

## GC×GC Thermal Modulator Upgrade Kit B

### Programmable Cold-Jet Flow & Modulation Control for Zoex Loop Modulators

Alignment-free hardware plus software-controlled cold-jet flow and modulation.

#### Why Upgrade?

Upgrade Kit B modernizes an existing Zoex loop modulator by combining InfoMass alignment-free hardware with PC-based control of cold-jet flow and modulation parameters. The system provides programmable operation while retaining the core components of the existing loop modulator.

**Kit B includes all features of Upgrade Kit A** - including the alignment-free head clamp and loop holder - and adds programmable control.

#### Kit B – Advanced Modulation Control Upgrade

- GC×GC Modulator Control hardware
- GC×GC Modulation Control PC software
- **Programmable cold-jet flow**
- **Programmable modulation period**
- Programmable hot-jet pulse duration
- Method save and load
- GC start synchronization

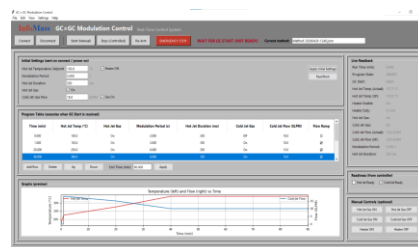
#### Kit B System



**Alignment-Free Hardware**  
Kit A hardware included



**GC×GC Modulator Control**  
Advanced control hardware



**GC×GC Modulation Control Software**  
Method-based PC control interface

Software image shown for interface illustration; Kit B does not include hot-jet temperature control.

#### What Kit B Adds

##### Programmable Cold-Jet Flow

Program 1-20 SLPM cold-jet flow with step changes or linear ramps during a run.

##### Programmable Modulation

Program modulation period and hot-jet pulse duration as part of the method.

##### Method-Based Operation

Save operating parameters as methods and load them for repeatable future analyses.

##### GC Start Synchronization

Begin the programmed method automatically upon receiving the GC start signal.

#### Upgrade Comparison

| Capability                          | Kit A | Kit B |
|-------------------------------------|-------|-------|
| Alignment-free hardware             | ✓     | ✓     |
| Improved loop stability             | ✓     | ✓     |
| PC software control                 | -     | ✓     |
| Programmable cold-jet flow          | -     | ✓     |
| Programmable modulation period      | -     | ✓     |
| Programmable hot-jet pulse duration | -     | ✓     |
| Method save/load                    | -     | ✓     |
| GC start synchronization            | -     | ✓     |

Upgrade your existing Zoex loop modulator with InfoMass Upgrade Kit B.

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