



## The FORMACS<sup>LT</sup> TOC Analyzer



The measurement of total organic carbon (TOC) constitutes an essential part of many water quality studies. Using a combination of UV light and wet oxidation the Formacs<sup>LT</sup> TOC Analyzer is particularly suitable for the analysis of complex sample matrices in a wide variety of applications including; drinking, ground, sea, surface and waste waters, effluents, soil digests, boiler feed water, etc.

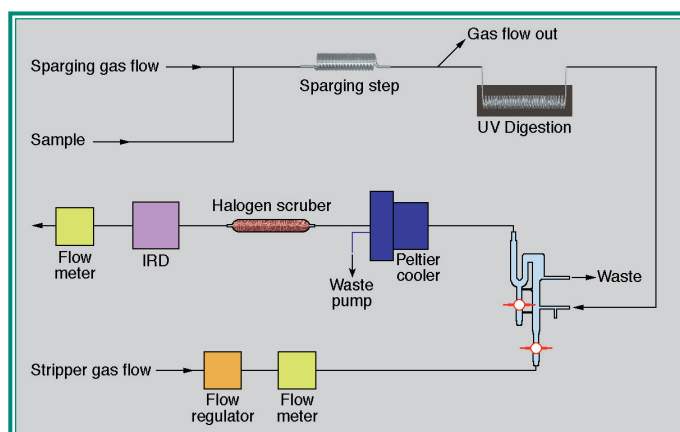
The principle components of the Formacs<sup>LT</sup> TOC Analyzer include an internal sparging system, continuous UV-promoted persulphate digestion, on-line stripping and NDIR (Non Dispersive Infrared) detection. The latest version Windows<sup>®</sup> based software fully complements this set up for all data handling and presentation.

The operator can choose to include or exclude inorganic and volatile compounds. The process of removing these is automatically performed by acidifying and sparging the sample with nitrogen gas. With addition of potassium persulphate and exposure to UV light, the organic compounds of the sample are oxidized to CO<sub>2</sub>. The CO<sub>2</sub> is expelled from the solution by a stripper unit and is measured quantitatively using NDIR detection.

The instrument includes a fully integrated Random Access Sampler. The sampler has a capacity of 80 sample positions. A contamination free top stirrer is fitted as a standard feature.

### Features:

- Measures TC, TIC, TOC, DOC and NPOC
- Highly sensitive (ppb levels)
- Wide range of sample matrices can be handled
- Minimum bench space required
- Fully computer controlled
- Storage of multi range calibration curves
- Real time graphics
- Easy to use software
- Methods according to Standard Methods, EPA, CEN, DIN, ISO etc.



Flow diagram of the Formacs<sup>LT</sup>

**Sample****Oxidation efficiency**

Glycine	97.9 %
EDTA	94.9 %
Glucose	100.0 %
Caffeine	104.4 %
4-Aminoantipyrine	99.8 %
Thiamine	97.3 %
Barbituric acid	100.8 %
Sucrose	101.1 %
Potassium hydrogenphthalate	100.0 %

**General Characteristics**

Analytes	Total Carbon (TC), Total Inorganic Carbon (TIC), Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC), Non Purgeable Organic Carbon (NPOC)
Method	UV promoted persulphate digestion with synchronous dual wavelength Infra Red detection (NDIR)
Samples	Drinking-, ground-, waste-, sea-, cooling-, surface-, pharmaceutical waters
Sample introduction	Injection by peristaltic pump
Features	Integrated random access 80 position sampler Extendable with Primacs <sup>MCS</sup> – Add-on module for TOC in solid samples Contamination free top-stirring Complies with international regulations such as EPA 415.2, DIN 38409 H3 Standard Methods 5310C

**Operational and Performance Characteristics**

Measuring range	Up to 2 ppm C - Up to 10 ppm C - Up to 100 ppm C - Up to 1000 ppm C
Detection limit	0.02 ppm C (lower ranges can be achieved but depend on laboratory conditions)
Reproducibility	Ranges < 2 ppm within 3% of f.s. range. - Ranges > 2 ppm within 2% of f.s. range
Analysis Sequence	Continuous, results are displayed every 4-5 minutes
Data processing	Detector signal: Area calculation. Data: Multi point linear regression, exclusion of results and recalculations, statistical calculation

**Physical Characteristics**

Gas Combustion	Carrier gas: Nitrogen or purified compressed air.
Power requirements	110 – 120 V, 220 – 240 V, 60/50 Hz
Dimensions (hxdxw)	58 x 53 x 72 cm
Weight	53 kg

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