



HICHROM

Chromatography Columns and Supplies

**LC CONSUMABLES
AND ACCESSORIES
HPLC Column
Temperature Controllers**

Catalogue 9

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HPLC COLUMN TEMPERATURE CONTROLLERS

Accurate temperature control plays an important role in HPLC, since the majority of chromatographic properties are a function of temperature. Ambient temperature can vary quite considerably from lab to lab and even throughout the day, resulting in poor reproducibility in HPLC methods. Thermostating the column at a suitable temperature will result in greater reproducibility and assay robustness. Methods will also be more reproducibly transferred from one laboratory to another when temperature is accurately controlled. In addition, many applications demonstrate greater separation efficiencies and improved selectivity when performed at elevated or reduced temperatures.

The main advantages of using elevated temperatures are:

- High speed.** For most reversed-phase separations, an increase in temperature leads to a decrease in retention. In addition, decreased solvent viscosity at elevated temperature leads to lower back pressure. This allows the use of higher flow rates.
- High efficiency and resolution.** At elevated temperature, the solute transfer from eluent to stationary phase is more efficient, resulting in high efficiency, even at elevated flow rates. The low back pressure due to decreased solvent viscosity at elevated temperature allows the use of smaller particle sizes and/or longer columns.
- Selectivity.** Temperature has an important role in determining HPLC selectivity, particularly for polar and ionisable compounds. The selectivity of an analysis can be specifically tuned by adjusting temperature. Figure 1 illustrates how a method can be optimised by varying temperature. At 30°C, peaks 3 and 4 are not fully resolved. At 40°C, peaks 1 and 2 and peaks 4 and 5 are not fully resolved. Running the separation at 35°C shows resolution of all components and reduced analysis time.

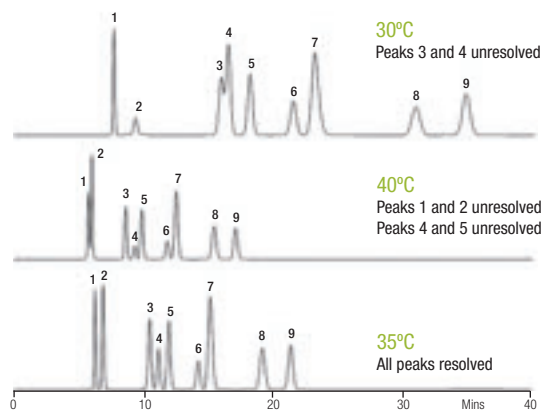


Figure 1. Optimisation of temperature for improved resolution

Jetstream Plus 2

- Peltier column thermostat heats to 85°C and cools to 5°C
- Temperature may be fixed or changed via step or linear gradient
- Large column compartment holds 5 columns up to 1" o.d. and 35cm in length

The Jetstream Plus 2 has a wide temperature range and large heated zone. It can be installed vertically or horizontally. The column temperature is controlled using two-way forced air circulation for fast heating and cooling. A controller with a numerical keypad and a two-line LCD is used for programming.

Specifications

Temperature Range	5 - 85°C
Column Capacity	5
Max. Column Length	35cm
Max. Column o.d.	1"
Temperature Accuracy	±0.2°C
Temperature Stability	±0.1°C
Operating Voltage	100-245 VAC, 50/60Hz, 100W

Ordering Information

Model	Part Number	Price
Jetstream Plus 2 Heater/chiller, 75cm cable	531102	
Jetstream Plus 2 Heater/chiller, 150cm cable	531202	



Jetstream Plus 2

HPLC Column Temperature Controllers (continued)

Polaratherm™ Series 9000

The SandraSelerity Polaratherm™ 9000 is a stand-alone column compartment capable of controlling column temperature from sub-zero to 200°C in isothermal and fast temperature gradient programming options. The Polaratherm can be operated in various modes – elevated temperature LC, sub-zero temperature LC and fast temperature programmed LC.

The column compartment accommodates columns from microbore to analytical (4.6mm i.d.) and length up to 25cm. The forced air mechanism provides rapid, uniform temperature distribution in the column chamber for isothermal or temperature programming operations. The use of thermal gradients instead of solvent gradients enables eluents to be recycled.

Specifications

Temperature Range	Without cryo option: 5°C above ambient to 200°C With cryo option: -20°C to 200°C
Column Capacity	8
Max. Column Length	25cm
Temperature Accuracy	±0.5°C
Operating Voltage	100, 110 or 220 VAC



Polaratherm series 9000 temperature controller

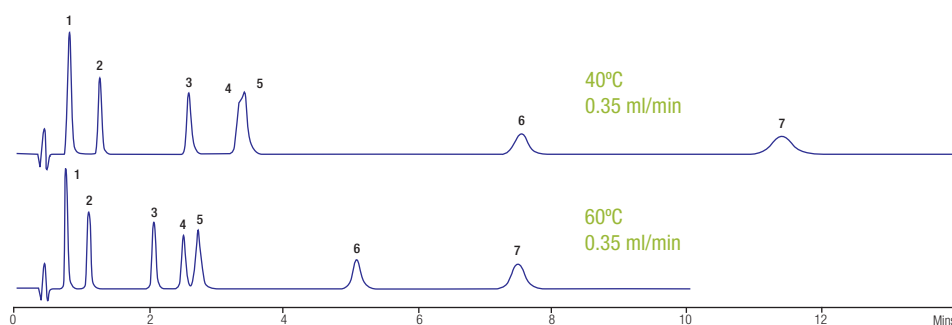


Figure 2. Selectivity and retention changes with temperature

Figure 2 illustrates the significant temperature dependent selectivity and retention changes that can be achieved for a mixture of components (pesticides).

Ordering Information

Item	Part No.	Price
Polaratherm Series 9000 Total Temperature Controller 220V	HI-9000	POA
Series 9000 cryo cooling option	HI-AD0578	POA
Interface software for communication with Empower	HI-BA0010	POA

For details of alternative HPLC column heaters, please contact Hichrom.