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

**Wafer Size**
- 100mm standard
- Larger sizes available

**XY Stage**
- **Travel**
  - 100mm x 100mm
  - Larger range available
- **Resolution** Motorized, 1.5μm repeatability

**Chuck**
- **Type**
  - DC or RF available
- **Vacuum**
  - Multi-zone vacuum
- **Flatness** +/- 13μm
- **Breakdown Voltage** At least 500 V
- **Isolation** At least 1GΩ
- **Rotation Adjustment** Motorized, full 360°
- **Rotation Resolution** 0.01° resolution

**Platen**
- **Travel** 12.7 mm or more
- **Adjustment** Dual coarse and fine control
- **Planarity** <12.7μm across 150 mm
- **Rigidity** <50μm for 4.5 kg
- **Material** Chrome-plated steel

**Microscope**
- **Type**
  - High-resolution Seiwa Optical microscope
- **Travel**
  - 100mm x 100mm
  - Larger range available
  - 1.5μm
  - Up to 4
  - Up to 3
  - ±25mm
- **Positioning resolution** Bright field/incident illuminator with aperture stop.

**Laser**
- **Type**
  - Pulsed, air cooled Nd:YAG
  - Class IIIb
- **Wavelengths**
  - 1064nm, 532nm, and 355nm
- **Pulse Width**
  - 2-4ns at all wavelengths
- **Pulse Energy (High/Low)**
  - 1064nm: 0.5mJ / 0.15mJ
  - 532nm: 0.5mJ / 0.15mJ
  - 355nm: 0.4mJ / 0.15mJ
- **Cut Size (single pulse)**
  - Min. (w/ 100X objective)
  - Max. (w/ 50X objective)

**Facility Requirements**
- Single shot, 1Hz continuous; 5Hz for 50 shots followed by 20 sec cool-down period
- >100:1 for 532nm and >40:1 for 1064nm and 355nm using HI/LO ranges

**Shipping Information**
- 110VAC, 20A or 220VAC, 15A
- Shipping weight up to 250kg depending on selected options
- 60cm x 74cm x 92cm
- Weight: 90kg to 230kg depending on options selected

**System**
- **Dimensions**
- **Weight**

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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.
U.S. Sales

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

ViaTec Sales and Marketing, LLC
Phone: 1-617-696-4461
Fax: 1-617-696-1841
Website: www.viatescales.com
E-mail: info@ViataecSales.com

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

RJI Technical Sales
Website: www.rijsales.com
Email: bjemison@rijsales.com
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
Phone: 7 (926) 134-69-15
Email: info@eavangard-semi.ru

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

Euris Semiconductor Equipment Services
Website: www.euris-semiconductor.com
E-mail: gailus@euris-semiconductor.com
Phone: +49 (0)89 3509578-11
Fax: +49 (0)89 3509578-10

People’s Republic of China

Whole-Link International Co., Ltd.
Website: www.whole-link.com
E-mail: susan@whole-link.com
Phone: 86-21-64325962/64326897
Fax: 86-21-64326499
MP: 13636392732

Taiwan

Great Domain Enterprise
Website: www.great-domain.com.tw
Email: douglas@great-domain.com.tw
Phone: 03-5826858 ext. 216
Fax: 03-5827900

Japan

Niki Glass Company Limited
Website: www.nikiglass.co.jp
Phone: +81-6-4805-4155
Fax: +81-6-4805-2011

People’s Republic of China

Nanovis Electronics Technology
Website: www.nanovis.net
E-mail: jerryshi@nanovis.net
Phone: 86 21 5031 7301 ext. 605
Fax: 8602150317283

MicroXact, Inc.
285 Industrial Drive
Christiansburg, VA 24073
540.394.4040
www.microxact.com
products@microxact.com