

GC×GC Thermal Modulator L10

LN₂-Cooled, Alignment-Free Thermal Modulation

High-performance loop-delay thermal modulation for compounds from C4 and higher.



L10 thermal modulation system integrated with a GC platform

Why L10?

The InfoMass **L10** is a loop-delay thermal modulator designed for reliable and flexible comprehensive two-dimensional gas chromatography (GC×GC). Its alignment-free geometry eliminates user-dependent loop alignment, while programmable cold-jet flow, modulation period, hot-jet pulse duration, and hot-jet temperature provide flexible control of modulation conditions.

With liquid-nitrogen cooling to temperatures as low as -189°C , the **L10** provides effective modulation across a broad volatility range, including compounds from C4 and higher.

-189°C

Lowest cold-jet temperature

C4 and higher

Designed for Reliable GC×GC Modulation

Alignment-Free Operation

Geometry establishes the modulation-loop position without user-dependent alignment.

Programmable Cold-Jet Flow

Program 1–20 SLPM cold-jet flow, including step changes or linear ramps.

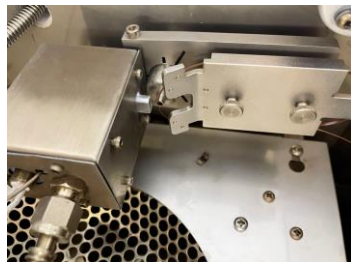
Programmable Modulation

Program modulation period and hot-jet pulse duration through the control software.

No Moving Parts

A mechanically simple modulation design supports robust and reliable operation.

L10 Hardware



Alignment-Free Modulator

Current cold-jet / hot-jet assembly



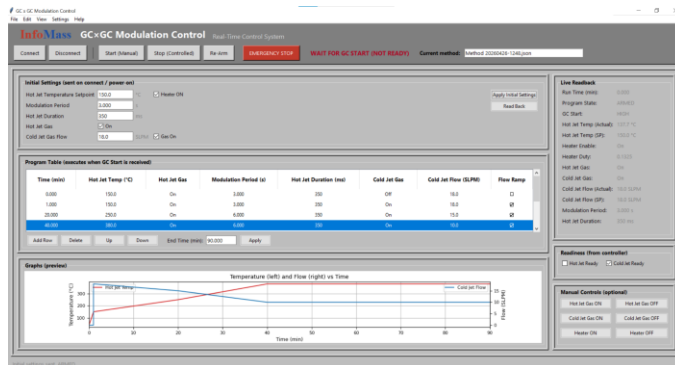
LN₂ Cooling Assembly

Automatic refill, 4.5 L bench-top Dewar, and cold-jet transfer line

Software-Controlled Modulation & Performance



GC×GC Modulator Control
Dedicated system-control hardware



GC×GC Modulation Control
Method-based PC control with real-time system status

Fully Software-Controlled Operation

- Programmable modulation period (1–30 s)
- Programmable hot-jet pulse duration
- Programmable cold-jet flow (1–20 SLPM)
- Step or linear cold-jet flow programming
- Programmable hot-jet temperature (30–400 °C)
- Method save/load
- GC start synchronization
- Real-time system status and readback

L10 at a Glance

Technology: Loop-delay thermal modulation

Cooling: Liquid nitrogen

Lowest cold-jet temperature: –189 °C

Analyte range: C4 and higher

Cold-jet flow: Programmable, 1–20 SLPM

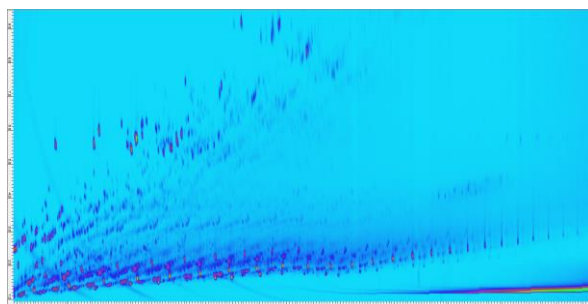
Modulation period: Programmable, 1–30 s

Hot-jet temperature: Programmable, 30–400 °C

Mechanical design: Alignment-free; no moving parts

GC compatibility: Most commercial GCs

GC×GC Performance



Crude Oil

Representative GC×GC chromatogram acquired using the L10 thermal modulator



Diesel

3D GC×GC visualization

L10 System Includes

- Cold-jet and hot-jet assembly
- GC×GC Modulator Control hardware
- GC×GC Modulation Control software
- LN₂ cooling assembly, including automatic LN₂ refill system, 4.5 L bench-top Dewar, and cold-jet transfer line
- Installation hardware and accessories

GC×GC Data Processing Software

InfoMass also provides GC Image GC×GC Edition and MDC Investigator for GC×GC data visualization, peak detection, analysis, comparison, quantitation, and reporting.

Compatible with most commercial GCs.

Advancing GC×GC Through Innovation