CA-6 UV Analyzers

Electro-Chemical Devices

UV Spectroscopic Analyzers	
• Ammonia	**Range:** Various from 0-10 mg/L to 0-1000 mg/L **Method:** Sodium Hydroxide addition to convert ammonium to ammonia, UV detection of ammonia in carrier gas.
• Nitrate	**Range:** Various from 0-30 mg/L, 0-100 mg/L, 0-250 mg/L **Method:** Continuous measurement, differential N-O absorption versus reference wavelength
• COD 254 nm	**Range:** Various from 0-200 mg/L to 0-20,000 mg/L **Method:** Continuous measurement, differential 254 nm absorption versus reference wavelength
• BOD 254 nm	**Range:** Various from 0-200 mg/L to 0-20,000 mg/L **Method:** Continuous measurement, differential 254 nm absorption versus reference wavelength
• TOC 254 nm	**Range:** Various from 0-200 mg/L to 0-20,000 mg/L **Method:** Continuous measurement, differential 254 nm absorption versus reference wavelength

Description

The CA-6 UV Analyzers are a family of on-line sampling analyzers that use UV absorption to perform an analysis. The analyzers are configured to perform analysis over a wide range of values for each parameter measured.

The CA-6 UV Analyzers are easy to start up and use, simply connect the sample, waste and cleaning solution/reagent lines and then power up the Factory Calibrated analyzer. Wall mounting hardware is standard but an optional benchtop stand with reagent holder is also available. Accessing information or customizing an analysis routine are easily accomplished with the simple, user friendly menu structure and touch screen interface.

The analysis are based on the measurement of UV absorption in the sample. The absorbance of the solution or gas is measured though a Quartz Flow Cell at a specific wavelength using a long life Xenon light source and photodetectors. The absorbance is related to the sample concentration according to 'Beer-Lambert Law'.

Concentration=(Absorption coefficient)log(light in/light out)

CA6 UV Ammonia Analyzer

The measurement principle is based on the UV-light absorption spectrum of ammonia gas (NH3) in equilibrium with dissolved ammonium in the water sample. A small quantity of Sodium Hydroxide (NaOH) is added to the sample to increase the pH converting the ammonium into ammonia gas. A fast Fourier Transform (FFT) is applied to the spectrum to extract the absorption signal typical of ammonia gas. A water temperature probe performs automatic temperature compensation.

This method is very selective and no interferences are present in river water or waste water. The turbidity or color of water have no influence as the measurement is performed in the gaseous phase. Waste water with suspended solids such as activated sludge can be measured without filtering. An autozero is performed at each measuring cycle.

CA6 UV Nitrate Analyzer

The measurement principle is based on the strong absorption of UV light by the chromophore N-O according to the Beer-Lambert law. An automatic internal linearization compensates for the inherent nonlinearity of the Beer-Lambert law for high concentrations. The measurement is the weighted sum of the nitrite and nitrate concentrations, but in most applications the nitrite concentration is negligible.

Turbidity, organic matter, suspended solids or dirt on the flow cell is automatically compensated for by a differential measurement with a second detector at a reference wavelength. Chlorates and chlorites at high concentration are the only inorganic causes of interference, but these are usually not encountered with drinking water or urban wastewater.

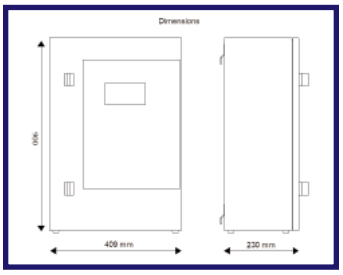
CA6 UV - COD 254 nm - BOD 254 nm - TOC 254 nm Correlation

The measuring principle is based on the UV light absorption by unsaturated organic molecules at 254 nm wavelength, according to the Beer- Lambert law. There is a close correlation between the absorbance at 254 nm and COD, BOD, or TOC as determined by the permanganate and dichromate methods in river water, potable water and municipal wastewater. The measurement time is very fast, less than 10 seconds and it requires no reagents or calibration solutions.Turbidity or suspended solids are automatically compensated for by a second detector at a reference wavelength.

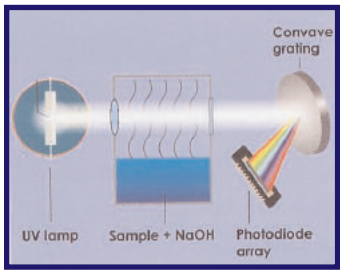
CA-6 UV Analyzers

Product Specifications

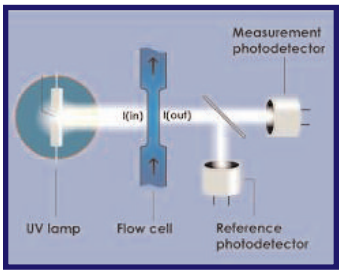
Measurement	Ammonia	COD - BOD - TOC 254 nm Any two of the above (X)	Nitrate	Ammonia + Nitrate
Part Number	CA6-31-A-1-0-0	CA6-4X-A-1-0-0	CA6-30-A-1-0-0	CA6-32-A-1-0-0
Range	0-10 mg/l 0-30 mg/l 0-100 mg/l 0-400 mg/l 0-1000 mg/l	0-200 mg/l 0-800 mg/l 0-2000 mg/l 0-5000 mg/l 0-20,000 mg/l	0-30 mg/l 0-100 mg/l 0-250 mg/l	0-200 mg/l
Accuracy	5%	10%	5%	5%
Repeatability	3%	0.15%	0.3%	3% / 0.3%
Zero Drift	5%	5%	5%	5%
Full Range Drift	6%	10%	10%	6% / 10%
Measurement time	15 minutes	10 seconds	10 seconds	15 min / 10 seconds
Reagents	NaOH	None	None	NaOH
Filtration	Not needed			
Auto cleaning	Yes, Integrated in design			
Sample Temperature	0˚- 80˚ C, sample can not be frozen			
Ambient temperature	0˚- 50˚ C			
Alarm relays	4 Alarm relays, Normally Open, 5 A at 250 VAC for resistive loads.			
Analog Output	Single 4-20 mA output, 12 bit resolution, 500 Ω maximum load (option 2nd channel)			
Communication	RS232, download data to Excel file, (optional RS485 MODBUS module)			
Data Logging	Integrated, download via RS232			
Power Supply	110-130 VAC or 220-240 VAC /30VA / 50-60Hz), 12-15 VDC / 4A			
Dimensions	600mm x 420mm x 230mm			
Weight	30 kg			



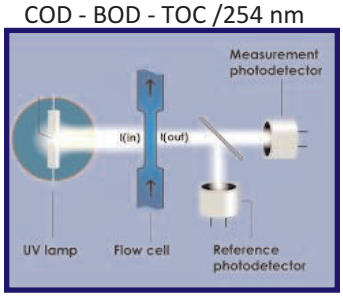
Ammonia



Nitrate



COD - BOD - TOC /254 nm



Specifications subject to change without notice.

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CERTIFIED ISO9001 QUALITY SYSTEM