



MarTek, Inc.

Electroglas Specialists

4090 μ +

❖ **Ease of operation** – Probe operators can quickly begin the probe process from a single screen and move on to their next task.

❖ **Increased test-cell utilization for temperature probing** – The 4090 μ + automatically detects and adjusts for temperature changes, eliminating the need for lengthy soak time.

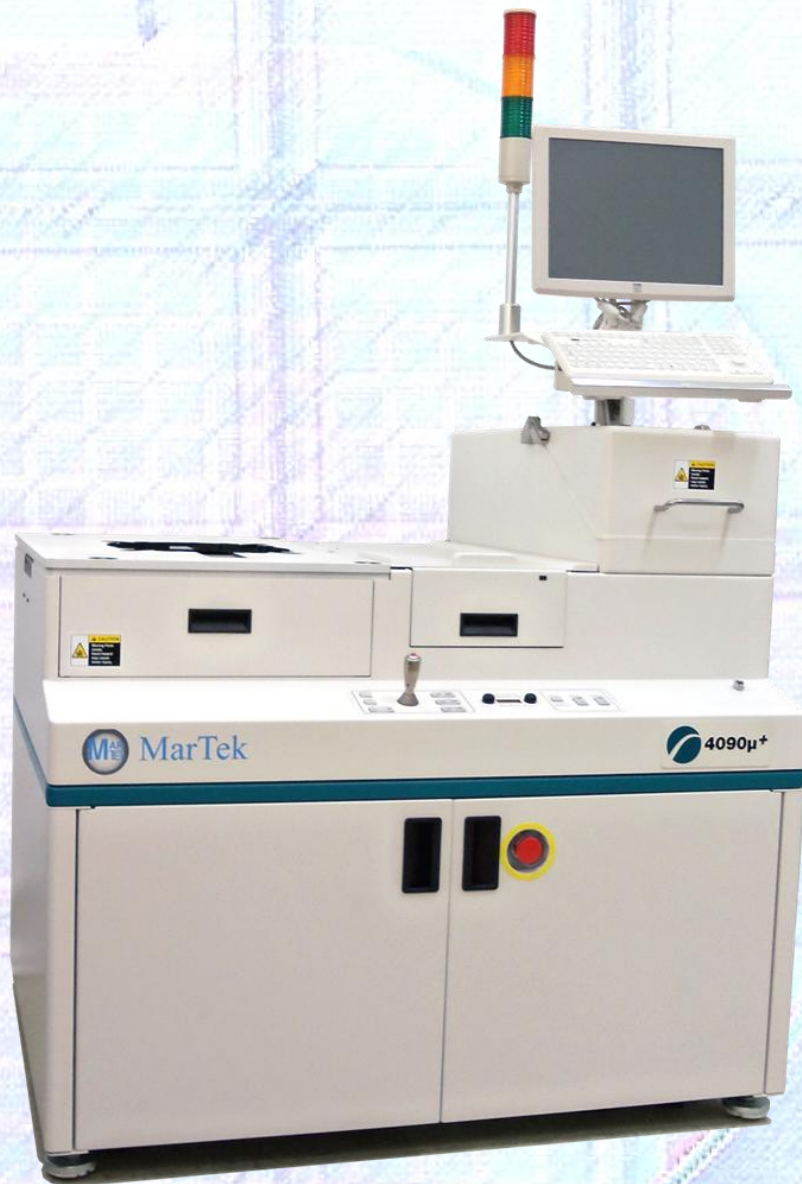
❖ **Circuit Under Pad/Low K dielectric** - Micro Touch™ allows the user to “tune” the velocity of the Z-stage prior to contact with the probe needles to minimize contact force and scrub depth on the bond pad.

❖ **Reliable wafer alignment** – Improved auto-focus, lighting, and pattern recognition allow for more consistent wafer alignment, even in difficult contrast environments.

❖ **Fast probe needle alignment** – The 4090 μ + DPS III and Advanced Vision System aligns probe needles up to 75% faster than competing probers on even the most complicated probe cards.

❖ **Fine Pitch Probe** – Fine Pitch Probe: - +/-3 um system accuracy across all temperature ranges provides consistent probe to pad alignment for fine pitch probe applications.

❖ **Probe Cleaning** – Enhanced flexibility with multiple options for probe cleaning allow the user to customize cleaning techniques and recipes to maintain consistent yields and extend probe card life.



The 4090 μ + is an extended performance version of the Electroglas 4090 μ prober that increases test-cell utilization for temperature probing, makes probing operations easier, provides additional capacity through increased speed, increases probe-to-pad stepping accuracy and introduces MicroTouch™ to provide support for more sensitive probe devices. These options are also available as upgrades through MarTek for existing Electroglas 4080, 4090, and 4090 μ probers.

Test Cost Reduction Critical as Probe Becomes Increasingly Complex

Today's devices are becoming increasingly complex, smaller, and manufactured with substrates unheard of in the past. Still, cost reduction and efficiency in test are critical. Capacity, utilization, Mean Time Between Assists (MTBA), operator setup time, and other factors need to be controlled effectively. At the same time, there is need to improve the probe process and add functionality to effectively screen devices prior to adding packaging costs to a potentially failing device.

The MarTek Solution: Advanced Capability for 200mm Productivity

The 4090 μ + by MarTek enables customers to lower production costs by providing enhanced capabilities, increased capacity through reliable performance that minimizes the number of operator assists, and simplifies operations.

MarTek verifies the accuracy of each prober is within +/- 3 μ m across all temperature ranges, which ensures precise touchdowns for even the smallest probe geometries. The MicroTouch™ feature allows the user to control the amount of probe force at bond pad or bump at initial contact and throughout the overdrive range. This minimizes damage to the bond pad/bump and prevents damage to delicate underlying circuitry.

The automatic temperature compensation features of the 4090 μ + increases availability by ensuring proper probe to pad alignment is maintained without operator intervention. Despite environmental changes while probing, the 4090 μ + is able to maintain accurate probe needle placement by constantly monitoring the environment, making appropriate stepping adjustments as the wafer is probed and eliminates the time required for an operator to manually adjust for environmental changes.

Probing multiple temperature ranges with

the 4090 μ + also saves time when compared to competing probers. The ability of the 4090 μ + to automatically compensate stepping for temperature changes allows probing to begin once the chuck temperature reaches its setpoint, even while other internal components are still expanding or contracting. No additional operator intervention is necessary and no additional soak time is required, which greatly increases utilization and decreases probe costs.

Operation of the 4090 μ + becomes comparatively simple and automatic. From one screen and the touch of a button, the probe operator can complete the lot setup information and start the probe process. All other tasks are performed automatically by the prober, from probe card alignment to wafer alignment and pin to pad alignment. Software improvements have been made to increase the time between assists, also improving throughput and utilization.

Stepping speed of the 4090 μ + has been increased by 15-20% over previous Electroglas prober models, further reducing costs of probe and increasing capacity, and far outpaces the stepping speed of competing probers.

Contact Us

For more information on how the 4090 μ + can improve probe processes and lower probe costs, contact your MarTek sales representative at (480) 947-5757 or visit us online at www.martekprober.com.

System Information

The "Plus" upgrade is available for all 4080, 4090, and 4090 μ probers. The 4080 μ + will not be a fully equivalent 4090 μ + but does provide significant productivity enhancements. Other MarTek hardware and software solutions are also available to increase the capability of your new or existing prober. Contact your sales representative for additional information.

Standard Features

- ❖ +/- 3 μ m Motion System Accuracy
- ❖ 5, 6, & 8" Wafer Handling
- ❖ MicroTouch™
- ❖ Wafer Stepping & Scaling Calibration
- ❖ Capacitive Probe Card Sense (CPCS)
- ❖ Self Teaching Auto Align (STAA)
- ❖ Probe Mark Inspection
- ❖ Ink Dot Inspection
- ❖ Automatic Probe to Pad Alignment
- ❖ Self/Auto Calibration
- ❖ Advanced Vision System (AVS)
- ❖ Thermal Agility
- ❖ Probe to Pad Optimization

Featured Options

- ❖ 4" Wafer Handling
- ❖ Dual Cassette
- ❖ Thin Wafer Handling
- ❖ Thin Warped Wafer Handling
- ❖ EG Hot Chuck (Ambient to 150°C)
- ❖ Vortex Hot Chuck (20°C to 150°C)
- ❖ Hot/Cold Chuck (-55°C to 150°C)
- ❖ Back-side Bar Code Reader (BSBC)
- ❖ Bottom Probe Card Changer (BPCC)
- ❖ Optical Character Recognition (OCR)
- ❖ Automatic Probe Cleaning Pad / Brush
- ❖ Min-E (Class 1 Mini Environment)
- ❖ Million Die

Please contact your sales representative for information regarding additional 4090 μ + options not listed above.

About MarTek - Established in 1995, MarTek Inc. a privately held company, has been providing quality products and support to wafer test floors around the world. In addition to new system manufacturing, MarTek can also provide refurbished probe systems, system upgrades, spares, PCB repairs and onsite service.



MarTek, Inc.

112 South Rockford Dr.

Tempe, AZ 85281

Phone #(480) 947-5757

www.martekprober.com