FIAlab Instruments Inc.

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HELLO!

I am Scott Schroeder

National Sales Manager

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THEY LOVE FLOW INJECTION

FIA Lab
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FIAlab Instruments has perhaps the strongest roots in flow injection out there. The inventor of these techniques (J. Ruzicka) founded FIAlab in 1987. For over 30 years now, we have remained on the cutting-edge of these techniques and have significantly improved these technologies.

FIAlab Improvements over Continuous Flow Analyzers

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- Size-Bench Space Critical
- Backup for Lab (redundancy)
- Full Array Spectrometer
- Pump Control (FIA)
- Method Improvements (Hardware/Software/Chemistry)
- Significant Reduction in cost of operation

EXTREMELY SMALL SIZE 25 cm X 15.2 cm

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60 cm X 25 cm X 50 cm
Reagents 5 cm (actual space 10cm)

SIMULTANEOUSLY RUN MULTIPLE ANALYTES =8

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Ammonia/TKN all on 1 Channel no switchover either FIA100 or EPA 350.1/351.2
NO3+NO2 353.2

UNIQUE FLEXIBILTIY WITH LITTLE ADDED COST

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- FLEXIBILITY
- Add Autosampler and Software license SPLIT
- TWO WORKSTATIONS
- THREE WORKSTATIONS

HIGH END SPECTROMETER IN FIA1000

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Flame Spectrometer

The Flame Spectrometer is built using industry-leading manufacturing techniques that help deliver high thermal stability and low unit to unit variation- without compromising the flexibility and configurability that are the hallmark of Ocean Insight's miniature spectrometers. New features such as interchangeable slits, indicator LEDs, and simple device connectors deliver more freedom and less frustration.

Whether you are a research lab looking to make a breakthrough, or an engineer working to integrate a spectrometer into an OEM system, the Flame will provide you with the performance and features you need to make your UV-Vis spectroscopy application successful.

ALL WAVELENGTHS SIMULTANEOUSLY

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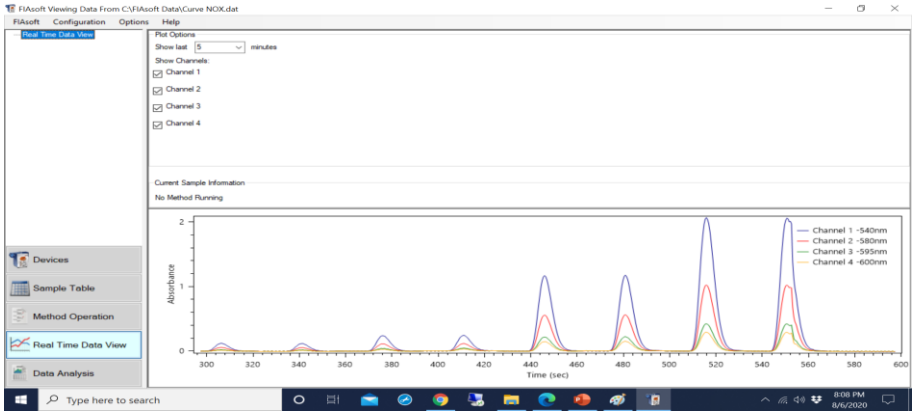
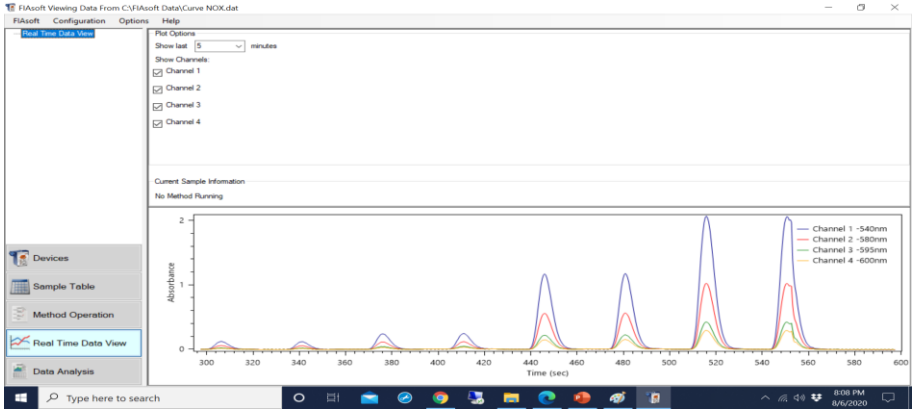
Ammonia



NO3+NO2



SOFTWARE CONTROLLED ISMATEC PUMP

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FL-1000 Pump

The FL-1000 pump features a planetary drive for less pulsation and longer tubing life. The eight SS rotors provides smooth rotation and accurate liq-uid flow. This pump requires fewer tubing changes and can handle flow rates of 0.002 to 44 mL/min per channel. Flow rates depend on drive rmp and tubing size. See page XX for a complete list of FIAlab's pump tubing. The FL-1000 pump is simple to use and includes automatic occlusion cartridges, which provide reproducible results.

Pump Extensions

The FL-1000 pump can be extended up to 8 chan-nels to accomodate multple chemistries.

Fluorometric Ammonia & TKN

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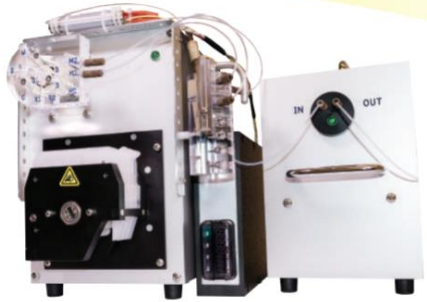
Alkalinity								
Method number	Lower	Upper	MDL	Units	Sample / Hour	Matrix	Compliant With	Notes
ALK-W-1-1	1 10	50 500	0.3 3	g CaCO3 / L	50	Waters	EPA 310.2	Methyl Orange method.

Ammonia								
Method number	Lower	Upper	MDL	Units	Sample / Hour	Matrix	Compliant With	Notes
NH3-S-1-1	0.02 0.075	0.5 50	0.006 0.025	mg N / L as NH3	120	Soil extracts	N/A	Salicylate method for soil extracts.
NH3-W-1-2	0.5	20	0.1	mg N / L as NH3	60	Waters	EPA 350.1	Salicylate method with gas diffusion.
NH3-W-1-4	0.5	20	0.1	mg N / L as NH3	60	Waters	SM 4500-NH3 H.	Salicylate or phenate method with gas diffusion.
NH3-W-2-1	0.05	0.5	0.02	mg N / L as NH3	60	Waters	EPA 350.1	Salicylate or phenate method with gas diffusion, utilizing low-noise detector.
NH3-W-2-3	0.05	0.5	0.02	mg N / L as NH3	60	Waters	SM 4500-NH3 H.	Salicylate or phenate method with gas diffusion, utilizing low-noise detector.
NH3-W-2-5	0.006	1	0.002	mg N / L as NH3	60	Waters	SM 4500-NH3 H.	Salicylate or phenate method, utilizing low-noise detector.
NH3-W-3-2	0.05	10	0.012	mg N / L as NH3	60	Waters	EPA Rec.	OPA method with gas diffusion, utilizing fluorometric detector.

•APPROVED JULY 19th 2021



Gas Diffusion works well Ammonia

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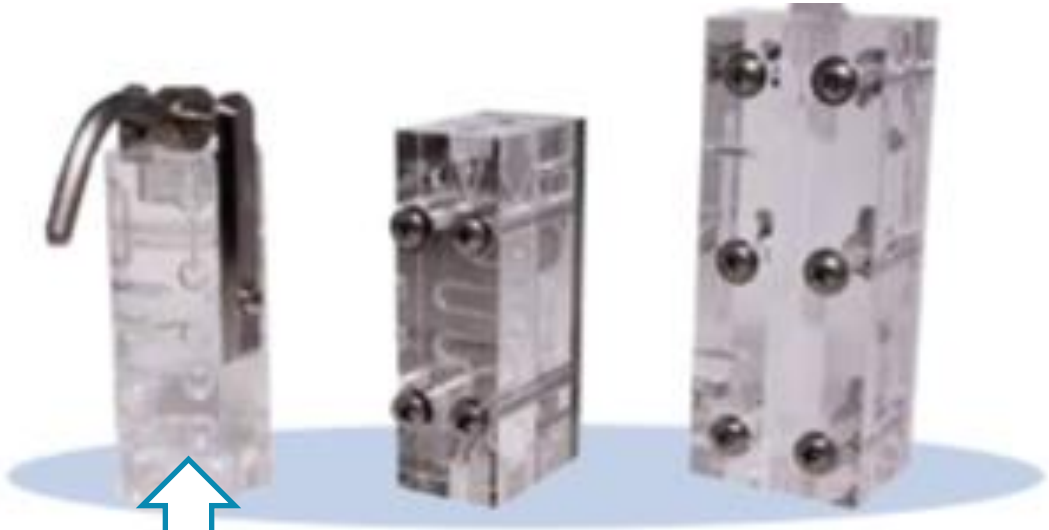

FIALAB VERSION

LESS REAGENT CONSUMPTION & WASTE GENERATION

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Chemistry	Lachat method	Standard Method	Fialab method	Low	High	units	Lachat	FIAlab
Nitrate/Nitrite	10-107-04-1-C	4500-N03-I	NO3-W-20-2	0.2	2	mg/L		
Nitrate/Nitrite		4500-N03-I		0.2	2	mg/L		
Chemical	**Chem Formula**		**Regent**	**Reagent Name**		**prepare**		
Ammonium chloride	NH4Cl		1	1.6 M Ammonium Chloride Buffer (1 L)		3 months	3.07	1.925
Sodium Hydroxide	NaOH		**2**	Sulfanilamide Solution (1 L)		Monthly	0.94	0.94
Ethylenediaminetetraacetic acid disodium salt dihydrate	C10H14N2Na2O8 · 2H2O							
Sulfanilamide	H2NC6H4SO2NH2		**3**	Carrier Water or 2 ml H2SO4/L/4ml FIA			1.28	0.77
Phosphoric acid, 85%	*H3PO4*			Total (ml)/minute			5.29	3.635
N-1-Naphthylethylene diamine dihydrochloride	*C10H7NHCH2CH2NH2 · 2HCl*							
Brij® L23, 30% solution	*CH3(CH2)10CH2(OCH2CH2)nOH*			Waste comparison Reduction of waste approximately 30%				
Sulfuric acid (36N)	H2SO4							

FLOW CELLS

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STS Series Spectrometers
Ocean Optics

Flow Cells

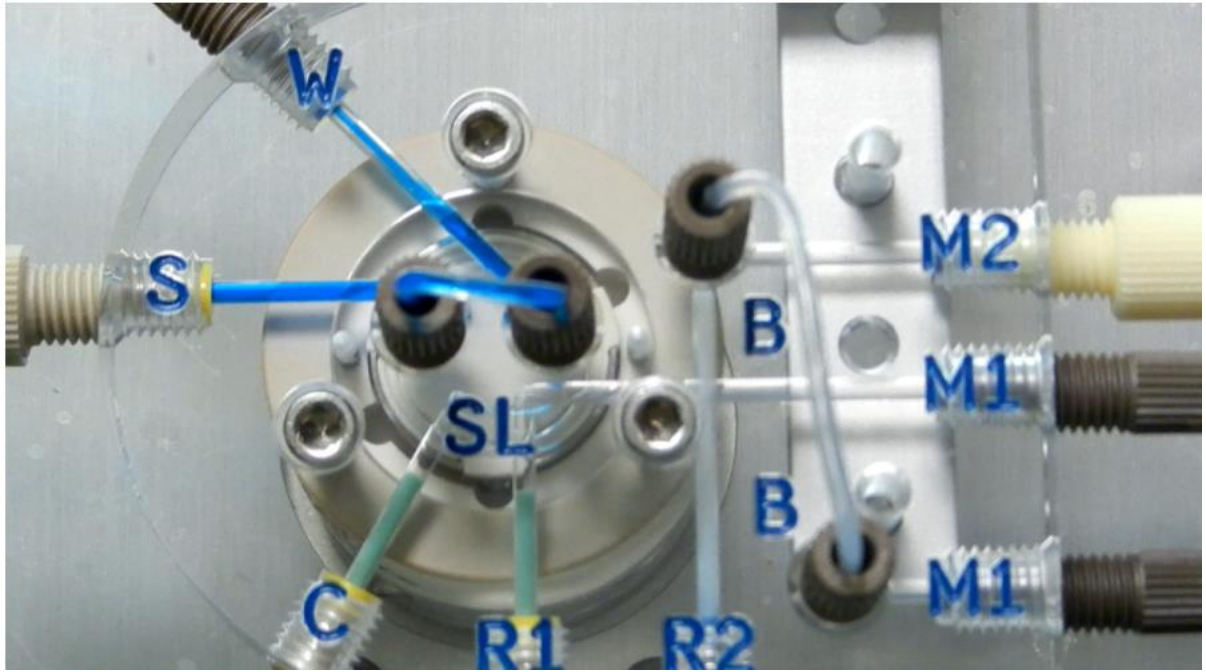
Professionally machined. Carefully measured. Proudly made in the USA. These flow cells come in a wide range of materials and lengths to satisfy your detection limits and withstand your reagents. Normal and micro-volumes are available.

Products Include:
- SMA-Z Flow Cells 100um to 100mm optical length
- Long Path 50 cm optical path
- Dialysis and gas diffusion cells

Assorted flow cells

Materials Available:
- Plexiglas
- Ultem
- Teflon
- Stainless Steel
- Peek
- COP

LAB ON VALVE DESIGN



DEMO TIME

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Conclusions

THANK YOU!