

THERMAL SYSTEMS



QuietTemp Series Thermal Chuck Systems

Signatone has been designing and building its own thermal chuck systems for over 25 years. The S-1060 is the most popular of our *Hot-Only* thermal systems, and utilizes DC heaters for low noise operation.

Available in 1 °C and .1 °C resolution models, and maximum temperature options of 200°C and 300°C, the S-1060 is a proven, reliable performer. Triax chucks are also available for low-level DC/CV/IV parametric applications,



PERFORMANCE, QUALITY, VALUE

SIGNATONE®

Advanced Microprobing Solutions Since 1968

THERMAL SYSTEMS



OVERVIEW

For over 25 years **SIGNATONE** has designed and manufactured its own thermal chuck systems. While we routinely integrate systems from other vendors, the real advantage that we can offer our customers is a **single-source** solution. Temperature testing has become an integral part of wafer probing, and the ability to characterize and control the interaction between the chuck and the rest of the station has become increasingly important. The vast number of thermal chuck systems on the market precludes our undertaking this effort for any designs other than our own. By manufacturing our own thermal systems we can control all critical aspects of the design and manufacture. By avoiding reliability-prone technologies we can insure greater up-time, and by minimizing our reliance on 3rd party service we can be more responsive in the unlikely event you ever do experience a problem.

S-1070 SERIES

The **S-1070 Series** Thermal Chuck Systems are the latest offerings in the SIGNATONE temperature control product line. Utilizing the latest in materials and technology these products represent a new standard in performance and reliability. Switching DC power supplies are used to drive the embedded chuck heater cores, and the on-board computer offers superior temperature compensation over traditional linear interpolation methodologies. Temperature resolution on all models is 0.1°C. The cool-down function is provided by either a recirculating water source, or by one of several self-contained chiller systems, with the lower temperature set-point determined by the cooling system used.

In the full-range variants of the **S-1070B/C** systems the **Mercury Series** chucks are used, based on proprietary, patented technology designed to minimize reliability problems common in Peltier-based designs. The coolant temperature never exceeds +20°C which also eliminates the flash-point and volatilization problems seen with more conventional implementations, and widens the choice of coolants that can be used safely. **Mercury Series** chucks are offered in both coaxial and triaxial configurations.

S-1070A	S-1070B/Mercury	S-1070C/Mercury
200mm: 25°C to 300°C	200mm: 25°C to 300°C	200mm: -55°C to 300°C
300mm: 25°C to 200°C	300mm: 25°C to 200°C	300mm: -55°C to 200°C

S-1060 SERIES

The **S-1060 Series** Thermal Chuck Systems is SIGNATONE's workhorse product line for on-wafer thermal probing. Based on the industry-standard **ATHENA** controller module, the **S-1060 Series** incorporates all temperature control functions in a single unit, including DC heater drivers and cool-down water management. The controller is available in standard (**S-1060-R**) and high-temperature variants (**S-1060-H**), and offer 1°C temperature resolution. The Model **S-1061-R** controller features 0.1°C resolution and a T_{MAX} of 200°C.

The **S-1060 Series** systems can be used with either our standard series hot chucks for stand-alone applications, or thinner models (**T-Series**) optimized for mounting on wafer probe stations. Gold and nickel plating is a user-configured option on all our chucks, with palladium plating required for temperature chucks operating above 300°C. Chucks are available in 100mm, 150mm, and 200mm diameters, with triaxial configurations offered in the 150mm and 200mm sizes.

S-1060-R	S-1061-R	S-1060-H
100mm: 25°C to 400°C	100mm: 25°C to 200°C	100mm: 25°C to 550°C
150mm: 25°C to 350°C	150mm: 25°C to 200°C	150mm: 25°C to 500°C
200mm: 25°C to 300°C	200mm: 25°C to 200°C	200mm: 25°C to 450°C

S-1050 SERIES

The **S-1050 Series** Thermal Chuck Systems is ideal for probing applications that have a limited temperature range, but require fine resolution and high temperature stability. Typical uses include liquid crystal hot-spot detection, and heatsink applications for power and photonic devices. The heart of the system is a closed-loop recirculating water bath that maintains 0.1°C temperature stability. The standard temperature range is 10°C to 85°C, and is offered in 150mm and 200mm versions. Custom shapes and temperature ranges are also available as custom products. Please consult the factory for price and delivery for your specific requirement.

S-1040 SERIES

The **S-1040 Series** is our economy line of ambient to 200°C Thermal Chuck Systems. Based on the **ATHENA** proportional controller and AC heaters, the **S-1040 Series** is ideal for applications where AC line noise isn't as critical, but price is. These include RF S-Parameter testing, functional test, and probe card alignment systems. The S-1045 is a 1°C resolution system available in 100mm, 150mm and 200mm chuck sizes. The S-1046 has the same feature set and functionality, but with 0.1°C programmability. Both configurations are available with either gold or nickel plated chucks, and an optional high-frequency vacuum surface add-on option that eliminates vacuum ring resonances.

SIGNATONE

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