

A Revolutionary, Elegant, & Dependable Solution

The Tempe™ system is designed for thin film coating process control when high evaporation or chamber temperatures are required. Because it is able to maintain temperatures of 50-500°C as well as initiate a high-temperature self-cleaning cycle, the Tempe™ sensor head excels at extending crystal life, reducing interruptions in a continuous process environment, and minimizing errors from rate noise.

The sensor head in the Tempe™ system is a newly patented design that precisely controls temperature by combining an ALN heater with the Mirage™ air cooling system to use simple air as an environmentally safe and maintenance free coolant. An embedded RTD within the sensor head allows the Eon™ controller to easily maintain tolerances of +/-1°C with regulated compressed air, or +/-3°C unregulated.

Combining the Tempe™ self-cleaning sensor head with Colnatec's Eon™ controller, Mirage™ air cooling system, and HT™ (High Temperature) crystal allows for a degree of monitoring and control never before imagined in the world of thin film, and is ideal for ALD (atomic layer deposition), for film thickness monitoring, precursor development and maintenance capabilities. In addition, CVD (chemical vapor deposition), MBE (molecular beam epitaxy), CIGS (copper indium gallium diselenide) solar cell fabrication, and OLED (organic light emitting diode) manufacturing or deposition processes are supported.



TEMPE™ SELF – CLEANING SENSOR

PATENTED 40-500° C HIGH VACUUM CRYSTAL SENSOR SYSTEM

Features:

- Temperature controlled sensor head, complete with heater, air-cooling lines (up to 32" long), and embedded RTD (optional shutter if required, although maximum temperature will be limited to 250°C)
- 2.75" ConFlat™ vacuum flange with electricals for heater, RTD, crystal control, air lines for cooling, and optional shutter air
- Simple PC based integration with the Eon™, high resolution controller with built-in heater control and measurement of temperature, rate, thickness, and frequency (PC not included)
- Integration with Mirage™ air-cooling system capable of an output up to 28° C (50° F) below the supply air temperature
- Tempe™ system includes all necessary hardware, software, and documentation for plug and play capability

Specifications:

(Subject to Change)

- Operating Temperature: 50 - 500°C
- Vacuum Rating: 1x10⁻⁸ Torr
- Component Materials:
 - a) Sensor Body: 304 SS, alumina insulators, nickel alloy contact springs, 304 SS screws
 - b) Heater: aluminum nitride heater with tungsten traces
 - c) RTD: embedded in heater
 - d) Crystal Cable: silica ceramic and Teflon insulated silver plated copper wire
 - e) Internal Heater Power Cable: silica ceramic braided nickel wire
 - f) Type K Thermocouple
- Dimensions:
 - a) Length: 4" to 32" depending on customer requirements
 - b) Cross Section: Able to be passed through a 2.75" ConFlat port