

4090 μ +

- **Fine-pitch probing.** The enhanced accuracy over a broad temperature range of the motion system and automatic system calibration make the 4090 μ +
- **Quickly test at different temperatures.** Proprietary Electroglas thermal technology allows testing to resume rapidly after changing temperatures.
- **Damage-free probing of Cu, low K and SOI wafers with soft touchdowns.** The new **MicroTouch™** feature allows the user to control the velocity of the Z stage just before contact and during overtravel to reduce probe damage to low-k dielectrics, circuitry under bond pads, and aluminum capped copper pads.
- **Robust wafer alignment.** Improved auto focus and lighting algorithms combined with new pattern recognition techniques enhance the reliability of auto-align in mixed contrast environments.
- **High-speed probe card alignment.** New probe card alignment techniques align the most advanced probe cards 75% faster than traditional techniques.
- **Comprehensive Z accuracy strategy.** Z accuracy is enhanced in four ways: stage accuracy, pin detection, wafer profiling and thermal compensation.

EXTENDED PERFORMANCE 200MM PROBER FOR HIGH-VOLUME AND LEADING-EDGE MANUFACTURING

Higher test cell utilization and hands-off operation for the lowest cost of test



- **The 4090 μ +** is a new extended performance version of the Electroglas 4090 μ prober that enables high test cell utilization for thermal applications, simplifies probing operations, increases throughput, and expands application capabilities with soft touchdown features for advanced copper and low-k dielectric devices. These productivity and capability enhancements are also available as an upgrade to existing Electroglas 4080, 4090, and 4090 μ probers.

Test Managers Are Driven To Reduce Rising Test Costs

A greater portion of the total chip manufacturing cost is now spent on test as devices become more complex and smaller. Test floor managers are tasked with driving down the cost of test and operating their test floors as efficiently as possible.

Improved Test Cell Efficiency and Increased Capabilities

The requirement for lower test cell costs, combined with new wafer test requirements for the latest device types, has prompted manufacturers to search for new ways to improve their test cell efficiency while expanding their application capabilities.

Extended Performance for 200mm Productivity Breakthrough

Electroglas has undertaken a whole new approach to enhancing its flagship 200mm wafer prober system. The new system, the 4090 μ +, enables customers to lower their test cell costs through significant performance improvements that result in increased test cell availability, higher throughput and simplified operation.

As the 4090 μ +

improves performance, it also expands existing capabilities with superior accuracy for testing fine pitch devices. Additionally, the 4090 μ +

provides a new feature, MicroTouch™, which decreases the impact force as the probe pins contact the bond pads to reduce pad damage to Cu, low-k and SOI wafers.

Fine pitch capability

Using the same proven platen motor technology, with frictionless air bearings, accuracy performance is increased by 25%. During manufacturing or an upgrade, a Prober Accuracy Measurement System (PAMS) is used to map and correct for cyclic and linear errors at multiple temperatures.

The 4090 μ + increases test cell availability by maintaining excellent alignment of probe pins to bond pads without operator adjustments. The temperature of the probing environment is constantly changing and the effects of this change can be seen on the probe-to-pad positioning within a wafer and across the lot. The system automatically senses thermal shifts of system components and probe pins adjusts the probes-to-pad contact as required. All of this is accomplished with the wafer on the chuck and without alignment tools or operator intervention.

During a temperature change over, testing with the 4090 μ + can begin immediately after the chuck reaches the set point, even while components within the prober are still expanding or contracting. This provides a significant increase in tester utilization and cost savings.

Operation of the 4090 μ + has been significantly simplified and automated, making it easier and faster for operators to use. The 4090 μ + allows

operators to efficiently start probing and walk away while the prober automatically completes all necessary tasks to setup and align the probe card and wafers.

Each of these automation steps has been redesigned for robustness to increase the time between assists (MTBA). When combined with self-calibration features, this improved automation one-button probing slashes the operator and technician time needed to adjust probers and perform manual operations.

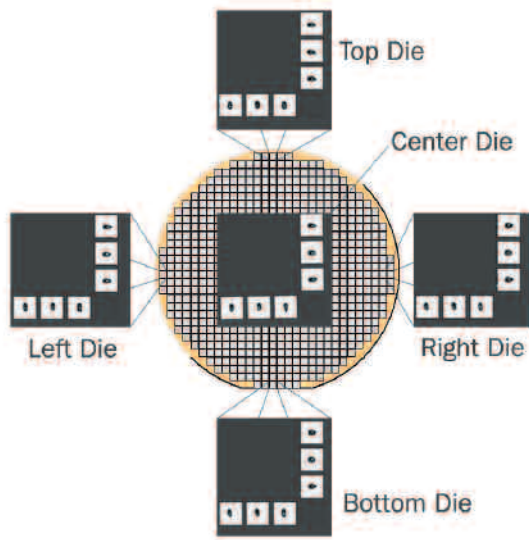
SYSTEM INFORMATION

The "Plus" Upgrade is available for 4080, 4090, and 4090 μ probers. An upgraded 4080 does not fully equal a 4090 μ + but provides equivalent productivity enhancements.

Other Electroglas products and solutions, including Electroglas' prober software products and the SORTmanager Test Floor Management Software family, can enhance or expand on the capabilities of Electroglas 4000 Series probers.

The Next, Easy Step

For more information on how the 4090 μ + can lower your test cell costs and probe your most advanced devices, contact your Electroglas sales representative at (800) 538-5124 or visit www.electroglas.com.



Probe mark images after probing, unloading, loading, and aligning a wafer five times. The excellent wafer-to-wafer accuracy of the 4090 μ + is demonstrated by the centered placement of all five probe marks on every pad and die of this wafer using a standard cantilever probe card.

ELECTROGLAS, INNOVATIVE TOOLS FOR TEST

Electroglas is Focused on Advancing Innovative Technologies to Meet Evolving Challenges in Semiconductor Test.

Test is all about ensuring device quality and manufacturing performance. In the high-volume manufacturing environment of our customers, our innovative products provide substantial value and help lower the overall cost of test.

Electroglas delivers high-speed tools for wafer probing and package test that are reliable, accurate and production proven. Today, we are focused on overcoming our customers' evolving test challenges, partnering with them to develop solid solutions for wafer probing, prober-based test handling, and test management that will drive greater efficiencies in their wafer and device testing processes. Our customers have rapid, direct access to our worldwide team of experts for service and advice.

Wafer Probers for Any Test Environment; With Shipments of Over 15,000 Systems

Electroglas' probers have been meeting a variety of probing needs for more than 40 years. These automated systems consistently deliver accurate, reliable wafer probing for high volume, low cost manufacturing, as well as leading edge, multi-die, bumped wafer, in-line parametric test and fine-pitch probing applications.

Prober-Based Test Handlers for Today's Latest Packaging Technologies

Electroglas' test handlers are built upon proven prober technology to give chip-makers a fast, flexible handling solution for today's final test challenges. Strip test handlers deliver unprecedented throughput for testing a wide variety of popular package types in panel or leadframe format. Filmframe handlers have unique capabilities for testing Wafer Level Packages (WLP), Known Good Die (KGD) on diced wafers, Microelectro-mechanical Systems (MEMS), and ultra-thin wafers.

Test Floor Management Software for Web-Based Process Analysis and Control

Electroglas test floor management software provides a unique, networked solution to connect wafer probers and test handlers to the broader testing infrastructure, allowing the chipmaker to better manage overall test effectiveness with accurate and efficient tools for monitoring, analyzing and improving important processes.

All Products Backed by Global Service for Fastest Response

Electroglas' customer service centers are located worldwide for rapid-response field service and local spare parts support. Electroglas demonstrates its commitment to total customer satisfaction through service excellence backed by factory-based technical support, applications development and training.



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