

# TOTAL ORGANIC CARBON

## TOC 3500



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

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▶▶ **Introduction**

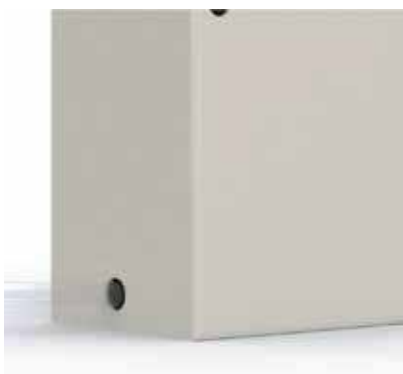
TOC 3500 TOC analysis module uses the static UV oxidation - Conductivity Detection, Deionized water samples for the determination of total organic carbon concentration of analytical instruments, TOC concentrations can be detected from 0.1ppb to 1000.0ppb water samples with high sensitivity and accuracy , as well as good stability.

▶▶ **Fundamentals**

Using UV light oxidation of carbon in water samples, After changes in the conductivity before and after oxidation of the sample to obtain the corresponding TOC values, During the test , water samples were isolated alone in a closed space, thus preventing contact with the surrounding environment pollution caused, The TOC value is through changes in the conductivity of the water samples before and after oxidation by UV light, To obtain the corresponding operations. The conductivity of the water sample is directly related to the content of organic carbon in water samples , and organic carbon content and can be completely oxidized to CO2 and measured.

▶▶ **Technical Parameters**

Fundamentals: Static UV oxidation - Conductivity	carrier gas: No need
Detect range: 0.1-1000.0 u g/L 0.1ppb-1000ppb	Communication: RS485, RS232 ( optional )
TOC precision: 0.1 p g/L 0.1 ppb	Display and operator: 3.5 inches screen (optional)
Accuracy error: ±5%	data storage: \
Repeatability error: < ±3%	printer: \
Span drift: < ±2%/D	Options:3.5 inches screen
Zero drift: < ± 2%/D	power: 24V DC
Conductivity detection range: 0.055-6.000 p S/cm	output: 50W
Sowing Data: TOC, Conductivity, temperature	Ambient temperature: 0-40 degree Celsius
Response time: Less than 15 mins	Dimensions ( W*D*H mm ) : 120*56*220
Injection method: Water network pressure	weight: 2Kg
reagent: No need	



►► **Product Features:**

- High accuracy
- lower test limit
- compact size, light weight
- Can be embedded in other devices
- RS485 and RS232 optional
- Optional interface
- Inch touch screen optional

►► **Application:**

can be used for online monitoring the pharmaceutical industry Water system, ultra-pure water preparation system in the semiconductor industry , and the deionized water preparation process in power plants.

## TOC 3500S



TOC 3500S total organic carbon analyzer use Static UV oxidation - Conductivity Detection method to detect the concentration of total organic carbon in de-ionized water, range from 0.1ppb-1000ppb, Has a high sensitivity and accuracy, as well as good stability.

►► **Fundamentals:**

Using UV light oxidation of carbon in water samples, After changes in the conductivity before and after oxidation of the sample to obtain the corresponding TOC values. During the test , water samples were isolated alone in a closed space, thus preventing contact with the surrounding environment pollution caused, The TOC value is through changes in the conductivity of the water samples before and after oxidation by UV light, To obtain the corresponding operations. The conductivity of the water sample is directly related to the content of organic carbon in water samples , and organic carbon content and can be completely oxidized to CO<sub>2</sub> and measured.

►► **Technical Parameters**

Fundamentals: Static UV oxidation - Conductivity	carrier gas: No need
Detect range: 0.1-1000.0 u g/L 0.1ppb-1000ppb	Communication: 4-20mA (External)
TOC precision: 0.1 p g/L 0.1 ppb	Display and operator: 3.5 inches screen
Accuracy error: ±5%	Data storage: 5-year data (date measured 500 times)
Repeatability error: < ±3%	printer: Embedded dot matrix printer
Span drift: < ±2%/D	Options: Calibration Pump
Zero drift: < ± 2%/D	Power: 220V AC ≤ ± 10% 50Hz
Conductivity detection range: 0.055-6.000 p S/cm	Output: 60W
Sowing Data: TOC, Conductivity, temperature	Ambient temperature: 0-40 degree Celsius
Response time: Less than 15 mins	Dimensions ( W*D*H mm ) : 305*126*168
Injection method: Water network pressure	weight: 6Kg
reagent: No need	

►► **Product Features:**

- high accuracy
- lower test limit
- Sense temperature and conductivity
- while detect organic carbon concentration.
- Interface can be connected
- Inch touch screen
- Data convenient query
- Five years of data storage
- UV lamp life Countdown
- Embedded dot matrix printer
- Low maintenance costs
- No reagents and carrier gas
- compact size, light weight
- Wall hanging design, easy online installation

►► **Application:**

can be used for online monitoring the pharmaceutical industry Water system, ultra-pure water preparation system in the semiconductor industry , and the deionized water preparation process in power plants.



# TOC 3600



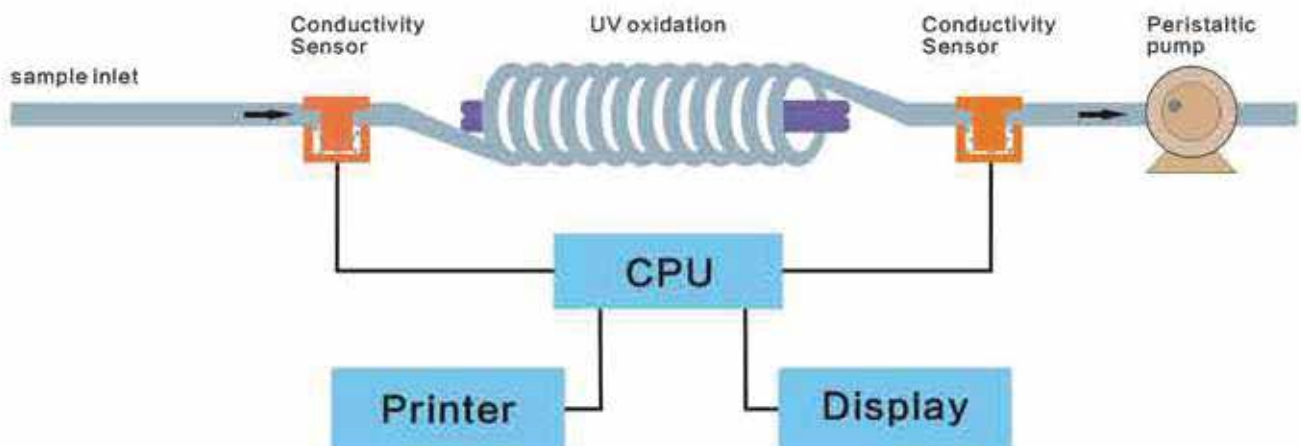
TOC 3600 use the Flow UV oxidation - Conductivity Detection method to detect the concentration of total organic carbon in de-ionized water, range from 0.1 ppb-1500ppb, Has a high sensitivity and accuracy.

## ►► Technical Parameters

Fundamentals: Flow UV oxidation - Conductivity	carrier gas: No need
Detect range: 0.1-1500.0 u g/L 0.1ppb-1500ppb	Communication: 4-20mA (External)
TOC precision: 0.1 p g/L 0.1 ppb	Display and operator: 3.6 inches screen (optional)
Accuracy error: $\leq \pm 5\%$	Data storage: 5-year data (date measured 500 time)
Repeatability : $< \pm 2\%$	printer: Embedded dot matrix printer
Span drift: $\leq \pm 2\%/D$	Options: online device, Calibration package, Autosampler
Zero drift: $\leq \pm 2\%/D$	Power: 220V AC $\leq \pm 10\%$ 50Hz
Conductivity detection range: 0.055-6.000 p S/cm	output: 56W
Sowing Data: TOC, Conductivity, temperature	Ambient temperature: 0-40 degree Celsius
Response time: Less than 15 mins	Dimensions ( W*D*H mm ) : 300*200*180
Injection method: Self-priming peristaltic pump	weight: 10Kg
reagent: No need	
Measuring time: Liquid : TC:Approx. 3min, IC :Approx. 3 min Solid : Approx. 5 to 6 min	

## ▶▶ Product Features:

- high accuracy
- lower test limit
- Simultaneous Determination of conductivity
- Conductivity temperature compensation technology
- Interface can be connected
- Inch touch screen
- Data convenient query
- Five years of data storage
- Embedded dot matrix printer
- UV lamp life Countdown
- Alarm output function
- Low maintenance costs
- Online testing optional
- Automatic calibration optional



## ▶▶ Fundamentals:

Using UV light to oxidized the slow flow of water samples ,according to the difference of conductivity before and after oxidation of the sample to calculate the value of TOC.

## ▶▶ Application:

laboratory Offline detection for the total organic carbon Concentration of the purified water, deionized water, water for injection , online monitoring the pharmaceutical industry Water system, ultra-pure water preparation system in the semiconductor industry , and the deionized water preparation process in power plants.

# TOC 3600S



TOC 3600S use the Flow UV oxidation - Conductivity Detection method to detect the concentration of total organic carbon in de-ionized water, range from 0.1ppb-1500ppb, has a high sensitivity and accuracy.

## ▶▶ **Application:**

Laboratory Offline detection for the total organic carbon Concentration of the purified water, deionized water, water for injection, online monitoring the pharmaceutical industry Water system, ultra-pure water preparation system in the semiconductor industry , and the deionized water preparation process in power plants.

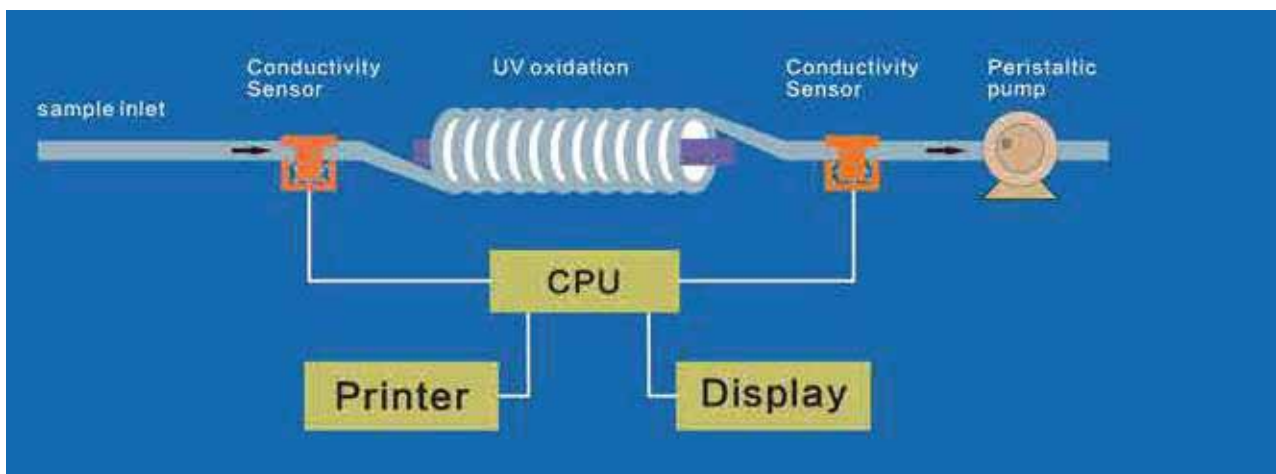
## ▶▶ **Product Features:**

- High accuracy and lower test limit
- 3.5 inch touch screen design, human interface, the operation is simple and convenient
- Conductivity temperature compensation technology
- Online sampling device is outside of Analyzer, it can be easily switched off-line detection mode
- Don't need a carrier gas and reagents, simple maintenance
- Five years of data storage, data convenient query
- Embedded dot matrix printer
- UV lamp life Countdown
- 4-20mA Interface can be connected
- Automatic calibration optional



### ►► Technical Parameters

TOC detection range: 0.1 p g / L - 1 50 0 .0 p g / L	Response time: 15min
TOC precision: 0.1 p g/L	Sample temperature: 0- 100°C
Conductivity detection range: 0.055 p S/cm -6.000 p S/cm	Sampling mode: the water pressure+ online sampling device +peristaltic pump
Showing Data: TOC, Conductivity, temperature	Environment temperature: 10 -60°C
Accuracy error: --- ± 5%	Relative humidity: ---≤90%
Repeatability error: -__3%	Output: 50W
Analysis time: analysis of the shortest time interval 20s (programmable)	Dimensions ( W*D*H mm) : 30.5*12.6*16.8
Zero drift: ± 2%/D	Weight: 6Kg
Span drift: ±2%/D	





# TOC 3700



TOC 3700 Uses UV persulfate oxidation NDIR method to detect the concentration of total organic carbon in water sample from 1 ppb-100ppm, Has a high sensitivity , good accuracy and stability

## ►► Fundamentals:

Subtraction : The samples by UV persulfate decomposed sufficiently oxidized into carbon dioxide and water, the dehydration condensation of the carbon dioxide measured by non-dispersive infra-red detector (NDIR), total carbon in the sample to determine the content of the TC ; agent via an acid decomposition of inorganic carbon in the sample carbon dioxide and water, dehydration condensation , with a non-dispersive infrared carbon dioxide detector (NDIR) measurement , the sample to determine the TIC of the total inorganic carbon content ;  $TOC = TC - TIC$ .

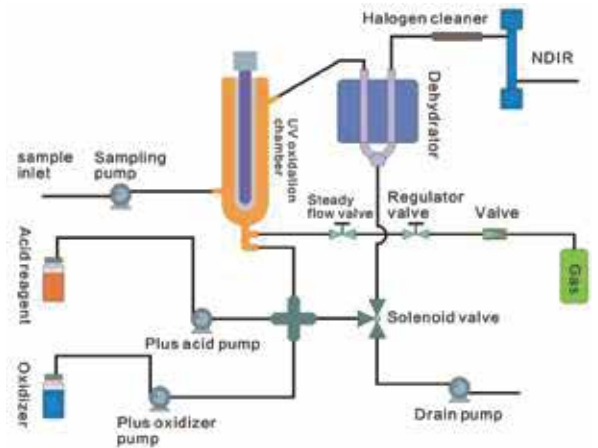
Direct method : First through the acid reagent inorganic carbon in the sample is decomposed into carbon dioxide and water to remove total inorganic carbon TIC; through UV persulfate sample decomposition of organic carbon into carbon dioxide and water , dehydrated condensed carbon dioxide by non-dispersive infrared detector (NDIR) measurement to determine the total carbon content in the sample of TOC

## ▶▶ Technical Parameters

Fundamentals: UV persulfate oxidation -NDIR	carrier gas: High purity nitrogen
Detect range: 0.001-100.0mg/L 1ppb-100ppb	Communication: No external
TOC precision: 0.001mg/L 1ppb	Display and operator: 7 inches touch screen
Accuracy error: <math>\pm 5\%</math>	Data storage: 2 -year data ( date measured 500 times )
Repeatability error: <math>\pm 3\%</math>	Printer: Embedded dot matrix printer
Span drift: 2°/0/D	Options: Autosampler Online device Dilution module
Zero drift: <math>\pm 2\%/D</math>	Power: 220V AC <math>\pm 10\%</math> 50Hz
Conductivity detection range:/	Output: 150W
Showing Data: TC, IC, TOC, NPOC	Ambient temperature: 0-40 degree Celsius
Response time: 3-8 mins	Dimensions ( W*D*H mm ) : 380*300*320
Injection method: Self-priming electromagnetic pump	Weight: 20Kg
Responreagent: Phosphoric acid, persulfatase time: 3-8 mins	

## ▶▶ Product Features:

- Twin tube electronic condensate dehydration ;
- Detection mode : TC, TIC, TOC, NPOC, three detection mode in the same reaction vessel
- A highly reflective gold plating chamber, an infrared light source and condensing the high sensitivity of the infrared detector, to ensure superior performance NDIR ; ppb level data measured with sufficient sensitivity and precision
- Real-time detection of curves visible
- 50-5000 p L Autosampler, precision solenoid metering pumps , injection volume 50-5000 p L
- Multiple temperature , pressure, flow in real-time self-monitoring function
- Embedded 7-inch touchscreen
- Built-in dot matrix printer
- Suitable for measuring high-salt samples
- Especially suitable for high proportion of total inorganic carbon in water samples TOC detection
- Configuring online modules , online monitoring
- In line with international standards IS08245, People's Republic of China State Environmental Protection standards HJ501-2009, national verification procedures People's Republic of China JJG 821-2005 and 2010 Chinese Pharmacopoeia



► **Product Features:**

- Water for injection, purified water
- Cleanliness verify wash water ;
- Tap water, surface water ;
- Chemical water ( washing water , cooling water, recycled water, etc. )
- Laboratory research



# TOC 3800



TOC 3800 Use High-temperature catalytic oxidation - NDIR detection to detect the Total organic carbon concentrations in water samples, range from 0.05ppm-35000ppm.

## ►► Technical Parameters

Fundamentals: UV persulfate oxidation -NDIR	carrier gas: High purity nitrogen
Detect range: 0.05-3500.0mg/L 50ppb-3500ppb	Communication: No external
TOC precision: 0.005mg/L 50ppb	Display and operator: 7 inches touch screen
Accuracy error: < $\pm 5\%$	Data storage: 2 -year data ( date measured 500 times )
Repeatability error: $\pm 3\%$	Printer: Embedded dot matrix printer
Span drift: $\pm 2\%/D$	Options: Autosampler Online device Dilution module Solid Injector
Zero drift: $\pm 2\%/D$	Power: 220V AC < $\pm 10\%$ 50Hz
Conductivity detection range:/	Output: 800W
Showing Data: TC, IC, TOC, NPOC	Ambient temperature: 0-40 degree Celsius
Response time: 3-8 mins	Dimensions ( W*D*H mm ) : 600*430*420
Injection method: Self-priming electromagnetic pump	Weight: 40Kg
Reagent: phosphoric acid	

▶▶ **Fundamentals:**

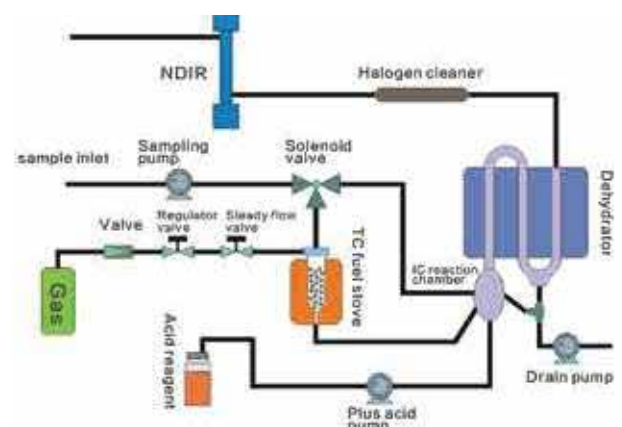
Performance by the combustion furnace to the oxidation catalyst at a high temperature combustion of the sample is decomposed into carbon dioxide and water vapor through a condenser to cool after removing the carbon dioxide measured by non-dispersive infra-red detector (NDIR), total carbon in the sample to determine the TC the content ; By the inorganic acid reagent in the sample is decomposed into carbon dioxide and water vapor through a condenser to cool after removing the carbon dioxide measured by non-dispersive infra-red detector (NDIR), the samples to determine the content of total inorganic carbon TIC ;  $TOC = TC - TIC$

▶▶ **Product Features:**

- Three -way electronic condensate dehydration
- Place the burner anyway integrated design , easy to replace 1 you can configure a solid injector, in solid samples into the sample \* TC, TIC, TOC, NPOC Detection mode : TC, TIC, TOC, NPOC
- A highly reflective gold plating chamber , an infrared light source and condensing the high sensitivity of the infrared detector, to ensure superior performance NDIR ; ppb level data measured with sufficient sensitivity and precision
- Real-time detection of curves visible
- Liquid samples autosampler , precision electromagnetic metering pumps , injection volume 50-1000  $\mu$ L
- Multiple temperature , pressure, flow in real-time self-monitoring
- Embedded 7-inch touchscreen
- Built-in dot matrix printer
- quantity : 100g / L
- Configuring online modules , online monitoring
- The maximum temperature up to 1100 degrees, depending on the sample to select a different catalysts (such as CeO, Pt, CuO) , and to set different temperatures
- In line with international standards IS08245, People's Republic of China State Environmental Protection standards HJ501-2009, national verification procedures People's Republic of China JJG 821-2005 and 2010 Chinese Pharmacopoeia

▶▶ **Application:**

- Cleanliness verify wash water
- Tap water, surface water
- Rivers, lakes and water
- Chemical water ( washing water , cooling water, recycled water, sewage water, etc.)
- Chemical production process and finished product testing \* Laboratory research



# TOC Autosampler



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- Trainings :We also take up preventive maintenance to reduce downtime of HPLC’s Trainings.
- AMC’s/CMC : We offer user training both in-House and at customer sites on PLC principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/U SFDA norms.
- Instruments : We offer instruments/Renting Services Modules like pumps, detector etc. on Rent.



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▶▶ **Our Products & Technologies**

						
UV/VIS Spectro 2080+ Double Beam	Infra FTIR	Optima Gas Chromatograph 3007	Optima Gas Chromatograph 2979 Plus	Flash Chromatograph	Atomic Absorption Spectrophotometer	Liquid Partical Counter
						
Optical Emission Spectrophotometer	DSC/TGA	Semi Auto Bio Chemistry Analyzer	HEMA 2062 Hematology Analyzer	Micro Plate Reader/Washer	URINOVA 2800 Urine Analyzer	Total Organic Carbon 3800
						
Fully Automated CLIA	NOVA-2100 Chemistry Analyzer	PCR/Gradient PCR/ RTPCR	TOC Analyzer	Laser Particle Size Analyzer	Ion Chromatograph	Water purification system

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

Analytical Foundation is a Nonprofit Organization (NGO) found for the purpose of:



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2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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