

# ZX-1 Thermal Modulation GC x GC System

The majority of chemical mixtures are far more complex than conventional GC has led us to believe. ZX-1 modulates the widest range of organic compounds. Gain over 10 times improvement in GC resolution and 5 times in sensitivity.



## Thermal Modulator

Two-stage thermal modulator using a continuous cold jet flow and a regularly pulsed hot jet to remobilize trapped effluent.

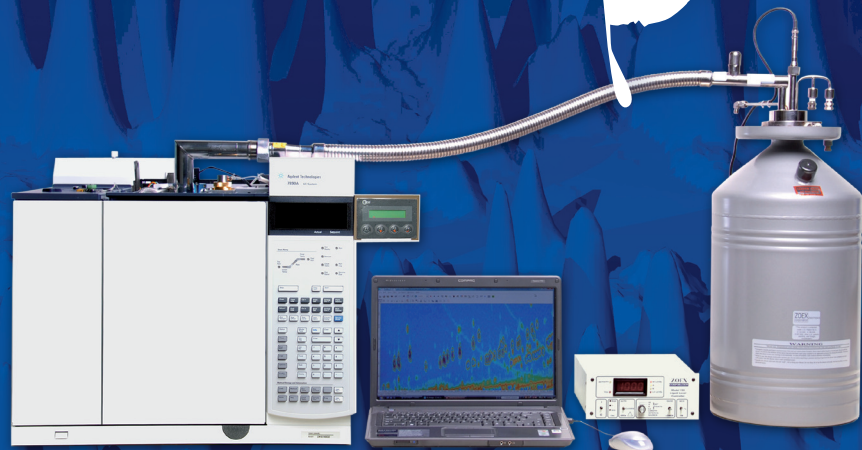
The ZX-1 system provides the lowest practical temperature for thermal modulation, hence modulates the widest range (C2 to C55) of organic compounds.

## Two-Stage "Loop Modulation"

Hot jet temperature: Up to 475 °C  
Cold jet temperature: As low as -189 °C  
Modulation period: Interval of 1 sec to 32 sec  
N2 consumption: 18 SLM per jet-Max

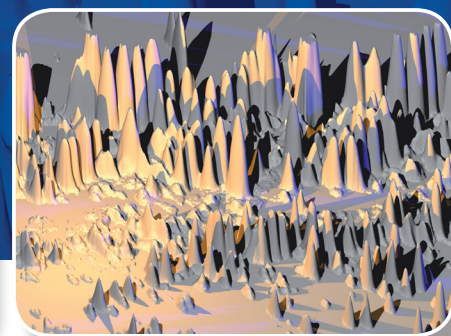
## Cryogenic Cooling System

Liquid nitrogen heat exchanger  
Maximum cooling temperature: -189 °C at the jet  
Flexible vacuum insulated cold gas delivery line 36" long  
Bench top dewar: 5L, 24"H  
Automatic liquid level controller  
Dimensions: 3.8"H x 8.4"W x 11.1"D  
Weight: 3.6 lbs/1,6 kg



## Applications

- Petrochemicals: GC x GC provides the best chemical group information
- Environmental
- Food and Flavors
- Fragrance and Perfumery
- Metabolomics



Zoex Europe B.V. | Beemdstraat 17a | 5653 MA Eindhoven | The Netherlands  
T +31 (0)40 257 39 72 | F +31 (0)40 251 47 58 | E info@zoex.eu | www.zoex.eu

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**Learn More:** Zoex offers on-site and online training. Our on-site classes (held at our headquarters in Houston, Texas and at our Zoex Europe office based in Eindhoven, The Netherlands) receive high praise from comprehensive GC analysts across the globe. **Support:** Zoex Corporation answers telephone calls in person during regular business hours (866) 904 2942 USA and +31 (0) 40 257 3972. **Europe Email support:** info@zoex.eu Online Meetings We invite online meetings with technical staff at any time. Contact us to learn how easy and efficient it is to use our online training service and support facilities.

# Introducing the new ZX-2

## Closed Cycle Refrigeration Thermal Modulated GC x GC System

No liquid nitrogen required for thermal modulation, Ready for online, routine, around-the-clock 2D gas chromatography



### Thermal Modulator

Two-stage thermal modulator using a continuous cold jet flow and a regularly pulsed hot jet to remobilize trapped effluent.

The ZX-2 employs a closed cycle refrigerator/heat exchanger to produce  $-90^{\circ}\text{C}$  cold jet and modulates volatile and semi volatile compounds over C7+ range.



### Two-Stage "Loop Modulation"

Hot jet temperature: Up to  $475^{\circ}\text{C}$   
Cold jet temperature: As low as  $-90^{\circ}\text{C}$   
Modulation period: Interval of 1 sec to 32 sec  
N<sub>2</sub> consumption: 18 SLM per jet-Max

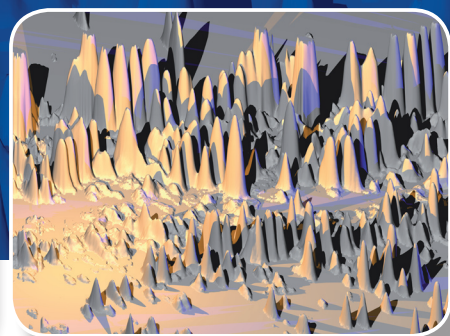
### Cooling System

Continuous cooling without liquid nitrogen  
Maximum cooling temperature:  $-90^{\circ}\text{C}$  at the jet  
SS vacuum insulated cold gas delivery line 30" long  
Cooling Probe: 316 corrugated stainless  
Refrigerant expands directly inside the probe  
Compressor: 2 compressors @ 1/4 hp  
Dimensions: 10" x 20" x 18.5"  
Weight: 70 lbs / 32 kg  
Electrical: 120 V / 60 Hz  
220 V / 50 Hz



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