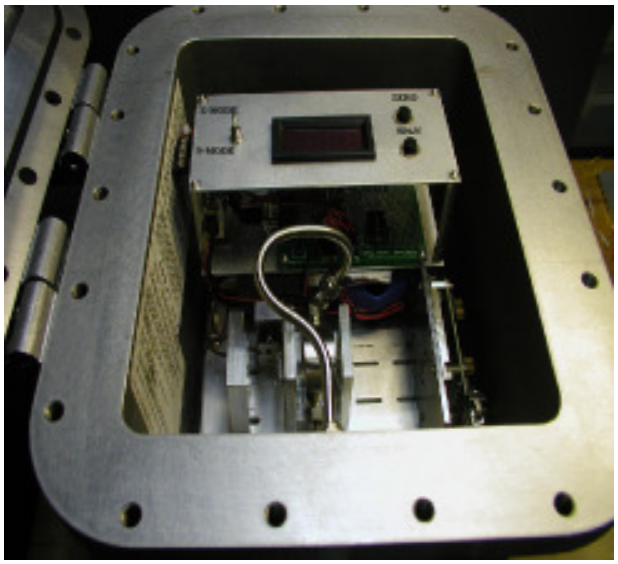
CSP - IR

ChromaSpec$_{IR}$

CONCENTRATION MONITORING BY AN IR DETECTOR ARRAY

The infrared spectral region is ideal for concentration monitoring of various chemicals such as water, CO and CO_2. Ruggedness is of utmost importance in process applications. Most IR analyzer have a filter wheel to move from one wavelength to another or just scan, while the ChromaSpec IR is based on an IR detector array with a linear variable filter (LVF) and has no moving parts. The ChromaSpec IR provides a cost effective maintenance-free solution to the monitoring of gases or liquids that absorb in the infrared spectral region.



PRINCIPLE OF OPERATION:

IR light is absorbed by the sample. The absotbance signals are then correlated to concentration. The detector is very compact. The LVF functions as the dispersive optical component. The light source is collimated and optimized for maximum intensity. The resolution for most LVF's is 1.5 % of the entire wavelength range. The wavelengths covered by the LVF detector depends on applications and range from (for example) 1.4-2.5µm, 2.5–4.9 µm, and 5.5-11 µm.

THE ANALYZER

Two different enclosures are available, a general purpose and an explosion proof. The user interface is via two buttons and toggle switch, allowing for zero and span.

The **ChromaSpec$_{IR}$** components include:

- An IR light-source synchronized to operate with the detector's electronics
- A sample cell(various path lengths are available depending on application), can be easily replaced
- IR detector 64 element array with a linear variable filter
- A microprocessor for data acquisition, analysis and user interface
- An LCD display. A 128 x 64 pixel graphic display. A high contrast, extended temperature range LED backlight LCD provides excellent viewing in direct light as well as indoors
- A 4-20mA output signal

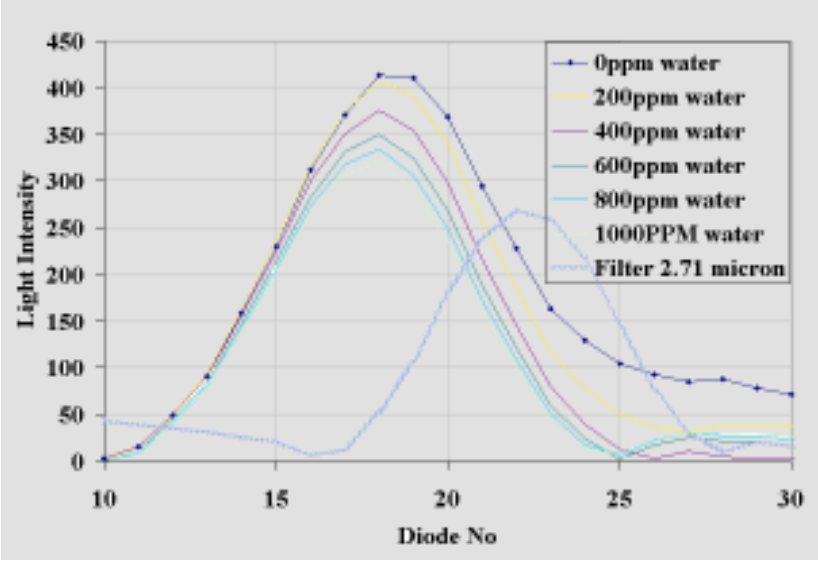
FEATURES

- Ideal for monitoring **PPM** level **WATER** in various solvents
- Fast and continuous quantitative measurements
- Contains no moving parts
- Extremely robust allowing for installations in process stream environments
- Replaces FTIR
- 4-20mA output
- For gas and liquids applications

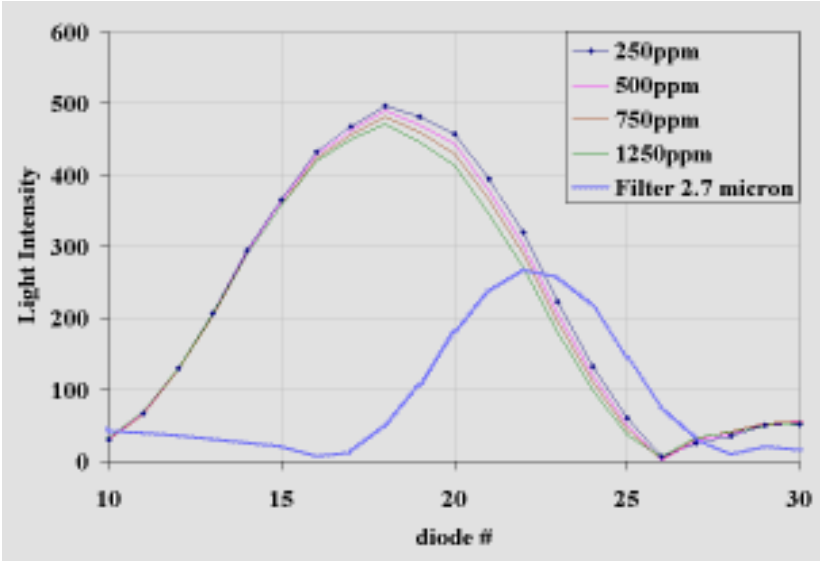
INDUSTRIES

- Petrochemicals
- Chemicals
- Polymers
- Pharmaceuticals
- Food

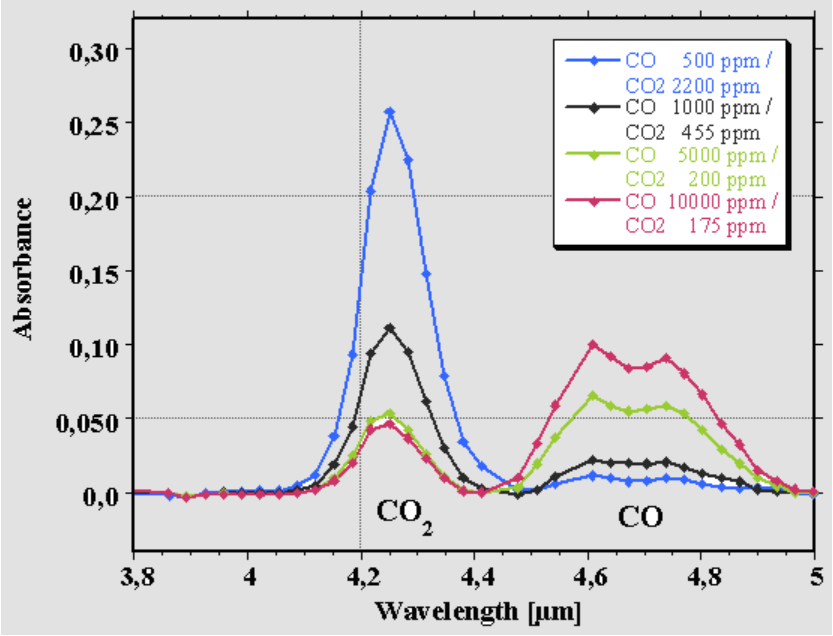
Applied Analytics, Inc.



IR spectra of PPM water in Aceto nitrile. The 2.71 microns range is used to monitor the water levels in Acetonitrle.



IR spectra of PPM water in acetone. The 2.71 microns range is used to monitor the water levels in acetone.



IR spectra of CO and CO_2, the CO_2 is monitored at the 4.25 microns and the CO at the 4.8 microns

Specifications	ChromaSpec IR
Detection:	IR array (2 to 10 Micron)
Flow cells	ATR and Transmission
Pressure:	Maximum 150psig (10 Bar)
Temperature:	100 C (212 F)
Measuring Range:	water (0-1000PPM) ;(0-10%)
	CO2 (0-2000PPM); (0-10%)
	CO (0-2000PPM); (0-10%)
	CH4 (0-5000PPM);(0-100%)
Drift:	0.1% of reading/ 24 hours
Noise:	±0.2% full scale
Power:	24 V DC 100 mA
Output:	4 – 20 mA 700 Ohm load galvanically isolated.
Connection:	2 1/4 " tube connections for flow in and out of the system
Response time	1 second per spectrum
Electrical:	General area classification (standard)
	Class 1 Div I Grps C, D (optional)

APPLICATIONS INCLUDE:

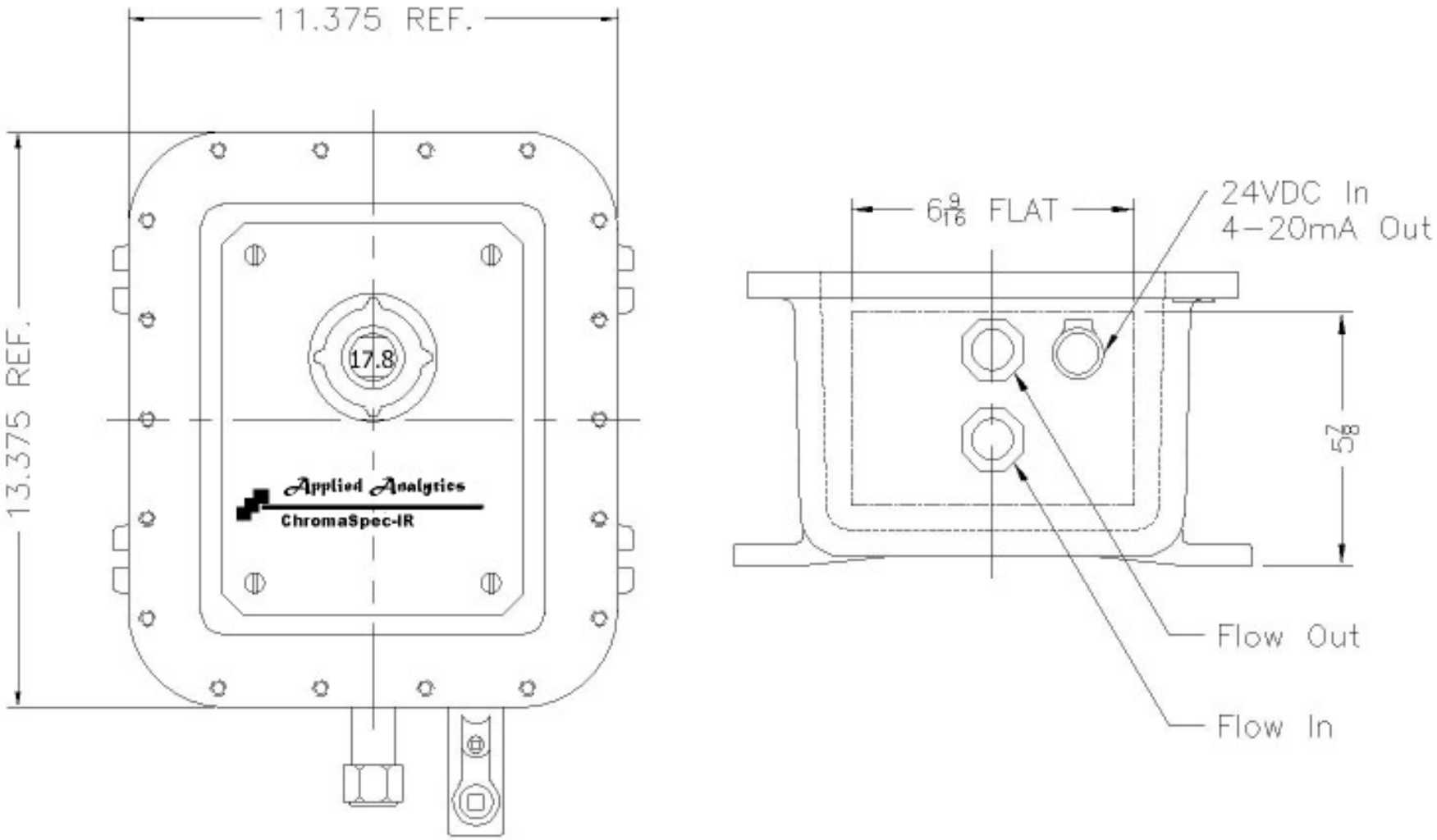
- HCl, HF
- Acetic acid
- Formaldehyde
- Esters
- Alcohol
- Acetone
- Aromatics
- VOC
- Water
- CO, CO2
- CH (hydrocarbons)
- Fluorocarbons; Freon
- SO2
- NO, N2O,
- NH3, urea
- NF3, SF6

Applied Analytics, Inc.

29 Domino Drive
Concord, MA 01742
Tel: 978-287-4222
Fax: 978-287-5222
e-mail: sales@a-a-inc.com
web: www.a-a-inc.com

Product Brief - **CHROMASPEC IR**

http://www.a-a-inc.com


11.375 REF.
13.375 REF.
17.8
Applied Analytics
ChromaSpec-IR
6 9/16 FLAT
24VDC In
4-20mA Out
57.8
Flow Out
Flow In