PICARRO A2100 Caddy™

Interface for Con-Flow Bulk ^{13}C Analysis

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Couples Picarro's CRDS to various CO_2 generating front-ends

Caddy™ is Picarro's continuous flow interface for isotopic CO_2 applications and is capable of lab use or field deployment. It enables the Picarro isotopic CO_2 analyzers (G2121-*i*, G2131-*i*, G2201-*i*, G2101-*i*) to supplant IRMS and extends the capability of carbon isotope analysis with unprecedented ease-of-use and low cost of ownership to scientists who are currently challenged by the complexity of IRMS and its taxing price tag.

Caddy™ is uniquely positioned to leverage the high-precision, and low cost of ownership features of Picarro's isotopic CO_2 Cavity Ring-Down Spectroscopy (CRDS) technology into a plethora of applications, that wouldn't otherwise be possible, and expand the use of stable isotope techniques into new scientific applications and research initiatives.

The flexibility of the Caddy™ interface allows it to interface to third-party continuous flow sample preparation devices. It is equipped with an open-split to vent off the excess incoming flow from the attached front-end. Compatible front-ends certified to date include the Picarro Combustion Module (CM), Costech elemental analyzers (ECS4010) and the OI Analytical 1030W DIC/DOC front-end.

Caddy™ is software-controlled via a stand-alone utility accessible through a desktop icon installed on the isotopic CO_2 analyzer. The SW utility allows the integration of transient CO_2 peaks with user-defined parameters. Users can connect remotely and the analyzer through a standard Remote Desktop connection or with similar remote login software.

Specified precision is guaranteed by running a series of 10 pulses of CO_2 standard gas at 3000ppm in N_2 and/or with 6 combusted solid samples of USGS40 (L-glutamic acid).

Caddy™ Features

- Attaches to commercially available front-ends
- High-precision compatible
- High-throughput with Transient Peak Integration SW
- Laboratory & field deployable

Targeted Performance (depends on front-end)	
Gas species	**Precision**
CO_2 Concentration (^{12}C & ^{13}C, via CRDS)	< 200 ppbv (^{12}C), <10 ppbv (^{13}C) **(5 min ave., 1-σ)**
$\delta^{13}C$ (via CRDS)	< 0.4 ‰ (0.2 ‰ typical) sample-to-sample

System Requirements	
Sample Throughput	~11 min sample-to-sample, unless rate-limited by front-end
Sample Temperature	-10 to 45 °C
Sample Flow Rate	< 120ml/min at 760 Torr
Fittings	1/4", 1/8" & 1/16" Swagelok®
Installation	Benchtop
Dimensions (LxHxW) / Weight	14" x 5" x 6 ." / 2lbs
Power Requirem	None
Communication with Front-End	Software provides Contact Closure from CRDS analyzer
Gas Requirement	N_2 as carrier gas via Front-end

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