

PC³ / PC³-LT

Sample Inlet System

Thermally stabilized inlet system for ICP-MS

The PC³ is a compact Peltier Cooled inlet system which incorporates the ESI cyclonic spray chamber.

The peltier within the PC³ can be air or water cooled, as such the system can be connected to any ICP-MS.

The PC³ reduces the water vapour loading on the plasma resulting in enhance stability and performance. The spray chamber can incorporate any 6 mm nebulizer and is ideally suited to the PFA-ST Microflow nebulizer.



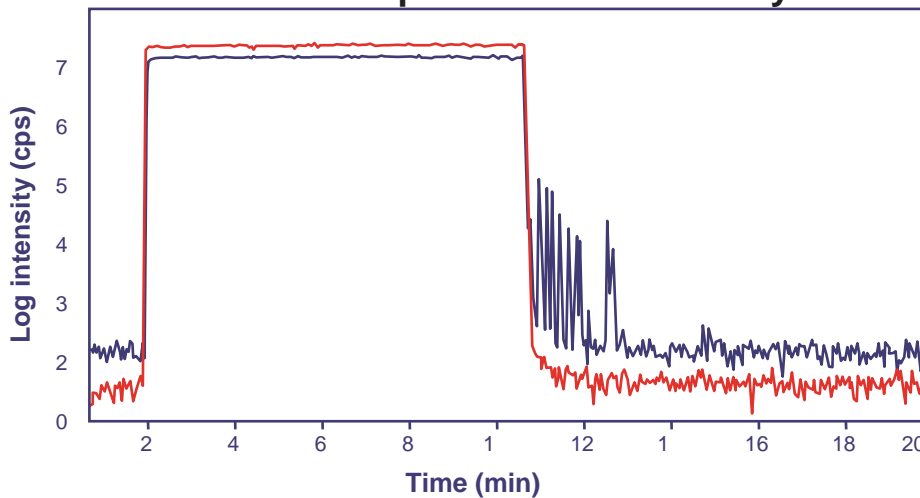
PC³-LT and PC³

PC³ Advantages:

- Thermal stabilization of spray chamber improves long-term stability
- User-selected control of spray chamber temperature (+2 °C/ -5 °C) and for the PC³-LT (+2 °C/ -20°C) for aqueous or organic solvents.
- Optional oxygen gas port for organic solvent analysis.
- Interchangeable quartz, polypropylene, PFA and borosilicate cyclonic spray chambers available.
- Fast rinse-out using PFA-ST nebulizer and O-ring-free quartz cyclonic spray chamber.
- Reduced oxides
- No separate chiller required
 - No antifreeze required
 - No algae growth
 - No water lines
- Robust, with very little maintenance reducing the chance of accidental breakage
- Long lifetime
- Very low maintenance

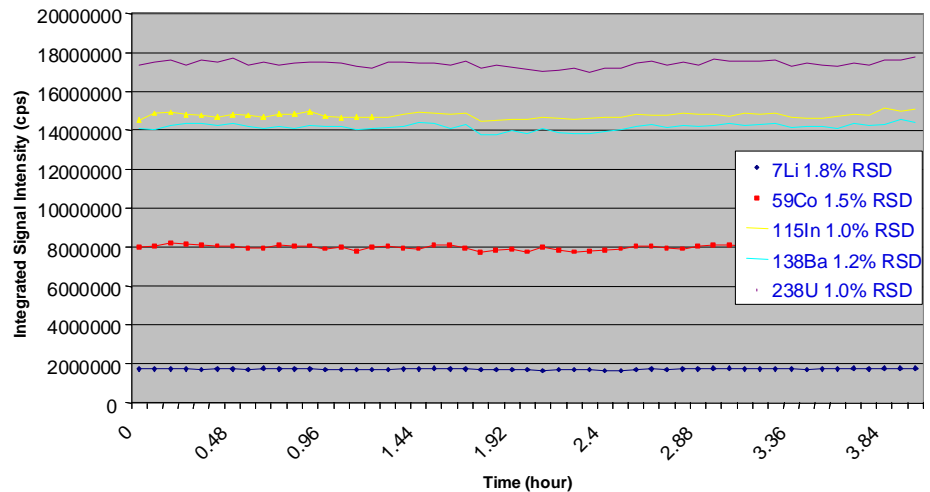


Rinse-out comparison of two inlet systems



The **PC³** will rinse out 5 orders of magnitude, 10ppb to 1ppt, of analyte in less than 30 seconds compared to the 3 minutes it takes the standard Scott spray chamber.

The cooled spray chamber reduces the amount of solvent reaching the plasma, this not only improves long term stability but will also reduce oxide levels from 3% with a standard spray chamber to 1% with the PC³



PC³-SSI

The **PC³-SSI** incorporates a dual spray chamber which further homogenizes the sample aerosol stream giving improved stability. Ideal for high precision Isotope Ratio analysis.

Isotope	Standard Inlet	PC ³	PC ³ -SSI
Co-59	1.03%	0.92%	0.53%
In-115	1.32%	1.08%	0.40%
Ba-138	0.96%	0.90%	0.48%
U-238	1.16%	0.93%	0.34%

Short term signal stability, 20 min analysis time n = 10



PC³ with SSI spray chamber

Cyclonic Spray Chambers

Cyclonic spray chambers have well established benefits over Scott type spray chambers.

- Faster wash in / wash out characteristics
- Less spiking
- Higher aerosol transport efficiency
- Low internal volume
- Fit any 6mm nebulizer, including PolyPro-ST, PFA-ST and MicroFlow nebulizers

All ESI cyclonic chambers feature:

- O-ring free connections to the nebulizer and torch injector
- Secure leak-free threaded drain port
- Available with or without internal baffle
- Optional threaded auxiliary port for addition gas

ESI's cyclonic chambers are available in 3 materials, all of which fit into the PC³ Peltier cooler for extra temperature stabilization.

Quartz - High purity spray chamber, ideal for ICP-MS applications.

PFA Teflon® - Resistant to hydrofluoric acid and gives low BEC. Ideal for ultra trace analysis required by the semiconductor industry.

Stable Sample Introduction dual quartz chamber

Aerosol enters second homogenization chamber, producing a very stable signal, ideal for isotope ratio analysis.



Quartz Cyclonic Spray Chamber



PFA Cyclonic Spray Chamber



Stable Sample Introduction (SSI) spray dual chamber