to include a variety of additional functions

System can be upgraded to include semi-automated control of wafer probing

Isolated feed-through terminals located on both sides of station for convenient connection to micropositioners can be customized for BNC, Triax or DC pin connections



# Specifications

<p><b>Wafer Size</b></p> <p>100mm standard Larger sizes available</p>	<p><b>Wafer Size</b></p> <p>100mm standard Larger sizes available</p>	<p><b>Laser</b></p> <p>Type Pulsed, air cooled Nd:YAG Class IIIb</p> <p>Wavelengths 1064nm, 532nm, and 355nm</p> <p>Pulse Width 3-4ns at all wavelengths</p> <p>Pulse Energy (High/Low) 1064nm: 0.5mJ / 0.15mJ 532nm: 0.5mJ / 0.15mJ 355nm: 0.4mJ / 0.15mJ</p>	<p><b>Laser</b></p> <p>Type Pulsed, air cooled Nd:YAG Class IIIb</p> <p>Wavelengths 1064nm, 532nm, and 355nm</p> <p>Pulse Width 3-4ns at all wavelengths</p> <p>Pulse Energy (High/Low) 1064nm: 0.5mJ / 0.15mJ 532nm: 0.5mJ / 0.15mJ 355nm: 0.4mJ / 0.15mJ</p>
<p><b>XY Stage</b></p> <p>Travel 100mm x100mm Larger range available</p> <p>Resolution Motorized, 1.5µm repeatability</p>	<p><b>XY Stage</b></p> <p>Travel 100mm x100mm Larger range available</p> <p>Resolution Motorized, 1.5µm repeatability</p>	<p><b>Facility Requirements</b></p> <p>110VAC, 20A or 220VAC, 15A</p>	<p><b>Facility Requirements</b></p> <p>110VAC, 20A or 220VAC, 15A</p>
<p><b>Chuck</b></p> <p>Type DC or RF available</p> <p>Vacuum Multi-zone vacuum</p> <p>Flatness +/- 13µm</p> <p>Breakdown Voltage At least 500 V</p> <p>Isolation At least 1GΩ</p> <p>Rotation Adjustment Motorized, full 360°</p> <p>Rotation Resolution 0.01° resolution</p>	<p><b>Chuck</b></p> <p>Type DC or RF available</p> <p>Vacuum Multi-zone vacuum</p> <p>Flatness +/- 13µm</p> <p>Breakdown Voltage At least 500 V</p> <p>Isolation At least 1GΩ</p> <p>Rotation Adjustment Motorized, full 360°</p> <p>Rotation Resolution 0.01° resolution</p>	<p><b>Shipping Information</b></p> <p>Shipping weight up to 250kg depending on selected options</p>	<p><b>Shipping Information</b></p> <p>Shipping weight up to 250kg depending on selected options</p>
<p><b>Platen</b></p> <p>Travel 12.7 mm or more</p> <p>Adjustment Dual coarse and fine control</p> <p>Planarity &lt;12.7µm across 150 mm</p> <p>Rigidity &lt;50µm for 4.5 kg</p> <p>Material Chrome-plated steel</p>	<p><b>Platen</b></p> <p>Travel 12.7 mm or more</p> <p>Adjustment Dual coarse and fine control</p> <p>Planarity &lt;12.7µm across 150 mm</p> <p>Rigidity &lt;50µm for 4.5 kg</p> <p>Material Chrome-plated steel</p>	<p><b>System</b></p> <p>Dimensions 60cm x74cm x 92cm</p>	<p><b>System</b></p> <p>Dimensions 60cm x74cm x 92cm</p>
<p><b>Microscope</b></p> <p>Type High-resolution Seiwa Optical microscope</p> <p>Travel 100mm x 100mm Larger range available</p> <p>Positioning resolution 1.5µm</p> <p>Number of Objectives Up to 4</p> <p>Number of Tube Lenses Up to 3</p> <p>Focusing Range ±25mm</p> <p>Illuminating System Bright field incident illuminator with aperture stop.</p>	<p><b>Microscope</b></p> <p>Type High-resolution Seiwa Optical microscope</p> <p>Travel 100mm x 100mm Larger range available</p> <p>Positioning resolution 1.5µm</p> <p>Number of Objectives Up to 4</p> <p>Number of Tube Lenses Up to 3</p> <p>Focusing Range ±25mm</p> <p>Illuminating System Bright field incident illuminator with aperture stop.</p>	<p><b>Weight</b></p> <p>90kg to 230kg depending on options selected</p>	<p><b>Weight</b></p> <p>90kg to 230kg depending on options selected</p>



## LCS-4000

[www.microxact.com](http://www.microxact.com)  
 Phone: 540-394-4040  
 Fax: 1-866-588-0908

## Accessories



*Illuminator Shutter*

Shutter system designed for the fiber optic ring light and halogen light source. System is integrated with the software for fully automated use. Makes automated testing of photosensitive devices easy while protecting halogen sources from the wear & tear of constant on/off switching.



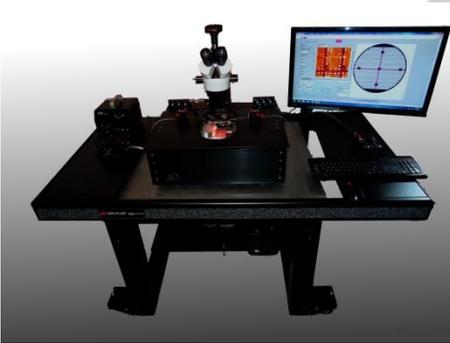
*Digital Camera*

Both the stereo zoom and Olympus BXFM microscopes include a third viewport for cameras. We offer compatible scope-mount digital cameras ranging from 1 megapixel to 10 megapixels. Included with the camera is software for image and video capture as well as dimension measurement capability.



*Thermal Vacuum Chuck*

The TC-SYS-150 system includes a thermal controller with USB interface and Windows-compatible control software as well as a liquid nitrogen cooling system with 6-stage pump and 10-liter dewar.



*Vibration Isolation Table*

For high precision testing of the smallest features, vibration isolation is a necessity. We offer a full line of vibration isolation tables which we will customize for each probe station and application.



*Micropositioners*

For features 5 microns or larger we offer very affordable 3-axis positioners with 0.025" resolution per turn. These positioners have 0.300" of available travel in X, Y, & Z. For features smaller than 5 microns we offer a premium positioner with 0.500" of available travel in X, Y, & Z. These positioners are available in three resolutions ranging from 0.025" per turn to 0.010" per turn. All have the option of being configured with either magnetic (left) or vacuum-lock bases (right).



*Seiwa Precision Microscopes*

Seiwa microscopes offer a broad range of capabilities, all of which are the result of Seiwa's unparalleled engineering and craftsmanship. Whether your system requires an application-specific microscope, such as a multi-wavelength laser compatible scope (above), or a standard stereo zoom microscope, we can integrate any of these microscopes with a MicroXact probe station.

LCS-4000

# Sales

## U.S. Sales

*Maine, New Hampshire, Vermont, Massachusetts,  
Rhode Island, Connecticut, and New York*

**ViaTec Sales and Marketing, LLC**

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*Texas, Oklahoma, Kansas, Louisiana, Arkansas,  
and Mississippi*

**RJI Technical Sales**

Website: [www.rjjsales.com](http://www.rjjsales.com)

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Phone and fax: 1-469-656-2022x1

## International Sales

*Russian Federation, Ukraine, Belarus, Moldova,  
Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan,  
Uzbekistan, Turkmenistan, Tajikistan*

**Energoavangard Ltd.**

Website: [www.eavangard-semi.ru](http://www.eavangard-semi.ru)

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*France, Germany, United Kingdom, Ireland, Italy,  
Spain, Malta, Belgium, Netherland, Luxembourg,  
Portugal, Switzerland, Baltic countries, Morocco*

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