

electroglas 2000 annual report > why efficiency matters.

Our mission:

Electroglas Inc. is a premier supplier of essential process management tools for the worldwide semiconductor industry. Our integrated suite of process management tools – including wafer probers, optical wafer inspection products, networking software, and yield management solutions – helps semiconductor companies collect, manage, and analyze vital data during wafer fabrication to improve yield, throughput, and product quality.

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ELECTROGLAS' VISION

AT ELECTROGLAS, WE ENVISION A SEMICONDUCTOR MANUFACTURING ENVIRONMENT CHARACTERIZED BY BREAKTHROUGH IMPROVEMENTS IN EFFICIENCY AND YIELD MADE POSSIBLE THROUGH A MORE DATA-CENTRIC APPROACH TO PROCESS MANAGEMENT. WE ARE TURNING THIS VISION INTO REALITY BY OFFERING MANUFACTURERS AN INTEGRATED SET OF TOOLS – WAFER PROBERS, OPTICAL WAFER INSPECTION PRODUCTS, NETWORKING SOFTWARE, AND YIELD MANAGEMENT SOLUTIONS – THAT ENABLE THEM TO EASILY ACCESS AND ANALYZE THE INFORMATION GENERATED AT EACH PROCESS STEP. OUR APPROACH CREATES A DOMINO EFFECT THAT CAN DRAMATICALLY IMPACT PRODUCTIVITY AND EFFICIENCY.



EG5|*300e*



YIELDMANAGER



QUICKSILVER

> 40 years



> 1960-2000

Letter to stockholders

THE YEAR 2000 MARKED BOTH THE END OF AN OLD AND THE BEGINNING OF A NEW ERA FOR ELECTROGLAS. WE BEGAN THE YEAR – OUR 40TH IN BUSINESS – WITH A MOVE FROM THE SANTA CLARA, CALIFORNIA, FACILITIES WE OCCUPIED FOR 25 YEARS TO A BRAND NEW, 260,000-SQUARE-FOOT CORPORATE CAMPUS IN SOUTH SAN JOSE. WE ALSO SAW A CORRESPONDING CHANGE IN OUR PRODUCT MIX, WITH THE FIRST SHIPMENTS OF OUR 300-MM WAFER PROBERS AND ADVANCED, POST-FAB INSPECTION TOOLS AND FINAL SHIPMENTS OF OUR WORKHORSE 2001 WAFER PROBER FAMILY.

2000 was an excellent year for our company, with record revenues, net income, and prober shipments. Net sales for 2000 were $225.5 million, compared to $126.7 million in 1999, a 78 percent increase. Net income was $40.4 million, or $1.92 per diluted share, as compared to net income of $5.6 million, or $.27 per diluted share, in 1999. Our strong cash position of $164.5 million will allow us to continue R&D spending in 2001 to pursue our vision of helping customers improve yield, throughput, and product quality through process management.

We introduced products in each of our three product categories this past year: wafer probing, yield management, and optical inspection. Additionally, we completed our acquisition of Corvallis, Oregon-based Statware, Inc., whose software enables real-time analysis and Web-based graphical reporting of data from test equipment. These new products and the capabilities gained through this strategic acquisition better position our company to offer manufacturers the tools they need to improve yield and profitability.

Statware: e-diagnostics and Web reporting

Statware technologies will expand the capabilities of our SORT*net*® products to include statistical process control, remote monitoring, and e-diagnostics. This will enable customers to monitor, analyze, and improve important processes – allowing them, for example, to statistically analyze wafer maps and report results via the Web or back to the prober to modify process conditions. In addition, with Statware's scripting language, we will be able to customize reporting tools and actions for particular customers.

Consistent with Electroglas' vision of the key role that process management will play in the semiconductor industry, e-diagnostics are emerging as an important industry initiative. Our acquisition of Statware's e-diagnostic capabilities is an important step toward realizing our vision, and we expect it to give us a significant marketplace advantage.

In a related development, we moved closer to fully networked sort-floor operations by porting our prober software to Windows NT®. Running on Windows NT, our probers gain the intelligence they need to support real-time event management and e-diagnostics.

Realizing the vision: new products enhance process control

With the introduction of six new products during 2000, Electroglas product teams had a busy year. Here are highlights of the products we brought to market:

> The EG5|*300e* is a high-throughput, automated prober for ultra-sensitive parametric testing on wafers up to 300 mm. The EG5|*300e* is based on our newest prober architecture, the EG5 series – which uses advanced wafer positioning for probing accuracy and speed – and on technology developed by Electroglas strategic partner Cascade Microtech. The EG5|*300e* enables semiconductor fabrication to be monitored with greatly improved resolution and accuracy.

> The Electroglas 4090*f* Film-Frame Wafer Prober enables testing on extremely fragile wafers – such as those used for smart cards, stacked-chip packages, and wafer-level chip-scale packages – and the probing of bare die after they have been diced. Before the 4090*f*, no prober could safely handle and position ultra-thin wafers, which can be as flexible as paper.

> QuickSilver™ II, a post-fab, bumped-wafer inspection, classification, and measurement system, goes beyond defect inspection to offer a new level of process monitoring and performance. QuickSilver II delivers higher wafer throughput, increased accuracy and repeatability, lower cost of ownership, and more options for wafer handling.

Curt Wozniak
Chairman and CEO



> QuickSilver Gold Bump is a high-speed, automated optical inspection system for identifying defects on wafers that use gold bumps to connect to the thin-film circuits on liquid-crystal display panels. It incorporates special lighting and image-processing capabilities that Electroglas developed exclusively to detect defects on gold bumps at full production-line speeds. No other inspection system can identify defects with the accuracy and throughput of QuickSilver Gold Bump.

> The QuickLook™ process visualization workstation, used by QuickSilver inspection systems, allows operators to analyze bumped-wafer inspection data right on the production floor and simplifies wafer-bumping process management. Using QuickSilver bump inspection data, QuickLook creates displays and graphs that help identify process trends and problems.

> Knights LCD YieldManager (LCD-YM™) is a software system for managing the liquid-crystal-display manufacturing process. It collects defect data and images from the electrical testing and optical inspection of thin-film transistor substrates and identifies manufacturing problems before they impact yield. LCD-YM provides comprehensive information about and real-time control of display fabrication dynamics, enabling manufacturers to optimize process variables throughout a product run. With the use of yield management tools in its infancy among the world's LCD manufacturers, LCD-YM opens up a new market opportunity for Electroglas.

Yield enhancement for the industry's first 300-mm production facility

Validating the semiconductor manufacturing industry's confidence in Electroglas' Knights Technology as a leading yield management solutions provider, SEMICONDUCTOR300 (SC300) selected Knights' YieldManager® to enhance yield in the industry's first 300-mm wafer-processing facility. SC300, a joint venture of Infineon AG (formerly Siemens) and Motorola located in Dresden, Germany, represents a major step for the semiconductor industry in its quest for increased capacity and profitability.

A single 300-mm wafer can contain more than twice as many chips as a 200-mm wafer. Given the significant value of each wafer and the huge volumes of data generated on the wafer fab and test floor, software such as YieldManager is required for real-time feedback on the health of the line. By identifying and correcting defects early in the new processes, YieldManager will ensure that the SC300 pilot line capitalizes on new product market values while they are at their peak.

Meeting the highest standards

This past year, the VLSI Research Customer Satisfaction Survey identified Electroglas for the ninth consecutive year as a 10 BEST test and material-handling equipment supplier. In addition, we received ISO 9001 certification for our quality-management system. This certification signifies that we operate within the ISO 9000 family of standards, an international consensus on good management practices that can fulfill customers' most stringent criteria for quality. Electroglas was one of the first semiconductor equipment manufacturers to meet the ISO 9001 quality standard.

What is most noteworthy about this recognition for customer service and quality in 2000 is that we achieved it despite the pressures of 78 percent revenue growth. This is a remarkable testament to the hard work and dedication of Electroglas employees, who enabled our company to grow rapidly while maintaining the highest service and quality standards. We thank them for their extraordinary efforts. With such a superb team in place, we enter our fifth decade with great anticipation for the successes to come.



CHAIRMAN AND CEO

> 01 :

Improving test capability and efficiency

Today, most semiconductor manufacturers use probers to test one to four devices at a time. At this rate, it can take many minutes–even hours–to test a single wafer. What's more, although probing generates volumes of information that could be used to improve the manufacturing process, the data typically is used only to determine whether an individual device is good or bad.

To improve process efficiency, manufacturers are looking to increase the number of devices that can be probed simultaneously. They also want to enhance test capability–that is, to test earlier in the process and to measure more characteristics, such as temperature sensitivity and operating frequency. They want to do this, as well as better apply the information generated during testing, without increasing test times or costs.

New Electroglas probers can probe from 16 to 128 devices simultaneously and conduct a broader range of tests at the wafer level to enable early corrective action and avoid the cost of packaging defective die. Networked using our SORT*net* software, these probers can feed data back to optimize the manufacturing process for better yields and forward to better determine which devices meet the quality requirements for packaging.

The domino effect: By accurately testing up to 128 devices simultaneously, Electroglas probers improve all aspects of sort-floor productivity. Plus, when networked using SORT*net* software, our probers can feed data back to optimize manufacturing and forward to assess device quality.



01: test

> 02 :

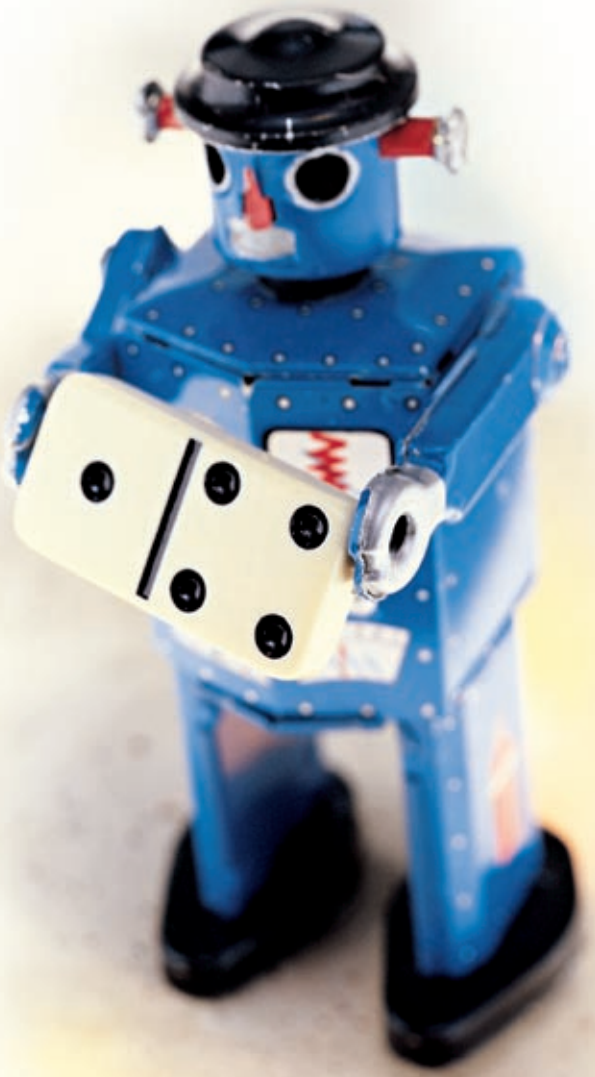
Improving sort-floor process management

The sort floor in a typical fab houses the probers used to test each wafer. Most probers today are not networked – and thus the data they generate is not easily accessed for analysis and corrective action. Further, many sort-floor operations still require inefficient, costly manual setup and control.

To maximize efficiency, yield, and profitability, manufacturers need the ability to easily access and analyze information obtained from the sort floor. They need to reduce costly downtime, human involvement, and error by moving toward automated sort-floor operations. Electroglas' SORT*net* software and the Web-based analysis and reporting technologies of our recent acquisition, Statware – combined with automated setup and material-handling equipment – will make these automated operations possible.

SORT*net* provides network connectivity for probers – centralizing test information, intelligently managing it, and making it available to anyone, anywhere in the world. Statware technologies expand the capabilities of SORT*net* to include statistical process control, remote monitoring, and e-diagnostics. We have designed our new Electroglas probers, such as the EG5|300, to accommodate this intelligent networking as well as automated material handling through robotics and guided vehicles. These capabilities ultimately will lead to "lights-out" operations, with no human intervention and minimal unexpected downtime.

Electroglas' SORT*net* and Statware's Web-based analysis and reporting technologies will combine with automated setup and material-handling equipment to enable "lights-out" manufacturing.



02: automate

> 03 :

Improving bump process management

To achieve better performance in today's more compact integrated circuit designs, semiconductor manufacturers have developed innovative packaging technologies – some of which involve directly attaching "bumps" of solder or gold on the wafer. Bumping allows assemblers to make direct connections between the chips and printed circuit boards. But it can also produce defects that cause yield loss at probing or packaging as well as damage expensive probe cards.

To address these issues, Electroglas developed the QuickSilver optical wafer inspection system. QuickSilver analyzes every wafer and all its bumps for defects at production speeds. It classifies the types of defects and passes the results to process and yield management systems. QuickSilver is also a component of a closed-loop, bumped-wafer testing and analysis solution that includes our probers and yield management tools.

QuickSilver allows manufacturers to:

> *Catch process drifting early enough to prevent yield problems*
> *Feed back defect information to allow constant process adjustments to prevent further defects*
> *Detect defects and eliminate them from downstream processes*

These capabilities, in turn, reduce costs by screening out defective chips before probing and packaging, result in better yields, and improve quality and reliability.

At production speeds, the QuickSilver optical wafer inspection system accurately examines bumps and identifies defects earlier in the manufacturing process.


03: inspect

> 04 :

Improving end-to-end process control

Most semiconductor manufacturers today monitor and measure subsets of the manufacturing process and use the information they obtain locally to improve the efficiency of these steps. This is called "short-loop" process control.

However, because many process steps operate independently, these discrete improvements may have little, if any, impact on the entire process. At Electroglas, we believe that real process improvement, and accompanying gains in yield and profitability, can occur only through "long-loop" process control–when a manufacturer collects information at many process steps and centralizes it for analysis. The knowledge gained can be fed back to optimize the process for better yield and device performance.

Electroglas' Knights Technology division's YieldManager serves as the foundation for automated, long-loop process control. YieldManager integrates data from process tools, inspection systems, metrology equipment, wafer probing, and final test to determine which zones or tools contribute to yield loss. YieldManager provides a common location and format–graphical, image, or tabular–for presenting data and correlating disparate data types. It automatically compares data to identify process trends and optimize tool maintenance. Moreover, its open architecture assures easy connectivity with fab equipment from multiple suppliers and worldwide yield data sharing among a manufacturer's different fabs.

We believe significant improvements in yield and profitability are possible only when a manufacturer collects data at each process step and centralizes it for analysis. YieldManager software serves as the foundation for this approach to process control.



04: analyze

> 2000

Financial highlights

IN THOUSANDS (EXCEPT PER SHARE AMOUNTS) YEAR ENDED DECEMBER 31,	> 2000	1999	1998	1997	1996
Net sales	$225,529 [4]	$126,695	$101,599	$150,035	$151,950
Engineering, research & development	$28,336	$26,865	$30,538	$21,897	$18,672
Net income (loss)	$40,444 [4]	$5,576	$(31,585) [1]	$(15,937) [2]	$24,459
Diluted net income (loss) per share	$1.92 [4]	$0.27	$(1.62)	$(0.86)	$1.36
Cash and short-term investments	$164,473	$140,859	$131,536 [3]	$124,978	$129,102
Total equity	$234,029	$177,338	$167,667	$199,734	$173,651

(1) Includes a $9.6 million pretax charge for impaired technology and intangibles related to previous acquisitions.

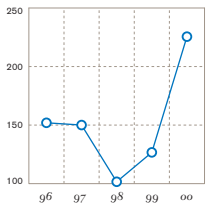
(2) Includes pretax in-process research and development charges of $23.5 million and $3.5 million resulting from the acquisitions of Knights Technology, Inc. and Techné Systems, Inc., respectively. In addition, the Company incurred a $1.6 million pretax charge for environmental remediation costs.

(3) Includes restricted cash.

(4) After adoption of Security and Exchange Commission Staff Accounting Bulletin N° 101.

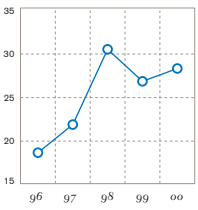
The statements contained in this Annual Report that are not purely historical are forward-looking statements, including statements regarding the Company's expectations, hopes, plans, goals, strategies, intentions and beliefs regarding the future. Forward-looking statements include, but are not limited to, statements in the Letter to Stockholders regarding: forecasts of growth in the semiconductor and related equipment industries; Electroglas' prospects; and our mission to provide tools to help customers improve yields and profitability. All forward-looking statements included in this document are made as of the date hereof based on information available to the Company as of the date hereof and Electroglas assumes no obligation to update any forward-looking statement. It is important to note that the Company's actual results could differ materially from those in such forward-looking statements. You should consult the risk factors listed in the Company's Report on Form 10-K starting on page 15 of this report, as well as those disclosed from time to time in the Company's Reports on Forms 10-Q and 8-K.

DOLLARS IN MILLIONS



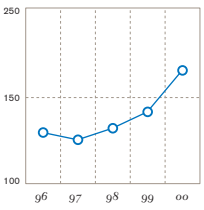
NET SALES

DOLLARS IN MILLIONS



ENGINEERING, RESEARCH & DEVELOPMENT

DOLLARS IN MILLIONS



CASH AND SHORT-TERM INVESTMENTS

Corporate directory

> Board of directors

CLASS III
Curtis S. Wozniak
Chairman and CEO
Electroglas, Inc.

CLASS III
Neil R. Bonke
Chairman (retired)
Electroglas, Inc.

CLASS II
Robert J. Frankenberg
President and CEO (retired)
Encanto Networks

CLASS II
Roger D. Emerick
Chairman and CEO (retired)
Lam Research Corp.

CLASS I
Joseph F. Dox*
President and COO (retired)
Novellus Systems, Inc.

CLASS III
Mel Friedman
Senior VP of Customer Advocacy
Sun Microsystems, Inc.

> Corporate management

Curtis S. Wozniak
Chairman and CEO

Thomas E. Brunton
VP of Finance and CFO

Armand J. Stegall†
VP of Finance and CFO

Timothy J. Boyle
VP, Chief Technology Officer

Daniel T. Fields
VP of US Customer Operations

William J. Haydamack
VP and General Manager of Knights Technology

Jeffrey R. Hintzke
VP of Marketing and General Manager of 300-mm Prober Business Unit

Francine Keegan
VP of Human Resources

Joseph G. LaChapelle
VP of Engineering and General Manager of Prober Software and SORTnet Business Unit

Conor P. O'Mahony
VP of Global Customer Operations

Joe M. Reid, Jr.
Director of Customer Support and Quality

Joseph A. Savarese
VP of Business Development and General Manager of Inspection Products

Wayne E. Woodard
VP of Operations and General Manager of 200-mm Prober Business Unit

* *Retired in October 2000 after serving on the Board since its inception in 1993.*
† *Retired after 19 years of exemplary service and leadership.*

> Corporate office

Electroglas, Inc.
6024 Silver Creek Valley Road
San Jose, California 95138
408.528.3000

> United States offices

Arizona
California
Massachusetts
Oregon
Texas

> International offices

France
Germany
India
Japan
Korea
People's Republic of China
Singapore
Taiwan
United Kingdom

> General legal counsel

Morrison & Foerster LLP
Palo Alto, California

> Independent auditors

Ernst & Young LLP
San Jose, California

As of February 6, 2001, the Company had approximately 8,000 stockholders of record.

The Company's Common Stock is traded on the NASDAQ National Market under the symbol "EGLS."

> Registrar and transfer agent

EquiServe LP
Boston, Massachusetts

FISCAL YEAR 2000	HIGH	LOW
1st Quarter	43 7/16	22 1/8
2nd Quarter	40 5/8	21 1/2
3rd Quarter	25 3/16	17 1/16
4th Quarter	17 5/16	12 15/16

FISCAL YEAR 1999	HIGH	LOW
1st Quarter	16 3/4	11 27/32
2nd Quarter	20	11 1/2
3rd Quarter	24 3/4	18 1/8
4th Quarter	28 15/16	20 9/16

The preceding tables set forth the high and low sale prices as reported on the NASDAQ National Market during the last two years.

The Company has never declared or paid cash dividends on its Common Stock. The Company currently intends to retain all future income for use in the operation of its business, and, therefore, does not anticipate paying any cash dividends in the foreseeable future. Additional copies of this report, as well as of SEC Form 10-K, for the year ended December 31, 2000 are available at www.electroglas.com or may be obtained from the Company without charge by writing to:

Electroglas, Inc.
Attn: Investor Relations
6024 Silver Creek Valley Road
San Jose, California 95138

The Electroglas logo and SORT*net* are registered trademarks and QuickLook and QuickSilver are trademarks of Electroglas, Inc. YieldManager is a registered trademark of Knights Technology, Inc. Windows NT is a registered trademark of Microsoft Corporation.

design > communications design photography > neal brown, donald satterlee



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