GL Sciences

Gas Chromatography

OPTIC-5 CRYOFOCUS

Cold Trap

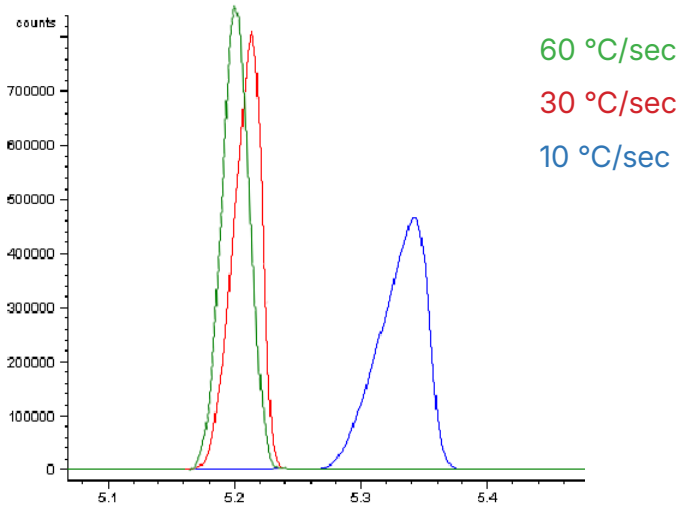
Cryogenic trapping in GC oven

Silent LN2 valve

Fast heating trap

Fast Heating and Cooling

Unique, low thermal mass design of the CryoFocus-5 trap allows extremely fast heating (up to 60 °C/sec) and cooling.
Cooling can be done in two different way's;
- Using LN2, from pressurized vessel (direct cooling). Trap can be cooled down to -150 °C.
- Using CO2, from bottle with dip pipe. Trap can be cooled down to -50 °C.



Same sample with different trap heating rates.

Universal Trap

The CryoFocus is designed for installation on virtually any GC system, with different versions available to ensure compatibility with the host GC.

Its intuitive, clearly structured control software makes system operation simple and user-friendly.

Why CryoFocus?

- Fast heating and cooling
- Low consuption of LN2
- Silent LN2 valve
- Improve detection limits
- Improve separation
- Compatible with any GC
- Software controlled
- Driver for Chronos software
- Driver for Thermo Chromeleon software

Cryogenic Focusing for Enhanced Chromatographic Performance

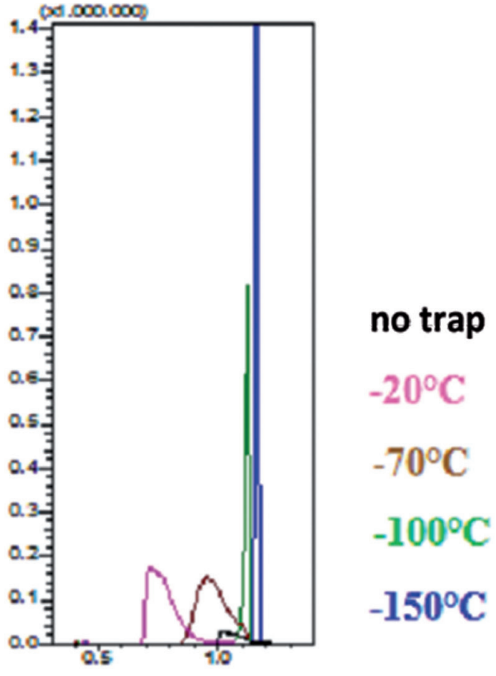
Cryogenic cold trapping is widely used to narrow chromatographic bands and improve detection limits. During the trapping process, analytes are retained and subsequently released through highly precise, rapid heating to ensure their introduction onto the analytical column in an extremely narrow band.

The CryoFocus system achieves this by cooling a selected section of the GC column to sub-ambient temperatures, allowing analytes to be efficiently focused either at the beginning or at the end of the column.

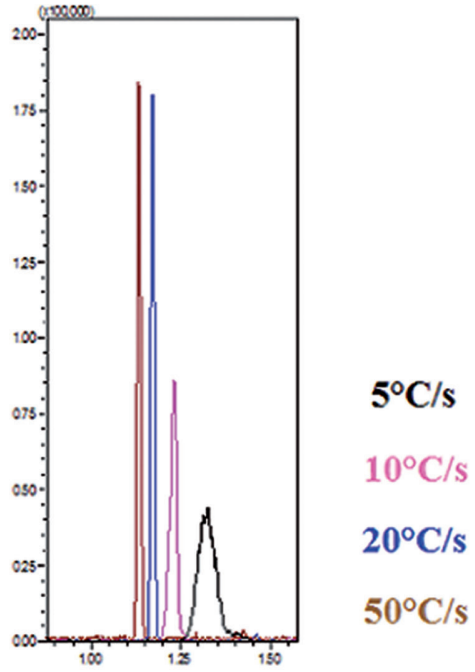
Once focusing is complete, the trapped analytes are released using an exceptionally fast heating rate of up to 60 °C/s. This rapid thermal desorption produces extremely sharp chromatographic peaks, resulting in improved peak resolution, enhanced signal-to-noise ratios and significantly lower detection limits.

Low Temperature and Fast Heating Ramp Rate

Headspace out of Water



Influence of Cryotrap low temperature for Vinylchloride (M/Z = 62)



Influence of Cryotrap heating rate for Vinylchloride (M/Z = 62)

Specifications

Cooling Media:	LN2 - from pressurized (100 – 150 kPa) vessel, CO2 - from high pressure cylinder with dipstick.
Consumption LN2:	approx. 1 liter LN2 per sample, depending on GC method
Cool down time:	3-8 minutes (from 350 °C down to -150 °C at GC oven at 50 °C)
Temperature range:	-150°C – 350°C (LN2), -50°C – 350°C (CO2)
Heating ramp rate:	1 to 60 °C/sec
Heating system:	3 V DC, 15 W max
Dimensions Control Unit:	38 cm × 15 cm × 38 cm (h × w × d)
Dimensions Trap:	ø 34 mm, 115 mm long, 0.8 mm ID
Power:	90 VA
LN2 Valve:	Silent valve
CO2 Valve:	Not Silent
Software:	OpticControl is included with the unit (Windows 11)

Item Numbers

2416-3110	OPTIC-5 CryoFocus System, LN2 Cooling, for Shimadzu GC-20xx
2416-3111	OPTIC-5 CryoFocus System, CO2 Cooling, for Shimadzu GC-20xx
2416-3210	OPTIC-5 CryoFocus System, LN2 Cooling, for Agilent 88xx GC
2416-3211	OPTIC-5 CryoFocus System, CO2 Cooling, for Agilent 88xx GC
2416-3310	OPTIC-5 CryoFocus System, LN2 Cooling, for Thermo TRACE 13xx/16xx GC
2416-3311	OPTIC-5 CryoFocus System, CO2 Cooling, for Thermo TRACE 13xx/16xx GC
2416-3410	OPTIC-5 CryoFocus System, LN2 Cooling, for LECO BT/BTX
2416-3411	OPTIC-5 CryoFocus System, CO2 Cooling, for LECO BT/BTX

Items not listed, please contact us.

Contact

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