

## WE MEET THE HIGH QUALITY STANDARDS DEMANDED BY THE SEMICONDUCTOR INDUSTRY

- Inside of our specialized semi assembly production area, we utilize laminar flow tables to assemble our temperature sensors in a clean environment.
- Our packaging and delivery processes are performed meticulously to ensure that our sensors arrive at your door on time and ready to install. Visit our website to learn more about these procedures.
- Our instruments are tested and calibrated against standards that are traceable to NIST standards and conform to the latest industry specifications and protocols. We utilize a state-of-the-art computer controlled data acquisition system which provides computer generated calibration reports, ensuring data accuracy and integrity by eliminating potential human errors in recording/reporting.



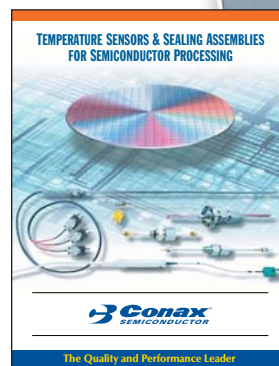
Our Laminar Flow Tables Certified 209E Class100

## THE EXPERIENCE AND INGENUITY TO MEET ANY APPLICATION REQUIREMENTS

Thermocouples for ASM Epsilon Reactors shown in this brochure represent just one of many products that Conax Semiconductor manufacturers for the semiconductor industry.

Order our semiconductor overview catalog today to see many of our other standard semiconductor products. You can order this catalog by calling us at **1.800.223.2389** or visiting our website at **www.conaxsemiconductor.com**.

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Bulletin #6003B



Division of Conax Technologies  
2300 Walden Avenue  
Buffalo, New York 14225, USA  
Telephone: 716.684.4500 Fax: 716.684.7433  
Toll free in the USA at 1.800.223.2389  
E-mail: semisales@conaxtechnologies.com  
www.conaxsemiconductor.com



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## Thermocouples for ASM Epsilon® Reactors

Gen 2.0 150/200mm – Center

A complete selection for  
150mm, 200mm and 300mm  
versions of the reactors



# The Next Generation of Thermocouples for 150mm, 200mm and 300mm Versions of the ASM Epsilon Reactor

## Gen 1.x Sets Provide OEM Performance

The two versions of our Conax Gen 1.x sets are for those fabs that want typical OEM performance and thermocouple life.

Our Gen 1.0 sensors are manufactured from custom-sized quartz sheaths as specified by the OEM.

Conax Gen 1.1 sensors are interchangeable with Gen 1.0, but are manufactured from standard-sized quartz tubing. Sensor life is comparable to the OEM standard version at a lower price.

## Gen 2.0 Sets Last 40-90% Longer!

Conax Gen 2.0 sensors are designed to provide longer service life over their Gen 1.x counterparts without modifying your reactor. A combination of different wire sizes, quartz sheath variations and non-diffused Center tips contribute to the longer life of the Gen 2.0 family.

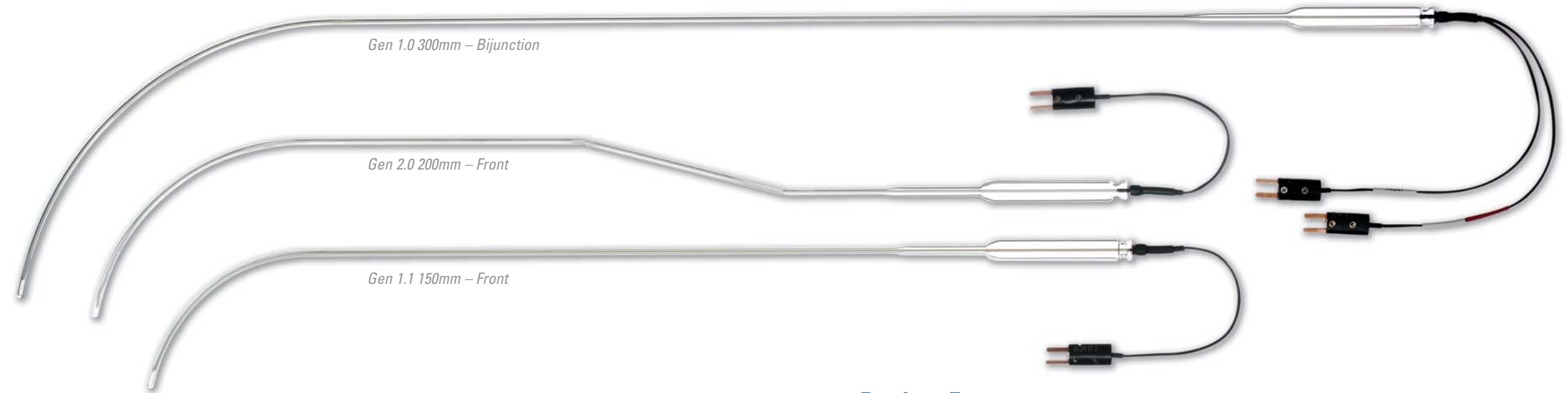
By lasting 40-90% longer, a Conax Gen 2.0 set will decrease the number of PMs required solely to change out thermocouples, thereby significantly increasing reactor uptime and wafer starts per month.

**Example:** Our longer-lasting Gen 2.0 thermocouples have allowed one of our 150/200mm EPI customers to **reduce by 50%** the number of PMs required solely to change out thermocouples. This gives them the ability to process more wafers, translating to a projected \$1+ million annual increase in finished product revenue *per reactor*.

## Custom Designs are Available

Conax will work with your engineering staff to create a special variation of any sensor so that it is uniquely designed to accomplish your specific objectives.

Some variations we can offer include variations in diffusion treatment of the quartz sheath, multiple junctions contained within a single sheath, special junction locations and other dimensional variations.



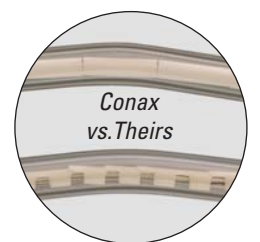
Front, Side, Rear and Bijunction Thermocouples					
Susceptor Size	Susceptor Position	ASM Reference P/N	Typical OEM Sensor Life		Extended Sensor Life
			Gen 1.0 Conax P/N	Gen 1.1 Conax P/N	Gen 2.0 Conax P/N
150mm	Front	02-323647D01	10-0710-001	10-0794-001	10-0969-001
	Side	02-323649D01	10-0711-001	10-0793-001	10-0968-001
	Rear	02-323648D01	10-0709-001	10-0792-001	10-0942-004
	Bijunction	02-327874D01	10-0712-001	Contact Conax	Contact Conax
200mm	Front	02-323652D01	10-0074-001	10-0746-001	10-0967-001
	Side	02-323654D01	10-0073-001	10-0745-001	10-0966-001
	Rear	02-323653D01	10-0072-001	10-0744-001	10-0942-001
	Bijunction	02-327875D01	10-0459-001	10-0747-001	Contact Conax
300mm	Front	N/A	10-0924-001	Contact Conax	Contact Conax
	Side	02-178706D01	10-0925-001	Contact Conax	Contact Conax
	Rear	02-178705D01	10-0923-001	Contact Conax	Contact Conax
	Bijunction	02-178704D01	10-0926-001	Contact Conax	Contact Conax
Center Thermocouples					
Susceptor Size	Susceptor Position	ASM Reference P/N	Typical OEM Sensor Life		Extended Sensor Life
			Gen 1.0 Conax P/N	Gen 1.1 Conax P/N	Gen 2.0 Conax P/N
150mm & 200mm	Center - ATM (ground tip - Gen 1.x)	02-321895D01	10-0708-001	10-0743-004	10-0941-004
	Center - ATM (non-ground tip)	02-330816D01	Contact Conax	Contact Conax	
	Center - RP (ground tip - Gen 1.x)	02-323584D01	10-0461-001	10-0743-001	10-0941-001
	Center - RP (non-ground tip)	02-330816D02	10-0787-001	Contact Conax	
300mm	Center	02-187139D01	10-0922-001	Contact Conax	Contact Conax

## Product Features

- 150mm, 200mm and 300mm sets are available.
- Type R thermocouples include special limits of error.
- Sheaths are manufactured from semiconductor-grade quartz tubing.
- Laser engraved serial numbers are on each of our connectors.



- Each sensor is heat sealed into two bags that are suitable for use with clean room procedures.
- Square-cut insulator segments improve performance by minimizing thermocouple calibration drift caused by vapor phase transport of rhodium to the pure platinum leg of the sensor. Others take shortcuts by removing large portions of the insulator thereby allowing the insulator to break at curved points of the sheath. This causes large areas of the wire surface to be exposed, thereby increasing the potential for cross-contamination and subsequent drift to occur.



## Conax Services

- Quartz re-sheathing option is available.
- Platinum reclamation program is available.
- All thermoelements used in the construction of our sensors are calibrated using recognized American Society for Testing and Materials (ASTM) International procedures with temperature standards traceable to the National Institute of Standards and Technology (NIST). Individual sensors can be custom calibrated upon request.
- Allow Conax to carry your inventory to guarantee next day delivery on all items. Contact us for details.
- Transmitters can convert the thermocouple output into a 4-20mA current loop output.