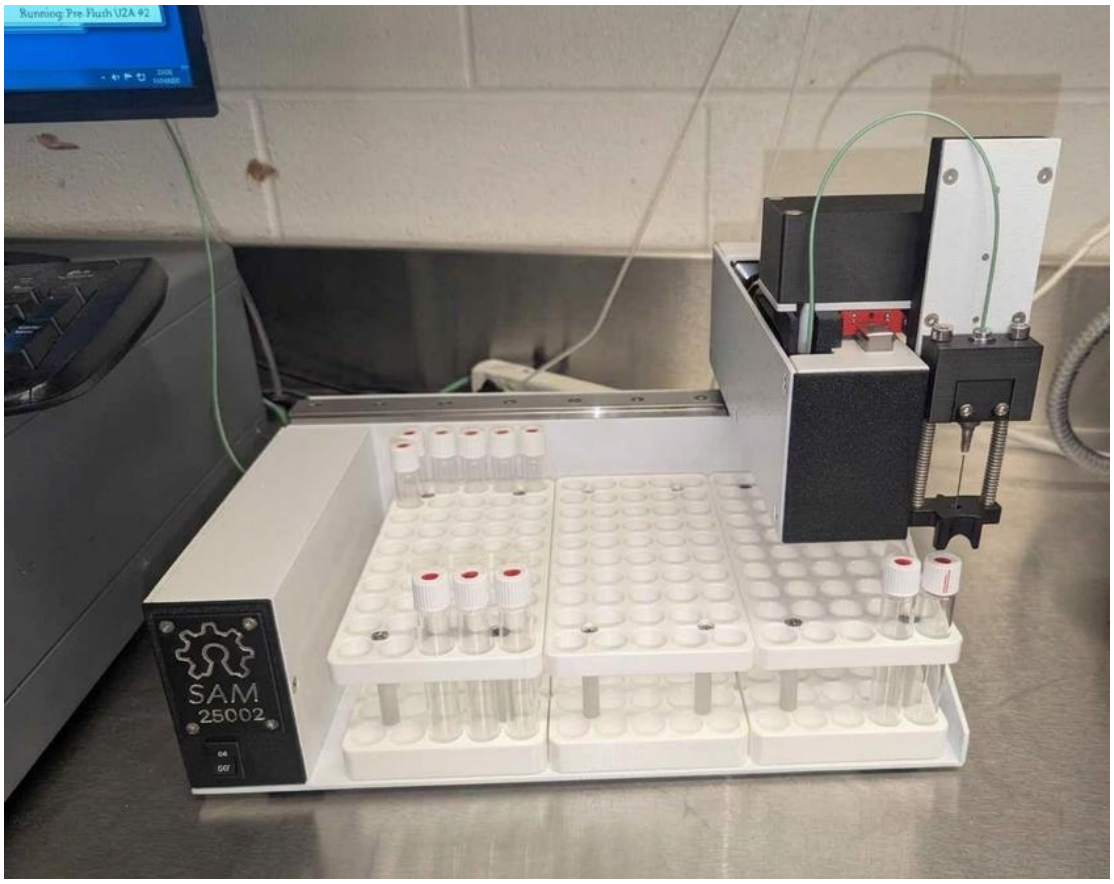
OpenAutoSampler

email: info@openautosampler.com

SAM for Picarro isotopic gas analyzers

SAM is an open source and low-cost autosampler. Sam can be used with Picarro gas analyzers in combination with 12ml Exetainer vials (Labco, UK). SAM is most used with Picarro's G2201-I analyzer, but can work with any instrument that is compatible with Picarro's SSIM2.



- Automated analysis of gas samples stored in 12ml Labco Exetainer vials (for best results the 12ml vials need to be filled with 30-35ml of gas)
- 150 sample positions
- Time per sample: ~15 minutes (adjustable down to 8 minutes without losing significant performance)
- Allows for non-stop use of the analyzer: samples for analysis can be added at any time
- SAM works independently, you do not need a Small Sample Isotope Module (SSIM or SSIM2) by Picarro
- Performance of SAM is similar or better than the SSIM2 by Picarro
- Open-source software (Python scripts) allow easy modification
- Open-source software for summarizing and charting of sample results is included
- Open-source hardware: all design files are included and free for any use
- Uses standard syringe needles, no other consumables are required

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SAM Specifications	
Construction	Powder coated aluminum frame
Electronics	Einsy Rambo 1.1/1.2
Interface	USB 2
Power	External 24 VDC 2.5A power supply (universal 100 – 240 VAC input)
Dimensions and weight	43 x 29 x 30cm, 8 kg
Accessories included	All fittings and tubing included for connection to ¼" inlet of analyzer
Accessories required	Tank with Ultra Zero Air + pressure regulator (5 PSI, 0.3 BAR) +fittings

SAM Performance	
Carry over between samples	Less than 0.5% of sample
Concentration accuracy / dilution (vial filled with 35ml sample)	98 / 2 %
Concentration accuracy / dilution (vial filled with 25ml sample)	95 / 5 %
Accuracy d13C / d15N	Same as analyzer performance

Disclaimer

A small gas sample collected in a small vial is likely to be affected by several inaccuracies. Best analyzer performance as listed on the datasheets by Picarro, can only be achieved with large samples stored in large volume gasbags or tanks. Proper vial preparation and sample collection is vital to get best results. Pre-evacuated vials supplied by Labco are NOT suitable! **Please discuss your use case before placing an order.**