



## SIA-2000-CR

### Hexavalent Chromium Online Analyzer

Hexavalent chromium exists in water in the anion forms of  $\text{CrO}_4^{2-}$ ,  $\text{HCr}_2\text{O}_7^-$ ,  $\text{Cr}_2\text{O}_7^{2-}$ . Hexavalent chromium is highly poisonous and carcinogenic and can be easily accumulated in the body, and thus it is a persistent danger to the environment. So the level of hexavalent chromium is an important indicator of the water pollution.

Focused Photonics Inc, combining its many years of experiences on process analysis and environmental monitoring instrument development, has developed the SIA-2000-CR hexavalent chromium online analyzer, which can be used for automatic monitoring on industrial wastewater, surface water, municipal wastewater, etc. It adopts advanced sequential injection platform, combining with the national standard detection method, which ensures reliable and accurate results. With high level of robustness in the electronics, mechanics and hydraulics components, the analyzer requires very little maintenances. Such analyzer has some special features such as automatic calibration, automatic zero adjustment and automatic cleaning. The analyzer provides multiple standard interfaces, which are easy to combine other available instruments, such as flowmeter, pH meter, etc, therefore remote monitoring can be achieved.

The analyzer can be equipped selectively with corresponding pretreatment system for thoroughly meeting the demands of various working conditions and various customers.

### Operational Principle

Based on the standard method and new technical platform, hexavalent chromium in samples and diphenylcarbazide will react to form purplish red compound in the acid medium.

The reaction product will be measured with a colorimeter and the absorbance is proportional to the hexavalent chromium concentration in the sample.



### Product Features

- High reliability, low maintenance
- Accurate measurement, wide applicable scope



Diagram of Pretreatment System (optional)

### Technical Specifications

Measuring Principle	Colorimetric, diphenylcarbazide method	Measuring Range	0.5/2/5 mg/L, other ranges available on request
Technical Platform	Sequential injection analysis	Measuring Interval	Selectable: continuous, periodic, timing or triggered by the external switch signal
Colorimeter	LED light source, silicon detector	Measuring Time	15 minutes
Accuracy	±10%	Data Storage	One year
Repeatability	≤3%	Maintenance	0.5 hours per month, typical
Resolution	0.01 mg/L	Inputs	2 paths of 4-20 mA input, 2 paths of switch signal collection, and analog signal collection unit can be added according to demand
Power Supply	220 VAC±10%, 50 Hz±5%, not over 100 W	Outputs	2 paths of 4-20 mA output, 8 paths of switch signal output
Operation Temperature	(10-40) °C	Dimensions	500mm×700mm×365mm (W×H×D) without pretreatment system
Weight	30kg without reagents and pretreatment system		

## FO-2000 Series

### Oil-In-Water Online Analyzer

With the years of experiences on process analysis and environmental monitoring instrument development, the Focused Photonics Inc has developed the FO-2000 series oil in water online analyzer, which is a new generation in the world. The instrument is designed for automatic oil in water monitoring on several types of water matrix, such as industrial wastewater, industrial process water, surface water drinking water, sea water, etc. Such analyzer adopts advanced ultraviolet fluorescence analysis method with international testing methods, which ensures reliable and accurate results. With high level of robustness in the electronics, mechanics and hydraulics components, the analyzer requires very little maintenances. Such analyzer has some special features such as no need of chemical reagent, low detection limit (ppb), non-contact measurement, etc.

The analyzer is equipped with appropriate pretreatment system and is developed anti-explosion products for thoroughly meeting the demands of various working conditions and various customers.

### Operational Principle

Based on ultraviolet fluorescence analysis principle, samples will be irradiated by an ultraviolet light source and the oil in water will be excited to emit a light with a longer wavelength than excitation light, which belongs to one kind of fluorescence phenomenon. In this process, when the excitation light intensity is fixed, the fluorescence intensity is proportional to the concentration of oil in water. The technique with features of high sensitivity and good selectivity can be used for the qualitative and quantitative analysis of oil in water in various areas.

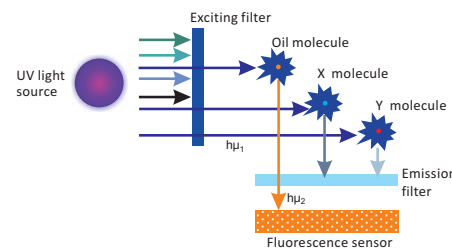


Diagram of ultraviolet fluorescence analysis principle

### Applications

- Industrial Process Water
- Waste Water Discharge Port
- Surface Water Station
- Drinking Water Source
- Process Condensed Water Recycling
- Recharge Water Monitoring in Oil-Fields
- Monitoring of Cooling Water of Boilers in Power Plants
- Section of Sea Mouth



### Product Features

- Quick and accurate measurement, high sensitivity
  - High sensitivity, up to 0.1ppb
  - Degree of linearity  $r^2 \geq 0.999$
  - Four range switch-over and wide range of measurement
  - Direct fluorescence measurement and quick response
- Continuous and stable measurement, good anti-interference capacity
  - Unique water-mist dispelling method, avoiding the effect of vapor on the measurement
  - Non-contact measurement, with no window pollution and no need for cleaning, and consequently the avoidance of drift caused by window pollution
  - Double traverse technique, and can make compensation for weakening and fluctuation of light source; little long-time drift
  - Spillover measurement model, eliminating the effect of water pressure on the measurements
  - Dual bubble-eliminating method, eliminating the bubble effect
- Low maintenance, low cost
  - No need of extraction or addition of extra chemical agent, thus no secondary pollution
  - Bulb Life more than 5 years, with the function of energy compensation
  - Simple and standard operation of accessory solid calibration block
  - No moving parts and easy maintenance

### Technical Specifications

Measuring Principle	Ultraviolet fluorescence analysis, spillover and non-contact continuous measurement
Measuring Parameter	Oil in water
Measuring Range	0-2/10/100/1000 mg/L
Detection Limit	0.1 ppb
Repeatability	<1%
Zero Drift	±5% F.S. within 90 days
Span Drift	±5% F.S. within 90 days
Operation Temperature	(0-50) °C
Sample Temperature	(0-100) °C, (60-100) °C with cooling module
Protection	IP65
Power Supply	220 V AC ±10%, 50 Hz ±5%, not over 20 W
Dimensions	450mm×180mm×350mm (W×H×D) without pretreatment system
Weight	25kg without pretreatment system